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Health Psychology in Applied Settings

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**Submitted in fulfilment of the requirements of the
degree**

DOCTORATE IN HEALTH PSYCHOLOGY

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Declaration

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Section A

Preface

This portfolio is a demonstration of the skills and knowledge gained whilst training to become an applied health psychologist. The thesis, generic professional practice and the supplementary report were conducted within a Maltese context. The themes explored are addictions, mental health and chronic pain. Themes are inter-related since chronic pain sometimes co-exists with mental health problems such as anxiety and depression (Lima, 2013). On the other hand, medicinal abuse and addiction to medication is a common practice amongst chronic pain patients (Sehgal, Manchikanti & Smith, 2012).

The practice placement was completed in two different job settings, both within a Maltese context. The first two years of practice were carried out whilst working as an anti-substance abuse guidance teacher within the Education Department. The main duties entailed the primary and secondary prevention of substance abuse amongst students attending the Gozo College. A good proportion of the work involved the promotion of health via the application of health psychology models and theories including the Health Belief Model (Rosenstock, 1966), Protection Motivation Theory (Rogers, 1975) and Social Cognition Theory (Bandura, 1977, 1992, 2000). The target population were teenagers, parents, senior management teams and other members of staff employed with the Directorate for Educational Services. More often than not, work was completed in collaboration with a multi-disciplinary team.

The first job paved the way for the second post of trainee health psychologist within the Mental Health Services. This entailed a more challenging setting and consisted of the delivery of group and one-to-one behaviour change interventions with clients experiencing diverse mental health problems. The latter was completed whilst working with other health care professionals including doctors, basic specialist trainees, consultant psychiatrists, nurses, occupational therapists, assistant psychologists and social workers. Working in mental health was an opportunity to apply evidence-based health psychology models to practice. The latter was made

possible by engaging in regular individual and peer supervision, attendance to different CPD workshops and extensive reading. Interventions were mostly based on cognitive behaviour therapy (Beck, 1970), acceptance and commitment therapy (Hayes, Wilson & Strosahl, 1999), motivational interviewing (Miller & Rollnick, 1991), mindfulness, relapse prevention (Marlatt & Gordon, 1985) and the stages of change (Prochaska & DiClemente, 1983) model.

Section B: Research

Thesis

Chronic pain has been identified as the most common somatic complaint prompting medical assistance (Freburger, Holmes, Agans, Jackman, Darter et al., 2009). Persistent pain can have a significant impact on the individual's well-being (Dezutter, Luyckx & Wachholtz, 2015). Multi-disciplinary approaches adopting a bio-psychosocial perspective offer a more comprehensive treatment to minimalist ones relying solely on pharmacological treatments and may be more beneficial for individuals experiencing significant psychosocial distress (Widerstrom-Noga, Finnerup & Siddall, 2009).

Pain research with Maltese participants is solely lacking and input from a Maltese perspective is existing pain theories is relatively absent. Indeed, very little is known about pain coping mechanisms amongst this population. Pain coping, beliefs and practices are culturally bound, with social and religious norms providing a framework for pain conceptualization (Wachholtz, Pearce & Koenig, 2007). The main thesis aims to explore pain coping mechanisms within a Maltese context, with the hope that knowledge gained could positively impact pain assessment and treatment outcomes.

Spirituality holds an important place in the consciousness of humanity. Since the shipwreck of Saint Paul in Malta in the year 60 A. D, the role of the Roman Catholic religion in Maltese public life shows no signs of abating, with its influence being strong and old as humanity itself (Mandely, cited in Dettartt, Dekker & Halman, 2013). According to recent data, 95% of the Maltese population is Roman Catholic, with the

remaining 5% being followers of other religious affiliations (Gouder, 2010). Within a Maltese context, religion does not only provide a personal and close relation with a higher being, but often serves to foster individual understanding and courage in times of illness (Baldacchino, Borg, Muscat & Sturgeon, 2012).

Findings shed no doubts on the strong link between religion and pain coping, illustrating how Maltese who are religiously active are more likely to resort to religious coping than those who are not. The operation and consequence of diverse pain coping mechanisms is illustrated. An emerging theme also reveals how faith in a higher being is often synonymous with pain alleviation or elimination. Religious coping can sometimes become the key to imprisonment since death by suicide is an unacceptable solution in a country where the effects of Catholicism remains robust and prevalent. The role of religion in fostering a more accepting attitude and finding meaning in life with pain is also discussed.

Since chronic pain sufferers often have mobility problems, online interventions offer increased ease of accessibility of psychological services. Nonetheless, a gap in literature in the exploration of attitudes towards psychological interventions exists (Mohr, Siddique, Ho, Duffecy, Jin et al., 2010). Most of the existing research adopts a quantitative approach to attitude measurement, with an in-depth understanding of prevalent attitudes being relatively unaddressed. The second section of the thesis aims to investigate chronic pain sufferers' attitudes towards psychological interventions for chronic pain, with particular reference to online treatments. Although the coping and attitude theories have been discussed separately, they are also strongly inter-linked since the kind of coping responses and attitudes individuals have towards psychological interventions will influence the kind of help sought and the quality of life of the chronic pain sufferer. Barriers to service uptake and facilitating factors that increase ease of accessibility are discussed. Findings point to the need of moving away from a *one-size-fits-all* model to culturally sensitive interventions that reflects the needs of the target audience. Research implications and recommendations for future research have been identified. Finally, this work was an opportunity to advance upon my qualitative research skills.

Supplementary reports

Maltese people have been producing wine and brewing beer for centuries. Given Malta's hot and humid climate, grapes ripen at a faster rate when compared to northern European countries. Wine production and consumption in Malta is not only a hobby but a passion, almost an asset to any sociable meal, gathering or celebration (Saliba, 2008). Given this context, findings from the recent European School Survey Project on Alcohol and other Drugs (ESPAD, Arpa, 2011) revealing higher alcohol consumption rates amongst Maltese teenagers when compared to other European countries come as no surprise. These results paved the way for the first supplementary report which comprised a clustered randomized-controlled trial aimed to prevent the misuse of alcohol consumption amongst Maltese teenagers. Since alcohol remains an ingrained component of Maltese culture, efforts to curb excessive alcohol consumption require a holistic approach addressing broader sociocultural norms and assumptions. For this reason, the trial incorporates culturally sensitive criteria, with the aim of addressing this escalating problem. Results from this research were particularly useful whilst working in applied contexts and helped set standards of best practice when delivering behaviour change interventions with teenagers who were misusing alcohol in a school setting. This research follows legal, ethical and professional standards for conducting research with human participants as dictated by the British Psychological Society's code of ethics (2006). Adherence to these guidelines helps ensure the implementation of procedures towards becoming a professional psychologist.

The second supplementary report entails a quality review of smart phone applications for the management of pain. Results reveal that most pain apps are often constructed by engineers, with little input from health care providers. Implications behind these findings are discussed mostly in relation to the revelation that apps can sometimes do more harm than good, particularly when professional input is lacking. This competence was a primary driver in developing the main idea for the doctoral thesis.

Section C: Professional Practice

Consultancy

The consultancy case study entails the revision of the National Policy on Substance Abuse in Schools. The policy comprises detailed guidance on steps to follow in cases of abuse or alleged substance abuse in schools. Two booklets were devised alongside the policy, one for parents and one for students. The policy caters for all educational establishments on the Maltese islands. Although the target population are students under the age of 18, the policy also provides guidelines in case of abuse by members of staff. The revision of the national policy was not part of the job description of the anti-substance teacher. The provision of consultancy arose from a meeting with the contact client in September 2012, who was the Service Manager of the Psycho-social Services within the education department. In this case, the primary client was the Ministry of Education while the unwitting clients were parents and all members of staff who had some form of contact with students. A *Process Consultation* (Schein, 1999) approach was adopted during preliminary meetings to clarify the kind of help needed. Booklets were devised following the *Purchase of Expertise* model since the contact client was less knowledgeable about the subject at hand. Other smaller pieces of consultancy were also carried out. These included drafting a psychology module for the *Introduction to Psychology* foundation course at the University of Malta, providing training to teachers and support staff on *Mental Health and Well-being in the Classroom*; giving advice for the drafting of *National Standards for Residential Facilities* providing accommodation to people with drug, alcohol and gambling-related issues, and training to *Home Start* volunteers. The latter is a non-governmental organisation that helps parents of young children adapt to the challenges of parenthood. The possibility of working on different consultancy projects served to broaden the remit of consultancy skills and expertise. It also helped raise awareness of the role of health psychologists within the local population.

Teaching/training

The first job within the Education Department provided ample opportunity and on-going experience for teaching and training. The first teaching and training case study comprises a module conducted with a class of 13-year-olds, with the aim of raising awareness of the hazards of smoking and binge drinking. Although teenagers were often the primary clients, psycho-educational talks to parents and other adult populations who had direct or indirect contact with teens were also held on a regular basis. This experience was not only an opportunity to apply health promotion theories in an applied setting but it also helped boost presentation skills and the ability to adapt teaching content and delivery to different audiences.

The second case study was conducted outside normal working hours whilst working as a guidance teacher. It consists of a stress management workshop held at the Gozo General Hospital. The target audience included doctors, occupational therapists, physiotherapists, nurses and speech language pathologists. Workshops incorporated constructs from cognitive behaviour therapy and health psychology theories. Following these initial workshops, the second job within the Mental Health Services provided other opportunities for the teaching of health care professionals. Lectures to basic specialist trainees and doctors were delivered as part of the basic psychology and psychotherapy modules. These included health psychology topics such as stress management, ethical issues in a health care context and fostering doctor-patient communication. These lectures provided an excellent opportunity to raise awareness of the remit of health psychology within the medical profession. Finally, other teaching opportunities also arose and included teaching basic psychology to undergraduate students at the University of Malta as part of the Foundations in Psychology module.

Behaviour change intervention

This case study comprised of an intervention designed to help two secondary school students quit smoking. It was carried out whilst working as a guidance teacher. Weekly sessions with students were held during students' free lessons or breaks. Regular contact helped ensure clients were being supported during the most difficult periods when cravings to smoke were at their strongest. The intervention was devised following evidence-based models for overcoming addictions including Hajek's (1989) withdrawal-oriented therapy, cognitive behaviour therapy, motivational interviewing, relapse prevention and the stages of change model. Since this was the first time a Focal Person had been appointed with the Gozo College, the first obstacle entailed creating a need for the service and building a relationship with potential clients so as to foster healthier behaviours. A reflection of challenges when conducting the smoking cessation intervention within a school context is provided in the case study. Conducting behaviour change interventions in a school setting was particularly helpful in raising personal awareness of the difficulties in overcoming habits and addictions. It was a good exposure and preparation for handling more challenging cases, namely working with drug addicts. Finally, it urged me to undertake further research and to develop the idea for the systematic review, with the aim of informing best-practice for working with teenagers.

Systematic review

The last section of this portfolio comprises a systematic review aiming to investigate the effectiveness of psychosocial interventions for cannabis abuse amongst adolescents. A total of 13 studies met inclusion criteria for this review. Results revealed that motivational enhancement therapy and multi-dimensional family therapy are the most effective evidence-based treatments. Results also reveal that cognitive behaviour therapy and contingency management are partly effective, particularly when compared to no intervention. Nonetheless, pooled results suggest that these interventions have a very small effect, with little or no differences observed

between experimental and control groups. The need to develop more effective methods to reduce cannabis abuse remains a top priority, mostly because cannabis remains a popular drug amongst youths. This work was useful in informing best practice in substance misuse, both within the education department and in the mental health sector.

Finally, working within the Mental Health Services provided an opportunity to demonstrate the utility of applied health psychology within a very clinical and medically-oriented setting. Since the health psychology course is currently not being offered at the University of Malta, this job served to show the valuable input of the profession and give voice to a relatively unrepresented field within a Maltese context.

References

Arpa, S. (2011). *European school survey project on alcohol and other drugs. Student survey in secondary schools: National report*. Malta: Sedqa.

Baldacchino, D. R., Borg, J., Muscat, C., & Sturgeon, C. (2012). Psychology and theology meet: Illness appraisal and spiritual coping. *Western Journal of Nursing Research*, 34 (6), 818–847.

Bandura, A. (1977). Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review*, 84, 191-215.

Bandura, A. (1992). Self-efficacy mechanisms in psychobiological functioning. In R. Schwarzer (Ed.), *Self-efficacy: Thought Control of Action*. (pp. 355–394). Washington DC: Hemisphere.

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions of Psychological Science*, 9, 75–78.

Beck, A.T. (1970). Cognitive therapy: Nature and relation to behaviour therapy. *Behaviour Therapy*, 1, 184-200.

British Psychological Society (2006). *Code of ethics and conduct*. Leicester: The British Psychological Society.

Dettartt, J., Dekker, P., & Halman, L. (2013). *Religion and civil society in Europe*. Netherlands: Springer.

Dezutter, J., Luyckx, K., & Wachholtz, A. (2015). Meaning in life in chronic pain patients over time: Associations with pain experience and psychological well-being. *Journal of Behavioural Medicine*, 38 (2), 384-395.

Freburger, J.K., Holmes, G.M., Agans, R.P., Jackman, A.M., Darter, J.D., Wallace, A.S., Castel, L.D., Kalsbeek, W.D., & Carey, T.S. (2009). The rising prevalence of chronic low back pain. *Archives of Internal Medicine*, 169, 251-258.

Gouder, A. (2010). *Religious affiliation in Malta and Gozo*. Floriana Malta: Archbishop Curia.

Hajek. P. (1989). The practical business of treatment 4 – Withdrawal-oriented therapy for smokers. *British Journal of Addiction*, 84, 591-598.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behaviour change*. New York: The Guilford Press.

Lima, E.N. (2013). Chronic pain and mental health – Moving beyond the conceptualization of pain as the fifth vital signal. *North Carolina Medical Journal*, 74 (3), 229–231.

Marlatt, G.A., & Gordon, J.R. (1980). Determinants of relapse. Implications for the maintenance of behaviour change. In P. O. Davidson & S. M. Davidson (Eds.), *Behavioural Medicine: Changing Health Lifestyles* (pp. 411-452). New York: Brunner Mazel.

Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing. Preparing people to change addictive behaviours*. New York: Guilford Press.

Mohr, D. C., Siddique, J., Ho, J., Duffecy, J., Jin, L., & Fokuo, K. (2010). Interest in behavioural and psychological treatments delivered face-to-face, by telephone and by internet. *Annals of Behavioural Medicine*, 40, 89-98.

Prochaska, J., & Diclemente, C. (1983). Stages and processes of self-change of smoking: towards an integrated model of change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.

Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology*, 91, 93–114.

Rosenstock, I. M. (1966). Why people use health services. *Millbank Memorial Fund Quarterly*, 44, 94–124.

Saliba, M. (2008). Dealing with alcohol abuse within the family. *Maltese Family Doctor – A Peer-reviewed Journal of the Malta College of Family Doctors*, 17 (1), 6 – 8.

Sehgal, N., Manchikanti, L., & Smith, H. S. (2012). Prescription opioid abuse in chronic pain: A review of opioid abuse predictors and strategies to curb opioid abuse. *Pain Physician*, 15, ES 67–ES 92.

Schein, E. H. (1999). *Process consultation revisited – Building the helping relationship*. USA: Addison-Wesley.

Wachholtz, A. B., Pearce, M. J., & Koenig, H. (2007). Exploring the relation between spirituality, coping and pain. *Journal of Behavioural Medicine*, 30, 311-318.

Widerstrom-Noga, E. G., Finnerup, N., & Siddall, P. J. (2009). Bio-psychosocial perspective on a mechanisms-based approach to assessment and treatment of pain following spinal cord injury. *Journal of Rehabilitation Research and Development*, 46 (1), 1-12.

Section B

Abstract

Pain is an inevitable human experience. Despite its crucial role for survival, pain becomes problematic when it is enduring and when it impairs the individual's quality of life. Living with pain on a day-to-day basis can be exhausting, especially when nothing seems to relieve the pain. The way chronic pain sufferers perceive their situation will determine the kind of coping strategies used. The main research thesis within this portfolio aimed to explore differences in pain coping mechanisms amongst the Maltese population. The emergent theory resulted from a grounded theory methodology and was entitled *The Journey to Coping*. Results reveal that Maltese chronic pain sufferers often rely on a number of self-taught/sought techniques to cope with pain. The journey to coping is not an easy one, with some participants engaging in relentless struggles to eliminate pain. The inability to achieve control often leads to a sense of disconnectedness from the external world, with death perceived as the only solution. On the other hand, accepting pain was linked to increased adaptation and psychological well-being. The main research also aimed to investigate service users' attitudes towards psychological treatments, with particular reference to online interventions for pain management. Overall, results reveal that escalating pain; the inability to find pain relief; positive expectancies, and a number of facilitating factors play a role in the formation of positive attitudes and increase the likelihood of service uptake. On the other hand, a number of impeding factors and negative expectancies revolving around perceptions of weakness and equating pain with the physical body not only resulted in a number of negative attitudes but hindered help-seeking behaviour. Moreover, although chronic pain sufferers are quite accepting of online interventions, the presence of the human element seems to be an indispensable asset to service uptake as reflected in the theory entitled *Wanting the Real Thing*.

Title: An exploration of pain coping mechanisms and attitudes towards psychological interventions for chronic pain amongst the Maltese population (Reference number PSYETH (UPTD) 13/1436)

Introduction

1.1 What is pain and when is pain a problem?

Pain is an inevitable and universal human experience. The International Association for the Study of Pain (IASP) defines pain as '*an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage*' (Merskey & Bogduk, 1994). Although pain is uncomfortable and exacerbates unpleasant physical sensations, it is of vital importance for the body. It signals that something is not working as it should within the human body. These sensations can be life-saving by prompting the person to take protective action to reduce the impact of any physical damage incurred (Sarafino & Smith, 2014).

Chronic pain affects between 12 to 25% of the adult population in the US and 19% of Europeans (Dezutter, Luyckx & Wachholtz, 2015; Reid, Harker, Bala, Truysers, Kellen et al., 2011). Despite its crucial role for survival, pain becomes problematic when it is enduring, persistent and dominating and when it impairs the quality of life of the sufferer. Living with pain on a day-to-day basis can be exhausting, especially when no pain relief is available (Vlaeyen, Crombez & Groupert, 2007). Persistent pain can also be a source of challenge for health care professionals who are struggling to alleviate the pain of their clients and trying to improve their quality of life (Melzack & Wall, 1965).

1.1.2 Acute and chronic pain: The difference

One of the first steps in the assessment and treatment of pain requires an understanding of its basic manifestations and characteristics. Pain can be chronic or acute. Acute pain often arises following surgery, bone fractures, burns or cuts, infections and physical injuries. Its intensity often diminishes as the body starts to heal

itself. Given its temporary duration, acute pain often poses minimal disruptions to the individual (Morley, 2008). On the other hand, unrelieved pain becomes chronic in nature when it persists for more than 3 months (IASP, 2003). Chronic pain is often characterized by varying pain intensity. Pain is often persistent or recurring, and the onset and duration is often unpredictable (North American Nursing Diagnosis Association International, *NANDA*, 2005). Common chronic pain conditions include migraines, whiplash, fibromyalgia, degenerative disc disease, musculoskeletal rheumatoid arthritis and cancer pain. While a clear understanding of the scientific origin of acute pain is lacking, that for chronic pain is even more blurred (Vlaeyen et al, 2007).

1.2 Biomedical models of pain perception

Early theories of pain took a mechanistic view of pain perception. According to Descartes' Specificity Theory (Melzack & Wall, 1965), pain receptors transfer pain messages to the spinal cord and the brain, where pain signals are processed. The amount of pain experienced depends on the extent of physical damage incurred. Pain sensations without any organic basis were considered pathological. On the other hand, Goldscheider's Pattern Theory (1894) asserts that pain receptors are activated when a certain threshold of neuronal activity is reached. Both theories have been influential in the diagnosis and treatment of pain conditions. Nevertheless, they adopt a reductionist perspective as pain is seen to originate solely from physical pathology. They fail to explain the sensation of pain in the absence of tissue damage. Thus, the brain is a simple passive receiver of pain signals (Hadjistavropoulos & Craig, 2004).

1.2.1 The gate control theory

Melzack and Wall's (1965) Gate Control Theory is the most accepted theory. According to the latter, pain signals pass through a gating mechanism located in the spinal cord before activating transmission cells and sending messages to the brain. Intensity of stimulation and the magnitude of incoming signals are crucial in pain perception. The gating mechanism is also influenced by the cognitive and emotional state of the

individual. This dualistic theory differs from earlier biomedical models since it acknowledges the role of psychological factors in the experience of pain (Vlaeyen et al, 2007). This view helped eradicate erroneous beliefs of psychopathology in the absence of physical damage (Lumley, Cohen, Borszcz, Cano, Radcliffe et al., 2011). The theory had a significant impact on the study of pain since organic and psychological factors were now viewed on a dichotomous level rather than a continuum (Sarafino & Smith, 2014).

1.3 Bio-psychosocial approaches to the study of chronic pain

Biological factors play a crucial role in the aetiology of pain. Although physical damage to body tissues or organs will cause pain, research reveals that the pain reported by individuals does not always reflect the extent of physical injury and that other factors influence the sensations of pain (Jacobs, 2013).

The bio-psychosocial approach sheds light on the complexity of chronic pain. It rejects reductionist perspectives of biomedical approaches and affirms the interdependence of biological, psychological and social factors as playing an important role in the health and illness. Conclusively, physical factors alone cannot fully explain the pain sensations experienced by the individual. Although several bio-psychosocial models were proposed, they share two features. First, pain is subjective and is manifested differently in different individuals (Mechanic, 1962). Second, the weight sufferers give to social, biological and psychological factors varies with changing circumstances in life (Engel, 1977). Engel's (1980) bio-psychosocial model is one of the most influential, mainly because he views persons as *beings* rather than mere objects to be studied and investigated, thereby emphasizing the importance of compassion in the doctor-patient encounter.

Pain can seriously affect the quality of life of the individual and interfere with the ability to carry out day-to-day tasks. It can result in social withdrawal, loss of interest in hobbies, job loss, family conflicts, inability to perform normal and taken-for-granted family roles and taking care of oneself (Fine, 2011). Another influential bio-

psychosocial approach is Fordyce's (1976) Operant Model. According to operant conditioning, behaviour that results in positive outcomes will increase in frequency while that which is not rewarded or is punished is less likely to be repeated. Thus, behaviours that reduce pain are likely to be maintained, irrespective of whether they are helpful or not. Such behaviours include over-reliance on others or avoidance of annoying tasks or responsibilities. Although social support is important, families who are too protective may reinforce unhealthy sick-role behaviours (Newton-John, 2002). On a similar note, safety behaviours may temporarily alleviate pain but can become problematic if maintained over time. For instance, passivity may cause weakening of muscles, resulting in further deterioration (Carver, Scheier & Segerstrom, 2010).

Other psychological factors also play a crucial role in the maintenance of pain behaviours and in the experience of pain (Vlaeyen et al., 2007). The individual's beliefs, thoughts, coping mechanisms, expectations, emotions, self-efficacy, locus of control and perceived limitations due to the pain are important aspects influencing pain perception (Coughlin, Badura, Fleischer & Guck, 2000; Jackson, Wang, Wang & Fan, 2014). The psychological side-effects of living with chronic pain can be overwhelming. Conclusively, an individual's perception of pain experience plays a significant role in coping responses and adaptation.

Bio-psychosocial approaches reveal that the understanding somatic manifestations of pain require a consideration of the broader multidimensional and contextual circumstances. Chronic pain can be a devastating experience, threatening to 'unmake' the individual's world, shake taken-for-granted identities, disturb life balance and narrow the horizon of time (Good, 1992, cited in Crossley, 2000). Given this complex perspective, a holistic assessment is indispensable (Institute for Clinical Systems Improvement, 2008).

1.4 Socio-cultural influences

1.4.1 Pain expression and behaviour

Cultural factors play a significant role in formulating the norms, beliefs, expectations and practices of pain behaviour. Although pain is very subjective, pain responses and expressions are often similar among individuals sharing similar ethnic and cultural backgrounds (Houser & Zamponi, 2011). Cultural socialization teaches individuals how to behave when in pain and acceptable ways of pain expression (D'Arcy, 2009). For instance, Italians, Arabs and Puerto Ricans are more outwardly expressive when it comes to pain while the Chinese and Germans seem to be more stoic and less likely to display pain behaviours (Ondeck, 2003). This means that cultural differences are manifested in different pain behaviours, prompting some individuals to seek immediate medical advice, whilst making others postpone seeking treatment. The latter can have repercussions on the nature and severity of the problem experienced.

1.4.2 Gender and pain

Socio-cultural norms and expectations are also likely to influence gender differences in pain expression. They often set rules of acceptable and unacceptable pain behaviour for members of each sex. For instance, female adolescents tend to report higher pain intensity compared to adolescent boys for the same physical problem (Hechler, Chalkiadis, Hasan, Kosfelder, Meyerhoff et al., 2009). On the other hand, men holding high masculinity measures are often very tolerant of pain (Bernandes, Keogh & Lima, 2008). Stereotypical expectations may compel men to refrain from reporting pain (Defrin & Shramm, 2009). Men are also less likely to reach out for support and adopt an information-seeking approach to coping (Eakin & Strycker, 2000). It seems that women with chronic pain are less likely to suffer from depression or anxiety disorders when compared to their male counterparts and more likely to adjust to living with pain (Eakin & Strycker, 2000). One factor that may explain these findings is women's tendency to seek support from diverse sources, including external and internal familiar networks.

Gender differences in pain perception remain a controversial phenomenon. Some researchers claim that sex differences in pain are nothing but an artifact and can be

accounted for by other equally plausible explanations including the individual's psychological state, past experiences and coping strategies (Dionne, Bartoshuk, Mogil & Witter, 2005). As Eccleston (2001) rightly points out, persistent pain is a complex condition.

1.4.3 Pain and spirituality

Another factor that influences pain behaviour, expression and coping is spirituality. Religious or spiritual coping usually involves seeking strength and reassurance from a benevolent and higher being, often as a way of coming to terms with pain. In some Christian communities, accepting pain helps the individual get closer to God (Norris, 2009). Religion may act as a buffer against symptoms of depression and can foster psychological well-being, optimism and improved quality of life in chronic pain populations. The way an individual perceives their overall situation plays a significant role in their adjustment to persistent pain. Religious coping can be both helpful and unhelpful (Moreira-Almeida & Koenig, 2008). It is helpful when individuals surrender to God, knowing they tried their best to alleviate pain, when they perceive a spiritual meaning to suffering, when religion is a means for alleviating worry and when it helps the individual find a new purpose in life. On the other hand, it is unhelpful when pain is perceived as a punishment, when the person engages in unrealistic wishful thinking and when things are perceived as being beyond God's wish to help. Such coping strategies are likely to result in increased psychiatric symptoms, poor quality of life and higher mortality (Ano & Vasconcelles, 2005).

Pain is perceived in different ways across cultures, religious groups and geographical locations. The subjective implications make the objective study of pain problematic (Houser & Zamponi, 2011). Thus, a holistic understanding of pain requires the consideration of social, spiritual and cultural dimensions.

1.4.4 Coping styles and pain

Individuals differ in how they respond to life stressors. This depends on the coping strategies they adopt. Lazarus and Folkman (1984) define coping as the individual's cognitive and behavioural efforts to manage specific external or internal demands that are appraised as taxing or exceeding the individual's resources. The way chronic pain sufferers perceive their situation will determine the kind of strategies they use to cope and adapt to life with pain.

Lazarus and Folkman (1984) describe two types of coping strategies, *emotion-focused coping* and *problem-focused coping*. Problem-focused coping strategies involve adopting problem-solving tactics to cope with arising problems. These include defining the problem, brainstorming all solutions available, weighing the pros and cons of engaging in particular behaviours, altering some aspects of the surrounding environment when possible and if not possible, engaging in an internal reappraisal of the situation. On the other hand, emotion-focused coping strategies are more common when little or nothing can be done to alter a particular situation. Examples include avoidance, denial, venting out of emotions, distancing oneself from the problem or seeking social support.

Chronic non-malignant pain is often associated with poor quality of life and a higher risk of developing major depression (Nicholas, Linton, Watson & Main, 2011). It is also associated with elevated rates of suicidal ideation, with suicide sometimes perceived as the only conceivable solution (Wilson, Kowan, Henderson, McWilliams & Peloquin, 2013). According to the interpersonal theory of suicide (Joiner, 2005), two factors contributing to the individual's desire to commit suicide are *thwarted belongingness* and *perceived burdensomeness*. The former entails an unmet need of social belongingness and withdrawal from others, often leading to a sense of isolation from the rest of the world. On the other hand, *perceived burdensomeness* comprises the belief that one is a burden on others and others are better off without the person (Van Orden, Witte, Cukrowicz, Braithwaite, Selby et al., 2010). Joiner's theory has successfully been applied to pain research, revealing that similar thought processes

often occur in chronic pain patients (Wilson et al., 2013). Suicidal ideation amongst chronic pain patients is often as high as 20% (Tang & Crane, 2006).

Clearly enough, some of coping strategies outlined above can have devastating consequences. Unhelpful coping strategies can be very isolating, making the chronic pain patient suffer in silence. Techniques relying on avoidance and wishful thinking may exacerbate disability and depression, leading to a spiral of self-destructive tendencies (Murphy, Kratz, Williams & Geisser, 2012). More often than not, people usually adopt a combination of coping strategies, depending on the particular circumstances they find themselves in (Murphy et al, 2012). These will in turn determine the kind of treatments sought to alleviate pain.

1.5 Medical approaches to the treatment of chronic pain conditions

Pharmacological and physical interventions are the first line of treatment for managing pain. These include corrective surgery, over-the-counter or prescription drugs, local anaesthetics, physical therapy such as counter-irritation or acupuncture, transcutaneous electrical nerve stimulation (TENS) and massage therapy. Since symptoms of depression, mood disturbance, insomnia and anxiety often co-exist with chronic pain conditions, psychotropic drugs are popularly prescribed (Knaster, Karlsson, Estlander & Kalso, 2012). Opioids are very powerful in relieving pain. Doubtlessly, while medical interventions play a crucial role in alleviating pain, they have their limitations including unpleasant side effects, tolerance and physical dependence (Gupta, Bruehl, Burns, Buvanendran, Chont et al., 2014). Apart from that, some chronic pain problems are difficult to diagnose and medicine may only provide temporary relief (Gilron, Jensen & Dickenson, 2012).

1.6 Psychosocial interventions for the treatment of chronic pain

Despite advances in medical pharmacology, the treatment of unrelieved pain remains a challenge. Up to this day, cure for certain pain conditions such as fibromyalgia have not been identified (Kristjánsdóttir, Fors, Eide, Finset, Lauritzen et al., 2013). Chronic pain management is also expensive, mostly due to the need for long-term treatment.

The accepted gold standard treatment for the management of chronic pain in most health centres relies on a multi-disciplinary approach consisting of feedback from diverse health care professionals working closely with the patient to ensure a holistic treatment plan (Institute of Medicine, 2011). Psychological interventions incorporated alongside medical treatments play a crucial role in helping patients adjust to pain, adapt to new changing roles, cope with feelings of distress, sadness or depression and ensure adherence to medication. The most commonly used psychological interventions include behavioural treatments and activation, cognitive therapies, Cognitive Behaviour Therapy (CBT), hypnosis, biofeedback, relaxation and distraction (Morley, 2008; Sarafino & Smith, 2014). Other approaches that are gaining increased popularity include Acceptance and Commitment Therapy (ACT), Emotional Freedom Techniques (EFT), Motivational Interviewing (MI) and Dialectical Behaviour Therapy (DBT) (Brattberg, 2008; Carlson, 2014; Veehof, Oskam, Schreurs & Bohlmeijer, 2011).

1.6.1 Behavioural approaches

Chronic pain patients sometimes engage in unhelpful behaviours to reduce unpleasant pain sensations. Behavioural interventions attempt to reward healthy behaviours and punish or ignore unhealthy ones. Trials using behavioural approaches have revealed encouraging findings. Positive reinforcement of healthy behaviours such as making an extra effort, increasing physical activity and withdrawal of attention by significant others was found to reduce pain intensity, symptoms of disability and sick leave behaviour (Lousberg, Vuurman, Lamers, Van Breukelen, Jongen et al., 2005; Smeets, Vlaeyen, Hidding, Kester & van der Heijden, 2006). Other behavioural approaches include relaxation exercises used to distract the mind from painful stimuli by allowing pain to drop in the background (Linton, 1982).

1.6.2 Motivational interviewing (MI)

Motivational interviewing (Miller & Rollnick, 1991) is a client-centred approach that motivates individuals to engage in the necessary changes needed to reduce disability and sick role behaviours resulting from pain, thereby encouraging a restoration of

health to the maximum of the clients' abilities. Results of studies involving MI interviewing techniques have revealed positive effects on pain reduction and disability and increased physical and psychological health (Vong, Cheing, Chan, So & Chan, 2011; Tse, Vong & Tang al, 2012).

1.6.3 Cognitive behaviour therapy

Cognitive behaviour therapy (CBT) is a well-established intervention that aims to psycho-educate patients about their condition and about factors that may aggravate pain as well as change maladaptive thoughts and behaviours. CBT also encourages the scheduling of pleasant events, cognitive reframing and problem solving. Individuals are helped to set realistic and achievable goals, thereby taking an active role in treatment. An understanding of unhealthy constructions of reality is another primary goal. This helps clients break free from emotional helplessness and imparts an increased sense of self-efficacy to take adaptive action (Beck, 1976). CBT has revealed promising results for the management of chronic pain conditions and is considered to be the standard treatment of use with chronic pain patients (Bee, Bower, Lovell, Gilbody, Richards et al., 2008; Slater, Chircop-Rollick, Patel, Golish, Weickgenant et al., 2011). For instance, a meta-analysis on psychological interventions for the management of chronic low back pain revealed moderate to large positive effects on reduced pain intensity and health-related quality of life when CBT was incorporated (Hoffman, Papas, Chatkoff & Kerns, 2007).

1.6.4 Mindfulness-based approaches

Acceptance and commitment therapy (ACT) is a mindfulness-based approach. *Acceptance* does not mean giving up or being a passive victim of circumstances but adjusting and accommodating to pain, without struggling or resisting it, while taking up actions that foster overall improvement in quality of life. ACT uses mindfulness-based techniques that teach patients the necessary psychological skills needed to deal more effectively with painful thoughts and feelings, to develop a transcendent sense of self, and to live the here-and-now, without the need to resort to experiential avoidance (Harris, 2006).

One way of overcoming life challenges and living a meaningful life is by connecting with values (Harris, 2008). Harris describes values as ongoing actions and desires that drive a person's behaviour. Sometimes, pain becomes the main focus of attention for the chronic pain sufferer. Unsuccessful attempts to eliminate pain often results in a state of 'creative hopelessness' (McCracken, 2005). As a result, personal values, qualities and goals are often put on hold or forgotten altogether. ACT aims to promote valued actions by encouraging the person to accept both pleasant and unpleasant thoughts and sensations in a nonjudgmental way, without attempting to modify them or act on them (McCracken et al, 2013). Cognitive defusion techniques and experiential acceptance (as opposed to avoidance) are incorporated to help the person develop effective coping patterns that bring them closer to their chosen values, thereby living a meaningful life (Hayes, Strosahl & Wilson, 1999).

Living a meaningful life despite pain is also in line with existential approaches. Frankl (1963) holds that man's search for meaning is a natural, healthy and motivational driving force. He believes that individuals who have the ability to connect to something they truly value in life are better able to endure suffering and find a sense of purpose. Within the context of chronic pain, finding meaning in pain means making sense of pain and finding a reason to live rather than giving in to a meaningless existence.

A recent systematic review reveals that ACT is a good alternative to cognitive behaviour therapy for chronic pain, particularly for patients who are not responsive to the latter (Veehof et al, 2011). The effectiveness of ACT for pain management has been reported in diverse studies (Buhrman, Skoglund, Bergström, Gordh, Hursti et al., 2013; Wetherell, Afari, Rutledge, Sorrell, Stoddard et al., 2011; Veehof et al, 2011). Kabat-Zinn's (1990) mindfulness-based stress reduction (MBSR) program is a technique using body scan and sitting meditation as a way of getting out of the head and developing intimacy with one's body. MBSR has proved to be effective for diverse mental and physical disorders, including pain management (Praisman, 2008).

Despite stemming from Buddhist practices, mindfulness is a health psychology technique (Nash McFeron, 2006). While traditional and complementary therapies focus on alleviating bodily pain, health psychology adopts a holistic approach to health preservation. Since chronic pain involves the complex interaction between body and mind processes, incorporating mental and behavioural self-help techniques fosters an increased sense of empowerment and control (Nash McFeron, 2006).

1.6.5 Dialectic behaviour therapy (DBT)

Linehan's (1993) Dialectic Behaviour Therapy incorporates mindfulness techniques aimed to help individuals develop a moment-to-moment sense of awareness and a balanced state of being. It has been successfully applied to treat diverse health conditions including depression and chronic pain (Kabat-Zinn, 1982). Chronic pain sufferers are taught techniques that allow the safe regulation of emotions, whilst encouraging the *wise mind* to override the *emotion mind*. The *emotion mind* often induces feelings of self-pity, helplessness and negative thinking (Brodsky & Stanley, 2013). On the other hand, the *wise mind* encourages disengaging attention from emotional stimuli towards more productive practices, thereby encouraging positive coping skills. Some programs such as the *Teach, Apply and Generalize* (TAG) incorporate practices from diverse fields and are gaining increasing popularity for the management of chronic pain (Carlson, 2014).

1.7 Pain management in Malta

1.7.1 Hospital services

Given the wide implications of chronic pain, an ideal treatment plan would incorporate a multi-disciplinary approach. Unfortunately, accessing such service is not always possible, the Maltese islands being a case in point.

The current health care system in the Maltese Islands is mostly hospital-based. Mater Dei Hospital (MDH) in Malta and the smaller Gozo General Hospital (GGH) on the sister island of Gozo are the two main acute governmental hospitals. The other four

speciality hospitals cater for substance abuse and mental health, rehabilitation, geriatrics and oncology services. Three other smaller privately owned hospitals come at a costly fee and are only accessible to those who can afford to pay for the service. Due to Malta's small size, specialization and expansion of services is not always possible (Azzopardi Muscat, Calleja, Muscat, Calleja & Balzan, 2012). There are two pain clinics on the Maltese islands, one situated at MDH and one at the GGH. The specialized clinic at MDH is run on an out-patients basis by five pain management consultants, each one having their own nurse. The clinic provides pain management services for both acute and chronic pain conditions. Services revolve mainly round the administration of medication, referral to acupuncture, transcutaneous electrical nerve stimulation (T.E.N.S) and physiotherapy. On the other hand, the pain clinic at the GGH opened towards the end of 2013 and caters for a population of 31, 296 individuals (National Statistics Office Malta, 2012). Services consist of pharmacological treatments and acupuncture. A pain management consultant renders services on a monthly basis. No psychological service is currently available at the pain clinics. Thus, current local services available at the pain clinics revolve mainly round the conventional medical treatment.

1.7.2 Cultural influences

Maltese culture is a rich one, comprising beliefs and practices resulting from the process of adaptation of different societies that came in contact with the Maltese islands through history. The Maltese tongue is semantic and influenced by the succession of northern African rulers, Latin Europeans, Roman occupation and British colony. Thus, northern and southern traditions make Maltese culture particularly unique. Under the rulings of the Norman, Spanish and the Knights and following the shipwreck of Saint Paul in 60AD, Malta remains a very devout Roman Catholic nation (Gouder, 2010). All these historic processes have resulted in a culture comprising an ethnic admixture that defines Maltese identity. Potential implications of these demographic and cultural differences are not addressed in existing theories since input from Maltese participants is lacking. To the extent that these differences influence pain coping amongst the Maltese in diverse ways, they merit consideration

when attempting to create a meaningful portrait of the Maltese experience. This is particularly important in devising interventions that are culturally sensitive and that meet the target needs of the population under study.

1.8 Attitudes

1.8.1 The role of attitudes in predicting health behaviour

Allport (cited in Fishbein, 1967) defines an attitude as *'a learned predisposition to respond to an object or a class of objects in a consistently favourable or unfavourable way'*. Attitudes have an enduring impact on pain behaviour (Rollman, cited in Kazarian & Evans, 1998) and play a significant role in accessing psychological services (Cornally & McCarthy, 2011). Although behaviours are often hard to predict, individuals are often inclined to behave in ways consistent with their attitudes.

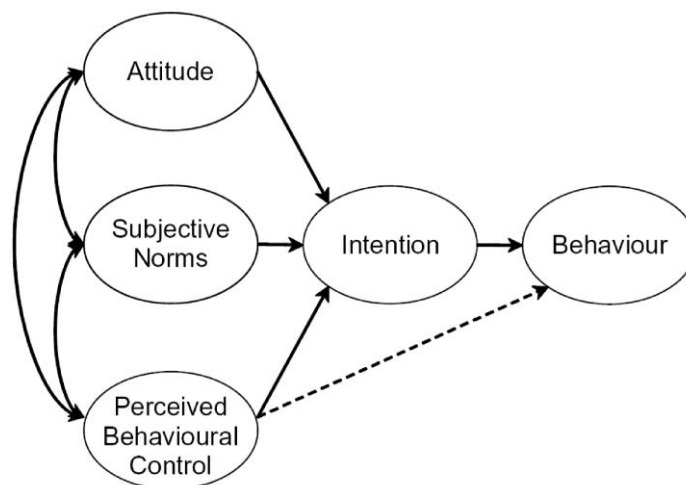
An important theory in attitude-behaviour research is the Theory of Reasoned Action (TRA, Ajzen & Fishbein 1980). According to this theory, people are rational beings and have the ability to make volitional, rational choices. Apart from that, intentions are the best predictors of behaviour. A person's intentions and motivation to comply with a particular behaviour will depend on the attitude they hold towards a particular behaviour as well as subjective norms. The former refers to the perceived judgment of whether engaging in a particular behaviour is a rewarding experience or not. The latter refers to the opinion of significant others.

The Theory of Planned Behaviour (TPB, Ajzen, 1991, Figure 1) is an extension of the TRA. It incorporates an additional element to the constructs outlined above, namely the individual's perceived control over the behaviour. This depends on past experiences and perceived obstacles. Applying this framework to the current context, individuals who believe that seeking psychological help would be beneficial (attitude towards the behaviour) and who believe that important people in their life would approve of this behaviour (subjective norms) are more likely to seek help. Apart from that, persons perceiving some form of internal control over situations that may be causing distress (ability to learn new skills, information to help them cope) and who

feel they have the ability to overcome external control factors (obstacles, lack of accessibility) are less likely to resort to help-seeking.

Finally, it is worth pointing out that people's attitudes entail more than behaviours. A tripartite model is a comprehensive approach to attitude measurement because it views behaviour, thoughts and feelings as interdependent and as playing a crucial role in attitude formation (Krech, Crutchfield & Ballachey, 1962; McGuire, 1969).

Figure 1: Theory of planned behaviour



1.9 Barriers to accessing psychological interventions

Although psychological interventions play a significant role in pain management, some individuals fail to resort to psychological therapies. Reasons for this are diverse and include lack of accessibility, the fear of pain being dismissed as *something in their heads*, scepticism about their effectiveness, use of alternative therapies, unsupportive health care professionals, physical distance and costs associated with treatment (Keefe, Abernethy & Campbell, 2005; Tan, Alvarez & Jensen., 2006). Some individuals adopt a passive role and lose interest in models that require some form of self-help. Still, others have utmost faith in medical interventions (Tan et al., 2006).

According to Skevington's (1995) model of chronic pain and illness, pain behaviour is guided by a number of psychosocial factors. The latter include the person's view of the self, the individual's understanding of bodily functions, the origin of pain, the kind of pain management services available and the person's acceptance of treatment options. These factors form the basis of a *pain schema* or concepts influencing the person's understanding of their pain experience. Skevington and Mason (cited in Hadjistavropoulos & Craig, 2004) hold that such schemas are likely to inform decision-making practices for pain management.

Ironically enough, psychological approaches themselves are also partly responsible for people's reluctance to resort to psychological interventions (Crossley, 2000). Contemporary health psychology comprises two different perspectives to the study of health and disease, the dominant *mainstream* approach and the emerging *critical* approach. The critical perspective highlights the need to develop a deeper and reflective understanding of the psychological dimensions of human experiences, including complex emotional and irrational forces behind individual actions. It stresses the importance of relational and contextual experiences of health and illness and how individuals construct their world via the collection of detailed information, with a special emphasis on subjective and qualitative methodologies.

On the other hand, the mainstream approach is scientific, mechanical and objective (Crossley, 2000). It aims to predict health and illness behaviour via the testing and development of theories. Individuals are therefore capable of making informed choices. They are not passive victims of circumstances and are not only partly responsible for their disease, but also for managing it and for restoring their health (Crossley, 2000). The latter may include adhering to medication regimes, cutting down on alcohol and adopting healthy diets. Although these psychological factors may be useful, they fail to take into account the complexity of human behaviour and the broader psychosocial circumstances surrounding the individual.

According to Crossley (2000), individuals who have tried psychologically oriented methodologies without success may experience feelings of guilt and failure. Chronic pain sufferers perceived the link between emotional factors and chronic pain with

disdain (Jackson, cited in Crossley, 2000). Such factors go against the implicit assumption that pain is organic in nature and something over which the individual has little or no control. Conclusively, although medicine may not offer a cure for certain debilitating pain conditions, it provides a safe explanation of pain and disease, causing individuals to adhere blindly to medical regimes. Such reductionist approaches do little to help individuals come to terms with the devastating experience of enduring pain (Crossley, 2000). Thus, although psychological interventions may be beneficial, service uptake is influenced by the way they are presented to individuals. Unavailability of multi-disciplinary services in pain clinics may continue to reinforce the notion that psychological factors do not play a role in the experience of pain.

1.10 Help-seeking behaviour among the Maltese population

In health care, help-seeking behaviour is the act of using health care services or the communication of a problem to selected health sources (Rickwood, Deane, Wilson & Ciarrochi, 2005). As outlined earlier, social and cultural factors play a significant role in the expression of pain, in help-seeking behaviour and pain management efforts. Malta is no exception to other western countries, with its heavy reliance on pharmacological models and physical rehabilitation. The field of psychological help in Malta is still in its infancy (Abela & Sammut Scerri, 2010; Xerri, cited in Samele, Frew and Urquiza, 2013). Although the collaboration between doctors, psychiatrists and psychologists in Malta is increasing, few doctors have access to a designated psychologist, psychotherapist or trainee psychologist. This is mostly due to shortage of qualified psychologists working within the government sector. A recent survey reveals that help-seeking behaviour for psychological problems amongst European countries including Malta is quite low (Evans-Lacko, Brohan, Mojtabai & Thornicroft, 2012). Factors such as lack of accessibility, lack of awareness, long waiting lists or costs of accessing services may be possible barriers. It is currently unclear whether the barriers identified in the survey are true across diverse health conditions and whether they are prevalent amongst Maltese chronic pain sufferers.

1.11 Gender differences in accessing psychological services

Men seem to hold negative attitudes towards seeking psychological help (Addis & Mahalik, 2003; Kyung Nam, Jung Chu, Kyoung Lee, Hee Lee, Kim et al., 2010). Two major variables playing a role in help-seeking behaviour include the *Traditional Masculinity Ideology* and *Gender Role Conflict* (Levant & Richmond, 2007). The former refers to men's beliefs of the importance of conforming to traditional and stereotypical male norms. These include behaving in masculine ways, suppressing emotions, behaving in a stoic and dominating manner, an emphasis on self-reliance and an intolerance towards gay men (Levant, Rankin, Williams, Hasan & Smalley, 2010). Such expectations often result in *Gender Role Conflict* or the pressure to conform to these norms, which goes against help-seeking behaviour. Face-to-face therapeutic relations are often perceived as a sign of weakness, often due to power imbalances in the therapist-client relationship. Some men associate the open expression of emotions with homosexuality or feminine traits (Hoy, 2012). Thus, traditional notions of the self-reliant, controlling, autonomous and 'bullet proof' male contribute to men's reluctance in accessing psychological services (Chuick, Greenfeld, Greenberg, Shepard, Cochran et al., 2009; Hoy, 2012).

The *Self-stigma of Seeking Help* (Vogel, Wade & Haake, 2006) comprises the lowering of self-esteem resulting from the inability to solve one's problems. Traditional notions of masculinity make men particularly susceptible to *Self-stigma of Seeking Help* and have a negative impact on help-seeking attitudes. Self-stigma plays a role in the relation between *Traditional Masculinity Ideology* and *Gender Role Conflict* (Penderson & Vogel, 2007). Unfortunately, negative attitudes towards seeking help could have wide ranging implications including job dissatisfaction, relationship problems, increased alcohol consumption and suicide (Houle, Mishara & Chagnon, 2008; Vogel, Wester, Hammer & Downing-Matibag, 2013).

1.12 E-health and the provision of health care via electronic means

Over the past few years, internet technology has revolutionized the way people access health information. The term 'e-health' is becoming more popular. Eysenbach (2001)

defines e-health as an attitude, or a state-of-mind, commitment for networked, global thinking to improve health care locally, regionally, and worldwide by using information and communication technology. E-health therefore comprises the use of information technology in the delivery of health care (Oh, Rizo, Enkin & Jadad, 2005). Internet accessibility can increase the access of health services. Internet-supported interventions are one case in point, offering enhanced opportunities for managing specific conditions. Barak, Klein and Proudfoot (2009) define a web-based intervention as:

"a primarily self-guided intervention programme that is executed by means of a prescriptive online programme operated through a website and used by consumers seeking health and mental-health related assistance. The intervention programme itself attempts to create positive change and/or improve/enhance knowledge, awareness and understanding via the provision of sound health-related material and use of interactive web-based components (p 5)."

Self-management programmes can improve the quality of life of chronic pain sufferers (Trudeau, Pujol, DasMahapatra, Wall, Black et al., 2015). Web-based interventions incorporating self-management efforts have resulted in improved health outcomes (Monteagudo & Moreno, 2007; Samoocha, Bruinvels, Elbers, Anema & van der Beek, 2010). They offer a promising role for coping with specific conditions (Heron & Smyth, 2010; Webb, Joseph, Yardley & Michie, 2010). Web-based interventions have been applied to a range of problems including eating disorders, anxiety, depression and addictive behaviours, revealing some promising results (Gainsbury & Bkaszczynski, 2011; Newman, Szkodny, Llera & Przeworski, 2010; Winzelberg, Eppstein, Eldredge, Wilfley, Dasmahapatra et al., 2000). A popular evidence-based approach is computerized cognitive behaviour therapy (CCBT). CCBT incorporates structured and clearly delineated activities that make it an attractive and practical web-based treatment (Przeworski & Newman, 2006). Studies reveal that CCBT is effective in alleviating distress associated with diverse somatic problems including insomnia and headache (Murray, 2012).

1.13 LifeGuide community - Facilitating the provision and delivery of online interventions

LifeGuide Community is an open-source platform created in collaboration with a group of health psychologists. It facilitates the creation, modification or delivery of existing internet-delivered interventions. Various researchers have already started using LifeGuide Community to foster behaviour changes (Everitt, Moss-Morris, Sibelli, Tapp, Coleman et al., 2010; Yardley, Miller, Scholtz & Little, 2011; Yardley, Miller, Teasdale & Little, 2011). Results of these studies are encouraging and expand the realm of possibilities for web-based interventions.

1.14 Can chronic pain be managed over the internet?

Although CBT is popular treatment for managing chronic pain, it is not provided routinely. Reasons for this include lack of trained personnel and high costs associated with treatment (Hollon, Stewart & Strunk, 2006). Other barriers include the lack of physical accessibility and transportation problems (Jerant, von Friederichs, Fitzwater & Moore, 2005). The latter is especially true for patients with limited mobility.

Over these past few years, diverse randomized controlled trials have tested the possibility of translating traditional face-to-face psychological interventions into internet-based ones. Online interventions may help overcome some of the barriers to accessing pain management services. Statistically significant and positive improvements in pain management were observed in diverse studies (Berman, Iris, Bode & Drengenberg, 2009; Khan, Akhter, Soomro & Ali, 2014). Recent systematic reviews reveal that internet-based CBT can help improve the quality of life of chronic pain sufferers (Bender, Radhakrishnan, Diorio, Englesakis & Jadad, 2011). CCBT reduces treatment costs and minimizes pharmacological side-effects (Macea, Gajos, Armynd, Calil & Fregni, 2010). An online CBT intervention for the management of chronic headaches resulted in decreased symptoms of psychopathology in children and adolescents (Trautmann & Kroner-Herwig, 2010). A statistically significant reduction in pain interference and pain-related thoughts was also observed. Other promising computerized interventions include mindfulness-based practices, ACT and

Motivational Enhancement Therapy (Buhrman et al, 2013; Hsu, Schubiner, Lumley, Stracks, Clauw, et al., 2010; Veehof, et al, 2011).

Web-based treatments incorporating some interactive element with the user are more effective in promoting behaviour change than those which do not (Doherty, Coyle & Matthews, 2010; Spek, Cuijpers, Nyklícek, Riper, Keyzer et al., 2007; Webb et al, 2010). Interactive components include messages, e-mails, phone calls, peer-support groups, chat rooms, bulletin boards, social health communities and networks. Such communities can be a valuable source of support for individuals undergoing similar experiences (van der Eijk, Faber, Aarts, Kremer, Munneke, et al., 2013). Although therapist support seems to enhance the efficacy of online interventions, the need to explore the possible benefits of web-based interventions led by trained professionals and the incorporation of added therapist time still needs to be addressed (Brattberg, 2006).

Although the internet can play a supportive role in pain management efforts, research to date has failed to identify evidence in favour or against its use (Eysenbach, Powell, Englesakis, Rizo & Stern 2004; Griffiths, Cleave & Banfield, 2009). More research is needed to identify the utility of web-based interventions (Yardley, 2011).

1.14.1 Advantages of online interventions

Web-based interventions pose several advantages when compared to traditional treatments including the bridging of geographical distances, help in overcoming time constraints, increased ease of access for persons with limited mobility, the cutting down on travel costs, increased flexibility in the scheduling of interventions and an attractive alternative to those who may be uncomfortable with face-to-face interventions (Deardorff, 2012; Maheu, 2011; Mohr, Siddique, Ho, Duffecy, Jin et al., 2010). Online interventions are also private, emotionally safe and allow the retention of privacy and confidentiality (Murray, 2012). The latter can eliminate stigma associated with help-seeking behaviour.

1.14.2 Addressing health inequalities: The potential of web-based interventions

Equity, or better, the lack of equity plays a major role in differences in life expectancies between populations across the world. Health inequalities and socio-economic status (SES) are major determinants of health (Angell, cited in Marks, 2002). The implications of SES are diverse. First of all, individuals of low SES are more likely to engage in health-compromising behaviours such as smoking, excessive alcohol consumption and poor nutrition (Carroll, Davey Smith & Bennett, cited in Marks, 2002). They also tend to live in poor accommodation and are more likely to be exposed to chemical environmental hazards that can result in poor health outcomes. Individuals of low SES are more likely to work in unfavourable environments and experience work-related stressors that increase the risk of coronary heart disease (Carroll et al., cited in Marks, 2002). Apart from that, individuals with low SES may not be able to pay for good-quality health care. Conclusively, they are less likely to access health services and recover from illness (Joud, Petersson, Jordan, Lofvendahl, Grahm et al, 2014). Their risk of suffering from enduring pain is higher due to limited access to medical treatments (Azevedo, Costa-Pereira, Mendonca, Dias & Castro-Lopes, 2013). Thus social and economic factors may confer substantial health disadvantages. Unfortunately, no quick-fix solution exists to addressing health inequalities. Possibly, internet access may partly eliminate some of these problems since users can avail themselves of health information at the click of a button.

The internet may partly eliminate some of these health disparities by bringing health-related information closer to the service user (Murray, 2012). The latter is also true of online psychological interventions, some of which are already in place. For instance, an online mental health CBT service has allowed the widespread access of psychological treatments across the Australian continent (Bennett-Levy & Perry, 2009). Although having access to the internet does not eliminate the problem for those individuals who cannot afford to buy a computer, cheaper alternatives such as smart-phones or mobiles with Wi-fi settings may be an attractive solution.

1.14.3 Barriers to accessing online interventions

Notwithstanding the highly appealing advantages of online interventions, diverse barriers to service access persist. External constraints such as poverty may limit access to web-based health-related information. Other barriers limiting access include having a computer and internet within reach and an awareness of the role of psychological factors in health and illness. Internal constraints include low self-efficacy or an external locus of control (Braveman, Egerter & Williams, 2011; Murray, 2012). A person with a high self-efficacy is more likely to believe in one's ability to bring about positive changes in one's life and is more likely to persist in the face of difficulties, as opposed to individuals with a low sense of self-efficacy (Bandura, 1977). The locus of control (Rotter, 1966) entails the individuals' tendencies to regard events as controlled by them or by external uncontrollable forces. Individuals with an external locus of control are more likely to believe that they are at the mercy of external forces such as luck or fate. They often feel helpless and fail to take the necessary action to safeguard their overall health and well-being. The person's level of health literacy or the ability to understand and use health-related information is another factor that merits considerable attention (Wise & Nutbeam, 2015). Technological innovations that simplify the presentation of complex information may help eliminate some barriers (Murray, 2012).

The question of whether the advantages outlined earlier apply across all online psychological interventions and for diverse health conditions persist. Despite the preference for face-to-face treatments, a survey reveals that while participants were quite willing to engage in online behavioural and psychological treatments to induce lifestyle changes, they were less likely to participate in online interventions for managing pain (Mohr et al, 2010). Reasons behind such findings are unclear. Tentative explanations drawn by researchers point to the assumption that these interventions are ineffective, offer no professional support and are out-dated. Possibly, they are not advertised well enough. Conclusively, the notion that internet-based interventions may eliminate all of the barriers of face-to-face treatments remains an assumption rather than fact (Mohr, 2009).

The lack of consensus regarding the acceptability of e-therapy amongst service providers also exists. For instance, a recent study on attitudes towards e-therapy recruiting 844 Norwegian psychologists revealed that the majority adopted a neutral stance as regards online interventions (Wangberg, Gammon & Spitznogle, 2007). On the other hand, findings from a study by Mora, Nevid and Chaplin (2008) reveal that psychologists are less likely to endorse internet-based therapies. The latter was particularly true amongst psychodynamic and existential therapists, with cognitive behaviour therapists being more open to this kind of service. A factor that seems to influence therapists' attitudes is the severity of the client's problem, mostly due to the fact that complex issues often require more than what e-therapy has to offer. On the other hand, an integration of face-to-face and e-therapy seem a more acceptable solution (Perle, Langsam, Randel, Lutchman, Levine et al., 2013). Concerns related to lack of training, privacy, ethical issues and problems dealing with crisis situations seem to be other barriers influencing therapists' reluctance to '*prescribe*' online therapies. Some therapists are not only sceptical of the effectiveness of computerized cognitive behaviour therapy (CCBT), but fear that such interventions can do more harm than good (Whitfield & Williams, 2004; Williams & Garland, 2002). These concerns need to be addressed prior to referring clients to these services. Greater exposure to CCBT and further therapist training on the use of these programs are potential solutions (Waller et al, 2009). Identifying the *best fit* of therapeutic intervention for specific clients and their problems requires further investigation (Perle et al, 2013). User characteristics such as skills and psycho-social factors need to be taken into consideration when directing clients to web-based interventions (Zautra, Fasman, Davis & Craig, 2010).

1.15 Internet accessibility on the Maltese islands

Internet accessibility in Malta is on the increase. According to a recent 2013 survey by the National Statistics Office in Malta (NSO), 77.5% of households in the Maltese islands had internet access in 2012. Findings reveal that internet usage amongst the Maltese was mostly associated with communication purposes (93.6%), followed by access to general information (91%), with a minimal percentage being allotted to accessing E-health services (4.5%). The perceived utility of E-Health does not seem to

be a top priority among the Maltese population. Reasons behind these findings are unclear and merit further investigation, given the immense potential of E-Health.

Internet access in Malta is expected to increase over the coming years (National Statistics Office, 2012). Free Wi-fi is now available in most local village squares, coffee shops, transportation devices and restaurants. Apart from that, free use of computers for the general public is available in public libraries. These factors facilitate the ease of accessing health information and may reduce existing health inequalities.

1.16 Findings from current literature: What we know and what we need to find out

Given the promising findings of the effectiveness of online psychological interventions for pain management, the development of well-designed studies and facilitating the use of online interventions remains a top priority. Once the latter are in place, improving adherence to online therapies remains a big challenge, as evident from recent findings. For instance, the systematic review by Bender et al (2011) reveals that a major shortcoming common to most online chronic pain trials revolves round a high unexplained attrition rate. High attrition rates were also observed in Macea et al's (2010) systematic review on chronic pain online interventions, with the average drop-out rate being as high as 40%. Studies attempting to improve adherence to online interventions including therapist contact and e-mail support were not enough to reduce drop-outs (Andersson, Lundström & Ström, 2003; Devineni & Blanchard, 2005). Although attrition is a common occurrence in most trials (Cuijpers, van Straten & Andersson, 2009), Bender et al (2011) highlight the need to identify reasons why participants may withdraw from internet-based interventions and to find strategies that could help facilitate participant retention. Another gap in literature worth investigating is the attitude of chronic pain sufferers as regards online therapies (Bender et al, 2011).

A systematic review by Waller and Gilbody (2009) aimed to identify possible barriers to the uptake of CCBT, mostly for anxiety and depression. Feedback from participants reveals that lack of time was a major cause of drop-outs. Waller et al (2009) hold that

major barriers to service uptake remain unknown. It seems that uncertainty about CCBT acceptability is also unclear and this is especially true amongst the general public. The need for further research investigating the attitudes of individuals who fail to resort to online therapies was identified.

Another noteworthy observation common to most trials is the gender imbalance of participants, with most studies recruiting female subjects. For instance, 67% of the trials in Macea et al's (2010) review were females. On a similar note, the majority of participants in Bender et al's (2011) review were females, with male subjects being relatively unrepresented. Male participants were also more likely to drop out than their female counterparts (Lorig, Laurent, Deyo, Marnell, Minor et al., 2002). Although research to date has failed to investigate this disparity, physiological differences between the two genders are one possible explanation, given the fact that women are more susceptible to suffering from chronic pain conditions (Bartley & Fillingim, 2013). Hormonal and reproductive factors make women more prone to persistent musculoskeletal pain than men (Martin, 2009). Women have an increased sensitivity to pain when compared to males (Leresche, 2011). Thus, the psychological effects of chronic pain can more be more profound for females than for males.

Nevertheless, physiological differences in pain perception do not imply that men are exempt from experiencing pain. Evidence from neuroscience reveals that the right hemisphere is involved in the processing of pain and that pain in the left side of the body is associated with increased negative affect (Coghill, Gilron & Ladarola, 2001). Men with left-sided chronic spinal pain are more likely to experience psychological distress and decreased quality of life than females (Wasan, Anderson & Giddon, 2010). It also seems that right hemisphere dominance of pain and affect-processing are more pronounced in men than women. This means that men are equally prone to suffering from chronic pain and physiological differences between the two genders cannot totally account for male's under-representativeness in online psychological interventions.

Thus, whilst both genders are susceptible to suffering from chronic pain, men are less likely to resort to online psychological therapies. This can result in adjustment problems. Constructs such as *Gender Role Conflict*, *Traditional Masculine Ideology* and *Self-Stigma of Seeking Help* highlighted in earlier sections cannot fully account for these gender differences since online interventions are often private and confidential, and over-ride barriers such as stigma. A gap in literature exists in relation to explaining gender imbalances in existing trials and men's apparent reluctance to engage in online interventions. Research to date has also failed to shed light on attitudes individuals of both genders have towards online psychological interventions for pain management. Given the wider implications of chronic pain, identifying these factors remains a priority.

1.17 This study

1.17.1 Measuring attitudes

To facilitate the clarification of attitudes within a given population, researchers use diverse methods. A popular methodology involves quantitative measures such as surveys or questionnaires, usually comprised of graduated scales, ranging alongside a continuum from positive (strongly agree) to negative (strongly disagree) evaluations. The assumption is that attitudes can be translated into objectively measurable entities which can in turn predict intentions, the uptake of particular behaviours or an individual's perception towards a social object or event (Taylor, cited in Langdridge and Taylor, 2007; Sammut, 2013). Such approaches have been employed in different studies aiming to assess attitudes towards seeking psychological help for diverse problems. Popular measures include the *Attitudes Toward Seeking Psychological Professional Help Scale* (Fischer & Turner, 1970), the *General Help-Seeking Questionnaire* (Rickwood, Deane, Wilson & Ciarrochi, 2005) and the *Beliefs About Psychological Services* scale (Ægisdóttir & Gerstein, 2009). These measures have a significant utility in attitude research since they allow the quick collection of data from a fairly large sample. Information is then subjected to statistical computations, thereby allowing generalization of results. Other advantages include the retention of participants' anonymity and increased accuracy (Johns, 2010).

1.17.2 Disadvantages of quantitative methodologies

Despite these advantages, quantitative methods for attitude measurement often fail to explain the intention-behaviour gap. Although a person may have the best of intentions to access a service, potential barriers such as stigma, financial limitations or lack of accessibility may not emerge from rating scales. Quantitative measures often examine constructs previously generated by the researcher rather than the participants' view of reality. Conclusively, additional factors influencing attitude formation may be overlooked.

Quantitative measures assume that attitudes are static entities. In reality, attitudes are fluid and changing, and dependent on the context at hand (Potter & Wetherell, cited in Langdridge & Taylor, 2007). People are complex beings and are influenced by the surrounding environment and circumstances they find themselves in. Although persons tend to hold generalized attitudes, they also modify attitudes and behaviours according to specific contexts (Taylor, cited in Langdridge & Taylor, 2007). For instance, a person may hold a positive attitude to seeking psychological help for pain management but a negative view of online interventions due to the impersonal nature of the latter.

1.17.3 Rationale

Persistent pain is of a relatively long duration, with some individuals suffering from pain for a significant portion of their lives. The kind of coping strategies employed can greatly influence the process of adaptation.

As outlined earlier, psychological help-seeking behaviour amongst a Maltese population is low, with potential reasons outlined being sporadic and unclear. Given the lack of psychological services within local pain clinics in Malta and the strong emphasis on the medical model, online interventions may be an attractive alternative to the Maltese. Nonetheless, there is a lack of attitude research when it comes to perceptions of online interventions.

Research findings also reveal that over all, men are less likely to access psychological services. Men's seeming reluctance is also apparent for online services, given high attrition rates. On the other hand, although women seem more endorsing of online trials, an in-depth understanding of motives behind high drop-outs in existing trials is unclear. Possibly, other unexplored barriers to accessing online psychological treatments exist.

Most attitude research findings have emerged from quantitative surveys (Waller & Gilbody, 2009). The latter often fall short of providing an in-depth understanding of the complex bio-psychosocial phenomena behind people's behaviours and perceptions. Qualitative approaches adopt observable measures to describe hypothetical and unobservable constructs that are difficult to quantify (Hewstone, Manstead & Stroebe, 1997), the exploration of attitudes being a case in point. In order to increase help-seeking behaviour, an in-depth qualitative exploration of attitudes towards psychological services and reasons behind their underutilization must first be illuminated. It is hoped that findings will also shed light on potential incentives can influence the uptake and overall efficacy of these services (Bender et al, 2011). Results may also help improve clinical care outcomes and the overall quality of life of chronic pain sufferers (Rini, Williams, Broderick & Keefe, 2012). Finally, findings could also help assess under what conditions the internet is preferred to face-to-face therapy (Bender et al, 2011). They can therefore be used as a framework to improve on existing interventions to better meet the needs of chronic pain patients and improve future pain-coping research.

As highlighted in earlier sections, although several psychological models and theories shed light on the complexity of pain coping, they all have their limitations. For instance, Engel's (1977) multi-factorial and 'holistic' *Bio-psychosocial Model* of health and illness remains a popular alternative to biomedical models (Nassir Ghaemi, 2011). Nonetheless, it fails short of providing a comprehensive explanation of pain coping for diverse reasons. For instance, it ignores the spiritual and subjective nature of pain and the multitude of ways individuals attempt to make meaning of life with pain (Grace, 2000). Moreover, the model fails to provide a conceptual ontological account of the

interaction between psychological, social and biological domains and treats them as separate entities, thereby resorting to a reductionist perspective of health and illness (Nassir Ghaemi, 2011).

On the other hand, the *Bio-psychosocial-spiritual Model* of health (Hiatt, 1986; McKeen & Chappel, 1992) is an extension of Engel's model but incorporates the spiritual domain. Apart from the biological, social and psychological domains, this model acknowledges the importance of spirituality and transcendent meaning in health and illness. Nonetheless, this model has not addressed the theme of chronic pain and its integration within existing reductionist and scientific conceptions of illness, life and death remain unclear (Hamilton, 2010; Sulmasy, 2002).

As identified in earlier sections, Lazarus and Folkman's (1984) *Transactional Model of Stress* reveals that most individuals resort to problem or emotion-focused strategies for coping with chronic pain. Nonetheless, they also hold that coping preferences, beliefs and practices are culturally bound. Thus, despite universal coping strategies, individuals may adopt unique ways of coping, based on culturally accepted values and norms (Lam & Zane, 2004). Indeed, illness representations are influenced the person's perceptions, attitudes, experiences and beliefs which are in turn affected by socio-cultural factors including services available within a given community, access to health care, significant others and socio-economic status (Rollman, cited in Evans & Kazarian, 1998). Despite this acknowledgment, cultural influences in pain behaviour and their consequences have been neglected, particularly amongst the aforementioned population. Given cultural disparities in pain behaviours, the ethnic admixture defining Maltese identity and the profound impact of religion on the Maltese culture, this study will therefore explore pain coping mechanisms amongst this population. Although some similarities with other populations are to be expected, it is hoped that coping preferences that are unique to a Maltese population may emerge. An examination of the latter is particularly important since psychological interventions can be beneficial in helping chronic pain individuals manage feelings of affective distress. It may also be useful in helping health care professionals reach out to

individuals who may be finding it difficult to adjust to chronic pain conditions, but who would nonetheless benefit from these services.

In conclusion, this research honors the subjective experience of pain whilst acknowledging biological, psychological and social aspects of pain coping without separating them in mechanistic ways.

1.17.4 Aims of this study

Given reasons outlined above, the two main aims of this study are 1) to explore pain coping mechanisms amongst the Maltese and 2) to investigate prevalent attitudes towards psychological interventions for pain management, with particular reference to online interventions.

Methodology

2.1. Research design

This research follows a qualitative methodology. Semi-structured interviews were employed for data collection. Intensive interviews provide a rich account of participants' lived experiences and their interpretation of these experiences (Charmaz, 2014). Although the questions in the interview serve as guidelines to explore the topic of interest, it is the participants who do most of the talking. This method facilitates open interactional space for ideas and issues to arise (Charmaz, 2014).

2.1.1 Overview of analysis technique employed

A qualitative methodology was employed to complement existing quantitative research. Semi-structured interviews enabled participants to express their views with greater freedom than would be yielded by questionnaires or standardized measures.

More than four decades ago, criticisms on the psychological methods employed for data collection led to the emergence of innovative approaches for conducting psychological research. A major criticism of quantitative methods is their emphasis on theory verification, hypothetico-deductive approach and the relentless search for

objective reality. These are major obstacles to thinking and discovery since the aim is to test logically deduced hypothesis via a top-down approach to research (Charmaz, 2014; Rennie, Phillips & Quartaro, 1988). Bakan (1967) equated psychologists to children playing cowboys whilst ignoring their major duties, taking care of cows. Although scientific enquiry aims to explain phenomena of interest, the methods employed were restricting scientific innovation. These criticisms paved the way for qualitative methodologies that enabled researchers to go beyond theory verification by creating new theories in areas where knowledge is lacking or sparse (Rennie et al, 1988).

Grounded theory (Glaser & Strauss, 1967) was identified as the best methodology to use since it provides the researcher with a tool for understanding human experience (Stern & Pyles, 1985). This research aims to shed light on two areas which have not been thoroughly investigated and which may be difficult to access using traditional research methods. Both the *Gate Control Theory* (Melzack & Wall, 1965) and the *Bio-psychosocial Model* (Engel, 1977) have challenged the notion that pain entails a simple mechanical response to stimuli, leading to increased recognition that pain entails a complex relation between physical and psychological factors. Although this led to the development of more sophisticated pain assessment scales such as the Pain Discomfort Scale (Jensen, Karoli & Harris, 1991) or the Pain Anxiety Symptoms Scale (McCracken, Zayfert & Gross, 1992), these tools are a simplistic representation of the human subjective experience (Crossley, 2000). Achieving such an understanding requires different methods and theoretical orientations that incorporate experiential and cultural elements of pain and illness (Crossley, 2000).

Much of the existing literature in the area of attitude measurement is atheoretical and descriptive and fails to provide an in-depth exploration of perceptions of ehealth for pain management. On the other hand, existing theories on attitude research such as the *Theory of Planned Behaviour* (Ajzen, 1991) are more useful at explaining factors that influence behaviour change, rather than providing an in-depth exploration of meaningful constructs that play a role in the formation of attitudes and the uptake of psychological services. As outlined above, attitude research is complicated by factors

such as gender, culture, severity of the problem and the socioeconomic circumstances of the individual. Apart from that, pain coping in Malta remains very medically-oriented and psychological input is relatively lacking. The aim of this study is to explore, describe and understand the phenomena being investigated via an inductive approach by integrating all these constructs into a coherent whole. This was made possible by tailoring interview content based on findings from successive narratives. The idea was to build theories grounded in data that would provide a conceptual tool to explain behaviour and which could help guide and improve psychological practice. This was made possible via the use of coding practice. The latter entails naming segments of data with labels that categorize, summarize and account for material collected (Charmaz, 2014). It entails moving beyond statements to make analytic sense of participants' narratives and statements to interpret the phenomenon under study and how the latter are formed and negotiated through social actions and interactions (Jeon, 2004). It also illustrates how social processes circumscribe the unfolding of these interactions and the meaning derived from them (Starks & Trinidad, 2007). This allows for the formulation of a theory, making grounded theory different from other qualitative approaches.

Grounded theory was originally developed by Glaser & Strauss (1967). It aims to achieve higher levels of understanding via the development of new theories emerging from the data rather than deducing testable hypothesis from existing ones. Over time, related yet divergent disciplinary traditions of the methodology have emerged, the most significant and important variations evolving from Glaser and Strauss' original approach. Glaser's (1978) methodology faithfully adheres to the classic approach whereby a rigorous method of codifying data is employed. He recommends delaying the process of literature review to avoid data contamination. On the other hand, Strauss' (1987) approach is more in line with pragmatist traditions that stress the importance of symbolic interactionism. The latter views society, reality and the self as related in an intimate way. Strauss' philosophy paved the way for Charmaz's (2000) constructivist approach to grounded theory, whereby both the researcher and participants play an active role in constructing research. Thus, research is constructed

rather than discovered (Charmaz, 2014). Conclusively, researchers' reflexivity plays a crucial role in the process of data analysis.

2.1.2 Rationale for selecting a constructivist approach

As highlighter earlier, stereotypical norms and expectations influence differences in pain expression and behaviour (Keogh & Denford, 2009). Moreover, although pain is subjective, individuals of similar cultural backgrounds tend to display similar pain responses (Houser & Zamponi, 2011). Traditional attitude research often relies on methods that take responses out of context and ignores the ways meanings are constructed in ordinary talk (Potter & Wetherell, cited in Langdrige et al, 2007). Keeping in mind the questions being addressed by this study, attitudes are formed within a social context and are the result of social processes. Apart from that, an investigation of the lived experience of pain incorporates the social and interpretative element. Different researchers may come up with different interpretations of participants' experiences. For reasons outlined above, it was felt that Charmaz's constructivist approach to grounded theory was the best method to use.

2.2 Participants

Of the 21 participants, 11 were males and 10 were females. The average age was 52 years (range 33–74). All participants were of Maltese nationality. The majority completed secondary level of education, two had a university degree and one completed a diploma. All participants suffered from chronic pain, with some suffering from more than one condition. None of them had participated in an online trial. Pain duration ranged from 2 to 37 years. The majority were on pain killers, anti-inflammatory drugs and injections. Five participants were on anti-depressants and tranquillizers. Further details of study participants and interview duration can be found in Table 1 below. To facilitate presentation and analysis of results, pseudonyms were used throughout the study.

Participant number & pseudonym	Interview duration	Gender	Living arrangements	Presenting problem and duration	Medication	Employment status & level of education	Age
1 Ivan	38 minutes	Male	Family	Degenerative disc disease, 3 years	Injection, anti-inflammatory drugs	Secondary level of education, property consultant	45 years
2 Nick	42 minutes	Male	Family	Back pain following fall, Familial Mediterranean Fever, 37 years	Injections	Secondary level of education, computer technician	43 years
3 Leopold	30 minutes	Male	Family	Back pain, 2 years	No medication	Secondary level of education, carpenter	33 years
4 Jes	30 minutes*	Male	Family	Sciatic nerve inflammation, 2 years	Pain killers, anti-inflammatory	Secondary level of education, office work	47 years
5 Joe	41 minutes	Male	Family	Lower back pain following injury, 7 years	Pain killers	Secondary level of education, property consultant	33 years
6 Tony	43 minutes	Male	Family	Neurofibromatosis of the spine, syringomyelia, in a wheelchair, 10 years	Injections, pain killers	Secondary level of education, cleaner	54 years
7 Phil	29 minutes*	Male	Family	Unexplained chronic headache and Trigeminal myalgia, tinnitus, +10 years	Anti-depressants, pain killers, tranquillizers	Secondary level of education, boarded out	55 years
8 Paul	28 minutes	Male	Alone	Unexplained pain in right abdomen, 2 years following operation	Pain killers	Secondary level of education, manual job	47 years
9 Carmel	32 minutes	Male	Alone	Arthritis 15 years	Pain killers, injections	Primary level of education, pensioner	75 years
10 Charles	25 minutes	Male	Family	Complex regional pain syndrome, 12 years	Injections	Secondary level of education, boarded out	46 years
11 Brian	42 minutes	male	Family	Rheumatoid arthritis, pain in the hip	Injections, pain killers	Secondary level of education, retired	64 years
12 Laura	40 minutes	Female	Family	Fibromyalgia	Pain killers, steroids	Secondary level of education, boarded out	34 years
13 Doris	44	Female	Alone	Back and	Injections,	Secondary level	55

	minutes			neck pain following car accident, 11 years	pain killers	of education	years
14 Rose	41 minutes	Female	Family	Fibromyalgia, 18 years	Pain killers, anti-inflammatory drugs, antidepressants	Tertiary level of education, social worker	54 years
15 Mary Ann	56 minutes	Female	Family	Fibromyalgia, Lumbar Spondylolisthesis, 8 years	Pain killers, antidepressants, tranquillizers	Diploma in nursing, boarded out	58 years
16 Mary Doris	31 minutes	Female	Family	Scoliosis, back and hip pain	Muscle relaxants, pain killers	Tertiary level of education, physiotherapist	59 years
17 Mary	36 minutes	Female	Family	Degenerative disc disease, scoliosis, back pain, +2 years	Pain killers	Diploma in nursing, boarded out	61 years
18 Rita	58 minutes	Female	Family	Myelopathy of the spine, also given fibromyalgia diagnosis, carpal tunnel	Pain killers, tranquillizers, antidepressants, injections	Secondary level of education, housewife	60 years
19 Carmen	37 minutes	Female	Family	Fibromyalgia	Pain killers, tranquillizers, antidepressants	Secondary level of education, housewife	68 years
20 Sharon	27 minutes	Female	Family	Back pain due to slipped disk, 10 years	Pain killers, tranquillizers, injection	Secondary level of education, housewife	37 years
21 Mabel	28 minutes	Female	Family	Rheumatoid arthritis, back pain following operation gone wrong, 2 years	Pain killers, morphine	Secondary level of education, housewife	74 years

Table 1: Participant details

**denotes interviews that had to be stopped short since client was in pain*

Eighteen interviews were conducted in a quiet room within the local hospital at the pain clinic. Due to mobility problems, two interviews were conducted at the participant's home. Another interview was completed at the participant's workplace. Interviews lasted between 25 and 56 minutes.

2.2.1 Inclusion/exclusion criteria

Inclusion criteria were as follows: (1) participants had to be over 18 years; (2) have been suffering from a pain condition lasting more than 3 months to fit the IASP diagnostic criteria; (3) be of Maltese nationality and (4) currently receiving services from the local pain clinic. Since individuals suffering from persistent pain may also suffer from depression, anxiety and disturbance in mood (Knaster et al., 2012), participants with mental health problems were included as long as the problem was not severe enough to interfere with the person's ability to comprehend the nature of the study and as long as they were oriented to person, time and place. Individuals not meeting these criteria were excluded.

2.3 Materials

Materials needed consisted of an audio-recorder, an interview guide, paper and pen to take field notes, a copy of the consent form, information sheet and debriefing form and a quiet room.

2.3.1 Interview guide

Demographics and other relevant information were gathered prior to the interviews. These included variables such as age, employment status, main presenting problem, current treatment, how long they have been attending the pain clinic, living arrangement and level of education.

An interview guide was devised by the researcher. Following the pilot interview, the questions were revised by the research supervisor to ensure they were understandable and addressed the main aims of the study. Following this process, the interview guide was finalized (Appendix A). Open-ended neutral questions served as guidelines to investigate the topic at hand whilst attempts were made to ensure minimal direction from behalf of the researcher. The use of free expression was encouraged. Prompts were used to encourage participants to elaborate further. Leading questions were avoided.

2.4 Procedure and recruitment process

Purposeful criterion sampling was used to recruit participants. Posters with brief information on the research and contact details of the researcher were placed in pain clinics at the local hospital (Appendix B). Since there are only two pain clinics on the island, it was assumed that this method would yield individuals from different strata of society and result in a heterogeneous sample. This method did not result in a large enough sample. Conclusively, patients attending the pain clinic were approached and invited to participate in the study. Having initially ascertained they met all the inclusion criteria, this process resulted in the recruitment of 21 participants.

An outline of the aims of the study was provided to potential participants. The stipulated wait time for deciding whether to participate in the study was two weeks. Nevertheless, this was not necessary since all participants agreed to participate and indicated they were willing to be interviewed during their current visit to the pain clinic. None of the participants dropped out of the study. Interviews were conducted over a four-month period between March and June 2014 whilst participants were waiting to be seen by the pain management consultant. This process helped eliminate some barriers to data collection such as transport problems, failure to turn up for scheduled interview appointments, loss of interest in participating in the study, problems with finding a time and place to conduct interviews that is convenient for both parties and elimination of researcher travel costs. All interviews were conducted by the researcher and audio-recorded. Participants did not receive any remuneration for participating in the study.

2.4.1 Ethical issues

Since participants were recruited from a clinical population, ethical approval from City University London Ethics Committee and the University Research Ethics Committee (UREC) of the University of Malta was required. Approval was also obtained from the two Chief Executive Officers and Data Protection Officers of the local hospitals. Additional consent from the Pain Management consultants whose clients were

involved in the study was also needed. All participants were treated according to the code of ethics of the British Psychological Society (BPS, 2009) and American Psychological Association (APA, 1992) ethical guidelines.

Participants were requested to read and sign a consent sheet with information about the aims of the study, why they had been invited to participate, what participation entailed, the benefits of taking part, what will happen to the data and how to access results of the study once completed. It was explained that participation was voluntary and that participants could withdraw at any stage without suffering adverse consequences. The anticipated duration of the interview was also highlighted. It was clarified that data collected would be kept in a safe place and used solely for this study. Participants were also informed they could refrain from answering a particular question if they felt uncomfortable doing so and that only questions related to the topic at hand would be asked. After the interview, participants who wished to do so would be briefed on results. They were also given the opportunity to ask questions about the study. Participants were thanked for their time and participation.

Additional anticipated ethical concerns that merit careful consideration were identified. First, since Malta is a very small community, confidentiality was ensured. Pseudonyms were used to protect the interviewees' identity. Prior to the start of the interview, reasons when confidentiality would be breached were clearly explained to participants. These included circumstances where harm to self was evident or implied. It was made clear that the pain management consultant and/or Crisis Team Intervention would need to be involved, should this information be disclosed at any point during the interview. In order to safeguard both the participants and researcher, interviews were carried out throughout the day when the Crisis Team was still operating. Contact details for additional support were provided. It was also highlighted that the interview was not a replacement for professional face-to-face physician or psychological consultation and advice.

2.5 The process of data collection and theory building

Following the identification of the topic of interest, the second step in grounded theory methodology involves the formulation of a number of open-ended and neutral questions. Theoretical sampling was employed. It is defined as:

‘The process of data collection for generating theory whereby the analyst jointly collects, codes and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges (Glaser & Strauss, 1967, p. 45).’

Keeping in line with these principles, constant comparative analysis was used whereby data was collected over a four-month period. This iterative process allows theory building to evolve (Oktay, 2012). Data was transcribed and analyzed after each interview to allow for constant comparative analysis. Additional data was gathered at different points in time to ensure further development and verification of concepts. No predetermined sample size was identified since this can interfere with the process of theory building (Oktay, 2012). Data collection continued until saturation point was reached, namely until the researcher felt that no new themes were emerging in the last few interviews conducted. Samples comprising 20 of participants or more are considered reasonable when conducting grounded theory (Creswell, 1998). For the latter reasons, data saturation was considered to have been achieved following interview 21.

Participants recruited varied in terms of age, pain condition, gender, educational background and pain duration. Variation facilitates the in-depth exploration of dimensions and relationships as well as theoretical sampling and constant comparative analysis (Oktay, 2012).

2.5.1 Procedures for analysis

Interview data was translated, transcribed verbatim, typed up with wide margins for note-taking during the coding process and stored on a computer. Lines on the text

were numbered to make it easier to locate relevant and important phrases, comments and reflections.

2.5.2 Format for data analysis

Data analysis in grounded theory is a discreet and gradual process whereby the researcher starts with an initial research question(s) for collecting and analyzing data, followed by an analysis of the unstructured material, further data collection and analysis as required, the setting up of theoretical categories towards more ordered analytical concepts and finally, the establishment of a theory. Although the stages are sequential, they are also likely to overlap as new information emerges. These stages used for data analysis are illustrated below.

Stage 1, Open Coding: Interviews were re-read several times to allow increased familiarity with the data. No coding scheme was set up prior to the process of data collection as this would have resulted in forcing data into pre-existing categories (Oktay, 2012). Emerging key words, responses, thoughts and associations that seemed significant were noted in the margin. Themes and categories were recorded line by line and coded into smaller chunks (Strauss & Corbin, 1990).

Stage 2, Focused Coding: Data was reassembled by drawing attention to the relationships and shared meanings between categories. Information was verified alongside the original transcript to ensure categories were an accurate reflection of participants' replies. This process facilitated higher level analysis.

Stage 3, Selective Coding: This involves the integration and identification of core categories to form an over-arching theory. A constant comparative method was employed where data coding was performed until a strong theoretical understanding emerged (O'Leary, 2007).

2.5.3 The translation process

Although Maltese is the native and national language in Malta, the English language is compulsory in Maltese schools and is the co-official language of the country. For some Maltese, English is the main spoken language. This is especially true of those who have

attended private schooling. Nevertheless, not all Maltese can understand nor speak the English language. As a result, the majority of interviews were held in Maltese.

Since I have a good command of the English language, the translation process was not very difficult. Nevertheless, it was not a straightforward process and I faced many dilemmas when trying to find the most appropriate words for particular expressions, phrases and thoughts. Translation involves the transfer of meaning from one language to another, not a simple word to word replacement. It does not merely entail a consideration of separate sentences but a complete understanding of the overall text, often comprised of a whole paragraph, in order to convey the intended meaning. A key challenge involved translating idiomatic expressions and words which did not have any equivalent in the English language. For instance, there is no proper English word for the Maltese word *bezzul* which is a term used when the person feels victimized and that events that are happening are beyond them. Translation is a decision-making process whereby the researcher ponders the kind of words and phrases to use that would in turn provide the closest equivalent meaning, what Birbili (2000) refers to as *conceptual equivalence*. This process can have two repercussions. One is the introduction of *pseudo-information* or information that was not originally there, and another is the loss of important information (Ervin & Bower, 1952).

A way of increasing research validity in translation involves developing *culturally competent knowledge* (Meleis, 1996) or a good understanding of language variations adopted by the target population. Apart from a good knowledge of the language, one needs to be familiar with the culture of the participants (Vulliamy, cited in Vulliamy, Lewin & Stephens, 1990). Having grown up and lived in Malta all my life facilitated the translation process. Sometimes, participants switched from Maltese to English and vice versa. In other situations, participants used only English whilst in others, Maltese was used throughout. Since I consider myself to be bilingual, I had no problem switching between the two languages. When participants spoke in English, words were transcribed verbatim, alongside any grammatical or syntax errors participants may have used. This process helped to ensure that at least, during these instances, the transcript was a transparent reflection of participants' replies.

Consultation with others reduces translation bias (Birbili, 2000). I consulted with an English language teacher who offered to help in the translation process. Disagreements were resolved by mutual agreement. A pilot interview also serves to ensure a smoother translation process (Birbili, 2000). This interview was not included in data analysis since the participant had not been suffering from pain for over 3 months to meet criteria stipulated by the IASP. It served to ensure that questions were understandable. It also facilitated the interpretation of meaning and ascertains that both the pilot participant and researcher understood the questions posed in the same way.

A reflection on the complex and often ambiguous task of the translation process increased my awareness of my role in data construction, an important component of Constructivist Grounded Theory approach. Thus, although I was trying to capture an accurate account of participants' replies, I was also bringing my own expectations and interpretations of these accounts. As Temple and Young (2004) rightly point out, *'the translator always makes her mark on the research, whether this is acknowledged or not'* (pg 171).

2.5.4 Reflexivity

The translation process is not a neutral endeavour but a joint constitution of data from participants and researcher. An important component of most qualitative research involves a reflexive evaluation of how inter-subjective elements may have shaped research. Charmaz (2014) defines reflexivity as:

'the researcher's scrutiny of his or her research experience, decisions and interpretations in ways that bring the researcher into the process and allow the reader to assess how and to what extent the researcher's interest, position and assumptions influenced inquiry. A reflexive stance informs how the researcher conducts his or her research, relates to the research participants and represents them in written reports (p188-189).'

Reflexivity in research is not a one-off event but an ongoing evaluative process (Guillemin & Gillam, 2004). A reflective diary comprising thoughts and feelings evoked during interviews was kept during data collection. Reflexivity requires the researcher to reflect on personal perspectives and biases that may influence the construction of knowledge. As a trainee health psychology researcher, I recall feeling frustrated upon finding out about the lack of psychological input in local pain clinics. I firmly believe that the holistic treatment of chronic pain requires the adoption of a bio-psychosocial approach and the psychological support is an integral part to coping. Nevertheless, the service was entirely medically oriented. Thus, to the question '*What is the role of psychological factors in the experience of pain?*', I had to exercise caution in relation to the paradox I could have shared with participants, particularly those who did not share my views. I tried to maintain a neutral stance without impinging my own views both during data collection and analysis.

Reflexivity emerges at every point of the research process, from the choice of research topic to the choice of design, methodology, participants recruited and presentation of findings (Harding, 1991). Upon deeper introspection, my choice of topic probably stems from the fact that a close friend of mine suffers from a chronic pain condition. This has put a limit on our ability to meet socially. I often feel frustrated at my inability to help her and of the fact that she is not getting any form of support. I started questioning how many individuals may be in similar situations and what could help improve the quality of life of chronic pain individuals. I had to be cautious of my urge to make things *better* for these people. I also tried not to let my feelings of frustration contaminate the data.

Non-adherence to treatment regime is a common problem amongst chronic pain patients (Bosworth, 2010). This can have adverse implications including increased hospitalizations, added health costs and lack of treatment progression. Chronic pain may also increase passivity and inactivity, thereby reducing adaptive functioning. One of the jobs of a health psychologist involves promoting healthier lifestyles and encouraging people to improve their health. In such situations, a health psychologist would try to promote medication adherence and motivate the individual to increase

physical activity. Indeed, throughout the data collection process I was very much aware of my background as a health psychologist in training and made a conscious effort to avoid providing health-related advice. This was mainly for two reasons. First, it could have contaminated the data by making participants alter their account to conform to my expectations rather than being true to their own experiences and feelings. Second, it posed the risk of promoting myself as a superior source of health knowledge and expertise. This would have created a power imbalance between participants and the researcher.

A way of achieving *culturally competent knowledge* and increasing research validity involves acknowledging power imbalances between the researcher and participant (Meleis, 1996). Power imbalance can stem from many factors including differences in age, knowledge, social status or level of education. Efforts to reduce power imbalances included ensuring participants had a clear understanding of their rights to refuse to answer questions, the right to voluntary participation and the right to withdraw from the study at any point. Nonetheless, occasional power imbalances emerged. In Malta, having a Masters degree in psychology and a number of hours of practice entitles the person to apply for a warrant and hold the legal title of *psychologist*. Although no reference to this was made in the participant information sheet, participants were aware I was a doctorate student specializing in health psychology. This could have influenced their replies and their readiness to disclose. For instance, in response to the question on different types of treatments sought for alleviating pain, one participant (Nick) commented:

'I tried (hydrotherapy) but I almost failed with the heat...I don't know why, maybe it is all psychological...You are a psychologist, so maybe you can answer that!' (P1, L59-60)

Another participant (Doris) commented:

'I hope this piece of research works out for you...I mean both for you and the patient...because if it works for you, it works for us.I felt this was more useful than the appointment with the GP! With the GP, it is always the same talk which in the end, amounts to nothing!' (P13, L292-295)

Following the latter interview, I received an e-mail from Doris' daughter who thanked me for interviewing her mother. Another client said that she hardly ever talks about her problems, yet she was talking incessantly. She also asked whether I would be *seeing* her again. Such instances were food for thought and served to reveal two important findings. First, since it is impossible to keep my own position hidden from participants, a certain degree of power imbalance is always present during interviews. Second, although I tried to retain a neutral stance, having someone to talk to about their pain was a cathartic and therapeutic experience for some participants. The interview was a validation of the client's pain and may have served to release pent up frustration and anxiety.

Ethics research does not stop once ethical approval for conducting research has been granted (Guillemin & Gillam, 2004). Ethical issues may emerge during the process of data collection and are closely linked to reflexivity. Guillemin and Gillam (2004) hold that the researcher has to be particularly sensitive to *ethically important moments*. This is especially true when unexpected situations arise, such as when immediate decisions have to be taken or when the information revealed puts the researcher or participant at risk. Apart from physical pain, clients often carry a baggage of emotional pain. Such disclosures need to be tackled in a very cautious way. A participant disclosed she was diagnosed with fibromyalgia following the death of her 19-year old son. Another disclosed she had been sexually abused. A few participants perceived death as the only solution for pain alleviation. During such disclosures, I tried to be empathic whilst trying to avoid becoming too emotionally involved to avoid contamination of data. Nevertheless, I spent some time talking to few participants after the interview. I felt I owed them that. Participants were not just individuals with a face and voice but human beings with real problems who needed a shoulder to cry on. I also consulted with the pain management consultant when necessary. Participants who had unresolved issues related to bereavement or problems coping were referred to the Crisis Team as deemed necessary.

Following the process of data collection, the consultant and the nurse in charge identified the need for a psychologist in the team and asked whether I could follow-up

some chronic pain patients, something I am still doing on a voluntary basis to date. Data collection and analysis is never a transparent process. The process of reflexivity has helped increase my self-awareness as a person and researcher, whilst allowing me to keep focused on the task at hand.

3.0 Results

This chapter is a presentation of findings derived from the adoption of a bottom-up grounded theory methodology. Two main theories were developed from data collected. The first theory was entitled the *Journey to Coping* and describes the interaction between factors relating to the subjective experience of chronic pain. The second theory, *Wanting the Real Thing* is an explanation of attitudes towards psychological interventions for chronic pain. Themes identified comprise the researcher's interpretation of participants' experiences as opposed to an objective reality waiting to be discovered. The section below provides an in-depth description of emergent theories.

3.1 Journey to coping

Data collected from each gender has been analyzed concurrently. Participants of both genders were found to employ similar coping strategies. On the other hand, spiritual coping seemed particularly true amongst female participants, something which was not expressed by their male counterparts. Main themes and subthemes will be elaborated upon in the sections below. Since the process of coping seems quite similar to that identified in previous studies using other populations, overlapping themes will be discussed briefly.

3.1.1 Developing strategies for self-preservation and re-attaining wellness

The first question requested participants to describe their pain. The aim was to start the process of disentangling the subjective element in response to pain and assess individuals' constructions of the pain experience. Pain descriptions included experiencing lancinating sharp pain attacks, feelings of stamping on a pointed object,

feeling of a screwdriver piercing deeply in one's body or of being electrocuted, numbness, scalding and searing heat, traction pressure, experiencing nauseating pain, feelings of '*being burned with a blowlamp*' and of being '*stabbed with a knife*'. Individuals also started experiencing an altered sense of self as they were unable to fulfil previously taken-for-granted tasks. These ranged from simple acts such as fastening a button to more complex ones such as fixing things round the house.

Escalating pain propels individuals to seek some form of pain alleviation, mostly via pharmacological treatments including over-the-counter pain relievers, corticosteroids, opioids, anti-depressants, tranquillizers and the intramuscular infiltration injection. Nonetheless, the majority of participants expressed concerns or disappointments of medical treatments. The latter revolved mostly round a perception regarding the lack of genuine concern on behalf of health care professionals, being subjected to mechanical care, finding no/only temporary pain relief, experiencing medicinal side-effects, problems accessing medical services such as long wait lists or financial barriers and disappointment over the lack of information on treatment options available. When conventional treatments fall short of participants' expectations, individuals often end up self-medicating. The latter comprises different coping strategies can be further divided into eight subthemes:

i) Thought regulation: This comprised techniques for modifying unhelpful thinking strategies as well as finding ways and means to avoid thinking about pain including distraction (e.g. card games, watching TV, playing with grandchildren), positive imagery, reframing and focusing on the here and now. Another form of distraction which was especially true for Brian was talking:

'I feel so engrossed in the conversation right now that I don't feel any pain!' (P11, L 153) and

'I am in pain when I stop talking about it...Talking helps me forget!' (P11, L139)

Rose uses imagery to cope:

'Whenever I notice that I am starting to feel stressed and starting to think very negatively...I use imagery...I imagine I am by the sea...I imagine I am near the

mountains (smiles)...I imagine where I would like to be in the present moment...that helps me...It helps me see the positive side of things.'(P14, L264-268)

On a similar note, Nick tries to adopt a positive outlook:

'It depends on your outlook towards life. If you are a pessimistic person, the bad things look worse. If you look at things from an optimistic outlook...you make a learning experience out of them...and actually change things for the better.'(P2, L165-168).

Another coping strategy that was true for participants of both gender involved focusing on the here and now. Laura believes that thinking about the present and avoiding thinking much ahead makes life a lot easier.

Reframing was also popular, as evident in Brain's comments:

'It is true I am in pain...but...it is not a serious and life-threatening illness...it is not like cancer, for instance.' (P11, L73-74)

ii) Routine and behaviour change: These included eating a healthy diet or making modifications to one's diet, keeping well-informed, keeping a routine, slowing down, avoiding over-exertion, relaxation, meditation, head tapping, having a hot shower, yoga, pilates and engaging in self-care.

Some participants adopted a pro-active approach to coping by modifying the external environment. For instance, Rose bought a motorized bed and a portable egg-shaped mattress. Mary Doris bought an automatic car to reduce dependence on others.

On the other hand, Maria decided to alter her diet:

'I had to change my diet...I went to see a nutritionist...she told me to avoid acidic foods...I did feel a bit better after modifying my diet.' (17, L74-75)

Rose uses a variety of behavioural strategies:

'I try to do a bit of centering to calm down ...to calm my thoughts. Awareness...I mean, I practice most of these things...and I only focus on the here and now. That makes life a lot easier. I don't think much ahead, I just think about today.' (P14, L266- 268)

Doris routinely adopts exhalation techniques as she imagines pain leaving her body. Nick uses acupressure. He accidentally discovered that pressing a location close to the origin of pain was beneficial in reducing the intensity of pain. On the other hand, some participants resorted to unhealthy coping strategies including binge eating, over-exertion and smoking to relieve frustration.

iii) Physical therapy: Physical therapy was a popular coping strategy and consisted of stretching exercises, physiotherapy, walking or swimming. For instance, Mary Doris points out:

'I obviously do my daily exercises...being a physiotherapist means I know what needs to be done.' (P16, L36)

Her professional background seemed to be an asset in helping her adopt a proactive approach to coping.

iii) Stimulation therapies: Stimulation therapies such as transcutaneous electrical nerve stimulation and acupuncture were also popular. Although acupuncture was beneficial for some, Phil felt *'it was the worst thing'* he had ever done and recalls feeling excruciating pain after.

iv) Self-sought/self-taught symptom management: This theme encompasses individual efforts to find some form of pain alleviation, albeit not necessarily evidence-based. Sometimes, participants were willing to try anything to find some form of pain relief. Joe relied on self-experimentation:

'I even tried a gel which is usually used on horses...and believe it or not...it is the one which was the most effective.' (P5, L56-57)

On the other hand, Maria heard that a mixture of 5 teaspoonfuls of ginger and turmeric a day help reduce inflammation. She has been sticking to this faithfully, despite claiming it has *'an awful taste'*.

v) Keeping up to date and assimilating knowledge: Some participants used the internet to ensure they were well-informed about their condition and up-to-date with the most innovative treatments. Sometimes, the internet was used as a self-diagnostic

tool or to confirm a given diagnosis. Laura recalls searching the net and feeling relieved upon realizing that her symptoms match her diagnosis. This meant she was not imagining pain.

Ivan believes that *'the internet is everything'*, that *'it has revolutionized the world'* and that some problems could easily be prevented if one is well informed. For instance, he read that adopting a certain posture when working on the computer was very beneficial in preventing further neck problems and was a way of coping with increasing pain.

vi) Reaching out to a higher power: Females were more likely to express reliance on religious coping. Religion seems to serve diverse purposes. Mabel perceives prayer as a source of comfort which has helped her cope during episodes of unbearable pain.

Praying helped Rose find spiritual meaning in pain and accepting life with pain. It also helped her realize that *'one can lead a good life, despite pain'*.

Some of the participants equated prayer with hope. Maria surrendered herself to God, knowing with certainty that God will help her:

'Praying means hope...I am always hoping...you put everything in god's hands and knowing that eventually, he will listen to my prayers and knowing with certainty that I will get better.' (P17, L93-94)

Carmen is experiencing symptoms of depression. She spends all her day in bed, feeling miserable and seems to have lost interest in everything. Prayer seems to fill an internal emotional void that nothing could replace. She desperately pleads to God to alleviate her pain:

'It (rosary) helps...it fills my heart (cries)...and I beg the Virgin Mary to cure me..I beg her to alleviate the pain. That is all I ask for...I don't want anything else.' (P19, L125-126)

vii) Seeking to access social support networks: For some participants, social support was an indispensable form of coping. Support was important in minimizing the emotional impact of pain and a way of eliciting help for tasks the person was unable to

carry out. Phil believes his family is everything for him. It is the thing that keeps him going:

'If I didn't have support I wouldn't be here now.' (P7, L159).

Although social support stood out as being important for most participants, not all of them found the support they need. For instance, Mary Ann sarcastically remarked:

'When I come back from the doctor...I would need to grab my family's attention first...because now they have gotten used to the fact that I have fibromyalgia!' (P15, L320)

Laura has become socially isolated. More often than not, she found her attempts to explain to her friends about fibromyalgia exhausting and useless, because they still could not understand why she was unable to meet up or make the extra effort. As a result, she has given up striving to maintain friendship networks.

Some of the participants felt that they were partly to blame for becoming socially isolated. For instance, Brian said:

'They don't really listen to me because I am always repeating the same thing...so you become boring...'(P11, L143)

He also feels that he is not getting the support he needs. The inability to be understood by others seems to create a distinction between *me*, a chronic pain sufferer and *them* or the rest of society who does not know what it feels like to live with pain on a day to day basis:

'People don't really worry about something unless it happens to them...so unless it happens to you...you don't really know what it feels like'(P11, L147-148) and

'Sometimes they don't even let me talk about it! They just don't want to hear!' (P11, L150-151)

Despite this, he also felt that talking about the pain and externalizing his feelings helped him feel a lot better.

viii) Accessing psychological therapy to 'tackle issues': Two participants had sought psychological help specifically for coping with pain. Phil believes that psychological help is '*a great source of support*' while Ivan perceived accessing help with the ability to '*tackle issues*', something which he was unable to do with doctors.

3.2. Accepting pain into sense of self

A possible stage in the process of coping entails *Accepting pain into sense of self*. The latter can lead to a sense of *Mastery and Control* as the individual slowly adapts to life with pain. It also allows the person to adapt to a modified self.

This is evident in Laura's comments when she said:

'The best approach is to make your enemy your best friend'. (P12, L142-143) and

'You carry pain in style. You do not struggle any more, you don't see it as something that is stopping you from doing things you want. Accepting for me means I have to carry this load and I am ok. It is not being imposed on me.' (P12, L148-149)

The same was true for Nick who remarked:

'You get used to it...you learn to live with it...imagine being born with one arm...you have to learn to do everything with the other arm...you just accept it and life goes on'. (P2, L113-114)

On a similar note, Rose realizes that pain is part of her life and is trying to adjust accordingly:

'I have realized I cannot do as much as others do...I am aware I am not going to recover...I know it is something I have to learn to live with. I always try to find the ways and means to help myself'. (P14, L118-120)

Acceptance is not a straightforward process. Nor is it always the happy ending. This is clearly illustrated in Ivan's comments:

'Unfortunately you learn to live with the pain...for me this is masochism!'(P1, L49-50)

3.2.1 Acquiescing to pain as a stronger force

This theme encapsulates the following sub-themes i) a sense of disconnectedness ii) death as a possible yet unacceptable solution.

i) Retreating in one's personal world: Sometimes, pain takes over. This is especially true for individuals who are struggling to accept pain. This process can result in a sense of disconnectedness or of distancing oneself from the world outside. There is a predominance of low mood, social withdrawal and loss of interest in activities once deemed pleasurable.

For instance, Rita wants to free herself of pain and is having problems coping:

'You may think I am crazy but I'd rather have cancer!...At least I know there is an end in sight...I might have three months left...and then it will be all over.' (P18, L185-186)

Brian experiences a sense of frustration when pain interferes with his ability to interact socially:

'Sometimes the pain stops me from socializing as it gets really bad...so I end up leaving and going home...and I get quite frustrated'. (P11, L95-96)

ii) Death as a possible yet unacceptable solution: Sometimes, death is perceived as the only solution, albeit an unacceptable one. This is mostly due to the repercussions this can have on family members. For instance, Rita added:

'Had I been separated or had I been childless, I would have contemplated an overdose...yes I would surely have committed suicide.' (P18, L99-100)

Rita also believes that killing herself would mean dishonouring herself and her children. Nonetheless, her use of language serves to reveal her own contradictions as she firmly believes that people who kill themselves do it out of love as they don't want to feel a burden on others:

'I know people who did it...who killed themselves...and it is not true they do not feel love...on the contrary, you do it out of love...because you love your family to the point where you do not want to see them like that because of you' (P18, L189-191)

and

'I don't think I can do it...I would feel dishonoured...it means finding relief in a self-centred way...I would dishonour my children...I would never forgive myself for that'. (P18, L192-194).

The same is true for Doris who said:

'It crosses my mind to grab a knife...or simply jump off the roof...I sometimes feel like taking my life'. (P13, L158-159)

The only things that seem to stop her are her grandchildren who she feels would be unable to bear the pain.

Despite feeling supported, Phil feels like a burden on his wife who is unable to enjoy life because of him. He also feels he is experiencing a meaningless existence. On a similar note, Mabel sometimes wishes God would take her.

Carmen said:

'I go to the cemetery and beg and pray to them (parents) to take me with them, the pain is too much...but they won't take me'. (P19, L324-325)

3.2.2 A theory of pain coping mechanisms

Main themes derived from an analysis of data were outlined in the previous section. This section illustrates how themes link together in the context of one of the primary aims of the study to form an overarching pain coping theory.

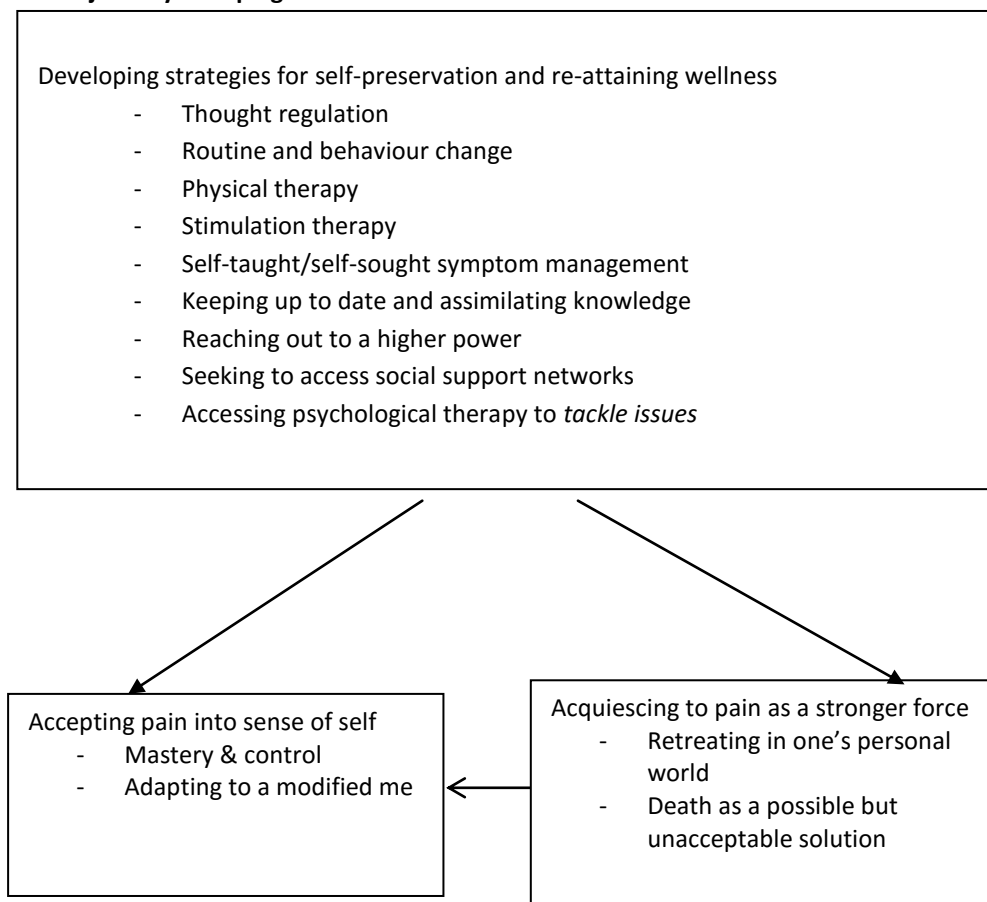
As highlighted above, individuals often rely on a number of techniques to alleviate pain, including cognitive, behavioural and psychological approaches, just to mention a few. The type of coping mechanisms adopted often result in two different outcomes. Healthy and effective self-preservation strategies can foster a sense of acceptance. This comprises a realistic appraisal of one's situation and fosters better adaptation to life in pain. It also leads to an increased sense of mastery and control. Most individuals tend to oscillate between the stages of *accepting pain into sense of self* and *acquiescing*

to pain as a stronger force before coming to terms with life with pain. The latter are often on a continuum rather than at extreme polarities. *Accepting pain into sense of self* is only possible if the individual is ready to *adapt to a modified me* whilst living a meaningful existence. This entails the realization that one can lead a good life, despite pain. On other hand, the inability to cope can foster a loss of control and a sense of disconnectedness from the external world. This is often coupled with feelings of depression. Personal resilience, healthy coping strategies and social support can foster acceptance. When this does not happen, death may be perceived as a possible but unacceptable solution.

Inter-related themes allowed for the emergence of the grounded theory model entitled *The Journey to Coping* as illustrated in Figure 2. Based on coding processes of Charmaz's (2014) constructivist approach to data analysis, the model reveals how potential relations of 13 aforementioned sub-themes portray a cause and effect relationship, resulting in the bridging of 3 final categories namely *developing strategies for self-preservation and re-attaining wellness*, *accepting pain into sense of self* and *acquiescing to pain as a stronger force*.

Relations between categories are not necessarily sequential and predictable but irregular and fluctuating. The *Journey to coping* is seldom smooth. Escalating pain entails repeated adaptation attempts as individuals start experiencing new losses and decreased functioning.

Figure 2: The journey to coping



3.3 Wanting the real thing

A second aim of this research was to investigate participants' attitudes towards psychological interventions for pain management. It is hoped that findings can shed light on potential barriers to service access and to the identification of factors that can increase service uptake. Attitudes play a significant role in coping since willingness to avail of psychological treatments often facilitates adaptation.

3.3.1 Positive expectancies/attitudes

This category encompasses three sub-categories that contribute to the formation of positive attitudes and expectations individuals have towards face-to-face psychological services, namely i) previous encounters ii) openness to experience and iii) the interview process as a way of letting it all out and being perceived as beneficial.

i) Previous encounters: Five participants had accessed some form of psychological help in their lives, albeit not necessarily for coping with pain. This experience has resulted in the formation of positive attitudes towards psychological help-seeking. Thus, it seems that these *previous encounters* play a crucial role in the formation of positive attitudes towards psychological services. These participants were also more willing to seek help in the future, should the need arise. For instance, having endured a difficult childhood and having grown up in a '*not so good family environment*', Nick sought psychological help when he and his wife were contemplating whether to have children. He recalls having doubts about whether he would make a good father. His experience with the psychologist was a beneficial one that served to reinforce his positive opinion of psychological services:

'He (the psychologist) taught me how to cope with certain situations...not to be carried away by thoughts of the past...he helped me...yes why not (seek future help)...' (P2, L137-138)

Having suffered from severe episodes of depression following a 10-year saga of unexplained headaches, Phil has been seeing a psychologist for over a year. Seeing a psychologist is an opportunity of validating and acknowledging his pain:

'Yes...very positive...very very positive...I can speak to someone who can understand...just to express myself to someone...' (P7, L109-110)

Ivan's problems coping with pain were having a detrimental effect on his relationship with his wife. Unlike doctors who sometimes '*fail to treat the underlying problem*', he felt that the psychologist helped him '*tackle issues*'. The reason for service termination was purely financial and had money not been an issue, he would have continued seeing a psychologist. Thus, his experience was also a positive one:

'I think that consultants...they see you for five minutes...prescribe medication and ask for money and that's about it...I prefer seeing a psychologist and talk about it.' (P1, L182-183)

A couple of years back, Rose was involved in a car accident whilst driving. She almost killed her nephew. Feeling overwhelmed with the incident, she went to see a psychologist:

'She (psychologist) helped a lot...I reviewed my life...and I took some major decisions...I made some big changes.'(P14, L178-179)

Some of Rose's life-changing decisions included embarking on a new career, taking up a new course and leaving a religious affiliation. Given these positive outcomes, Rose feels the need to avail herself of psychological services whenever she is going through a 'rough patch'.

Nine years down the line, Laura was relieved when the consultant was finally able to put a name to her condition. Nevertheless, the realization that she would be suffering from fibromyalgia all her life triggered her depression. Laura was under psychiatric treatment for a long time before seeking psychological help. Some of the first encounters turned out to be sour experiences, mostly due to the fact that the psychologists were 'taking notes all the time' and did not give her the 'answers' she was expecting. Eventually she found a psychologist who was helpful, supportive and 'easy to talk to'. This latter experience was beneficial in shaping her future intentions to seek psychological help, should the need arise. Thus, it seems that previous positive encounters with psychologists increase individuals' tendency to seek help in the future.

ii) Openness to experience: The second sub-category is entitled *openness to experience*. This refers to those participants who endorse positive attitudes towards accessing psychological help and as being willing to embrace alternative forms of treatments, if available. For instance, Paul describes himself as an 'open person' and is willing to find out what psychological services have to offer. Despite having had no previous experience with a psychologist, he believes that psychologists 'are there to help...not as an obstacle.'

Having suffered from sciatic nerve inflammation for a number of months, Jes was taking a lot of sick leave from work and was worried this would lead to him being fired from his job. These feelings of anxiety were being manifested in frequent panic attacks and an exacerbation of pain. Although he was referred to a psychiatrist, he had never seen a psychologist. Nevertheless, he expressed a positive attitude and seemed quite open towards accessing the service:

'Overall, I am in favour of these services...yes I mean, why not? If they can be beneficial, I agree.' (P4, L72-73)

Doris often relies on a number of psychological techniques such as imagery and relaxation for coping with pain. Although she has never been to a psychologist herself, she expressed willingness to seek psychological help in the future, believing that *'everything helps'* and that *'if a person believes you are there to help them, it will help'*. As opposed to some, Doris' attitude and predisposition was an open one.

Joe went to see a priest once due to marital problems. He describes this as a *'bold'* move, mostly because he does *'not have a lot of trust in priests'*. Nevertheless, he was glad to find an *'open door'*. Although he has never been to a psychologist, he felt the experience was *'something psychological'*. He added that although he is not sure *'exactly'* what psychologists do, he is open to these kinds of services, especially if they do not entail medication. Thus, overall it seems that although some individuals are not familiar with psychological services and what they have to offer, they are nonetheless open to psychological help and have a positive attitude towards services that may be useful for coping with pain.

iii) The interview process as a way of letting it all out and being perceived as beneficial:

All chronic pain sufferers who were approached prior to the interview agreed to participate in the study without hesitation. Within this context, positive attitudes towards psychological services were seemingly being formed during the interviewing process itself as participants were given the opportunity to talk about their pain in a non-judgmental and *'supportive'* environment. It also seemed that some participants

perceived the interview as beneficial. At the end of the interview, Doris sighed deeply and said:

'I felt this (interview) was more useful than the appointment with the doctor!' (p13, L219-220)

A few days later, the researcher received an e-mail from the participant's daughter thanking her for 'helping' her mother.

Having waited outside the pain clinic for almost two hours, Mary Ann said she was feeling quite irritable. She commented:

'I was going to leave...but then the nurse asked whether I wanted to sit for an interview...and I feel you are helping me...this helps...even talking about it...now I feel calmer'. (P15, L202-203)

Brian has been suffering from arthritis for a number of years. More often than not, pain was the main topic of conversation for him. Nevertheless, his family did not seem to be very supportive. They did not want to hear about his pain and were tired of hearing him repeat the same thing over and over again. He added that a person who is not in pain is unable to understand what he was going through. It seems that the interview was not only a form of distraction for Brian but also an opportunity to voice out his feelings, something he does not do very often:

'Talking about the pain makes me forget it is there...right now I don't feel pain... I am in pain when I stop talking about it...so it is best to vomit and empty your stomach!'(P11, L132-133)

He also believes that seeing a psychologist is 'no big deal' but an opportunity 'to talk' and a 'common occurrence' nowadays.

A few days after the interview, Tony, one of the participants, inquired whether he could talk to the researcher again because he needed to discuss some issues, mostly in

relation to concerns and fears about the future. The same was true for Rita who asked to see a psychologist after the interview. She believes that:

'The fact that I used to bottle things up....that I never spoke to anyone about my problems...I think fibromyalgia is...a manifestation of emotional pain'. (P18, L204-205)

On a similar note, Nick's attitude towards self-disclosure is a positive one. He believes talking can be an opportunity for self-growth:

'When I talk to people...like I am doing now...it is an opportunity for learning...talking always helps...this has helped me...' and 'maybe not in this very instant...maybe in an hour...or in a month's time I might remember something you said and it might ring a bell...so talking always helps'. (P2, L144-147)

It seems that the interview itself was a cathartic experience for some. In some instances, the interview served to increase participants' willingness to engage in similar 'sessions' in the future simply because it gave them the opportunity to talk about their pain and to have a sympathetic ear that was willing to listen to their lived experience of enduring pain.

The positive expectancies and attitudes outlined above could help increase participants' likelihood of talking up psychological interventions. On the other hand, some participants expressed a negative attitude towards psychological services.

3.3.2 Negative beliefs/attitudes

This category encompasses negative attitudes towards seeking face-to-face psychological help. It is comprised of two sub-categories, namely i) weakness and reaffirming control ii) equating pain solely with the physical body.

i) Weakness and reaffirming control: Some participants equate accessing psychological help with *weakness*. Within this context, the term '*weakness*' may be associated with different forms of frailty, ranging from a feeble physical body to weakness of character. For these participants, seeking psychological help meant giving in to the debilitating effects of pain and allowing pain to take over. One way of coping with pain

involved trying to achieve a sense of mastery and control, even though this may sometimes come at a cost.

Age is contextualized by social norms and expectations. 33 year old Leo equates psychological help-seeking with weakness of the physical body, old age and a lack of physical fitness. Unlike others who are also experiencing pain, Leo believes that he stands at an advantage because he is young and physically strong. These assets help him feel more in control, even though he often ends up in pain following physically strenuous activity:

'I am talking from the perspective of a 33 year old...my friend...poor guy...he cannot practice any of the exercises I used myself...I am talking in terms of age...he is a bit fat...it is harder for him...my perspective is to fight pain...but...he is over 60...if I were in his situation I would probably consider seeing a psychologist.'(P3, L200-204)

Leo also equates psychological help with a different form of weakness, namely lack of determination when he said:

'Some people are weak and are not determined...so they might need psychological help...but I am a very determined person.'(P3, L123-124)

On a similar note, Tony perceives accessing psychological help with different forms of weakness including old age, loneliness and a lack of mental capacity:

'I think it (psychological help) would be beneficial...for the elderly...because they are lonely people...they are helpless...even the disabled might benefit from a psychologist...or those people who have mental health problems...poor people...I am independent...but certain people...they have a low IQ...or for those who cannot really take care of themselves'.(P6, L252-255)

Tony seems to want to distance himself from his weakening body and from the realization that he is confined to a wheelchair, whilst acknowledging his independence.

Carmel equates psychological help with weakness of character. In reply to the question of whether he would ever access psychological help, Carmel voiced out in a strong affirmative tone:

'No no no! I always tackled my own problems. My son often tells me he feels the need to see a professional...but I always tell him he has to fight back...he has to be strong'.(P9, L120-122)

Such notions of weakness of character were also evident amongst female participants. For instance, 74 year old Mabel contested:

'I am a very strong person...I have a strong character...I am a fighter...I don't give up easily but people who are weak...they need a psychologist'. (P21, L124-125)

Thus, it seems that a major factor contributing to negative attitudes towards accessing psychological help involves a perceived loss of control and giving in to pain.

ii) Equating pain solely with the physical body: Another factor contributing to negative attitudes towards psychological interventions stems from the belief that for some individuals, the experience of pain is purely physical, arising from injury or wear and tear of the physical body. For instance, to the question of whether psychological factors and pain are related, Mabel points out:

'I don't think that psychological factors play a role in pain...because the pain is coming from my back. It is very physical.' (P21, L134-135)

Carmel seems to hold a similar opinion, shunning down the role of psychological factors:

'I used to bend a lot in my job...so all those factors triggered my back pain...so I don't see how psychological factors play a role here.' (P9, L129-130)

To the same question, Joe replied:

'If there is a marathon, I still take part...I do not stop because my mind is telling me I am unable to do so...I stop because the pain is there...in my back.' (P5, L271-272)

Interestingly enough, although participants perceive no link between pain and psychological factors, they all believed that the pain has had a significant impact on their mood and psychological well-being. For instance, Sharon remarked that she is unable to sleep without her nightly dose of tranquillizers. Pain has also interfered with her ability to fulfil her role as a sexual partner because *'you cannot really have sex if you are in constant pain'*. She has had to wait for 6 weeks to be called in for an appointment and feels that 6 weeks are way too long for someone who is in pain:

'These past 6 weeks were really bad and I know it has affected me...and not just me. I have been feeling quite irritable lately and I am shouting with the children more often...the pain has changed me.' (P20, L52-54)

The pain has changed Mabel too. She describes herself as a very sociable, cheerful and active person. Nevertheless things have deteriorated since the second operation and she has not been out in months. Sometimes the pain is so unbearable that she starts questioning the meaning of her existence:

'It is very frustrating. I keep questioning the point of staying alive, knowing I have to endure all this pain.' (P21, L83-84)

Phil feels useless and miserable most of the time. These feelings are coupled with occasional outbursts of anger as he sometimes punches the wall out of frustration.

Tony has been suffering from insomnia and increasingly low mood. The pain is depleting his ability to fulfil paternal norms and expectations:

'I am always in a bad mood...I am always unhappy...I don't sleep at night because my mind wanders a lot...I am already worried that...that I won't be able to walk my daughter to the altar in two years' time...and then I feel very upset (cries)'. (P6, L107-109)

Maria cried throughout most of the interview. She recalls going to the doctor to collect her biopsy result, fearing the worst diagnosis:

'The fear makes the pain worse.' (P17, L138)

Although the result did not reveal the presence of malignant tumours, she frequently engages in bed-seeking behaviour, especially when the pain becomes unbearable.

On a similar note, Mary Ann seems to be experiencing brain fogs when in pain and seems to have lost interest in most activities:

'Thinking of pain tires me...I am unable to concentrate or think about anything else...you don't feel like going out...you don't feel like changing or taking care of your appearance'. (P15, L120-121)

She adds that worry exacerbates pain and she often gets frequent headaches as a result.

Overall the word *psychological* seems to have a negative connotation for some participants. Nevertheless, none of the participants seems to have been spared from experiencing some of the psychological effects of living with chronic pain.

3.3.3 Impeding factors

This category refers to attitudes revolving around factors that interfere with psychological help-seeking. Whilst some of these perceived barriers are particularly true for face-to-face psychological interventions, others are specific to online interventions. *Impeding factors* comprise the following nine subcategories: i) stigma ii) lack of familiarity iii) lack of resources iv) negative affect v) individual characteristics vi) one-size-fits all model vii) pharmacological element viii) exercising caution ix) artificiality.

i) Stigma: One of the factors preventing service uptake that is particularly true for face-to-face interventions is stigma. Although some participants hold a positive attitude towards seeking psychological help and feel it may be useful, stigma was

perceived as a major barrier. The fear of being labelled and of not finding back-up from significant others seem to be major obstacles for Joe:

'In this country...if you tell people you have been to a psychologist you immediately get that label...it is like schizophrenia...you get that big label...you are doomed...they say you are crazy'. (P5, L246-248)

On a similar note, Ivan disappointedly pointed out that he does not always find the support and backing he needs:

'I believe that psychological services are important. Having someone listen to your concerns helps...but unfortunately it sometimes goes the other way round. I mean, if I tell colleagues at work...they end up making a joke out of it.' (P1, L241-243)

He also added that unfortunately, alternative treatments in Malta are not very popular. He believes that Maltese people are very medically-oriented and that it is not good. He cannot stand his own father's behaviour:

'He is always swallowing medication...he takes medicine like sweets...oh my god...I really cannot stand that!' (P1, L19-20)

It seems that in Malta, people still rely a lot on medication and psychological services are often a last resort. Psychological help could also come at a price, the fear of being ridiculed.

ii) Lacking familiarity: Another obstacle to seeking psychological help is a lack of familiarity with psychological services and what they entail. This was true for the majority of participants. For instance Charles commented that:

'I have never been to one (psychologist) myself so I don't know...I haven't got a clue...' (P10, L139)

Lacking familiarity was also true for Doris.

'No...is that a shrink?' (P13, L193)

The same was true of online services. For a good number of participants, seeking psychological help over the internet was not an option simply because it never occurred to them or because they are not familiar with these services. For instance Leo remarked:

'I think you need to know they exist in the first place. I mean, had you not told me about it, it would never have occurred to me.'(P3, L216-217)

Similar comments were raised by other participants. Thus, having never accessed psychological help is a major obstacle itself, simply because if individuals are not aware of its existence, they are less likely to avail themselves of the service.

iii) Lacking resources: This sub-category comprises the lack of financial or material resources that interfere with service uptake for both online and face-to-face interventions. For instance, although Ivan found psychological help beneficial, he had to terminate the service for financial reasons:

'I would have continued but...it was expensive and I had to stop'. (P1, L189)

Doris pointed out that she does not have a computer, nor can she cannot afford to buy one. Using her daughter's computer is a hassle, since this means leaving her house. Given her limited mobility, accessing a computer is not easy:

'I don't have a computer...I cannot afford to buy one' and 'If I had a computer with internet access, I would...definitely...I often tell myself I should go to my daughter's house and use her computer...but she lives on the third floor and I...I am unable to go up the stairs.'(P13, L240-242)

Although the lack of resources was a major obstacle to accessing psychological help, one participant associated the lack of financial stability with an increased need to seek psychological help. Leo believes it is easy to break down psychologically when financial resources are lacking:

'I did not need to go to psychiatrists or psychologists but it is no surprise one ends up resorting to these kinds of services...I think I did not seek psychological help because I am financially stable and have support'. (P3, L134-136)

Thus it seems that the lack of resources itself is both an obstacle to psychological help and a factor that increases the need for it, since it breaks the person down psychologically.

iv) Negative affect: This sub-category is applicable to both online and face-to-face interventions. Within this context, *negative affect* means a predominance of negative mood and passivity, often characteristic of depression. Thus, affect plays a role in attitude formation and in the tendency to seek help. These symptoms were evident in some of the participants and seemed to be an obstacle to active coping. For instance, Rita admitted to spending most of her days in bed feeling depressed. She feels that pain has taken over her entire existence and her dignity:

'The pain is continuous...I am always in pain...crying...feeling useless...I feel useless to my husband...I was just a normal person...I never ever imagined things could get so bad...I feel like garbage'. (P18, L312-214)

On a similar note, when asked about whether she would access an online intervention, Carmen pointed out:

'I cannot stand anything...nothing gives me pleasure...nothing makes me feel good. I don't like doing anything.' (P19, L268-269)

To the question of whether he would consider accessing online help, Phil replied:

'It depends on my mood...today I might feel like it...tomorrow I might not...I feel that...I don't know...what is the use of being in this world? I am just here for the pain...nothing else'. (P7, L144-145)

v) Individual characteristics: This sub-category broadly encompasses those individual characteristics or traits that may interfere with service uptake for both types of

psychological interventions. Some of these traits include the person's understanding of the utility of psychological services, their level of intellectual ability and education which in turn influence their attitudes towards the service. For instance, Rose points out:

'Sometimes it is ignorance...some people believe that only medication can help...you need to be educated to the level where you realize that psychological help can be equally beneficial.' (P14, L415-416)

Obstacles to service uptake related to the person's level of education are also evident in Brian's comments:

'I don't use the computer...I cannot even read...nor write.' (P11, L124)

Rose also believes that the person's intelligence plays a crucial role in the uptake of psychological help, particularly when it comes to online interventions:

'The person cannot have a low intelligence quotient (IQ) because it would not work.' (P14, L418)

Another factor encapsulating individual traits and characteristics is introversion. Although Sharon is not against accessing psychological services, being an introvert seems to be a major obstacle for her:

'I don't think I would...if I really had no choice I would but...I prefer keeping things to myself.' (P20, 132-133)

On a similar note, Ivan believes that a major barrier to seeking help is the person's ability to open up. He puts a lot of responsibility on the service user:

'Yes...I think it helps but then it is up to you...to open up...trust is a big one...I mean a person may not always say the truth...for one reason or another.' (P1, L193-194)

This is not to say that the service provider does not have any responsibility. The psychologist's ability to build a rapport with the client and provide a clear explanation

of the aims of psychological services is also important. Laura has been to a few psychologists before, some of which turned out to be disappointing experiences. She prefers a client-centred approach, alongside a helpful and supportive environment:

'Some are easy to talk to, they answer back...I expect answers...I want someone to help me and support me, not simply takes notes all the time. A psychologist needs to be human.' (P12, L119-120)

Another individual characteristic that interferes with service uptake is self-awareness. Joe's claim reflects this clearly:

'I think the first step is to admit you need psychological help'. (P5, L239)

Age seems to be another individual characteristic that influences the individual's decision to take up psychological services. This was particularly true in diverse circumstances. Although one participant believed that psychological help can be valuable, she felt she was too old now to tackle certain traumatic issues that are haunting her up to this day. Rita was sexually abused as a child. Sometimes she wonders whether her physical pain is a manifestation of emotion pain. Nevertheless, she also believes that seeing a psychologist is pointless now and that it won't undo the past. Thus, age seems to determine what is possible and not possible and the utility of seeking psychological help:

'I think that seeing a psychologist would not really make a difference...what's done is done. What can she possibly do? You cannot undo the past now...I mean, if I were younger, it might help, but now it is too late.' (P18, L245-247)

Another factor related to age was the era in which a person was brought up. Growing up in an era where computer technology is ingrained in the individuals' culture could serve to increase access to psychological services. On the other hand, older individuals who have never used a computer were less likely to hold positive attitudes to accessing psychological help over the internet. Thus, the surrounding context plays a crucial role in attitude formation. For instance, Mabel (74 years) remarked:

'I don't use the computer...if I were brought up using the computer I would probably check things online.' (P21, L152-1153)

On a similar note, 75-year old Carmel has never used the computer. For him, using the computer is a sheer waste of time.

'I cannot really say because I don't use the computer...I am a very busy person...I have lots of things to do...I cannot afford to waste time on that!' (P9, L167-168)

vi) One-size-fits all model: Another factor that acts as a barrier to the uptake of online interventions is the adoption of a *one-size-fits-all model*. This is evident in Doris' comments:

'If it is something related to my problem, I would participate...if it deals with things that are not related to my particular situation or things I am not experiencing, I would not even bother.' (P13, L194-195)

On a similar note, Mary Ann commented:

'Not everyone with fibromyalgia experiences the same symptoms. I would want a service that targets each problem individually.' (P15, 346-347)

The point of selectivity was also raised. For instance, Jes believes one has to be cautious when performing online searches, mostly because the internet often bombards the user with an overwhelming amount of information:

'The information...it can be overwhelming...only a small part of it may be relevant to your particular condition.' (P4, L126-127)

Joe holds similar views. This is evident in his comments on what factors would put him off online interventions:

'The computer has automatic replies so it will find what I call the 'magic' word...for instance, if you type 'pain in the ankle' and you will only get information related to this condition...but 'pain in the ankle' can mean a lot of things...not just one problem...I

mean I would not want the kind of thing where you have a one-size-fits-all approach.'(P5, L407-410)

His comparison to pain is a car that needs to be fixed neatly illustrates his point of having an individualized intervention:

'This is the same thing as buying a car...you can give your fiat to a mechanic...but you will always find a better mechanic...and you may find a mechanic who fixes only Ferraris but who would never fix a fiat...so I think that...it is possible that half of the symptoms coincide with those of another individual but everyone is different...so one needs to be careful'. (P5, L345-348)

Other participants share similar beliefs.

vii) Pharmacological element: The presence of the pharmacological element seems to be another obstacle to service uptake and to the formation of negative attitudes towards accessing help. Interventions encouraging users to take up medication for pain alleviation increase the individual's reluctance to follow through. Doris would be more than willing to use online services as long as they do not entail medication:

'Yes...as long as there is no medication involved' and 'If they suggest medication I would definitely not look any further into it.'(P13, L290-291)

On a similar note, Ivan remarked:

'If they require you to take pills and then more pills...the red light button goes on...I would just ignore the site completely.'(P1, L301-302)

The same was true for Maria and Joe who are very reluctant to resort to anything that incorporates a medicinal component, mostly due to fear of side effects.

viii) Artificiality: This sub-category refers to some of the participants' perceptions regarding the artificiality of online automated services. It seems they prefer the '*real thing*' (i.e. the presence of the human element).

This element of artificiality is evident in Nick's comments:

'I am the kind of person who prefers talking one-to-one...or at least I would want to see the face of the person I am talking to, even if on a screen.' (P2, L169-170)

and

'I can immediately tell whether the reply I am getting is an automated one or a reply sent by a person. There are some very sophisticated machines...that send automated messages that look very real...then I just close the window. I mean, what is the use of talking to a machine? Machines are there to facilitate things...but it is not the kind of communication I am talking about'. (P2, L171-174)

Charles has only used the computer to find out more about the anatomy of the arm and about his condition. When asked what factors would encourage him to access psychological services, the presence of the human element stood out:

'The lack of the human element is a major turn-off...I would prefer talking to another person than having to read'. (P10, L222-223)

The same was true for Tony:

'The mind needs to have the certainty that one will get a reply.' (P6, L401)

For Laura the human element is also important. The same is true for Sharon who perceives that psychological help is a mutual process:

'I would find the use of pictures appealing...even a photo of the person delivering the intervention...because you know there is someone behind it, not just a computer...for instance, if I log in and get a reply or e-mail from the person that would help. You get to 'know' the person...it is a mutual process'. (P20, L229-232)

Mary Doris feels she can explain herself better upon seeing the person:

'I believe that body language is important...I want the real thing...not even on the phone...one can easily be deceived when talking on the phone...but when you see the person face-to-face, they can understand you better.'(P16, L333-335)

The same was true for Rita who perceives that accessing face-to-face help ensures better communication and understanding.

ix) Exercising caution: The final sub-category comprises a number of fears that interfere with service uptake. One of these fears comprises the credibility of the source. For instance, Leo would want to ensure that the content is 'serious'. When asked what he meant by this, he clarified his claim by saying:

'I mean...er...that the content is being delivered by a reliable source...not just anyone who decided to post something on the subject matter.'(P3, L247-248)

Similarly, both Ivan and Doris pointed out that they would not follow through an intervention if it does not look professional. Thus, their attitude towards service access entails some scepticism. For instance, Ivan added:

'I want to make sure I am safe...I don't trust anyone...I would want to see the content myself and decide accordingly.'(P1, L307-308)

Mary Doris remarked:

'I wouldn't want to be cheated...I want the real thing you know...because there are a lot of unprofessional sites...certain material available online is made from quacks!'(P16, L423-424)

Nick believes that a lack of professional involvement can be harmful:

'It has to be professional site run because psychologically, if a person is misled, the intervention can cause more harm than good.'(P2, L244-245)

Another factor that seems to increase hesitancy on behalf of participants is the fear of the worst case scenario. For instance, Jes commented:

'I don't like it when they adopt a negative approach...certain sites mention only the negative...the focus is not on ability but disability...when I went online, the word malignancy stood out very prominently'(P4, L187-189)

and

'Certain sites may exacerbate unnecessary worries'. (P4, L130)

On a similar note, Laura points out:

'It is important that the material and content are lively...it has to have a positive element'. (P12, L208-209)

Joe believes that the internet can be a source of worry:

'Had I not read the information online...I would not have worried so much...I felt like eroding from inside afterwards.'(P5, L320-321)

Mary Ann's attitude towards the internet comprises the fear of an anticipated future. This seems to be a major obstacle to accessing online help:

'These things (accessing the internet) come at a high cost...not money-wise I mean...but health-wise...you end up worrying more'. (P15, L245-246)

Thus, it seems that the factors outlined above could reduce the individuals' tendency to engage in such programs.

3.3.4 Factors increasing access

Although few of the participants had sought psychological help, the majority endorsed positive attitudes to seeking online help and were willing to avail themselves of the service. This was particularly true when some of the barriers outlined earlier were overcome. For instance, if barriers such as not having access to a computer and not knowing how to use it were overcome, participants were willing to give online interventions a try. Other factors increasing service uptake can be grouped under the following subcategories i) facilitating factors ii) referent others.

i) Facilitating factors: A number of facilitating factors can help increase the uptake of online services and include: being user-friendly, variety, being appealing, the incorporation of a visual element, the incorporation of the practical element, the provision of suggestions, simplicity, positivity, avoiding the disclosure of personal details, having structure, flexibility, the incorporation of a multi-disciplinary involvement, use of text to aid understanding, using a language that is understandable to the lay audience, a psycho-educational element, liveliness and not being too long. These factors are evident in some of the interview excerpts below:

Laura commented:

'The first thing which attracts your attention is the presentation...so that helps...it has to have a positive element'. (P12, L212-213)

and

'It has to be user-friendly...it must not use jargon...and it have to avoid giving out lots of details...no fuss...just simple. It must not be too long...a person in pain tires out easily'. (P12, L225-226)

'Communicating with foreigners would put me off...I want to feel understood...someone who understands my language'. (P12, L216-217)

For Jes, positivity is important:

'It is important for the producer of the intervention to adopt a positive outlook...you do not focus on what can go wrong...but on how a person can improve and get better'. (P4, L192-193)

Flexibility and convenience are important for Maria:

'It has to be something I can do from home'. (P17, L213)

Leo wants a language which is easy to understand:

'People sometimes use words that are difficult to understand...I would prefer if they don't use too much of that...sometimes I have to keep surfing the net to check the meaning of particular words'. (P3, L265-266)

Tony prefers something which is accessible in audio format:

'It has to be in Maltese and an audible format...I don't know how to read. I prefer if it is not too long. I prefer if it were frequent and easily accessible...but I don't like repetition'.(P6, L391-393)

Mary Ann said:

'I often experience brain fog...so it must not be too long because I would start forgetting what I had read at the beginning'. (P15, L376-377)

Carmel feels the practical element would help:

'If it incorporates a practical element I would enjoy it...that is something I would enjoy doing'. (P9, L189-190)

ii) Referent others: The final sub-category influencing the formation of attitudes comprises *referent others* or the inclination to rely on word of mouth in deciding whether to give online interventions a try. More often than not, referent others include individuals who are in pain and have tried similar services and found them beneficial. This is evident in some of the participants' replies. For instance, Brian said:

'I would seek out others' experiences...I look at what others have to say because if the program helped others, it could help me too.'(P11, L267-268)

To the question of whether she would access online help, Maria replied:

'The reason why I went to a nutritionist...my cousin told me she is suffering from a similar condition...she encouraged me to eat a healthy diet and that I would feel better...she said that a lot of people have undergone a similar experience...so I trust...I trust someone who has been through it before me.'(P17, L192-195)

On a similar note, Sharon's attitude is shaped by other people's experiences:

'I think that in Malta...we rely a lot on word of mouth. If someone you know has participated in these kinds of services and benefitted from them...I would consider it'.(P20, L194-195)

The same was true for both Joe and Tony who remarked that they would find it not just useful but also encouraging to meeting others who have benefitted from similar experiences.

The sub-category *referent others* also incorporates trusted sources. When asked about who would be the best person to direct them to the intervention, the majority of participants replied that they would trust a health care professional. Jes would trust *'someone with a medical background or a psychologist maybe'*. On a similar note, Rose said:

'I want a source which is...someone would have to recommend the site to me...someone whose advice I trust.'(P14, L424-425)

Charles would trust the pain consultant, feeling confident that *'she knows what is best'*. Phil would trust his psychiatrist because she knows him well. Laura would trust her doctor more than any other person because he is very knowledgeable about her condition. Leo would trust his doctor. Nick would trust his own judgment but would also take heed of a doctor's advice. Sharon believes that if these interventions were effective, doctors should know about them. Since doctors never referred them to a psychologist, participants did not perceive the need of psychological input. This was irrespective of the fact that most of participants perceived a link between psychological factors and pain. As Mary rightly pointed out, *'had I thought a psychologist could help, I would have seen one by now'*.

All these factors play an indispensable role in help-seeking behaviour.

3.3.5 Inability to find relief for pain

When traditional treatments fail to alleviate pain, individuals often seek alternative measures, albeit not necessarily scientifically proven. Finding no relief for pain is likely to increase the individuals' tendency to take up psychological interventions.

Although Joe believes he is not the kind of person to resort to psychological therapies, the inability to find pain relief seemed an incentive for him. On a similar note, Phil is ready to try anything to feel better:

'I would do anything that I know of...which could help me...I would do anything.'(P7, L167)

The same was true for both Charles and Carmel.

Interestingly enough, although the first line of treatment was medical help, the absence of the pharmacological element in psychologically oriented therapies seemed particularly attractive to participants of both gender. On the other hand, a service encouraging the use of medication seemed to be a major turn-off.

Finally, despite the willingness to give psychological interventions a try, the inability to find relief from pain can sometimes have the opposite effect and lead to a decreased tendency to service uptake. Thus, pain was both a barrier and incentive. It served as an incentive when nothing else seemed to have worked. It was a barrier when it interfered with the person's ability to concentrate and when the person was feeling relatively low. The latter is intricately linked to the sub-category '*Negative affect*' highlighted in earlier sections.

3.3.5 An attitude theory

The previous section comprised a presentation of findings. This section illustrates how the aforementioned themes and sub-themes link together to explain attitude formation, in line with the second aim of the study.

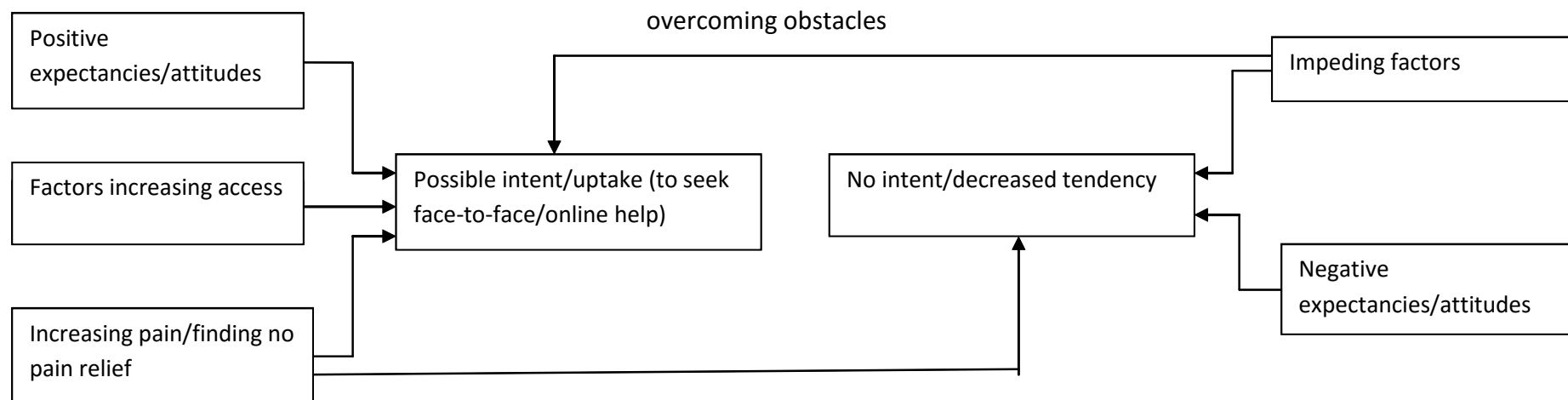
Data analysis reveals that previous encounters, openness to experience and the research interview play a crucial role in the formation of *positive attitudes/expectancies* towards help-seeking behaviour. Other aspects that could potentially lead to increased access entail *referent others* and a number of *facilitating factors*. This is true for both face-to-face and online help. *Increasing pain* could also eliminate barriers to service access. Despite the latter, intentions do not necessarily predict help-seeking behaviour.

A number of *impeding factors* acting as deterrents to service access were also identified. These include stigma, lacking familiarity with services, a lack of resources, negative mood, individual characteristics, fear of accessing a one-size-fits all model, the presence of the pharmacological element, artificiality and the need to exercise caution. Nonetheless, facilitating factors highlighted above may bridge the behaviour-intention gap. On the other hand, the need to reaffirm control, equating pain with the physical body and perceiving service access with weakness of character result in the formation of *negative expectancies* and decreased tendency to seek help. These factors were true for both face-to-face and online therapies.

Based on Charmaz's (2014) coding process for grounded theory, the model below (Figure 3) demonstrates how 16 sub-themes outlined above were grouped into 7 final categories, resulting in the emergence of an overarching theory entitled *Wanting the Real Thing*. The theory illustrates the complex interplay of psycho-social factors involved in shaping prevalent attitudes and perceptions towards psychological services.

Figure 3: Wanting the real thing

A complex interplay of psycho-social factors that play a role in shaping prevalent attitudes and perceptions towards psychological services



The main theme '*Wanting the Real Thing*' refers to the notion that although face-to-face interventions are the first preference when it comes to accessing psychological help, the presence of the human element as opposed to the artificiality of the computer seem to be an indispensable attribute to taking up online interventions. Thus, within this context, the *real thing* refers to some form of human contact.

Discussion

The present study aimed to explore pain coping mechanisms amongst the Maltese population. Another aim was to investigate service users' attitudes towards psychological treatments, with particular reference to online interventions. Emergent theories will be discussed in turn in the sections below.

4.1 The journey to coping

Despite the extensive theories of coping, no studies on pain coping amongst the Maltese population could be retrieved. Since pain expression and behaviour are often inter-twined within broader socio-cultural norms and expectations, existing theories may fail to provide an accurate representation of coping mechanisms amongst a given population. This study has attempted to shed light on specific coping patterns from a Maltese perspective, with the hope of identifying perceptions and needs of the target population and pinpointing ways of improving current assessment practices and treatment.

A striking difference between older and younger participants was that although both groups had to learn new ways of being-in-the-world, modifying behaviours to handle restrictive limitations imposed by pain seemed easier for older chronic pain sufferers. For instance, younger participants still continued to practice sports and physically strenuous activities, despite increased pain. Older ones seemed to adopt a more accommodating and practical approaches, such as investing in automatic cars, buying specialized mattresses and engaging in relaxing hobbies. The section below is a discussion of the main findings in light of the aforementioned research question and

existing pain research. In the concluding section, limitations and future implications of this research will be addressed.

4.1.1 Developing strategies for self-preservation and re-attaining wellness

Results revealed that unfortunately, chronic pain is a living reality for some Maltese men and women. The emergent theory proposed in Figure 2 both supports and extends previous literature by shedding light on the chronic pain sufferer's journey to coping with an unpleasant reality, a life with pain. Unlike previous research documenting high medication usage amongst chronic pain sufferers (Kerns, Sellinger & Goodin, 2011), Maltese chronic pain patients seem quite reluctant to rely on drug-based therapies for alleviating pain. This was irrespective of the fact that medical therapies were often the first line of treatment for managing pain. In line with symptoms experienced by participants, research reveals that pharmacological treatments are often associated with unpleasant consequences including fatigue, constipation, vomiting, sedation, nausea, dizziness, and respiratory depression (Knaster et al, 2012). Tolerance and physical dependence are other side-effects (Gupta et al, 2014). These factors seem to be major turn-offs for participants. On the other hand, medicinal use was more pronounced amongst participants with co-morbid symptoms such as anxiety and depression. In accordance with previous findings, the latter symptoms were also associated with increasing pain intensity (Knaster et al., 2012).

This study has identified a number of strategies developed to preserve one's sense of self and to re-attain wellness. These methods were popular amongst participants of both genders. Findings from this study replicate coping strategies identified by Lazarus and Folkman (1984) and revolve mainly round problem-focused or emotion-focused techniques. Problem-focused strategies included information-seeking, use of alternative therapies, physical treatments and behavioural interventions. On the other hand, emotion-focused strategies included seeking social support, spirituality and cognitive restructuring as a way to reappraise their situation and adapt to a newly imposed identity. Interestingly enough, despite some apparent resistance to

psychologically-oriented therapies, most participants were unknowingly resorting to psychological techniques to cope. Typical examples include distraction, reframing, grounding, relaxation exercises, positivity and imagery. In accordance with previous findings, some participants seem to have adjusted well, despite obvious limitations imposed (Mourão, Blyth & Branco, 2010). Adopting an acceptance-based approach has been linked to better functioning as well as decreased symptoms of anxiety and depression (McCracken, Sato & Taylor, 2013).

4.1.2 Accepting pain into sense of self

Although common themes were extracted from data, constructs outlined in this study do not necessarily reflect a multiple shared reality. For instance, accepting pain into sense of self is not a linear process. It does not happen overnight and is unique for each individual. Pain duration did not play a role in acceptance. Some participants were still struggling coming to terms with pain, despite suffering from persistent pain for years. Reasons behind these findings vary and are difficult to quantify. They illustrate how bio-psychosocial phenomena such as pain intensity, spirituality and psychological flexibility are intricately linked to pain coping.

The ability to accept pain does not mean giving in to pain, it simply means letting go of the need to control pain. Ironically, letting go of the need to control pain seemed to result in increased mastery and control *over* pain. Within this context, control means stopping pain from interfering with one's life and letting go of unsuccessful efforts to find a cure. In accordance with previous literature, participants with an internal health locus of control seemed to be coping better and displayed less anxiety than those with an external locus of control (Kupla, Kosowicz, Stypula-Ciuba & Kazalaska, 2014). The former term was coined by Wallston and Wallston (1982) and reflects a personal evaluation of whether one's health is controlled by the self or external circumstances or faith. On the other hand, participants with an external locus of control were more inclined to rely on ineffective problem-focused strategies such as relentless visits to different consultants with the hope of finding a cure, bed seeking behaviour or passivity.

Findings corroborate those identified in a previous study whereby some participants who were having problems coping were finding it extremely difficult to engage in previously enjoyable activities, believing they were better off dead (Dezutter et al., 2015). Although none of the participants had actually attempted suicide, 5 out of 21 participants reported some form of suicidal ideation. These findings coincide with a review by Tang and Crane (2006) reporting that the prevalence of suicidal ideation amongst chronic pain sufferers was found to be about 20%. The authors also found that chronic pain patients are a high-risk subgroup, with the risk of death by suicide being double that of healthy controls. In line with these findings, factors that seemed to increase this risk included pain intensity, feelings of helplessness, hopelessness and pain duration. Indeed, one of the participants with suicidal ideation had been suffering from incessant and unrelieved pain for 10 years. It seems that the presence of depressive symptoms and enduring suffering render death less fearful for chronic pain patients as exemplified in literature (Hooley, Franklin & Nock, 2014). A qualitative methodology has facilitated the emergence of sensitive issues, something which may not be possible to access using mainstream quantitative approaches (Griffin, 2004). It also challenges positivist quantitative frameworks presuming the importance of directly observable phenomena as being assets to scientific inquiry.

In line with findings by Wilson et al (2013), participants with suicidal ideation were more likely to retreat in their personal world and get disconnected from the rest of society. They were also experiencing significant problems coping. One of the factors that seemed to act as a buffer to preventing suicide was social support. This was true for participants of both genders. Another subtle factor that seems to act as a buffer to suicidality amongst female participants was spirituality. These findings coincide with those reported by Moreira-Almeida et al (2008) whereby spirituality was helpful in fostering acceptance amongst some participants. Nonetheless, it was unhelpful when it resulted in passive coping strategies and when participants resorted to higher powers to solve their problem. Participants adopting passive coping were more likely to experience psychological distress. The use of a qualitative approach reveals how the individual's experience cannot be isolated from the surrounding social and cultural contexts, something which is often sidelined by qualitative measures (Griffin, 2004).

The theme of *death* is not a novel construct in pain literature. What is perhaps strikingly different amongst Maltese participants was perceiving death as an unacceptable solution. Such findings reinforce the subjective and cultural perceptions of pain, rendering quantitative measures problematic (Houser & Zamponi, 2011). On the other hand, qualitative measures allow for the emergence of complex, contradictory and inconsistent nature of human experience (Griffin, 2004). For instance, although religion seemed to be a protective factor, it also seemed a major impediment to suicide. While concern regarding dishonoring family members was identified as one possible obstacle, three participants who relied on religious coping often prayed to God to take them with him. Although this theme was not always specifically stated, it was utterly implied several times. It is possible that some participants perceived suicide as sinful in the eyes of God. These fears could be particularly true in a devout nation such as Malta, where Roman Catholicism remains a trademark of Maltese culture. Apart from that, the impact death could have on one's family seemed an unforgettable sin.

Maladaptive coping skills contrast with an existential approach adopted by one particular participant who was able to find personal meaning in pain. These findings clearly illustrate differing approaches to coping, with ontological assumptions guiding this research revealing the subjective nature of reality (Ochieng, 2009). A construction of personal meaning and purpose has been linked to a number of psychological and physical benefits including decreased pain and lower distress (Scrignaro, Bianchi, Brunelli, Miccinesi, Ripamonti et al., 2014; Sherman & Simonton, 2012). The *Presence of Meaning* has also been associated with decreased use of medication and better psychological well-being (Dezutter et al., 2015). In line with constructs from acceptance and commitment therapy (ACT), values can help foster a meaningful life (Harris, 2008). Incorporating constructs from ACT in both face-to-face and online therapies may help overcome feelings of helpless and hopelessness and foster a meaningful life despite the pain.

4.2 Attitudes towards psychological interventions

Maltese men and women seem to endorse similar attitudes towards accessing psychological help, with no particularly polarized views with respect to gender differences. Moreover, half of the participants who had seen a psychologist were males. Thus, unlike findings reported in previous studies (Clement et al., 2015; Kyung Nam et al, 2010), Maltese female participants within this study were not necessarily more inclined to access psychological help than their male counterparts. The latter was particularly true for face-to-face interventions. Despite a clear lack of gender attitudinal differences, demographic factors do seem to have their mark on help-seeking behaviour. In accordance with previous findings, younger participants and those with a post-secondary or tertiary level of education were more accepting of professional help when compared to older ones and to those who did not pursue higher education (Vogel, Wester & Larson, 2007).

4.2.1 Positive expectancies/attitudes

In line with previous research (Mechanic, 1975), an intra-psycho factor influencing the formation of positive attitudes and behavioural intentions is the individual's *openness to experience*. The latter was true for both face-to-face and online interventions. Some individuals were willing to embrace alternative forms of treatment, with the belief that doing so will be beneficial in some way. These findings are reflected in constructs derived from the Theory of Planned Behaviour (TPB) which states that a major determinant of behaviour entails the individual's subjective evaluation of the consequences of engaging in a particular action. Thus, individuals holding positive outcome expectancies were more likely to seek help than those holding negative ones.

As opposed to quantitative research, this study relies on words used by participants in order to generate a deeper understanding of the topic under investigation. The researcher is therefore as immersed and actively involved in the research as participants (Charmaz, 2014). This was mostly evident during the process of data collection whereby some participants perceived the interview as therapeutic. The

interview therefore played a role in the formation of positive attitudes and expectancies to accessing face-to-face psychological help. As opposed to clinical interviews conducted in therapeutic settings that strive for the provision of psychological advice and the formulation of a treatment plan, qualitative interviews aim to gather information for research purposes. Nonetheless, the process of engaging in active and supportive listening during the process of data collection not only fosters self-disclosure but may have a healing and curative purpose for interviewees (Rossetto, 2014). Some participants derived different benefits from the interview including a distraction from pain, a learning opportunity, a way of releasing pent up frustration and a situation that encouraged them to reflect on their current situation and about potential benefits of therapy.

A number of interactional communication strategies are essential in '*therapeutic*' interviews. These include building a rapport with clients, establishing a safe environment, a good understanding of the person's background, allowing interviewees sufficient time to verbalize concerns and feelings, flexibility and attending to the interviewee, whilst striking a balance between the interview direction and structure (Nelson, Onwuegbuzie, Wines & Frels, 2013). The '*therapeutic*' effect of the interview could have been particularly pronounced amongst participants lacking support. The interview was therefore an opportunity to voice fears and concerns with a '*neutral*', non-judgmental and interested individual and could have played a role in promoting a positive attitude towards psychological help. The researcher therefore fulfilled the role of an '*empty*' absorber of emotional turmoil.

The '*therapeutic*' effects of the interviews were not universally applicable. Some interviews triggered unpleasant memories. Disclosures related to sexual abuse or death left their mark, not only on interviewees but also on the interviewer. Clearly enough, interviews encompass shared experiences between all parties involved. The researcher becomes engulfed in the participants' narrative. Indeed, transference was not uncommon during interviews, particularly when feelings of helplessness prevailed. Transference entails intra-psychic forces during therapeutic relations whereby clients' feelings are projected onto the therapist (Gabbard & Horowitz, 2009). In line with qualitative approaches, such instances illustrate how research can leave a mark on the

researcher (Willig, 2001). Occasionally, interviews can create role confusion (Rossetto, 2014). This was particularly evident when one participant inquired about the date for the next '*session*'. The establishment of boundaries and clarification of research aims are particularly important in the process of data collection.

Another factor influencing the formation of positive attitudes entailed previous encounters with psychologists. This was particularly true for face-to-face therapies since none of the participants had actually accessed an online intervention. These findings are consistent with Bandura's (1986) Social Cognitive Theory whereby past experiences perceived as beneficial often serve to reinforce the frequency of past behaviour and to predict the behaviour's future occurrence. Results also mirror those reported by Bobby (2012) whereby positive outcomes resulting from previous help-seeking experiences were found to be associated with positive attitudes towards the service and increased tendency to seek help.

According to the Theory of Reasoned Action (Ajzen & Fishbein, 1980), a factor influencing behavioural intentions is the individual's attitude towards the particular behaviour. Nonetheless, despite airing positive attitudes towards accessing help, only two had actually seen a psychologist for pain coping, irrespective of the presence of significant distress. Clearly enough, the link between attitudes and behaviours is far from straightforward. These findings confirm that the theory may be most useful in predicting intentions than actual behaviour (Sniehotta, Priesseu & Araujo-Soares, 2014).

4.2.2 Factors increasing access

In line with a qualitative approach, this research reveals that attitudes towards psychological services are quite subjective and that participants have different viewpoints about potential facilitators to service access. For instance, for some participants, *referent others* seem to play a crucial role in attitude formation. Inquiring about significant others who might play a role in attitude formation was not part of the original interview. Rather, it emerged as new information was collected from successive interviews, something which emerged thanks to the use of a qualitative

methodology. This was made possible due to the use of constant comparative analysis, a key feature of grounded theory.

The term *referent others* encompasses a number of social forces or influences revolving not only round what other people are saying but also on what they are doing. These forces are particularly evident within a Maltese context, especially when deciding on a course of treatment and when contemplating whether to access particular services. Participants seem to take extra heed of advice given by significant others who have undergone similar experiences and who have benefitted from engaging in particular behaviours. For instance, one participant revealed he had been to a psychologist after being advised to do so by a close friend. It therefore seems that referent others could help bridge the behaviour-intention gap.

Although social networks can sometimes have negative effects on health (e.g. social smoking), research reveals that these networks can enhance the perceived benefits of particular health services and foster the flow of health-related information (Deri, 2005). According to Deri (2005), individuals who perceive that a particular health service is beneficial are more likely to influence significant others and encourage them to do the same. Health service utilization is also more likely amongst persons living within close geographical distances and those sharing common traits such as language and cultural backgrounds. Given Malta's small size, such findings come as no surprise. Additional benefits of social support networks include the prevention of ill-health, provision of health information and boosting of health self-efficacy (Oh, Lauckner, Boehmer, Fewins-Bliss & Li, 2013).

A subtle theme that emerged from interview data was positioning, namely the distinction between *us* and *them*. The former refers to those individuals experiencing pain while the latter refers to the rest of the world that is oblivious to pain and its effects. Positioning plays an important role in attitude formation towards psychological help-seeking since individuals experiencing similar problems are often not only a means of identification but also a source of advice. Such findings corroborate previous literature whereby individuals perceived as being similar to self

are often a point of reference and guidance (White & Dahl, 2006). These individuals often act as *groups of reference* for some participants (Bobby, 2012) since they seem to be amongst the few who can truly understand what living with pain is like. Jackson (1994, cited in Crossley, 2000) holds that chronic pain sufferers often develop an intuitive sense of empathy or *communitas* which fulfils the need of a mutually understandable reality.

Possibly, the lack of understanding from significant others plays a role in the positioning effect. Although social support was perceived as indispensable, not all participants felt supported. Unfortunately, some participants felt ignored whilst others were subjected to sarcastic comments from family members. It seems that pain forces the individual to retreat in a private world incomprehensible to *them* out there. Such instances seem to reinforce a newly constructed identity, namely that of having become a 'boring' person. This label was true amongst participants of both genders, often becoming a taken-for-granted reality and serving to accentuate differences between *us* and *them*. Similar findings were disseminated in previous research revealing that pain not only changes the self in negative ways but is often perceived as a challenge to one's identity (Benyamini, Meseritz-Zussman, Brill, Goor-Aryeh & Defrin, 2014). In light of these findings, it is not surprising that participants value the opinion of other chronic pain sufferers in high regard, irrespective of the effectiveness of some of the suggested methods for pain alleviation. Social support has been linked to greater life satisfaction and decreased symptoms of depression in chronic pain patients (Ferreira & Sherman, 2007). Given the preference for some form of human contact and professional involvement emerging from this study, the incorporation of therapist-monitored social support networks alongside online interventions could be a way of increasing patient engagement.

Whilst most of the existing web-based programs are devised following the joint collaboration between software engineers and health care professionals, a lack of feedback from behalf of potential service users regarding the usability and appropriateness of these interventions has been identified (Pagliari, 2007). Results of this study reveal that consideration of a number of *facilitating factors* in the creation of web-based therapies could help extend their ease of accessibility. Findings mirror

those reported in previous literature whereby potential service users show an overwhelming preference for varied and appealing interventions or services matching their target goals and preferences (Eysenbach, 2005; Parks, Della Porta, Pierce, Zilca & Lyubomirsky, 2012). In line with Eysenbach's (2005) findings, potential users also expect some form of *observability* or anticipated benefits following the uptake of online interventions. Apart from that, individuals are more likely to endorse positive attitudes for structured approaches. Similar results were outlined in another study revealing an increased preference for tunneled versions of online programs as opposed to those containing overwhelming amounts of information (Crutzen, Cyr & de Vries, 2012). Other facilitating factors include a preference for user-friendly interventions, programs containing a psycho-educational component, treatments incorporating the involvement of a multi-disciplinary team, the avoidance of medical jargon and a preference for one's native language. Evidently enough, the way messages are communicated to the target audience or message framing is a crucial aspect of any intervention striving to foster healthier behaviours. It seems that messages are more persuasive and effective when they are designed to match the needs of service users, what Higgins (2000) refers to as *regulatory fit*. The latter serves as a motivating factor in bringing about change and increasing the person's engagement in pursuing set goals.

Another *facilitating factor* that seems to play a role in the formation of accepting attitudes towards online interventions is positivity. The presence of a positive element seems to be particularly effective in increasing client's engagement, more so than other treatment modalities, including CBT (Geraghty, Wood & Hyland, 2010). The term *online positive psychological interventions* (OPPI's, Parks, 2014) is gaining increasing popularity. It refers to psychological interventions exploiting the use of computer technology via the incorporation of a positive element, with the aim of fostering behaviour change, facilitating symptom management and improving the overall psychological well-being and resilience of the service user (Mitchell, Vella Brodrick & Klein, 2010). OPPI's can be used across diverse treatment modalities and in different settings, ranging from primary prevention to the fostering of mental health (Schueller & Parks, 2012). OPPI's seem to have several advantages when compared to

other interventions lacking an optimistic element. Bolier and Abello (cited in Parks & Schueller, 2014) believe that OPPI's can foster patient empowerment and stimulate self-management skills. They can also increase adherence and user participation (Parks, 2014). A literature search failed to retrieve any OPPI's designed specifically for pain management, with existing interventions focusing mostly on the fostering of general well-being and resilience. On the other hand, research reveals that positivity fosters psychological well-being and reduces pain catastrophizing (Ong, Zautra & Carrington Reid, 2010).

4.2.3 Increasing pain and finding no pain relief

Although some participants endorsed negative attitudes towards accessing face-to-face interventions, the majority were willing to avail themselves of online services, particularly when nothing seemed to alleviate pain. Such findings do not only reveal variation in participants' attitudes. The use of a qualitative methodology shows how the latter are often circumstantial, something which may not emerge in rating scales or quantitative measures (Taylor, cited in Langdridge & Taylor, 2007). Results from this research corroborate those reported in previous literature whereby web-based interventions seem to be an acceptable alternative to patients (Proudfoot, Goldberg, Mann, Everitt, Marks et al., 2003). The role of *relative advantage* could partly explain what makes online interventions attractive to participants (Eysenbach, 2005). Basically, if a person is willing to try all available alternatives, especially when previous ones have failed. This also means that in this particular study, accessing psychological help was perceived as the last resort, if at all, something to be considered when all other attempts have been unsuccessful. Similar findings were identified in an earlier study whereby increased psychological distress did not result in increased help-seeking behaviour, mostly due to perceived fears of self-disclosure (Li, Dorystyn & Denson, 2014). Unfortunately, such perceptions seem to persist over time, despite ongoing efforts to dispel stigma round seeking help. Some interviewees were willing to avail themselves of psychological therapies with the hope of finding a cure for pain. Evidently enough, some individuals were not only unfamiliar with psychological services but have unrealistic expectations of psychological help. The latter is not

surprising, given the lack of psychological input in Maltese hospitals. Raising awareness of the aims of psychological services is crucial. Apart from that, incorporating constructs from Acceptance and Commitment Therapy may help foster a non-judgmental acceptance of experience rather than an attempt to eliminate or resist pain (Carlson, 2014).

4.2.4 Impeding factors

A number of impeding factors that result in negative attitudes and in perceived obstacles to help-seeking behaviour have been identified, as discussed below.

According to the Theory of Reasoned Action, subjective norms regarding the appropriateness and acceptability of particular behaviours play a crucial role in attitude formation and in accessing help. The fear of stigmatization was particularly evident for face-to-face interventions. It was also striking amongst male participants, as evident in the type of discourse used to express constructed categories of psychological help-seeking including the fear of being ‘*doomed*’, labelled ‘*schizophrenic*’ or ridiculed by friends. It therefore seems that Maltese men are not exempt from external pressures of *Gender Role Conflict* (Levant & Richmond, 2007) identified in previous literature. Fear of stigma may be particularly prevalent in a small country such as Malta, where the possibility of keeping service access hidden from friends or acquaintances may be particularly difficult. Participants’ choice of words also serves to illustrate how meaning-making and interpretations are formed in a social context and the role they play in shaping prevalent attitudes and behaviours within a given culture. Since the majority of psychologists in Malta are currently employed with the mental health services, it is therefore possible that lack of awareness regarding the utility of psychological help may be a primary contributor to the creation of stigma. Thus, individuals may associate help-seeking behaviour solely with psychiatric problems and therefore try to distance themselves from this kind of service.

Lack of resources was identified an external barrier to service access for both kinds of therapy. Indeed, previous research reveals that expert fees are one major barrier to

seeking help (Wuthrick & Frei, 2015). Lack of equity between individuals coming from different strata of society contributes to discrepancies in life expectancies between populations. They are also likely to contribute to health inequalities and differences in health status, with individuals from higher socio-economic backgrounds experiencing better health and quality of life than those coming from lower classes (Angell, cited in Marks, 2002). Individuals of low socio-economic status often do not have sufficient financial resources to pay for good-quality health care. Conclusively, they are less likely to access health-care services and stand a higher risk of suffering from enduring pain (Joud, Petersson, Jordan, Lofvendahl, Grahn et al, 2014).

The main theory entitled *Wanting the Real Thing* reflects one of the biggest barriers to online service uptake, namely the fear of talking to a machine. This fear was true for both genders. Thus, the perception that online services are artificial contributes to the formation of negative attitudes towards seeking web-based help. On a similar note, findings reported in previous studies (e.g. Rini et al, 2010; Mohr et al, 2010) reveal that most individuals show an overwhelming preference for face-to-face therapies. One way of overcoming this artificiality barrier seems to be the incorporation of the human element.

The need for some form of human interaction when engaging in online interventions was evident. The desire to feel understood and to have someone bear witness to their experience seems to be as important as the need to find a solution to the pain. Research trials from previous findings point to the conclusion that an interactive element with the user carries a number of advantages. For instance, an internet-based trial by Brattberg (2006) aiming to improve the quality of life of chronic pain sufferers employed both self-help skills and therapist support. Encouragingly enough, significant reductions in depressive symptoms and pain severity were observed. Although this entails more commitment from behalf of therapists and despite incurring additional costs to automated services, added therapist time serves to improve motivation, patient engagement, compliance and improve exposure therapy (Cuijpers et al, 2009; Clough & Casey, 2011). Thus, some form of minimal contact from behalf of a trained therapist may help in overcoming the artificiality barrier and may complement internet-based programs.

Another prevalent attitude that hinders online service uptake was the need to exercise caution. Some participants feared that the internet could do more harm than good, especially when there is a lack of professional involvement. These findings do not corroborate those identified in a previous study whereby perceived unhelpfulness of online interventions, fears regarding the emergence of upsetting feelings following therapy and concerns regarding confidentiality seemed to be major barriers to service uptake (Choi, Sharpe, Li & Hunt, 2015). The latter study aimed to assess acceptability of online therapies for depression. It is important to point out that although depression often co-exists with chronic pain and despite overlapping concerns, perceived barriers are dependent on the target problem and are not necessarily universally applicable. Chronic pain patients are therefore a different population from those experiencing psychiatric problems, particularly when depressive symptoms arise as a result of chronic pain rather than from a somatoform disorder.

The fears of accessing a *one-size-fits-all* model and the preference for a service targeting individual needs were also evident. Unfortunately, some literature seems to confirm participant's concerns, namely that commercially available technologies often adopt a universal approach to the maintenance of health and well-being (Kutz, Shankar, Connelly & Eysenbach, 2013).

Unlike previous literature reporting a positive correlation between levels of distress and psychological service-seeking (Cramer, 2000), *negative affect* or a predominance of low mood was found to impair the individual's ability to take adaptive action, including accessing help. Recording interviews and transcribing content allowed for pauses and overlaps in participants' conversations to emerge. Listening to participants' narratives and soft utterances when talking about sensitive issues such as death or depression allowed for a more accurate representation of their experiences, something which may have gone unnoticed with quantitative measures.

Negative affect arising from psychological distress resulted in decreased attitudinal tendency to seek help. This was true for participants reporting frequent feelings of confusion, unhappiness, anhedonia, crying outbursts, death wishes and bed-seeking behaviour. Needless to say, *negative affect* interfered with every aspect of the

participant's life, not just the uptake of web-based interventions. Although some online interventions may help the individual defeat feelings of depression resulting from chronic pain, the first obstacle to be overcome entails motivating individuals to engage in online programs. This is not an easy task to accomplish, given that passivity is a major characteristic of depression. Health care professionals may need to screen chronic pain sufferers prior to '*prescribing*' online interventions in order to identify those needing additional help, if therapy is to be of benefit.

According to the Theory of Reasoned Action, individual characteristics influence not only attitudes but can also predict future intentions to engage in particular behaviours. These include intellectual ability, level of education, pain, self-awareness, age, the belief of the effectiveness (or lack of effectiveness) of psychological interventions and introversion. Clearly, the ability to comprehend the content of an intervention and ability to follow instructions are an indispensable part of treatment. Findings from this research mirror those reported in a previous trial whereby lack of computer skills and fewer years of education were associated with decreased participation in online trials (Lorig, Ritter, Laurent & Plant, 2008). Individuals lacking computing skills were also less likely to perceive the utility of online treatments and to adhere to them (Devineni & Blanchard, 2005). Truthfully enough, some of the older participants who had never used a computer believed that it was a sheer waste of time, commenting they had other more important things to do. Psycho-education and basic computer courses may be needed to address these gaps in knowledge prior to referral to online therapies.

When medication fails to alleviate pain, searching the internet to find information about specific pain conditions seems a preferred option for the Maltese. This was particularly true for those holding positive attitudes towards information technology. According to Davis' (1989) Technology Acceptance Model (TAM), positive attitudes are formed as a result of perceived utility and ease of use of specific technology gadgets. Fostering online service uptake among technologically-minded individuals may be easier since perceived utility and ease of use pose no potential barriers. On the other hand, motivating more conservative or computer illiterate clients may be a challenge. Possibly, some individuals may be unsuitable candidates for online-based

services. According to a recent survey by the Malta Communication Authority (2014), 80% of Maltese households have internet access. Of those who do not, 83% are in the 64-74 year age group and the retired. Possibly, face-to-face interventions may be more appropriate for this target group. In the Scottish Service Model for Chronic Pain management (National Health Service Education for Scotland, 2014), multi-disciplinary services are integrated within primary and community care. This approach fosters increased acceptance of psychological services since they are part and parcel of standard services. Using a similar approach within a local context and offering psychological help alongside medical treatment may increase the perceived utility of these interventions.

As highlighted earlier, pain was both a barrier and facilitating factor to service uptake. Sometimes, pain interfered with the individual's ability to do things, including using the computer. The inability to sit down for long periods of time, tiredness and brain fogs sometimes interfered with participants' ability to concentrate and remember things, particularly amongst fibromyalgia patients. The holistic effects of pain can be succinctly summarized by one participant's comments: *'when you are in pain everything seems to require too much effort, even getting out of bed, let alone using the computer or internet'*. These results support previous studies reporting that chronic pain patients were less likely to use the internet (Fox, 2007). Given the limitations imposed by pain, investigating the efficacy of shorter interventions is an area worth researching. Nonetheless, since chronic pain often requires long-term treatment, short-term treatment may not always be a viable option. A key to enhance use is flexibility. Ease of access of psychological help seems to facilitate help-seeking behaviour (Wong et al, 2006). Fortunately, trials incorporating online interventions allow the user to access the program at their own pace and with unlimited access (Ruehlman, Karolya & Enders, 2012; Cuijpers et al, 2008).

Although younger participants seemed to endorse more positive attitudes to accessing help, the latter was not true for everyone. Results reflect those of previous studies whereby discomfort revealing personal and intimate information seem to be major barriers to service uptake, particularly for face-to-face interventions (Vogel et

al, 2007). Educating individuals about the benefits of self-disclosure, the anticipated feelings of relief after talking to trusted professionals and the assurance of confidentiality could facilitate the uptake of therapeutic services (Vogel et al, 2007). On the other hand, web-based services seem an acceptable alternative and are perceived as less threatening, thereby posing an attractive alternative to individuals who are more introverted and reserved.

Although friends play a crucial role in guiding behaviour, doctors remain the most trusted referents. Health care professionals play a crucial role in shaping normative beliefs and attitudes (Walsh, Edwards & Fraser, 2007; Walsh, Edwards & Fraser, 2009). These results come as no surprise, especially within a Maltese context where medical interventions are usually the first (and sometimes the only) line of treatment for managing pain. Thus, whilst talking to a doctor is acceptable because it confirms the physical origin of pain, seeking psychological help is not even an option. The few participants who were seeing a psychologist had been referred to the service by their psychiatrist, via the Mental Health Service. They were also experiencing psychiatric problems exacerbated by pain. Unfortunately, this means that within the existing system, chronic pain patients only have access to a designated psychologist once the problem is serious enough to warrant psychiatric treatment.

Apart from lack of accessibility identified in a previous review (Waller et al, 2009), unfamiliarity with psychological services was another barrier to service uptake. In line with a previous study (Topkaya, 2015), most interviewees were unfamiliar with psychological services and did not know the difference between psychologists and psychiatrists. Some participants equated the service with psychiatric help and asked for a revision in medication during the interview. As highlighted earlier, current pain management services in Malta are run by a team of nurses and pain management consultants. Psychological input is a fairly recent introduction, albeit with very limited availability. Apart from that, no other professionals are involved. It seems that the psychological needs of chronic pain patients remain relatively unaddressed, with the medical model being the dominant approach to treatment. Addressing these needs remains a challenge. Moreover, the lack of human resources, low wages of psychologists employed within the government sector (which makes them more likely

to opt for private practice) and lack of specialized training in the delivery of chronic pain interventions are other barriers to face-to-face treatments. Web-based interventions pose an attractive solution, albeit not a straight-forward one.

4.2.5 Negative expectancies and attitudes

According to IASP (2009) and the Royal College of Anaesthetists (2015) in the UK, the holistic treatment of chronic pain requires the adoption of a multi-disciplinary approach to pain management, with input from various professional now being an indispensable part of treatment. Nonetheless, only 40% of UK pain management clinics are multi-disciplinary (The National Pain Audit, 2012). Although psychological interventions for pain management in the UK are not firmly established, the situation in Malta fares much worse. Results from this research do not only confirm the lack of psychological input in local pain clinics but reveal that the Maltese are not psychologically minded. They also seem to hold a number of negative expectancies and attitudes towards psychological services. These findings apply for both face-to-face and online interventions. In reality, such results are not surprising given that psychological input is lacking in local pain management clinics.

Chronic pain patients often resort to the traditional bio-medical model when accounting for their pain experience and are likely to reject psychological effects of pain (Vlaeyen et al, 2007). Findings from this study indicate that some participants' pain schemas (Skevington, 1995) entail associating pain solely with the physical body. This schema of organic pain seems to contribute to the formation of negative attitudes towards accessing psychological help.

Maltese chronic pain patients are no exception to this, with some airing very strong views in this respect. Some claimed that pain was *very physical* and could not see '*how psychological factors play a role here*'. Nonetheless, although these schemas seem to be firmly established, all participants perceived a link between psychological factors and pain and all of them were experiencing psychological effects of pain. Similar findings have been reported in previous literature, whereby chronic pain conditions often co-exist with psychological difficulties (Vlaeyen et al, 2007). Individuals

sometimes refuse psychological help, mostly due to the fear of pain being dismissed as something in their heads rather than located in their physical body (Keefe et al, 2005). Clearly, these controversies in discourse illustrate the individual's desire to dissociate oneself from the stigmatic labels pertinent in the surrounding environment. The talk used by participants does not reflect solely the expression of something within. It is also a reflection of assumptions prevalent within the Maltese culture which seems to be less accepting of psychological help for physical problems. In line with Ajzen's (1988) theory, social influences play a crucial role in attitude formation.

A clear comprehension of chronic pain sufferers' attitudes towards help-seeking behaviour requires a holistic understanding of their pain experience and the social context in which these experiences are embedded. The long-standing perception that accessing face-to-face psychological help entails some form of personal weakness seems to hold to this day. Maltese chronic pain sufferers' notions of weakness broadly encompass factors such as a lack of physical ability resulting from old age, a lack of determination, feelings of dependency, a lack of mental capacity and weakness of character. Findings from this study also reflect the presence of *Self-stigma of Seeking Help* (Vogel et al, 2007) or the lowering of self-esteem at the perceived inability to solve one's problems. These findings corroborate previous literature showing that a major barrier to seeking help was the belief that one should be strong and handle one's problems without resorting to expert help (Topkaya, 2015). Thus, the importance of self-reliance was particularly evident in some participants' replies. Nonetheless, unlike findings reported in previous literature, notions of weakness and fear of self-stigma was true for participants of both gender, not just males (Vogel et al, 2007) and across different age groups.

According to recent research commissioned by the Foundation of Social Welfare Services (2014), seeking help from parish priests as opposed to specialized state agencies is still a common practice in Malta. Coupled with a lack of understanding and information regarding psychological help, Malta's firmly rooted religious background continues to hold a strong influence on the Maltese. Although only one participant reported seeking pastoral help for a relationship problem, this experience was perceived as something '*psychological*'. Another participant asked for a priest's

blessing to cope with pain. Moreover, prayer seemed to have a therapeutic function for female participants, mostly in relation to providing comfort, a sense of fulfilment and to fostering acceptance. Thus, whilst seeking help from priests seems to be the norm, seeking psychological help is not. One way of overcoming this blurring of roles entails the promotion of psychological services, educating the public about the utility of these services and normalizing the notion of accessing help (Masuda et al, 2009; Topkaya, 2015).

To sum it all up, individuals holding positive attitudes towards psychological services are more inclined to avail themselves of the service, should the need arise. On a similar note, individuals who are already resorting to psychological coping strategies and are finding them beneficial are also more open to the service. On the other hand, those adopting passive coping strategies were less likely to try out alternative therapies, including psychological techniques mostly due to the fact that they felt quite helpless. Given the seeming reluctance to rely on pharmacological interventions, educating individuals on the benefits of psychological techniques and promoting active coping strategies may foster psychological help-seeking.

4.3 Implications for clinical practice

Further to a brief reference of suggestions discussed above, a number of important implications arising from this study for modifying existing interventions or incorporation of additional factors into current ones have been identified. These are discussed below.

The research interview served to increase participants' self-disclosure and readiness to talk about their current situation. Thus, the interview seemed to promote a positive attitude of psychological help. Possibly, a way of enhancing service uptake may entail conducting an initial psychological assessment with potential clients. This could serve diverse purposes. First, it can have a diagnostic purpose to assess problem severity, overall psychological functioning and a screening tool to assess client suitability (since not all chronic pain patients can benefit from psychological interventions) for face-to-

face therapies. Second, the interview could act as a cathartic experience and serve as an incentive to take up future therapy sessions.

Findings from this study confirm those identified in previous literature revealing that intentions do not necessarily and automatically predict behaviour. On the other hand, a high sense of self-efficacy has been found to reduce the behaviour-intention gap (Reyes Fernandex, Montenegro Montenegro, Knoll & Schwarzer, 2014). Chronic pain sufferers may benefit from interventions aimed to boost their self-efficacy skills prior to engaging in online interventions. These may entail the use of verbal persuasion to help overcome feelings of self-doubt, a focus on previously mastered tasks as a way of boosting future performance and accomplishments, and vicarious learning where the person can observe someone engage in the task with success. Motivational interviewing is another psychological technique that can boost self-efficacy skills. According to DiClemente and Velasquez (cited in Miller & Rollnick, 2002), individuals are sometimes stuck in the resigned *pre-contemplation stage*. This usually happens when the person feels overwhelmed by a problem, particularly when previous attempts of self-help have been unsuccessful. Thus, the overall dominating perception is one of helplessness. DiClemente and Velasquez hold that instilling hope, boosting confidence and an exploration of perceived barriers and ways of overcoming them via the use of motivational interviewing can bring about positive behaviour changes and reduce the behaviour-intention gap.

Another psychological intervention that can boost self-efficacy skills is solution brief-focused therapy (SBFT). It was developed in the 1980's by de Shazer and Berg (de Shazer et al, 1986). SBFT is a non-threatening collaborative psychotherapeutic approach that aims to help clients define problems in clear and practical terms and come up with effective solutions. A basic assumption underlying this approach is that the primary goals are identified by the client and that the individual has the necessary resources to make the required life changes. This can be done by identifying pre-session changes or progress made prior to seeking help with the intention of boosting the client's self-confidence and solution-focused talk. A recent systematic review by Gingerich and Peterson (2013) reveals that SBFT can effectively facilitate meaningful life changes and results in increased benefits across diverse mental health problems.

Incorporating skills from SBFT can be beneficial to chronic pain patients who are resorting to passive life-styles and who are struggling to make the required life changes to foster better adaptation.

Message framing has been identified as an important factor influencing the uptake of online interventions. In line with Bandura's Social Cognitive Theory (1986), there is an intricate and interactive relation between the person, behaviour and their environment. Whilst most of the existing interventions focus on specific pain conditions (e.g. Lorig et al, 2008), a consideration of the broader socio-cultural background of the target audience has often been sidelined in online therapies. One way of increasing service uptake and fostering a more accepting attitude might require modifying existing interventions by making them more culturally sensitive. This may require translating the content to the native language of the service user, a consideration of cultural factors related to pain behaviours, pain expression, tolerance and threshold which influence help-seeking behaviour, social support, the role of religious factors and acceptance of alternative pain treatments within a given culture.

Findings from this study reveal that healthcare professionals play a crucial role in the formation of positive attitudes and in the uptake of psychological services. A starting point for increasing the utilization of these interventions requires comprehensive psycho-educational efforts targeting not just the general population but also service providers as well as working in collaboration with other professionals. Fostering the utility of psychological help amongst the latter can be one way of encouraging patients to take up these services. The provision of high quality care and service access is also influenced by health care professionals' ability to clearly identify clients' needs and address any concerns clients may have in relation to psychological input. This is also true of online interventions. Addressing clients' perspectives contributes to improved satisfaction, sustained use of the services available, enhanced quality of life and better management of health conditions (Cugelman, Thelwall & Dawes, 2011).

Stigma remains a significant barrier. Addressing stigma remains a main challenge. A way of overcoming this barrier is to try to dispel prevalent negative perceptions that

may exist within a Maltese context. Currently, the two main psychological bodies in Malta are the Malta Psychological Association (MPA) and the Maia Psychology Centre. These entities are mainly responsible for the formulation and maintenance of professional guidelines and training and the rendering of psychological services. Nonetheless, efforts to disseminate the why, what, where, when and how of accessing of psychological services amongst the general public remains relatively unaddressed. A group of psychologists from the sister island of Malta are currently working to set up the *Gozo Society of Professional Psychologists*, with the aim of increasing awareness of the utility of psychological services amongst the local population. The anticipated date for launching the society is December 2015. It is hoped that this initiative could be the first step to raising awareness of the benefits of psychological services in diverse settings, not just within the mental health sector.

Online therapies offer an attractive solution to the stigma problem, given the fact that concerns round stigma are eliminated by web-based services. On the other hand, the need to help individuals cope and overcome negative effects of stigma when accessing traditional based treatments has already been identified in previous literature (Vogel et al, 2007). The use of cognitive behavioural strategies, normalization of feelings created by stigma and the establishment of support groups may be helpful in reducing internalized stigma (Schreiber & Hartrick, 2002). Fear of stigma may need to be addressed alongside face-to-face therapies or prior to referral to psychological interventions.

The present study brought to light the reality that a one-size-fits-all approach results not only in negative attitudes towards online service access but may be a minimalist approach to treatment, reducing potential adherence rates. Although there is no clear-cut solution to overcome this problem, a number of preventive measures to address this problem can be implemented. First, online interventions require a collaborative effort from behalf of software developers and health care professionals. This ensures that interventions are designed on evidence-based practices and by trusted entities and that the content is safe. Second, the establishment of a professional regulatory body certifying the quality of interventions can help set standards of high-quality care and ensure that individuals are accessing top quality

treatments. Third, specialized health-care professionals need to have a thorough understanding of what these interventions have to offer. This helps ensure that clients under their care are directed only to interventions targeting their specific needs. Fourth, it would be ideal if patients are assisted in accessing interventions targeting specific conditions rather than general pain management programs. Trials incorporating specific pain management interventions have already been tested, with some promising findings. These include the ones for chronic non-specific chest pain (Kisley, Campbell, Yelland & Paydar, 2015) and chronic low back pain (Carpenter, Stoner, Mundt & Stoelb, 2012), for instance. Fifth, a consideration of generational and demographic differences need to be taken into account when designing web-based programs, mostly due to salient needs of the audience and diversity in individuals' expectations (Kutz et al, 2013).

Symptoms of depression seem to be key components in modulating the decision as to whether to access online psychological services. Sometimes, working in collaboration with other health care professionals such as psychiatrists may be necessary. Possibly, brief therapist-led sessions incorporating motivational interviewing techniques prior to engaging in online programs may increase the uptake of these interventions. Apart from that, online programs incorporating graded task assignments and the breaking up of activities into small manageable sections may make the client feel less overwhelmed and may increase adherence. Possibly, the use of automatic and regular pop-ups reminding clients of their progress at different points of the intervention can act as an incentive to fostering adherence. Clearly, online programs need to take a holistic approach to treatment. Adopting a bio-psychosocial model ensures that both physical and psychological factors are addressed, thereby helping in the establishment of a comprehensive treatment plan.

The ability to comprehend the content of the intervention has been identified as a potential barrier to service uptake. 17 years has been identified as the typical reading age for using CBT (Williams et al, 2002). Thus persons who are illiterate may not be able to benefit from traditional web-based treatments. The use of illustrations, simplification of content or incorporation of audio-visual material may be needed to render the service more accessible and user-friendly.

Since individuals with an external locus of control are less inclined to adopt active coping strategies, assessing the locus of control via the use of standardized measures such as the Health Locus of Control Scale (Wallston, Wallston & DeVellis, 1978) of potential service users may be necessary to identify the most appropriate way forward. Possibly, these individuals may benefit from more directive and prescriptive approaches to engage in the desired behaviour.

The lack of psychological services within the local context has been identified as a major barrier to service access. Luckily, psychological services in Malta have improved a lot in recent years. The availability of trainee psychologists, psychology assistants, family therapists, counsellors and psychologists is slowly on the rise. For instance, psychological services are currently provided at the university, within the mental health sector, social welfare department, the education division, child guidance clinics, oncology services and at Mater Dei Hospital, albeit with limited availability. With the recruitment of new psychologists within the government sector in 2013 and plans for further recruitments in 2015, the remit of psychological services in Malta is expected to increase. Moreover, Maltese people are starting to avail themselves more of these kinds of services and to request psychological therapies, at least within the mental health sector. This means that the public is becoming more aware of the utility of these services.

The finding that a sense of belongingness serves to outweigh feelings of perceived burdensomeness and to decrease the risk of suicide has important implications for pain research. First, these results put added responsibility on clinicians who have a duty to make a holistic assessment of the client's presenting problem. Thus, apart from the physical investigation, clinicians need to be able to assess the psychological state of patients and refer accordingly. This is particularly important, given the fact that doctors are usually the first line of contact for most patients in pain. GP's may require additional training in order to be able to identify warning signs and symptoms of psychological distress. Fortunately, basic training in psychology for medical students is already in place at the University of Malta. Nonetheless this may not be enough to address specific health concerns. The possibility of additional training for doctors working in pain clinics merits consideration. This could be delivered by

psychologists specializing in pain management and risk assessment. Second, addressing the psychosocial impact of chronic pain is important in ensuring a holistic treatment. Cognitive therapy for suicidality can help shift negative thoughts and distortions and reduce feelings of burdensomeness (Stellrecht, Gordon, Van Orden, Witte, Wingate et al., 2006; Rudd, Joiner & Rajab, 2004). Moreover, incorporating constructs from dialectic behaviour therapy (Linehan, 1993) can foster adaptive coping and reduce self-harm in patients with suicidal ideation (Stellrecht et al, 2006). Third, since social support seems to act as a buffer to suicidality, the possibility of setting up therapist-led or self-help support groups (whether face-to-face or via online social networks) within the local hospital merits some careful thought. Recent results from the NSO (2011) reveal that the number of annual deaths following intentional self-harm in Malta in 2010 was 29. These figures do not include failed suicide attempts and costs related to hospital emergency services and treatments. The possibility of specialized training courses for psychologists working with pain patients is worth considering since this not only saves lives but may incur fewer costs to treating attempting suicides. Fifth, these findings reinforce the need to draft a national suicide prevention strategy as identified by Xuereb (2014) in order to address existing gaps in service provision and reinforce existing ones.

Frankl (1963) holds that the ability to find a life purpose is an inbuilt intrapersonal trait. Nonetheless, existential therapies can be one way forward. Existential therapy is firmly rooted in philosophical understandings developed by Friedrich Nietzsche and Soren Kierkegaard. It aims to help individuals come to terms with past, present and future crisis, to widen their perspectives of the world and to foster a valuable and meaningful existence (Dryden, 2007). Resolution of existential struggles is particularly beneficial in improving the overall quality of life of individuals suffering from chronic illnesses (Dezutter et al., 2015). A recent trial incorporating constructs from existential and cognitive behaviour therapy amongst chronic pain sufferers resulted in significant reductions in pain-related disability and pain severity (Gebler & Maercker, 2014). Investigating the possibility and efficacy of incorporating existential approaches to existing pain management therapies (whether online or face-to-face) could offer new insights to the understanding of chronic pain and its management.

The need to take into account the religious dimension in therapeutic interventions with chronic pain patients has already been identified elsewhere (Rippentrop, 2005). An awareness of religious individual coping mechanisms by health care professionals may shed light on helpful and unhelpful coping strategies and may need to be addressed in order to yield effective treatment outcomes. This is particularly true for face-to-face therapies. Health care professionals may need to liaise with religious affiliations in Malta to raise awareness of the distinct roles of each professional and to ensure a smoother referral processes. Rippentrop (2005) suggests taking a religious history of clients as part of the initial assessment, with the hope of gathering important information about factors influencing prognosis for recovery. She also suggests integrating spiritual dimensions in CBT by identifying negative thoughts clients may have in relation to their situation and replacing unhealthy beliefs with more balanced and rational cognitions. Incorporating mindfulness meditation practices from a spiritual perspective may be another way of overcoming potential resistance to the uptake of psychological services.

Health care professionals and chaplains who interact with individuals experiencing chronic pain may be trained to provide *autonomy support* practices to equip the sufferer with skills needed to build self-determination or the motivation to mobilize effort in order to live a more fulfilling life. *Autonomy support* is a term coined by Sheldon, Williams and Joiner (2003) and entails fostering competence, autonomy and relatedness in order to live a more fulfilling life.

4.4 Future research

Even though findings of this study may not necessarily be transferable to all chronic pain sufferers, they provide a research base that is sufficient enough to make a few recommendations for the holistic treatment of chronic pain. Given the lack of psychological services within a local context, the potential of evaluating an existing web-based intervention with Maltese participants is worth exploring.

Very few studies have attempted to investigate healthcare professionals' attitudes towards online psychological interventions. A recent systematic review by Waller and Gilbody (2009) revealed that physicians are quite sceptical when it comes to online psychotherapeutic interventions for the management of anxiety or depression and that overall, patients were more accepting of these services. Reasons behind these findings are unclear and perspectives of health care professionals have been inadequately addressed (Montero-Marin, Miguel Carrasco, Roca, Serrano-Blanco, Gili et al., 2013). In line with the Theory of Planned Behaviour, if significant others hold negative perceptions of online psychological treatments, the likelihood that patients will take up these alternative therapies is significantly reduced. This is a pity, considering evidence in favour of the effectiveness of these interventions. Since the provision of psychological help at local hospitals is still in its infancy, the attitudes Maltese doctors' hold towards psychological services and online treatments remains currently unexplored. One problem with local hospital services is that the demand for psychologists far exceeds the supply. The gap in the provision of holistic treatments for chronic pain is also evident in the lack of psychological input in local pain clinics which remain very medically oriented, failing to incorporate a bio-psychosocial approach to pain management. Future research aimed at exploring attitudes, beliefs and perceptions of medical personnel can facilitate the implementation of this psychological tool. It can also aim to identify the barriers or factors that would encourage health care professionals to refer clients to online therapies. Since the lack of a multi-disciplinary involvement and trained professionals in Malta remains a major setback, web-based alternatives could be one potential solution and may expanding the remit of psychological interventions.

This research did not explore health care professionals' perceptions of coping responses of individuals with chronic pain. An understanding of these perspectives would provide further information and guidance regarding how to most effectively influence positive coping responses within the health care system.

The effects of chronic pain are wide-ranging, encompassing the physical, psychological and social domains of the sufferer. More often than not, pain changes the dynamics of

family interactions. Thus, pain is not an individual phenomenon but has a rippling effect on family members. The latter may experience symptoms of depression, anger, irritability, anxiety, resentment and stress due to changing family roles and lifestyle adjustments (Kannerstein & Whitman, 2007). Whilst existing interventions (both face-to-face and online ones) are more individually-oriented, family interventions are often side-lined. This is not to mention to lack of resources available for family members when compared to self-help material aimed at chronic pain patients (Kannerstein et al, 2007). One way of enhancing pain management practices may entail the incorporation of systemic or multi-dimensional family therapy approaches. Taking these recommendations into consideration, future research could investigate the efficacy of incorporating sections specifically aimed at family members in online trials or web-sites, apart from those focusing solely on chronic pain sufferers. Raising awareness of the holistic effects of pain on the whole family and providing information on how to help patients in pain may yield long-term benefits. Moreover, given these promising findings of OPPI's, the efficacy of incorporating elements from positive psychology in existing pain management programs is worth investigating.

The current study was exploratory since grounded theory is a starting point for future research on pain coping. Based on findings outlined above, the emergent theory could be revised and expanded upon, with data from a longitudinal perspective following coping mechanisms over time. This could compare coping strategies and attitudes of younger and older participants in order to assist researchers to further develop emerging themes. Given the lack of research within this population, a deeper understanding of sociocultural influences on pain coping and whether the coping domains identified are most relevant to this particular age group merit further investigation. Future research could also shed light on how pain coping may be related to key outcomes for Maltese chronic pain individuals including psychological functioning, pain-related disability and quality of life.

Findings point to the need to incorporate not only a more comprehensive assessment of cultural and psycho-social variables relevant to pain coping but also the potential of triangulation methods of data collection. This can help explain more fully the richness

and complexity of human behaviour and experience. Finally, this research study does not address the perspective of younger generations experiencing chronic pain. Further theoretical sampling with individuals who are under 45 years of age may reveal differences in participants' attitudes towards psychological services, the use of ehealth and interpretation of pain experiences, something worth exploring.

4.5 Strengths and limitations

This study has a number of strengths. First, participants were balanced in terms of gender. This made comparability of participants' experiences and opinions possible. They were all of Maltese nationality and had lived in Malta all or most of their life, thus reflecting a good picture of prevalent attitudes and opinions of the Maltese. A qualitative approach has allowed for an in-depth exploration of pain coping strategies and attitudes towards psychological interventions, something which would not be possible via the use of quantitative methodologies. Results not only reinforce existing literature, but the use of grounded theory allowed the emergence of a new theory in a relatively unaddressed area with an unexplored population. A constructivist approach allows the acknowledgment of the researcher's subjectivity and meaning making to emerge.

Although this research does not aim to make general claims of the local population, the sample used renders generalization more possible, thereby shedding light on possibly shared attitudes and most common coping mechanisms. This is more so due to the fact that individual reality is socially constructed and a reflection of the social world which render it potentially generalizable (Willig, 2001). Finally, working in a pain clinic and within the mental health sector was an asset in becoming more aware of presenting issues and the current situation in Malta.

Despite strengths identified above, this study has a number of limitations that warrant acknowledgment. Firstly, none of the interviewees refused to participate, possibly implying that those contacted may have had less of a supportive family environment and were therefore more willing to share their experience. Pain duration of participants varied. It is therefore possible that the experience of participants who had

been suffering from pain for a number of years was different to those enduring a more recent onset. It is also possible that some of the former may have adjusted better simply because they cannot recall the time when they were not in pain and pain had become an ingrained part of their life, something which is almost taken for granted. Some pain conditions were still undiagnosed. This uncertainty could have had a detrimental effect on pain coping strategies and exacerbated distress levels of some participants. The original meanings of metaphors used might have been distorted or lost on translation. The majority of participants had a secondary level of education and were over 45 years of age. Conclusively, results were more representative of this particular segment of the Maltese society. Pain is more likely to be prevalent amongst older age groups. Thus, it is possible that younger Maltese participants would have different ways of coping and different attitudes towards computer delivered interventions. Two participants worked in health care and one had a background in social work, possibly biasing their attitudes and coping strategies. The research setting itself could have influenced participants' responses. Finally, although specific inclusion criteria were utilized, unresolved traumatic experiences endured by some participants could have influenced the pain experienced and conclusively, the coping strategies employed.

4.6 Conclusion

In conclusion, pain coping mechanisms amongst the Maltese revolve mostly round a number of self-taught/self-sought strategies, with a seeming reluctance to rely on pharmacological treatments. Findings from this study also reveal that the journey to coping is rarely straightforward and that although some participants have adjusted well to pain, others are still struggling to accept a painful reality.

Findings from this study also reveal that online interventions help eliminate a number of barriers to accessing psychological help. Nonetheless, the presence of a human element remains an indispensable asset to the formation of positive attitudes towards the service and to service uptake. Apart from that, accessing online help to cope with pain is not usually an option, mostly due to the fact that chronic pain sufferers are often unfamiliar with psychological services. Findings also seem to indicate that

people who perceive a link between psychological factors and pain are not necessarily more inclined to access psychological help, mostly due to the fact that help-seeking behaviour is influenced by a complex array of psychosocial factors which are difficult to quantify. Thus, the first step to increasing service uptake requires addressing these factors. This can only be accomplished via the incorporation of multi-disciplinary approaches involving not just health care professionals, but also significant others who influence the chronic pain sufferers' decision-making, including family members and the clergy.

References

- Abela, A. & Sammut Scerri, C. (2010). Multiple relationships in supervision practice. In C. Burck & G. Daniel (Ed.), *Processes insystemic supervision* (pp. 289 – 308). London: Karnac.
- Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help-seeking. *American Psychologist*, 58, 5–14.
- Ægisdóttir, S., & Gerstein, L. H. (2009). Beliefs about psychological services (BAPS): Development and psychometric properties. *Counselling and Psychology Quarterly*, 22, 197 - 219.
- Ajzen, I. (1988). *Attitudes, personality and behaviour*. Milton Keynes: Open University Press.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50, 179–211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs NJ: Prentice-Hall.
- American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist*, 47 (12), 1597-1611.
- Andersson, G., Lundstrom, P., & Strom, L.(2003). Internet-based treatment of headache: Does telephone contact add anything? *Headache*, 43, 353–61.
- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, 61, 461–480.

Azevedo, L. F., Costa-Pereira, A., Mendonca, L., Dias, C. C., & Castro-Lopes, J. (2013). Chronic pain and health services utilization: Is there overuse of diagnostic tests and inequalities in nonpharmacologic treatment methods utilization? *Medical Care*, 51(10), 859-896.

Azzopardi Muscat, N., Calleja, N., Balzan, M., Muscat, J., & Calleja, C. (2012). *Healthcare delivery in Malta. A publication outlining trends within the healthcare sector*.

Retrieved from

http://www.pwc.com/en_MT/mt/publications/healthcare/assets/healthcare_delivery_august_2012.pdf

Bakan, D. (1967). *On method: Toward a reconstruction of psychological investigation*. San Francisco: Jossey-Bass.

Bandura, A. (1977). Self-efficacy : Towards a unifying theory of behavioural change. *Psychosocial Review*, 84, 191- 215.

Bandura, A. (1986). *Social foundations of thought and action : A social cognitive theory*. Engelwood Cliffs, NJ: Prentice-Hall.

Barak, A., Klein, B., & Proudfoot, J. G. (2009). Defining internet-supported therapeutic interventions. *Annals of Behavioural Medicine*, 38(1), 4-17.

Bartley, E. J., & Fillingim, R. B. (2013). Sex differences in pain: a brief review of clinical and experimental findings. *British Journal of Anaesthesia*, 111 (1), 52-58.

Beck, A. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.

Bee, P.E., Bower, P., Lovell, K., Gilbody, S., Richards, D., Gask, L., & Roach, P. (2008). Psychotherapy mediated by remote communication technologies: A meta-analytic review. *Biomedical Central Psychiatry*, 8, 60, 2008

Bender, J. L, Radhakrishnan, A., Diorio, C., Englesakis, M, Jadad, A. R. (2011).Can pain be managed through the Internet? A systematic review of randomized controlled trials. *Pain*, 152, 1740–50.

Bennett-Levy, J., & Perry, H. (2009).The promise of online cognitive behavioural therapy training for rural and remote mental health professionals. *Australas Psychiatry*, 17, (1), 121-124.

Benyamini, Y., Meseritz-Zussman, A., Brill, S., Goor-Aryeh, I., & Defrin, R. (2014) Pain, pain identity, and self-rated health among adults with chronic pain before and after treatment. *Bulletin of the European Health Psychology Society*, 16, Supplement 2014.

Berman, R, L., Iris, M. A., Bode, R., & Drengenberg, C. (2009). The effectiveness of an online mind-body intervention for older adults with chronic pain. *Journal of Pain*, 10, 68–79.

Bernardes, S. F., Keogh, E., & Lima, M. L. (2008).Bridging the gap between pain and gender research: A selective literature review. *European Journal of Pain*, 12, 427–440.

Birbili, M. (2000).Translating from one language to another. *Social Research Update*, 3 (1), 41–56.

Bobby, L. M. (2012). *Shaping attitudes towards psychological services* (Doctoral dissertation).University of Northern Colorado, UMI Dissertations Publishing. Retrieved from <http://0-search.proquest.com.wam.city.ac.uk/docview/1044374820?pq-origsite=summon>

Bosworth, H. (2010). *Improving patient treatment adherence: A clinician's guide*.Englewood Cliffs, NJ:Prentice-Hall.

Brattberg, G. (2006). Internet-based rehabilitation for individuals with chronic pain and burnout: A randomized trial. *International Journal of Rehabilitation Research*, 29, 221–227.

Brattberg, G. (2008). Self-administered EFT (Emotional Freedom Techniques) in individuals with fibromyalgia: A randomized trial. *Integrative Medicine*, 7 (4), 30 – 35.

Braveman, P., Egerter, S., & Williams, D. (2011). The social determinants of health: Coming of age. *Annual Review of Public Health* 32, 381 – 398.

Brodsky, B. S., & Stanley, S. (2013). *The dialectical behaviour therapy primer: how DBT can inform clinical practice*. West Sussex: John Wiley & Sons.

Buhrman, M., Skoglund, J. H., Bergström, K., Gordh, T., Hursti, T., Bendelin, N., Furmark, T., & Andersson, G. (2013). Guided internet-delivered acceptance and commitment therapy for chronic pain patients: A randomized controlled trial. *Behaviour Research and Therapy*, 51, 307-315.

Carlson, M. (2014). *CBT for chronic pain and psychological well-being: A skills training manual integrating DBT, ACT, behavioural activation and motivational interviewing*. UK: John Wiley & Sons.

Carpenter, K. M., Stoner, S. A., Mundt, J. M., & Stoelb, B. (2012). An online self-help CBT intervention for chronic lower back pain. *Clinical Journal of Pain*, 28(1), 14-22.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, 30, 879–889.

Charmaz, K. (2000). Grounded theory: Objectivist and constructivist methods. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 509–535). Thousand Oaks, CA: Sage.

Charmaz, K. (2014). Constructing grounded theory. *A practical guide through qualitative analysis*. London: Sage publications.

Choi, I., Sharpe, L., Li, S., & Hunt, C. (2015). Acceptability of psychological treatment to Chinese and Caucasian-Australians: Internet treatment reduces barriers but face-to-face care is preferred. *Social Psychiatry Psychiatric Epidemiology*, 50, 77–87.

Chuick, C. D., Greenfeld, J. M., Greenberg, S. T., Shepard, S. J., Cochran, S. V., & Haley, J. T. (2009). A qualitative investigation of depression in men. *Psychology of Men and Masculinity*, 10 (4), 302-313.

Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & G, Thornicroft. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, 45(1), 11-27.

Clough, B. A., & Casey, L. M. (2011). Technological adjuncts to increase adherence to therapy: A review. *Clinical Psychology Review*, 31(5), 697–710.

Code of Ethics of the British Psychological Society.(2009). *Code of Conduct, Ethical Principles and Guidelines*. Leicester: BPS.

Coghill, R. C., Gilron, I., & Iadarola, M. J. (2001). Hemispheric lateralization of somatosensory processing. *Journal of Neurophysiology*, 85(6), 2602–12.

Cornally, N., & McCarthy, G. (2011). Chronic pain: The help-seeking behaviour, attitudes, and beliefs of older adults living in the community. *Pain Management Nursing*, 12(4), 206-217.

Coughlin, A. M., Badura, A. S., Fleischer, T. D., & Guck, T. P. (2000). Multidisciplinary treatment of chronic pain patients: Its efficacy in changing patient locus of control. *Archives of Physical Medicine and Rehabilitation*, 81, 739-740.

Cramer, D. (2000) Social desirability, adequacy of social support and mental health. *Journal of Community & Applied Social Psychology*, 10(6), 465-474.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Crossley, M. (2000). *Rethinking health psychology*. UK: Open University Press.

Crutzen, R., Cry, D., & de Vries, N. (2012). The role of user control in adherence to and knowledge gained from a website: Randomized comparison between a tunneled version and a freedom-of-choice version. *Journal of Medical Internet Research*, 14(2), e45.

Cugelman, B., Thelwall, M., & Dawes, P. (2011). Online interventions for social marketing health behaviour change campaigns: A meta-analysis of psychological architectures and adherence factors. *Journal of Medical Internet Research*, 13(1), e17.

Cuijpers, P., van Straten, A., & Andersson, G. (2009). Internet-administered cognitive behaviour therapy for health problems: A systematic review. *Journal of Behavioural Medicine*, 31, 169–77.

D'Arcy, Y. (2009). The effect of culture on pain. *Nursing Made Incredibly Easy*, 7(3), 5–7.

Davis, F.D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.

de Shazer, S., Berg, I. K., Lipchik, E., Nunnally, E., Molnar, A., Gingerich, W., & Weiner-Davis, M. (1986). Brief therapy: Focused solution-development. *Family Process*, 25, 207-222.

Deardorff, W. W. (2012). *Internet based treatment: A comprehensive review: Ethics and risk management*. Retrieved from <http://www.behaviouralhealthce.com/index.php/component/courses/?task=view&cid=69>

Defrin, R., Shramm, L., & Eli, I. (2009). Gender role expectations of pain is associated with pain tolerance limit but not with pain threshold. *Pain*, 145, 230–6.

Deri, C. (2005). Social networks and health service utilization, *Journal of Health Economics*, 24, 1076–1107.

Devineni, T., & Blanchard, E. B. (2005). A randomized controlled trial of an internet-based treatment for chronic headache. *Behaviour Research and Therapy*, 43, 277–92.

Dezutter, J., Luyckx, K., & Wachholtz, A. (2015). Meaning in life in chronic pain patients over time: associations with pain experience and psychological well-being. *Journal of Behavioural Medicine*, 38, 384–396.

Dionne, R. A., Bartoshuk, L., Mogil, J. S., & Witter, J. (2005). Individual responder analyses for pain: Does one pain scale fit all? *Trends in Pharmacological Science*, 26, 125–130.

Doherty, G., Coyle, D., & Matthews, M. (2010). Design and evaluation guidelines for mental health technologies. *Interacting with Computers* 22 (4), 243–252.

Dryden, W. (2007). *Dryden's handbook of individual therapy*. London: Sage Publications.

Eakin, E. G., & Strycker, L. A. (2000). Awareness and barriers to use of cancer support and information resources by HMO patients with breast, or colon cancer: Patient and provider perspectives. *Psycho-oncology*, 10, 103–113.

Eccleston, C. (2001). Role of psychology in pain management. *British Journal of Anaesthesia*, 87 (1), 144–152.

Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, 196, 129–135.

Engel, G. L. (1980). The clinical application of the bio-psychosocial model. *American Journal of Psychiatry*, 137, 535–544.

Ervin, S., & Bower, R. T. (1952). Translation problems in international surveys. *Public Opinion Quarterly*, 16, 595-604.

Evans, D. R., & Kazarian, S. S. (1998). *Cultural clinical psychology*. USA:Oxford University Press.

Evans-Lacko, S., Brohan, E., Mojtabai, R., & Thornicroft, G. (2012). Association between public views of mental illness and self-stigma among individuals with mental illness in 14 European countries. *Psychological Medicine*, 42, 1741–1752.

Everitt, H. A., Moss-Morris, R. E., Sibelli, A., Tapp, L., Coleman, N. S., Yardley, L., Smoth, P. W., & Little, P. (2010). Management of irritable bowel syndrome in primary care: Feasibility randomised controlled trial of mebeverine, methylcellulose, placebo and a patient self-management cognitive behavioural therapy website. *Gastro-enterology*, 10(136), 1-9.

Eysenbach, G. (2001). What is e-health? *Journal of Medical Internet Research*, 3(2) e20.

Eysenbach, G. (2005). The law of attrition. *Journal of Medical Internet Research*, 7, e11.

Eysenbach, G., Powell, J., Englesakis, M., Rizo, C., & Stern, A. (2004). Health-related virtual communities and electronic support groups: Systematic review of the effects of online peer to peer interactions. *British Medical Journal*, 15(328), 1-6.

Ferreira, V. M., & Sherman, A. M. (2007). The relationship of optimism, pain and social support to well-being in older adults with osteoarthritis. *Ageing and Mental Health*, 11(1), 89–98.

Fine, P. G. (2011). Long-term consequences of chronic pain: mounting evidence for pain as a neurological disease and parallels with other chronic disease states. *Pain Medicine*, 12(7), 996-1004.

Fischer, E. H., & Turner, J. L. (1970). Orientations to seeking professional help: development and research utility of an attitudes scale. *Journal of Consulting and Clinical Psychology*, 35, 79–90.

Fishbein, M. (1967). *Readings in attitude theory and measurement*. London: Wiley.

Fordyce, W. E. (1976). *Behavioural methods for chronic pain and illness*. St. Louis, MO: C. V. Mosby.

Foundation of Social Welfare Services. (2014). *Biennial report 2012-2013*. Malta: Foundation of Social Welfare Services Malta.

Fox, S. (2007). *E-patients with a chronic disability or a disease*. Pew internet & American life project: *E-patients with disability of chronic disease*. Retrieved from <http://www.pewinternet.org/Reports/2007/Epatients-With-a-Disability-or-Chronic-Disease.aspx>

Frankl, V. (1963). *Man's search for meaning: An introduction to logotherapy*. New York: Washington Square Press.

Gabbard, G. O., & Horowitz, M. J. (2009). Insight, transference interpretation, and therapeutic change in the dynamic psychotherapy of borderline personality disorder. *American Journal of Psychiatry*, 166 (5), 517-521.

Gainsbury, S., & Bkaszczynski, A. (2011). A systematic review of internet-based therapy for the treatment of addictions. *Clinical Psychology Review*, 31, 490–8.

Gebler, F. A., & Maercker, A. (2014). Effects of including an existential perspective in a cognitive-behavioural group program for chronic pain: A clinical trial with 6 months follow-up. *The Humanistic Psychologist*, 42(2), 155–171.

Geraghty, A. W., Wood, A. M., & Hyland, M. E. (2010). Dissociating the facets of hope: Agency and pathways predict dropout from unguided self-help therapy in opposite directions. *Journal of Research in Personality*, 44, 155–158.

Gilron, I., Jensen, T. S., & Dickenson, A. H. (2013). Combination pharmacotherapy for management of chronic pain: from bench to bedside. *The Lancet Neurology*, 12(11), 1084-1095.

Gingerich, Wallace J & Peterson, L. T. (2013). Effectiveness of solution-focused brief therapy: A systematic qualitative review of controlled outcome studies. *Research on Social Work Practice*, 23(3), 266.

Glaser, B., (1978). *Theoretical sensitivity*. Mill Valley, CA: Sociology Press.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine.

Goldscheider, A. (1894). *Über den schmerz in physiologischer und klinischer hinsicht*. Berlin: Hirschwald.

Gouder, A. (2010). *Religious affiliation in Malta and Gozo*. Floriana Malta: Archbishop Curia.

Grace, V. M. (2000). Pitfalls of the medical paradigm in chronic pelvic pain. *Baillieres Best Practices and Research in Clinical Obstetric Gynaecology*, 14(3), 525-539.

Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity, and “ethically important moments” in research. *Qualitative Inquiry*, 10 (2), 261-280.

Gupta, R. K., Bruehl, S., Burns, J. W., Buvanendran, A., Chont, M., Schuster, E., & France, C. R. (2014). Relationship between endogenous opioid function and opioid analgesic side effects. *Regional Anaesthesia and Pain Medicine*, 39(3), 219-224.

Griffin, C. (2004). The advantages and limitation of qualitative research in psychology and education. *Scientific Annals of the Psychological Society of Northern Greece*, 2, 3-15.

Griffiths, K. M., Caelear, A.L., Banfield, M. (2009). Systematic review on internet support groups (ISGs) and depression: Do ISGs reduce depressive symptoms? *Journal of Medical Internet Research*, 11(3), e40.

Hadjistavropoulos, T., & Craig, K. D. (2004). *Pain – Psychological perspectives*. New Jersey, USA: Lawrence Erlbaum Associates.

Hamilton, E. S. (2010). *A grounded theory of coping among women with chronic pelvic pain*. Unpublished doctoral thesis, Saybrook University, Parkway, USA.

Harding, S. (1991). *Whose science? Whose knowledge? Thinking from women's lives*. Milton Keynes: Open University Press.

Harris, R. (2006). Embracing your demons: An overview of acceptance and commitment therapy. *Psychotherapy in Australia*, 12(4), 1–7.

Harris, R. (2008). *The happiness trap. How to stop struggling and start living*. Australia: Exisle Publishing.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behaviour change*. New York: Guildford.

Hechler, T., Chalkiadis, G. A., Hasan, C, Kosfelder, J., Meyerhoff, U., Vocks, S., & Zernikow, B. (2009). Sex differences in pain intensity in adolescents suffering from cancer: Differences in pain memories? *The Journal of Pain*, 10, 586-593.

Heron, K. E. & Smyth, J.M. (2010). Ecological momentary interventions. *British Journal of Health Psychology*, 15, 1–39.

Hewstone, M., Manstead, A., & Stroebe, W. (1997). *The blackwell reader in social psychology*. Oxford: Blackwell.

Hiatt, J. F. (1986). Spirituality, medicine and healing. *Southern Medical Journal*, 79(6), 736-743.

Higgins, E. T. (2000). Making a good decision. Value from fit. *American Psychologist*, 5, 1217–1230.

Hoffman, B. M., Papas, R. K., Chatkoff, D. K., & Kerns, R. D. (2007). Meta-analysis of psychological interventions for chronic low back pain. *Health Psychology*, 26(1), 1–9.

Hollon, S. D., Stewart, M. O., & Strunk, D. (2006). Enduring effects for cognitive behaviour therapy in the treatment of depression and anxiety. *Annual Review of Psychology*, 57, 285-315.

Hooley, J. M., Franklin, J. C., & Nock, M. K. (2014). Chronic pain and suicidality: Understanding the association. *Current Pain and Headaches Report*, 18 (8), 435.

Houle, J., Mishara, B.L., & Chagnon, F. (2008). A test of a mediation model of the impact of traditional male gender role on suicidal behaviour in men. *Journal of Affective Disorders*, 107, 37- 43.

Houser, G. E., & Zamponi, G. W. (2011) Perceiving pain: Health, culture and ritual. *Journal of Anthropology*, 7 (2), 191–196.

Hoy, S. (2012). Beyond men behaving badly: A meta-ethnography of men's perspectives on psychological distress and help seeking. *International Journal of Men's Health*, 11(3), 202–226.

Hsu, M. C., Schubiner, H., Lumley, M. A., Stracks, J. S., Clauw, D. J., & Williams, D. A. (2010). Sustained pain reduction through affective self-awareness in fibromyalgia: A randomized controlled trial. *Journal of General Internal Medicine*, 25(10), 1064–1070.

Institute for Clinical Systems Improvement (ICSI). (2008). Assessment and management of chronic pain. Retrieved from http://www.guidelines.gov/summary/summary.aspx?doc_id=12998&nbr=006693&string=chronic+AND+pain+AND+management

Institute of Medicine of the National Academies. (IOM, 2011). *Relieving pain in America: A blueprint for transforming prevention, care, education and research*. Washington, DC: The National Academies Press.

International Association for the Study of Pain. (2003). *Pain: Clinical Updates*. Retrieved from <http://www.iasp-pain.org/AM/AMTemplate.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&SECTION=Home&CONTENTID=7594>

International Association for the Study of Pain (2009). Pain treatment Services. Retrieved from <http://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1381>

Jackson, T., Wang, Y., Wang, Y., & Fan, H. (2014). Self-efficacy and chronic pain outcomes: A meta-analytic review. *The Journal of Pain*, 15 (8), 800-814.

Jacobs, M. S. (2013). Psychological factors influencing chronic pain and the impact of litigation. *Current Physical Medicine and Rehabilitation Reports*, 1 (2), 135-141.

Jensen, M., Karoly, P., & Harris, P. (1991). Assessing the affective component of chronic pain: Development of the Pain Discomfort Scale. *Journal of Psychosomatic Research*, 35, 149-154.

Jeon, Y. H. (2004). The application of grounded theory and symbolic interactionism. *Scandinavian Journal of Caring Sciences*, 18(3), 249-256.

Jerant, A. F., von Friederichs-Fitzwater, M. M., & Moore, M. (2005). Patients' perceived barriers to active self-management of chronic conditions. *Patient Education Counseling*, 57, 300-307.

Johns, R. (2010). *Likert items and scales. Survey questions bank methods factsheet 1, 1-11*. Retrieved from <http://survey.net.ac.uk/sqb/datacollection/likertfactsheet.pdf>

Joiner, T. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

Joud, A., Petersson, I. F., Jordan, K. P., Lofvendahl, S., Grahn, B., & Englund, M. (2014). Socioeconomic status and the risk for being diagnosed with spondyloarthritis and chronic pain: a nested case–control study. *Rheumatology International*, 34(9), 1291-1298.

Kabat-Zinn, J. (1982). An outpatient program in behavioural medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33-47.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Delacorte.

Kannerstein, D., & Whitman, S. M. (2007). Surviving a loved one's chronic pain. A guide for friends and family of pain patients. *Practical Pain Management*, 49–52.

Kazarian, S. S., & Evans, D.R. (1998). *Cultural clinical psychology - Theory, research & practice*. New York: Oxford University Press.

Keefe, A., Abernethy, A. P., Campbell, L. C. (2005). Psychological approaches to understanding and treating disease-related pain. *Annual Review of Psychology*, 56, 601–630.

Keogh, E., & Denford, S. (2009). Sex differences in perception of pain coping strategy usage. *European Journal of Pain*, 13(6), 629-634.

Kerns, R. D., Sellinger, J., & Goodin, B. R. (2011). Psychological treatment of chronic pain. *Annual Review of Clinical Psychology*, 7, 411–434.

Khan, M., Akhter, S., Soomro, R. R., & Ali, S. S. (2014). The effectiveness of cognitive behavioural therapy (CBT) with general exercises versus general exercises alone in the management of chronic low back pain. *Pakistan Journal of Pharmaceutical Sciences*, 27(4), 1113-1116.

Kisley, S. R., Campbell, L. A., Yelland, M. J., & Paydar, A. (2015). Psychological interventions for symptomatic management of non-specific chest pain in patients with normal coronary anatomy. *The Cochrane Library*, Issue 6.

Knaster, P., Karlsson, H., Estlander, A. M., & Kalso, E. (2012). Psychiatric disorders as assessed with SCID in chronic pain patients: The anxiety disorders precede the onset of pain. *General Hospital Psychiatry*, 34(1), 46–52.

Krech, D., Crutchfield, R. S., & Ballachey, E. L. (1962). *Individual in society: A textbook of social psychology*. New York: McGraw-Hill.

Kristjánsdóttir, Ó. B., Fors, E. A., Eide, E., Finset, A., Lauritzen Stensrud, T., van Dulmen, S., Hørven Wigers, S., & Eide, H. (2013). A smartphone-based intervention with diaries and therapist-feedback to reduce catastrophizing and increase functioning in women with chronic widespread pain: Randomized controlled trial. *Journal of Medical Internet Research*, 15(1), e5.

Kupla, M., Kosowicz, M., Stypula-Ciuba, B. J., & Kazalska, D. (2014). Anxiety and depression, cognitive coping strategies and health locus of control in patients with digestive system cancer. *Przegląd Gastroenterologiczny*, 9(6), 329–335.

Kutz, D., Kalpana, S., Connelly, K., & Eysenbach, G. (2013). Making sense of mobile- and web-based wellness information technology: Cross-generational study. *Journal of Medical Internet Research*, 15(5), e14388871.

Kyung Nam, S., Jung Chu, H., Kyoung Lee, M., Hee Lee, J., Kim, N., & Min Lee, S. (2010). A meta-analysis of gender differences in attitudes toward seeking professional psychological help. *Journal of American College Health*, 59(2), 110–116.

Lam, A. G., & Zane, N.W. S. (2004). Ethnic differences in coping with interpersonal stressors. *Journal of Cross-Cultural Psychology*, 35(4), 446–459.

Langdridge, D., & Taylor, S. (2007). *Critical readings in social psychology*. Milton Keynes: Open University Press.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.

Leresche, L.(2011). Defining gender disparities in pain management.*Clinical Orthopaedics and Related Research*, 469, 871–877.

Levant, R. F., Rankin, T. J., Williams, C., Hasan, N. T., Smalley, K. B. (2010) Evaluation of the factor structure and construct validity of the Male Role Norms Inventory-Revised (MRNI-R). *Psychology of Men and Masculinity*, 11, 25-37.

Levant, R. F., & Richmond, K. (2007). A review of research on masculinity ideologies using the Male Role Norms Inventory. *Journal of Men's Studies*, 15, 130–146.

Li, W., Dorystyn, D. S., & Denson, L. A. (2014).Psychosocial correlates of college students' help-seeking intention: A meta-analysis. *Professional Psychology: Research and Practice*, 45(3), 136-170.

Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. New York: The Guilford Press.

Linton, S. J. (1982). A critical review of behavioural treatments for chronic benign pain other than headache. *British Journal of Clinical Psychology*, 21(4), 321–327.

Lorig, K. R., Laurent, D. D., Deyo, R. A., Marnell, M. E., Minor, M.A, & Ritter, P. L. (2002). Can a back pain e-mail discussion group improve health status and lower health care costs? A randomized study. *Archives of Internal Medicine*, 162(7), 792–796.

Lorig, K. R., Ritter, P. L., Laurent, D.D., & Plant, K. (2008). The internet-based arthritis self-management program: A one-year randomized trial for patients with arthritis or fibromyalgia. *Arthritis Care and Research*, 59(7), 1009-1017.

Lousberg, R., Vuurman, E., Lamers, T., Van Breukelen, G., Jongen, E, et al. (2005). Pain report and pain-related evoked potentials operantly conditioned. *Clinical Journal of Pain*, 21, 262-271.

Lumley, M. A., Cohen, J. L., Borszcz, G. S., Cano, A., Radcliffe, A. M., Porter, L. S., Schubiner, H., & Keefe, F. J. (2011). Pain and emotion: A bio-psychosocial review of recent research. *Journal of Clinical Psychology*, 67(9), 942–968.

Macea, D. D., Gajos, K., Armynd, Y., Calil, D., & Fregni, F. (2010). The efficacy of web-based cognitive behavioural interventions for chronic pain: A systematic review and meta-analysis. *Journal of Pain*, 11, 917-929.

Maheu, M.(2011). Exposing the risk, yet moving forward: A behavioural e-health model. *Journal of Computer Mediated Information*, 6(4).

Malta Communications Authority (2013). *Consumer perception survey on internet services 2013*. Retrieved from <http://www.mca.org.mt/sites/default/files/attachments/surveys/2014/consumer-perception-survey-2013-internet.pdf>

Marks, D. (2002). *The health psychology reader*. London: Sage Publications.

Martin, V. T. (2009). Ovarian hormones and pain response: A review of clinical and basic science studies. *Gender Medicine*, 6, 168–192.

Masuda, A., Anderson, P. L., Twohig, M. P., Feinstein, A. B., Chou, Y., Wendell, J. W., & Stormo, A. R. (2009). Help-seeking experiences and attitudes among African-

American, Asian American, and European American college students. *International Journal of Advancement Counselling*, 31, 168-180.

Mechanic, D. (1962). The concept of illness behaviour. *Journal of Chronic Disease*, 15, 189–194.

Mechanic, D. (1975). Socio-cultural and social psychological factors affecting personal responses of psychological disorder. *Journal of Health and Social Behaviour*, 16, 393–405.

Meleis, A. I. (1996). Culturally competent scholarship: substance and rigor. *Advances in Nursing Science*, 19, 1–16.

Melzack, R., & Wall, P.D. (1965). Pain mechanisms: A new theory. *Science*, 150, 971–979.

Merskey, H., & Bogduk, N. (2nd ed.). (1994). *Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms*. Seattle: IASP Press.

McCracken, L. M. (2005). *Contextual cognitive-behavioural therapy for chronic pain. Progress in pain research and management*. Seattle: IASP Press.

McCracken, L. M., Sato, A., & Taylor, G. J. (2013). A trial of a brief group-based form of acceptance and commitment therapy (ACT) for chronic pain in general practice: Pilot outcome and process results. *The Journal of Pain*, 14(11), 1398-1406.

McCracken, L., Zayfert, C., & Gross, R. (1992). The pain anxiety symptom scale: Development and validation of a scale to measure fear of pain. *Pain*, 50, 67-73.

McGuire, W. J. (1969). The nature of attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (pp. 136–314). Reading, MA: Addison-Wesley.

McKee, D. D., & Chappel, J. N. (1992). Spirituality and medical practice. *Journal of Family Practice*, 35(2), 205-208.

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people to change addictive behaviour*. New York: Guilford.

Mitchell, J., Vella-Brodrick, D., & Klein, B. (2010). Positive psychology and the internet: A mental health opportunity. *Electronic Journal of Applied Psychology*, 6, 30–41.

Mohr, D. C. (2009). Tele-mental health: Reflections on how to move the field forward. *Clinical Psychology: Science and Practice*, 16, 343-347.

Mohr, D. C., Siddique, J., Ho, J., Duffecy, J., Jin, L. & Fokuo, K. (2010). Interest in behavioural and psychological treatments delivered face-to-face, by telephone and by internet. *Annals of Behavioural Medicine*, 40, 89-98.

Monteagudo, J. L., & Moreno, O. (2007). Towards the establishment of a European research area. *Patient Empowerment*, 1–84.

Montero-Marín, J., Miguel Carrasco, J., Roca, M., Serrano-Blanco, A., Gili, M., Mayoral, F., Luciano, J. V., Lopez-del-Hoyo, Y., Olivan, B., Collazo, F., Araya, R., Baños, R., Botella, C., & García-Campayo, J. (2013). Expectations, experiences and attitudes of patients and primary care health professionals regarding online psychotherapeutic interventions for depression: Protocol for a qualitative study. *BMC Psychiatry*, 13:64.

Mora, L., Nevid, J., & Chaplin, W. (2008). Psychologist treatment recommendations for internet-based therapeutic interventions. *Computers in Human Behaviour*, 24, 3052–3062.

Moreira-Almeida, A., & Koenig, H. G. (2008). Religiousness and spirituality in fibromyalgia and chronic pain patients. *Current Pain and Headache Reports*, 12, 327–332.

Morley, S. (2008). The psychology of pain. *British Journal of Anaesthesia* 101(1), 25–31.

Mourão, A. F., Blyth, F. M., & Branco, J. C. (2010). Generalised musculoskeletal pain syndromes. *Best Practice & Research in Clinical Rheumatology*, 24, 829–840.

Murphy, S. L., Kratz, A. L., Williams, D. A., & Geisser, M. E. (2012). The association between symptoms, pain coping strategies and physical activity among people with symptomatic knee and hip osteoarthritis. *Frontiers in Psychology*, 3(326), 1-12.

Murray, E. (2012). Web-based interventions for behaviour change and self-management: Potential, pitfalls, and progress. *Journal of Medical Internet Research*, 14, 4.

Nash-Mc Feron, D. E. (2006). *Mindfulness in the treatment of chronic headache pain*. (PhD Dissertation). Seattle Pacific University.

Nassir Ghaemi, N. (2011). Existenz: The biopsychosocial model in psychiatry: A critique. *An International Journal in Philosophy, Religion, Politics and the Arts*, 6(1), 1-8.

National Health Services Education for Scotland (2014) *Scottish Service Model for Chronic Pain*. Retrieved from <http://www.knowledge.scot.nhs.uk/pain/scottish-service-model>

National Statistics Office Malta. (2011). *Demographic review*. Valletta: National Statistics Office.

National Statistics Office Malta. (2012). *Gozo in Figures 2007 – 2011*. Retrieved from http://www.nso.gov.mt/statdoc/document_file.aspx?id=3372

National Statistics Office Malta. (2013). *ICT usage by individuals and in households: 2012*. Retrieved from http://www.nso.gov.mt/statdoc/document_file.aspx?id=3543

Nelson, J. A., Onwuegbuzie, A.J., Wines, L. A., & Frels, R. K. (2013).The therapeutic interview process in qualitative research studies.*The Qualitative Report, 18*, 79, 1-17.

Newman, M. G., Szkodny, L.E., Llera, S.J., Przeworski, A. (2010). A review of technology assisted self-help and minimal contact therapies for anxiety and depression: Is human contact necessary for therapeutic efficacy? *Clinical Psychology Review, 31*, 89–103.

Newton-John, T. R. O. (2002). Solicitousness and chronic pain: A critical review. *Pain Reviews, 9*, 7–27.

Nicholas, M. K., Linton, S. J., Watson, P. J., & Main, C. J. (2011). Early identification and management of psychological risk factors (“yellow flags”) in patients with low back pain: A reappraisal. *Physical Therapy, 91*, 737–753.

Norris, R. S. (2009). The paradox of healing pain. *Religion, 39*, 22–33.

North American Nursing Diagnosis Association International (2005). *NANDA nursing diagnoses: Definitions & classification, 2005-2006*. Philadelphia: Author.

Ochieng, P. A. (2009). An analysis of the strengths and limitations of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century, 12*, 13-18.

Oh, H. J., Lauckner, C., Boehmer, J., Fewins-Bliss, R., & Li, K. (2013). Facebooking for health: An examination into the solicitation and effects of health-related social support on social networking sites. *Computers in Human Behaviour*, 29(5), 2072-2080.

Oh, H., Rizo, C., Enkin, M., & Jadad, A. (2005). What is eHealth? A systematic review of published definitions. *Journal of Medical Internet Research*, 7(1), e1.

Oktaý, J. S. (2012). Grounded theory. UK: Oxford University Press.

O'Leary, Z. (2007). *The social science jargon buster*. UK: Sage Publications.

Ondeck, D. M. (2003). Impact of culture on pain. *Home Health Care Management Practice*, 15(3), 255-257.

Ong, A. D., Zautra, A. J., & Carrington Reid, M. (2010). Psychological resilience predicts decreases in pain catastrophizing through positive emotions. *Psychology and Aging*, 25(3), 516-523.

Pagliari, C. (2007). Design and evaluation in eHealth: Challenges and implications for an interdisciplinary field. *Journal of Medical Internet Research*, 9(2), e15.

Parks, A. C. (2014). A case for the advancement of the design and study of online positive psychological interventions. *The Journal of Positive Psychology*, 9(6) 502–508.

Parks, A. C., Della Porta, M. D., Pierce, R. S., Zilca, R., & Lyubomirsky, S. (2012). Pursuing happiness in everyday life: A naturalistic investigation of online happiness seekers. *Emotion*, 12, 1222–1234.

Parks, A. C & Schueller, S. M. (2014). *The wiley blackwell handbook of psychological interventions*. USA: John Wiley and Sons.

Pederson, E. L., & Vogel, D. L. (2007). Men's gender role conflict and their willingness to seek counseling: A mediation model. *Journal of Counseling Psychology, 54*, 373–384.

Perle, J. G., Langsam, L. C., Randel, A., Lutchman, S., Levine, A. B., Odland, A. P., Nierenberg, B., & Craig, D. (2013). Attitudes toward psychological telehealth: Current and future clinical psychologists' opinions of internet-based interventions. *Journal of Clinical Psychology, 69*(1), 100–113.

Praissman, S. (2008). Mindfulness-based stress reduction: A literature review and clinician's guide. *Journal of the American Academy of Nurse Practitioners, 20*(4), 212–216.

Proudfoot, J., Goldberg, D., Mann, A., Everitt, B., Marks, I., & Gray, J. A. (2003). Computerized, interactive, multimedia cognitive-behavioural program for anxiety and depression in general practice. *Psychological Medicine, 33*(2), 217–227.

Przeworski, A., & Newman, M. G. (2006). Efficacy and utility of computer-assisted cognitive behavioural therapy for anxiety disorders. *Clinical Psychologist, 10* (2), 43–53.

Reid, K. J., Harker, J., Bala, M. M., Truysers, C., Kellen, E., Bekkering, G. E., & Kleijnen, J. (2011). Epidemiology of chronic non-cancer pain in Europe: Narrative review of prevalence, pain treatments and pain impact. *Current Medical Research and Opinion, 27*, 449–462.

Rennie, D. L., Phillips, J. R., & Quartaro, G. K. (1988). Grounded theory: A promising approach to conceptualizing in psychology? *Canadian Psychology, 29*(2), 139–150.

Reyes Fernandex, B., Montenegro Montenegro, E., Knoll, N., & Schwarzer, R. (2014). Self-efficacy, action control, and social support explain physical activity changes among Costa Rican older adults. *Journal of Physical Activity and Health, 11*(8), 1573–1578.

Rickwood, D. J., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health*, 4(3).

Rini, C., Williams, D. A., Broderick, J. E., & Keefe, F. J. (2012). Meeting them where they are: Using the internet to deliver behavioural medicine interventions for pain. *Translational Behavioural Medicine*, 32(1), 82–92.

Rippentrop, A. E. (2005). A review of the role of religion and spirituality in chronic pain populations. *Rehabilitation Psychology*, 50(3), 278–284.

Rossetto, K. R. (2014). Qualitative research interviews: Assessing the therapeutic value and challenges. *Journal of Social and Personal Relationships*, 31(4), 482–489.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1), 609.

Royal College of Anaesthetists. (2015). *Core standards for pain management services in the UK*. Retrieved from <http://www.rcoa.ac.uk/system/files/CSPMS-UK-2015-v2.pdf>

Rudd, M. D., Joiner, T., & Rajab, M.H. (2004). *Treating suicidal behaviour: An effective, time-limited approach*. New York: Guilford Press.

Ruehlman, L. S., Karolya, P., & Enders, C. (2012). A randomized controlled evaluation of an online chronic pain self-management program, *Pain*, 153, 319-330.

Samele, C., Frew, S., & Urquia, N. (2013). *Mental health systems in the European Union member states, status of mental health in populations and benefits to be expected from investments into mental health*. The institute of mental health. Retrieved from http://ec.europa.eu/health/mental_health/docs/europopp_full_en.pdf

Sammut, G. (2013). Measuring attitudes and points of view: Social judgment of proposals for the revision of student stipends in higher education. *Psychology & Society, 5*(1), 54-66.

Samoocha, D., Bruinvels, D. J., Elbers, N. A., Anema, J. R., & Van der Beek, A. J. (2010). Effectiveness of web-based interventions on patient empowerment: A systematic review and meta-analysis. *Journal of Medical Internet Research, 12*(2), e23.

Sarafino, E. & Smith, T. W. (2014). *Health psychology, bio-psychosocial interactions*. USA: John Wiley and Sons.

Schreiber, R., & Hartrick, G. A. (2002). Keeping it together: How women use the biomedical explanatory model to manage the stigma of depression. *Health Care for Women International, 62*(6), S392–S398.

Schueller, S.M., & Parks, A. C. (2012). Disseminating self-help: Positive psychology exercises in an online trial. *Journal of Medical Internet Research, 14*(3), May-June.

Scrignaro, M., Bianchi, E., Brunelli, C., Miccinesi, G., Ripamonti, C., Magrin, M., & Borreani, C. (2014). Seeking and experiencing meaning: Exploring the role of meaning in promoting mental adjustment and eudaimonic well-being in cancer patients. *Palliative and Supportive Care, 13*(3), 673-681.

Sheldon, K. M., Williams, G., & Joiner, T. (2003). *Self-determination theory in the clinic*. New Haven, CT: Yale University Press.

Sherman, A. C., & Simonton, S. (2012). Effects of personal meaning among patients in primary and specialized care: Associations with psychosocial and physical outcomes. *Psychology and Health, 27*(4), 475–490.

Skevington, S. M. (1995). *Psychology of pain*. Chichester: John Wiley & Sons.

Slater, M., Chircop-Rollick, T., Patel, S., Golish, M., Weickgenant, A., Penzien, D., Rutledge, T., & Atkinson, J. (2011). Telephone-delivered CBT self-management skills training for chronic back pain. *Journal of Pain*, 12(4), P75.

Smeets, R.J., Vlaeyen, J.W., Hidding, A., Kester, A.D., van der Heijden, G.J., van Geel, A. C., Knottnerus, J. A. (2006). Active rehabilitation for chronic low back pain: cognitive-behavioural, physical, or both? First direct post-treatment results from a randomized controlled trial. *Musculoskeletal Disorders*, 7, 5.

Sniehotta, F. F., Presseau, J., & Araujo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, 8(1), 1-7.

Spek, V., Cuijpers, P., Nyklíček, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: A meta-analysis. *Psychological Medicine*, 37(3), 319-328.

Stellrecht, N. E., Gordon, K. H., Van Orden, K., Witte, T.K., Wingate, L. R., Cukrowicz, K. C., Butler, M., Schmidt, N. B., Fitzpatrick, K. K., & Joiner, T. F. (2006). Clinical applications of the interpersonal-psychological theory of attempted and completed suicide. *Journal of Clinical Psychology*, 62(2), 211–222.

Starks, H., & Trinidad, S. B. (2007). Choose your method: A comparison of phenomenology, discourse analysis and grounded theory. *Qualitative Health Research*, 17(10), 1372-1380.

Stern, P., & Pyles, S. (1985). Using grounded theory methodology to study women's culturally based decisions about health. In P.N. Stem (Ed.) *Women. Health and Culture* (pp 1-24). Washington: Hemisphere Publishing.

Strauss, A. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques* (1st ed.). Newbury Park, CA: Sage.

Sulmasy, D. P. (2002). The bio-psychosocial- spiritual model for the care of patients at the end of life. *The Gerontologist*, 42, 24-33.

Tan, G., Alvarez, J. A., & Jensen, M. P.(2006). Complementary and alternative medicine approaches to pain management. *Journal of Clinical Psychology*, 62(11), 1419-1431.

Tang, N. K. Y., & Crane, C. (2006). Suicidality in chronic pain: A review of the prevalence, risk factors and psychological links. *Psychological Medicine*, 36, 575–586.

Temple, B., & Young, A. (2004).Qualitative research and translation dilemmas. *Qualitative Research*, 4, 161–78.

The National Pain Audit (2012). Retrieved from <http://www.nationalpinaudit.org/media/files/NationalPainAudit-2012>

Topkaya, N. (2015). Factors influencing psychological help-seeking in adults: A qualitative study.*Educational Sciences: Theory & Practice* 15(1), 21-31.

Trautmann, E., & Kroner-Herwig, B. (2010).A randomized controlled trial of Internet-based self-help training for recurrent headache in childhood and adolescence. *Behaviour Research and Therapy*, 48(1), 28-37.

Trudeau, K. J., Pujol, L. A., DasMahapatra, P., Wall, P., Black, R. A., & Zacharoff, K. (2015). A randomized controlled trial of an online self-managementprogram for adults with arthritis pain *Journal of Behavioural Medicine*, 38, 483-496.

Tse, M. M. Y., Vong, S. K. S., & Tang, S. K. (2012). Motivational interviewing and exercise programme for community-dwelling older persons with chronic pain: A randomized controlled study. *Journal of Clinical Nursing*, 22, 1843–1856.

van der Eijk, M., Faber, M. J., Aarts, J. W. M., Kremer, J. A. M., Munneke, M. & Bloem, B. R. (2013). Using online health communities to deliver patient-centered care to people with chronic conditions. *Journal of Medical Internet Research*, 15(6):e115.

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E. (2010). The interpersonal theory of suicide. *Psychological Review*, 117, 575–600.

Veehof, M. M., Oskam, M., Schreurs, K. M. G., Bohlmeijer, E. T. (2011). Acceptance-based interventions for the treatment of chronic pain: A systematic review and meta-analysis. *Pain*, 152, 533–542.

Vella, E., Azzopardi, L. M., Zarb-Adami, M., & Serracino-Inglott, A.(2009). Development of protocols for the provision of headache and back-pain treatments in Maltese community pharmacies. *International Journal of Pharmacy Practice*, 17, 269–274.

Vlaeyen, J. W., Crombez, G., & Goubert, L. (2007).The psychology of chronic pain and its management. *Physical Therapy Reviews*, 12, 179–188.

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology*, 53, 325–337.

Vogel, D. L., Wester, S. R., Hammer, J. H., & Downing-Matibag, T. M. (2013). Referring men to seek help: The influence of gender role conflict and stigma.*Psychology of Men and Masculinity*, 15(1), 1-8.

Vogel, D. L., Wester, S. R., & Larson, L. M. (2007). Avoidance of counselling: Psychological factors that inhibit seeking help. *Journal of Counselling and Development*, 85, 410–422.

Vong, S. K., Cheing, G. L., Chan, F., So, E. M., & Chan, C. C. (2011). Motivational enhancement therapy in addition to physical therapy improves motivational factors and treatment outcomes in people with low back pain: A randomized controlled trial. *Archives of Physical Medicine & Rehabilitation* 92, 176–183.

Vulliamy, G. (1990) Research outcomes: Postscript. In G. Vulliamy, K. Lewin and D. Stephens, *Doing educational research in developing countries*. London: The Falmer Press.

Waller, R., & Gilbody, S. (2009). Barriers to the uptake of computerized cognitive behaviour therapy: A systematic review of the quantitative and qualitative evidence. *Psychological Medicine*, 39, 705–712.

Wallston, K. A., & Wallston, B. S. (1982). Who is responsible for your health? The construct of health locus of control. In G. S. Sanders & J. Suls (Eds.), *Social psychology of health and illness* (pp. 65–95). Hillsdale, NJ: Erlbaum.

Wallston, K. A., Wallston, B. S. & DeVellis, R. F. (1978). Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.

Walsh, A., Edwards, H., & Fraser, J. (2007). Influences on parents' fever management: Beliefs, experiences and information sources. *Journal of Cardiovascular Nursing*, 16, 2311–2340.

Walsh, A., Edwards, H., & Fraser, J. (2009). Attitudes and subjective norms: Determinants of parents' intentions to reduce childhood fever with medications. *Health Education Research*, 24(3), 531–545.

Wangberg, S.C., Gammon, D., & Spitznogle, K. (2007). In the eyes of the beholder: Exploring psychologists' attitudes towards and use of e-therapy in Norway. *Cyberpsychology and Behaviour*, 10(3), 418–423.

Wasan, A. D., Anderson, N. K., & Giddon, D. B. (2010). Differences in pain, psychological symptoms, and gender distribution among patients with left-vs right-sided chronic spinal pain. *Pain Medicine*, 11, 1373–1380.

Webb, T. L., Joseph, J., Yardley, L. & Michie, S. (2010). Using the internet to promote health behaviour change: A meta-analytic review. *Journal of Medical Internet Research*, 12, e4.

Wetherell, J. L., Afari, N., Rutledge, T., Sorrell, T. J. Stoddard, J. A., Petkus, A. J., Solomon, B. C., Lehman, D. H., Liu, L., Lang, A. J., & Hampton Atkinson, J. (2011). A randomized, controlled trial of acceptance and commitment therapy and cognitive-behavioural therapy for chronic pain. *Pain*, 152, 2098–2107.

White, K., & Dahl, D. W. (2006). To be or not to be? The influence of dissociative reference groups on consumer preferences. *Journal of Consumer Psychology* 16(4), 404-413.

Whitfield, G., & Williams, C. (2004). If the evidence is so good – why doesn't anyone use them? A national survey of the use of computerized cognitive behaviour therapy. *Behavioural and Cognitive Psychotherapy*, 32, 57–65.

Williams, C., & Garland, A. (2002). A cognitive-behavioural therapy assessment model for use in everyday clinical practice. *Advances in Psychiatric Treatment*, 8, 172–179.

Willig, C. (2001). *Introducing research in psychology. Adventures in theory and method*. Buckingham. Open University Press.

Wilson, C. J., Deane, F.P., Ciarrochi, J., & Rickwood, D. (2005). Measuring help-seeking intentions: Properties of the general help-seeking questionnaire. *Canadian Journal of Counselling*, 39, 15–28.

Wilson, K. G., Kowal, J., Henderson, P. R., McWilliams, L. A., & Pelopuin, K. (2013). Chronic pain and the interpersonal theory of suicide. *Rehabilitation Psychology, 58*(1), 111-115.

Winzelberg, A. J., Eppstein, D., Eldredge, K. L., Wilfley, D., Dasmahapatra, R., Dev, P., & Taylor, C. B. (2000). Reducing risk factors for eating disorders: Comparison of an internet and a classroom-delivered psycho-educational program. *Journal of Consulting Clinical Psychology, 68*, 346–50.

Wise, M., & Nutbeam, D. (2015). Improving the health of communities by increasing critical health literacy. *Health Voices, 17*, 23-24.

Wong, Y. J., Pituch, K. A., & Rochlen, A. B. (2006). Men's restrictive emotionality: An investigation of associations with other emotion related constructs, anxiety, and underlying dimensions. *Psychology of Men & Masculinity, 7*, 113–126.

Wuthrick, V. M., & Frei, J. (2015). Barriers to treatment for older adults seeking psychological therapy. *International Psychogeriatrics, 27*(7), 1227-1236.

Xuereb, M. (2014). Suicide can be stopped. Times of Malta. Retrieved from <http://www.timesofmalta.com/articles/view/20140910/opinion/Suicide-can-be-stopped.535092>

Yardley, L. (2011). What can the internet do for future health psychology? *Health Psychology, 24* (2), 900–901.

Yardley, L., Miller, S., Schlotz, W., Little, P. (2011). Evaluation of a web-based intervention to promote hand hygiene: Exploratory randomized controlled trial. *Journal of Medical Internet Research, 13*(4), e107.

Yardley, L., Miller, S., Teasdale, E., & Little, P. (2011). Using mixed methods to design a web-based behavioural intervention to reduce transmission of colds and flu. *Journal of Health Psychology, 16*(2), 353-364.

Zautra, A. J., Fasman, R., Davis, M. C., & Craig, A. D. Pain. (2010). The effects of slow breathing on affective responses to pain stimuli: An experimental study. *Pain, 149* (1), 12–28.

Participants needed

For psychological study on chronic pain
comprising an one-to-one interview

Eligibility:

- Must be suffering from chronic pain more 3+ months
- Must be over 18 years of age

For more details please contact Ms Pamela Portelli on
[REDACTED] or on Tel [REDACTED]

Appendix A: Participant information and consent sheet

Title: An exploration of pain coping mechanisms and attitudes towards psychological interventions for chronic pain amongst the Maltese population (Reference number PSYETH (UPTD) 13/14 36)

Dear Participant

I am inviting you to participate in a study which is part of research component for a doctoral degree in Health Psychology. Before you decide whether to participate or not, please take some time to read the information below which will help you understand why this study is being done and what is expected of you. The main aim of this research is to investigate service users' attitudes towards psychological interventions for the management of chronic pain, with particular reference to online interventions.

You have been invited to participate because no one more than you can understand what it is like to live with persistent pain on a day-to-day basis. Please note that participation is voluntary. Should you decide to accept and later on change your mind about your contribution, you are free to withdraw at any time and have any information removed without the need to provide explanations or justifications. If you decide to withdraw from the study, you will not suffer any adverse consequences as a result. Any data collected will be used only for the purpose of this study and no personal information that can reveal your identity is needed. You are also free to refrain from answering to questions should you feel uncomfortable doing so.

For the purpose of this research, you are being asked to sit for an interview. Prior to this, you will be asked a few questions. These revolve round the collection of demographic details, the type of pain experienced, duration and whether you are taking any type of medication to control the pain. Anticipated time for the interview is about one hour. The interview will be recorded and transcribed. Data will be kept in a secure place and is confidential. After it has served its purpose, the data will be destroyed. Should you be interested in results of this study, you will be provided with a debriefing sheet once results when finalized. This project has been approved by the Research and Ethics Committee of the Department of Psychology of City University London (project approval number PSYETH(UPTD) 13/14 36) and by the University Research Ethics Committee of the University of Malta. It also follows principles dictated by the British Psychological Association for the recruitment of human participants.

Should you require further information, contact details are provided below. Additionally, if you have any comments, concerns or observations about the conduct of the study or your experiences as a participant, please contact the Secretary to the Committee Mrs Carmai Pestell, quoting the above project approval number, contact

details of whom are also provided below. Please sign this consent sheet if you agree to participate. I thank you in advance for your time.

Yours sincerely

Pamela Portelli

[REDACTED]

Email: [REDACTED]

Department's contact details:

Mrs Carmai Pestell

Secretary to Psychology Department Research and Ethics Committee

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Telephone: [REDACTED]

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Consent Form

I, the undersigned, confirm I have read and understood the information sheet presented above regarding this study and was given enough time to think about participating in this research. I understand that participation is voluntary and I can have my data withdrawn at any time. I consent to taking part in this study.

Name of researcher: Pamela Portelli

Signature of researcher:

Name of participant:

Signature of participant:

Date:

Appendix B – Interview questions

The following information will be collected from participants prior to the interview: age, gender, level of education, type of pain condition, duration, who they live with and any medication taken.

1. Can you describe your pain? (duration, severity)
2. What kinds of treatments you have sought so far to cope with pain and to what extent have they been helpful?
3. What is it like to live with pain on a day to day basis and how is it affecting you?
4. What do you do to cope?
5. What does your family do when you are in pain?
6. To what extent do you feel you have control over your pain?
7. Have you ever sought psychological help (general help-seeking and seeking help for pain) and what is your attitude towards psychological services?
8. In your opinion, what is the role of psychological factors in the experience of pain?
9. What is your attitude towards using the internet to access health-related information, particularly information for coping with chronic pain?
10. If you have made use of the internet, what kind of information did you look for?
11. What is your attitude towards psychological help over the internet?
12. Have you ever participated in an online psychological intervention for coping with chronic pain and if yes/no, what is your attitude towards these services?
13. What factors would encourage you to participate in online psychological interventions for pain management?
14. What are the barriers you anticipate to participating in online interventions?
15. What factors would encourage you to adhere to these kinds of interventions?
16. Assuming you decide to participate, what factors would make you withdraw from these interventions?
17. Is there anything else you would like to add?

Presentations and publications

Presentations

Title	Entity	Date
A systematic review on the effectiveness of psychosocial interventions for cannabis use amongst adolescents	University of Malta conference	November 2013
A quality review of smart-phone applications for the management of pain	University of Malta workshop	February 2014
Pain and coping	Arthritis and Rheumatism Association Malta (ARAM) conference	September 2015

Publications

A quality review of smart-phone applications for the management of pain – The British Journal of Pain, April 2016

A clustered randomized controlled trial for the prevention of alcohol misuse among Maltese teenagers

Abstract

Purpose: This study was designed to evaluate the effectiveness of a brief Alcohol Expectancy Challenge, with the aim of reducing the prevalence of alcohol consumption amongst Maltese teenagers.

Methods: 119 students were randomly allocated to a control or 3-hour expectancy challenge session. Alcohol consumption and alcohol expectancies were investigated via a self-report questionnaire delivered at baseline, immediately after the intervention and at 4 months follow-up.

Results: Despite significant differences in alcohol expectancy scores at post-intervention, no significant reductions in alcohol consumption were observed in the experimental group. On the other hand, a significant increase in alcohol consumption was observed in the control group at post-intervention.

Conclusion: This study failed to support the effectiveness of a brief alcohol expectancy challenge (AEC) to curb alcohol misuse. Nonetheless, it is possible that the challenge may have prevented the increase of alcohol consumption. Possibly, the teaching of alcohol refusal skills and active involvement of parents could yield beneficial outcomes.

Keywords: alcohol, adolescents, prevention, alcohol expectancy challenge, brief intervention

Introduction

Alcohol is a popular drug of choice amongst Maltese youths (Arpa, 2011). Drinking from an early age can have serious social implications including unwanted pregnancy, aggression, low school grades and drop-outs, suicidal attempts, traffic-related deaths and date rape (de Oliveira Benites & Ribeiro Schneider, 2014; International Agency for Research on Cancer, 2007). Adolescents who start drinking from an early age and experience frequent episodes of drunkenness have an increased risk of developing alcohol-related problems later on in life (Kuntsche, Rossow, Simons-Morton, Ter Bogt, Kokkevi, et al., 2014). Frequent episodes of binge drinking can also cause a number of health concerns including memory problems, sexually transmitted diseases, cancer, depression, decreased brain size and permanent damage to brain structures (Rehm, Room & Taylor, 2008; Singleton, 2007).

Teenage alcohol consumption is an alarming yet common practice amongst the Maltese. According to the latest European School Survey on Alcohol and other Drugs (ESPAD, Arpa, 2011), 56% of teens reporting frequent episodes of binge drinking. Maltese teens are second on the list in terms of highest alcohol consumption compared to European youths. 90% of Maltese teens reported having consumed alcohol at some point, with a relatively high percentage having their first alcoholic drink before 11 years (Arpa, 2011). Most adolescents consumed their first spirit and got drunk for the first time between the ages of 14 and 15 years. The prevalence of alcohol consumption seems higher amongst boys. Overall, the ESPAD survey reveals a significant increase in alcohol consumption between the ages of 14-15, despite the legal drinking age in Malta being 17 years.

Various studies have investigated the efficacy of interventions aimed to reduce alcohol consumption amongst teenagers. Schools are a viable setting to target unhealthy behaviours, offering the advantage of external and ecological validity (Winters, Leitten, Wagner, O'Leary & Tevyaw, 2007). School-based programs can be helpful in preventing the onset of drinking problems (Winters et al., 2007). They also offer diverse advantages including the elimination of transport problems or other

difficulties revolving round the scheduling of appointments. Popular school-based programs include the European Drug Abuse Prevention Study (EU-DAP, Caria, Faggiano, Bellocco & Galanti, 2010) and Botvin's (1985) Life Skills Training Program. Programs incorporating high refusal self-efficacy skills are associated with increased abstinence from alcohol (Jang, Rimal & Cho, 2013). It seems that interventions focusing on low-risk drinking yield better outcomes than those aiming for total abstinence (Mancini, Linhorst, Broderick & Bayliff, 2008). A zero-tolerance approach is unlikely to be effective and may increase drinking patterns due to feelings of rebelliousness in adolescents (van Amsterdam & van den Brink, 2013).

Existing research has contributed to a wealth of knowledge for preventing substance misuse. A recent systematic review reveals that psycho-social programs are effective in reducing drunkenness and binge drinking among young people (Foxcroft & Tsertsvadze, 2011). A main drawback of some interventions is the length of programs. Although schools are ideal for delivering timely interventions, timetable restrictions, ongoing school activities, holidays and over-loaded syllabi often render the delivery of such programs difficult. Apart from that, universal preventive programs are unlikely to be effective since they fail to incorporate the social and cultural elements that play a crucial role in behaviour modification (Bandura, 1977). An ideal intervention is one that can be delivered in the minimum amount of time, whilst targeting the needs of the given population.

A promising approach that can easily incorporate a cultural framework is the one based on Expectancy Theory, a derivative of Social Cognition Theory (Bandura, 1986). It is based on the notion that individuals develop '*if...then*' relations or anticipatory perceived outcomes when engaging in particular behaviours. These expectancies are likely to influence the occurrence of a behaviour. Thus, individuals holding the expectancy that alcohol will make them more sociable are more likely to consume alcohol than those holding negative expectancies. Expectancies develop through acculturation and social learning. Alcohol expectancies can strongly influence not only the initiation but also the maintenance of drinking behaviour (Jester, Wong, Cranford,

Buu, Fitzgerald et al., 2014). They often act as self-fulfilling prophecies and are often maintained in such a way as to reinforce particular behaviours.

The attempt to modify alcohol expectancies and reduce alcohol consumption is best illustrated by Drakes and Goldman's (1998) Alcohol Expectancy Challenge (AEC) where significant reductions in alcohol consumption and positive alcohol expectancies were observed at post-intervention. Although alcohol expectancies are often formed in childhood, they can predict adolescent drinking patterns. Expectancies are usually formed by observing others or from other sources in the surrounding environment. The media plays an important role in the formation of expectancies. Exposure to alcohol-related adverts seems to increase the risk of underage drinking and to the formation of positive alcohol expectancies (DeBeneditties, 2011). A prevention program based on a single AEC session in a primary school setting using a no-alcohol modified version revealed promising findings in terms of altering children's positive alcohol expectancies (Cruz & Dunn, 2003). Significant reductions in alcohol consumption amongst high-school students were observed in another study (Cruz & Dunn, 2005). It seems that challenging and modifying expectancies is likely to change drinking patterns (DeBenedittis, 2011). Interventions aimed to reduce alcohol consumption do not have to be lengthy to be effective. This is especially true of individuals who do not have severe drinking problems (National Institute of Alcohol Abuse and Alcoholism, NIAAA, 2005; Winters et al., 2007).

This study

Although AEC programs are widespread, few trials have been conducted with adolescents. It is possible that younger adolescents who have less experience with alcohol are more likely to benefit from such programs. This research aims to examine the effectiveness of a brief school-based AEC program, with the aim of reducing alcohol consumption amongst secondary school students. It is the first alcohol expectancy study to recruit Maltese teenagers. Given the prevalent and permissive attitude towards alcohol consumption in Malta, a harm-reduction rather than a total-abstinence approach was adopted. Although the intervention was designed to

incorporate culturally-sensitive criteria, it is based on trials that have been tested on multi-ethnic participants. This should allow for better generalization of results across adolescents from different populations.

The *Enhancement in Social Behaviour Expectancy* is a major determinant of adolescent drinking behaviour (Christiansen, Goldman & Inn, 1982; Christiansen, Smith, Roehling & Goldman 1989). Positive expectancies are strong predictors of future intentions to drink (Zamboanga, Ham, Van Tyne & Pole, 2011). They are also the most studied since the immediately perceived positive consequences of alcohol consumption are more likely to influence behaviour than long-term repercussions. They are also easier to access from memory than negative ones (Stacy, Widaman & Marlatt, 1990; Rohsenow, 1983). It seems that positive expectancies formed during adolescence can be used to predict alcohol consumption in adulthood (Patrick, Wray-Lake, Finlay & Maggs, 2010). Manipulating positive expectancies is more likely to yield effective outcomes with younger drinkers whereas manipulation of negative ones is more suited for older and more experienced drinkers (Jones, Corbin & Fromm, 2001; Leigh & Stacy, 2004).

The Health Belief Model (HBM, Becker & Rosenstock, 1984) has been applied to a range of health behaviours. According to this model, the perceived severity of a health problem and susceptibility to developing particular health concerns influence the individual's decision to engage in health-related behaviours. When the perceived benefits for taking preventive action outweigh the costs, the behaviour is likely to be reinforced. This study will incorporate constructs from the HBM in an attempt to enhance the efficacy of the intervention and to raise awareness of the health hazards of alcohol abuse.

Based on the literature reviewed above, the three main hypotheses guiding the analysis were:

1. Participants with higher alcohol expectancy scores are more likely to consume alcohol than those with lower scores at pre-intervention.
2. Participants in the intervention group will exhibit lower levels of alcohol consumption at 4 months post-intervention than the control group.

3. The intervention group will show decreased alcohol expectancies at 4 months post-intervention when compared to the control group.

Methods

Participants

Based on statistical power calculations for the detection of a medium effect size with a desired power level of 0.80 and a probability level of 0.05 (Scott-Sheldon, Terry, Carey, Garey & Carey, 2012), a total of 129 participants were needed for this study. Out of 175 students approached, 56 were lost for diverse reasons including being absent from school at some point throughout the delivery of intervention, failure to fill in the questionnaires correctly and failure to hand in the signed consent form. This resulted in a total of 119 participants. Eligibility criteria included: a) participants aged between 14 and 16 b) parental and informed consent and c) proficiency in the English language. Exclusion criteria were: a) insufficient mental capacity to understand and provide informed consent. This was assessed via information obtained from school professionals. Demographics of study participants are provided in Table 2.

Variable	Intervention	Control
Gender		
Male (N= 71, 60%)	29	42
Female (N = 48, 40%)	24	24
Age		
Mean	14.32	14.28
SD	0.471	0.456
Ethnicity		
Maltese (N = 118, 99%)	53	65
Other white background (N = 1, 1%)	1	0

Table 2: Demographic details of participants

Procedure

The research was approved by City University Senate Research Ethics Committee and by the Directorate for Quality and Standards in Education, Education Division Malta

(Ethics consent form in Practice Log). Participants were treated according to the British Psychological Society (BPS, 2009) and American Psychological Association (APA, 1992) ethical guidelines. The intervention was conducted in the scholastic year 2013-2014. Participants' consent (Appendix A) was obtained and baseline questionnaires (Appendix B) were completed. Personalized codes given to participants were used to match data from subsequent questionnaires and maintain confidentiality. Participants were randomly allocated to AEC group (AEC-G) or information only-control group (IO-G). Follow-up assessments were conducted at post-intervention. Participants had the chance of winning an ice-watch.

Study Design

Due to school setting restrictions, the random allocation of individual participants was not possible. This would have caused major disruptions to time-tabled lessons and other school activities. Conclusively, a cluster randomized controlled trial methodology was used and classes were randomly assigned to experimental or control condition. The manual method of drawing lots was used to achieve random allocation. A between-participants experimental design was employed throughout.

Measures

Demographics

Assessed demographics included gender, class/form, date of birth, age and ethnicity.

Alcohol use

This was assessed via the Alcohol Timeline Follow Back Calendar Method (TLFB, Sobell & Sobell, 1992). It has a high test-retest reliability across multiple populations with participants of both genders and of varying drinking patterns. It gives a good estimate of daily drinking data. The TLFB was completed prior to the intervention, at 1 month and 4 months follow-up. For the analysis presented here, the number of drinks consumed in the past 30 days was calculated. To aid recall, students were asked to identify personal marker days such as any special occasions on their calendars where they might have consumed alcohol. A chart showing the typical number of units

contained in different drinks was hung in the classroom to ensure accurate understanding of units of alcohol.

Alcohol Expectancies

The adolescent version of the Alcohol Expectancy Questionnaire (AEQ-A, Brown, Christiansen & Goldman, 1987) was used. Items are appropriate for adolescents between 12 and 19 years of age. The scale can be used in preventive efforts to reduce risks of addiction with adolescents who may or may not have any experience with alcohol. It can also be used to identify factors involved in the persistence of drinking problems. The AEQ-A is divided into different sub-scales designed to measure different positive and negative expectancies individuals may have about drinking. The original 90-item AEQ questionnaire is too lengthy to maintain adolescents' attention (Aas, 1993; Webb, Baer, Caid, McKelvey & Converse, 1992). Moreover, a 7-factor scale is too complex for adolescent participants, thereby failing to assess cognitive configurations of alcohol expectancies among this target group (Randolph, Gerend & Miller, 2006). Due to the reasons stated above and other school restrictions, only 4 sub-scales were used (details of sub-scales in Methods section). These included: Scale 2: *Enhanced or impeded social behaviour*, Scale 3: *Enhanced cognitive and motor abilities*, Scale 6: *Enhanced arousal* and Scale 7: *Enhanced relaxation and tension reduction*. The AEQ-A was completed at baseline, immediately after the intervention and at 4 months follow-up.

Intervention

The intervention (Appendix C) followed a format similar to that of other trials (e.g. Musher-Eizenman & Kulick, 2003) but with some modifications. The program consisted of 3 forty-five-minute sessions delivered in a group format. Number of students in each group ranged from 8 to a maximum of 28 pupils.

AEC-G: Participants were asked to generate lists of the *good* and *not-so-good* things about drinking alcohol. The concept of expectancies was introduced. A group discussion on the role of expectancies in drinking behaviour followed. A presentation

with information about health hazards of teenage drinking was shown. Assertiveness tips were provided and healthier ways of spending time in Malta were discussed.

IO-G: Participants in the control group received information about the hazards of alcohol abuse. Apart from that, no additional advice or material was provided.

Person delivering intervention and setting: Sessions were delivered in a school setting by a doctorate in health psychology student with 2 years experience in the field of addiction. Supervision by a psychotherapist with a doctoral degree in supervision was in place.

Results

Analysis

Data were subject to statistical analysis using the Statistical Package for Social Sciences (SPSS) version 19. Histograms for the conditions and scores of each variable were inspected separately. Since attempts to transform data did not correct distribution problems, non-parametric tests were used throughout.

Association between alcohol expectancies and alcohol consumption

Results of Spearman's rho correlation coefficient revealed a moderately statistically significant positive correlation between Scale 2 alcohol expectancy scores and alcohol consumption at pre-intervention ($r = 0.47$, $N = 118$, $p < 0.000$). The hypothesis that enhanced social behaviour expectancies are associated with increased alcohol consumption was supported.

Spearman's rho also revealed a weakly positive and statistically significant correlation between Scale 3 alcohol expectancy scores ($r = 0.19$, $N = 118$, $p < 0.05$) and Scale 7 alcohol expectancy scores ($r = 0.17$, $N = 118$, $p < 0.05$). The hypotheses that alcohol consumption is associated with expectancies revolving enhanced cognitive/motor abilities and enhanced relaxation/tension reduction were supported. On the other hand, no statistically significant correlation was observed between alcohol consumption and Scale 6 alcohol expectancy scores ($r = 0.144$, $N = 118$, $p > 0.05$).

Conclusively, the hypothesis that alcohol consumption results in enhanced arousal was not supported.

Group differences in alcohol consumption

Histograms for the two conditions were inspected separately. Since data was skewed, the most appropriate statistical test to compare differences in alcohol consumption at different points in time was the Mann Whitney.

One month pre-intervention

Statistical analysis revealed that at one month pre-intervention, the amount of alcohol consumed by the intervention group ($Mdn = 7$) did not differ significantly from that of the control group ($Mdn = 4$), $U = 1567$, ns , $r = -0.80$.

One month, two months and 4 months post-intervention

No significant differences in alcohol consumption were observed at 1 month post-intervention between the intervention ($Mdn = 1$) and the control group ($Mdn = 3$), $U = 1558$, ns , $r = -0.09$. Similarly, no significant differences in alcohol consumption were observed at 2 months follow-up between the experimental ($Mdn = 5.0$) and the control group ($Mdn = 4.5$), $U = 1708$, ns , $r = -0.02$. Finally, no significant differences in alcohol consumption were observed at 4 month post-intervention period between the intervention ($Mdn = 5.5$) and the control group ($Mdn = 6.0$), $U = 1313$, ns , $r = -0.06$. This means that the hypothesis that the intervention would result in significant reductions in alcohol consumption was not supported.

Group differences in alcohol expectancies

Given the fact that data was not normally distributed, the Mann Whitney was the most appropriate test to use to measure group differences at different time intervals.

One month pre-intervention

Statistical analysis failed to reveal any significant differences in Scale 2 alcohol expectancy scores between the intervention ($Mdn = 8$) and the control group ($Mdn = 8$), $U = 1655$, ns , $r = -0.05$.

No significant differences in Scale 3 alcohol expectancy scores were observed between the intervention ($Mdn = 1$) and the control group ($Mdn = 2$), $U = 1458$, ns , $r = -0.15$. The same was true for Scale 6 alcohol expectancy scores, where no differences between the intervention ($Mdn = 2$) and control ($Mdn = 2$) were observed, $U = 1695$, ns , $r = -0.03$. Finally, Scale 7 alcohol expectancy scores did not differ either, with no significant differences observed between the intervention ($Mdn = 9$) and control groups ($Mdn = 9$), $U = 1651$, ns , $r = -0.05$. This means that participants in the two groups were drawn from the same population.

Immediately after the intervention

Statistical analysis revealed a significant difference in Scale 2 alcohol expectancy scores in the intervention group ($Mdn = 6$) when compared to the control group ($Mdn = 8.5$), $U = 1013$, $p < 0.000$, $r = -0.40$.

A significant difference in Scale 3 alcohol expectancy scores was also observed between the intervention ($Mdn = 2$) and the control group ($Mdn = 3$), $U = 1264$, $p < 0.004$, $r = -0.02$. Scale 7 alcohol expectancy scores also revealed significant difference between the intervention ($Mdn = 7$) and control group ($Mdn = 9$), $U = 1106$, $p < 0.001$, $r = -0.32$. Thus, group differences in alcohol expectancy scores for Scales 2, 3 and 7 were not due to sampling error but to differences between the two populations.

On the other hand, Scale 6 alcohol expectancy scores did not reveal any significant differences between the intervention ($Mdn = 2$) and control ($Mdn = 3$), $U = 1544$, ns , $r = -0.11$. Thus, the intervention was not effective in modifying Scale 6 alcohol expectancy scores. On the other hand, the hypothesis that the intervention group would exhibit lower alcohol expectancy scores than the control was partly supported.

4 months post-intervention

Significant differences in Scale 2 alcohol expectancy scores between the intervention ($Mdn = 7$) compared to the control group ($Mdn = 8$) were observed, $U = 1123$, $p < 0.03$, $r = -0.18$. On a similar note, a significant difference in Scale 3 alcohol expectancy scores was observed between the intervention ($Mdn = 1$) and the control group ($Mdn = 4$), $U = 876$, $p < 0.000$, $r = -0.32$. The same was true for Scale 7 alcohol expectancy

scores where significant differences between the intervention ($Mdn = 7$) and control groups ($Mdn = 9$) were evident, $U = 1042$, $p = 0.014$, $r = -0.21$. Thus, group differences in Scales 2, 3 and 7 alcohol expectancy scores were not due to sampling error.

On the other hand, Scale 6 alcohol expectancy scores did not reveal any significant differences between the intervention ($Mdn = 2$) and control ($Mdn = 2$), $U = 1199$, ns , $r = -0.12$. On the other hand, the hypothesis that the intervention group would exhibit lower alcohol expectancy scores than the control was partly supported.

Group differences in alcohol consumption across time

Since data was skewed, the most appropriate test to use was the Wilcoxon Signed Ranks Test.

Alcohol consumption in the intervention group

A significant reduction in alcohol consumption was observed at 1 month post-intervention ($Mdn = 2$) period compared to the pre-intervention period ($Mdn = 7$), $T = 29$, $p < 0.000$, $r = -0.40$. Similarly, a significant reduction in alcohol consumption was observed at 2 months post-intervention ($Mdn = 5$) period compared to the pre-intervention period ($Mdn = 7$), $T = 23$, $p < 0.05$, $r = -0.20$. Nonetheless, no significant differences in alcohol consumption were observed at 4 months post intervention ($Mdn = 5.5$) compared to prior the intervention ($Mdn = 7$), $T = 13$, $p > 0.05$, $r = -0.09$.

Alcohol consumption in the control group

No significant differences in alcohol consumption were observed at 1 month post-intervention ($Mdn = 3$) period compared to the time prior to the intervention ($Mdn = 4$), $T = 25$, $p > 0.05$, $r = -0.13$. Similarly, no significant difference in alcohol consumption was observed at 2 months post-intervention ($Mdn = 4.5$) compared to the pre-intervention period ($Mdn = 4$), $T = 21$, $p > 0.05$, $r = -0.02$. On the other hand, the control group significantly consumed more alcohol at a 4 month post-intervention ($Mdn = 6$) period compared to the pre-intervention period ($Mdn = 4$), $T = 16$, $p < 0.05$, $r = -0.20$.

It therefore seems that the intervention may have prevented an increase in alcohol consumption at 4 months follow-up period in the group that had been exposed to the alcohol expectancy challenge.

Discussion

Alcohol expectancies are learned associations between the consumption of alcohol and the expected outcomes of drinking. These associations seem to form at a very early age before the individual starts experimenting with alcohol (Dunn & Goldman, 1996, 2000). This results in anticipatory responses in settings where alcohol may be available (Goldman, Brown & Christiansen, 1987). AEC aim to challenge expectancies individuals may have about alcohol. Rather than erasing former expectancies, it is hoped that introducing new information about the negative effects of alcohol may compete with pre-existing positive expectations individuals may have, thereby reducing the person's drinking patterns (Goldman, 1999). The aim of this study was to prevent the early onset of alcohol use and problem drinking.

Results from this research reveal that overall, Maltese adolescents seem to endorse positive expectancies in relation to alcohol consumption. This is especially true when it comes to enhanced social behaviour and enhanced cognitive/motor abilities. Alcohol consumption also seems to be associated with tension reduction and increased feelings of relaxation. Such findings are consistent with those reported by Christiansen et al. (1982) whereby high alcohol expectancy scores were also found to be related to increased alcohol consumption. Nevertheless, the significant association between alcohol expectancies and alcohol consumption observed was not a strong one. Thus, apart from expectancies, other variables seem to influence the uptake of alcohol. Dahlgren and Whitehead's Social Model of Health (1991) may help explain these findings. The model holds that individual, social and environmental factors are interconnected in such a way to play a crucial role in health and illness. Factors influencing the initiation of substance misuse include genetic predispositions, boredom, a desire for experimentation, stress, lack of parental supervision, family conflict, incomplete brain development that influences the individual's ability to take

decisions and judge the outcome of one's behaviour and accessibility to substances (Kendler, Chen, Dick, Maes, Gillespie, et al., 2012; Velazquez, 2015). The latter is especially true in a country such as Malta where alcohol is easily accessible from pubs, supermarkets, coffee shops and other venues of entertainment. Moreover, despite legal restrictions forbidding the selling of alcoholic beverages to minors, the Maltese law is hardly enforced.

Results also reveal that Maltese adolescents do not seem to associate alcohol consumption with enhanced arousal or the ability to stand up to others, with feeling stronger and more powerful. It is possible that the Maltese cultural milieu does not promote this kind of expectancy. It is worth noting that approximately 50% of participants had not consumed alcohol at 3 months pre-intervention. Conclusively, it is possible that these participants have less experience about the effects of the substance. Nonetheless, expectancies are not set in stone. A shift from negative to positive expectancies is possible once adolescents start drinking (Nicolai, Moshagen & Demmel, 2012). This also means that drinking patterns may change with time.

Despite documented evidence favouring the effectiveness of alcohol expectancy challenges (Cruz & Dunn, 2005; Darkes & Goldman, 1998) and despite a reduction in alcohol consumption being observed at 2 months post-intervention, this reduction was not maintained over time. Similar results were reported in other studies (Corbin, McNair & Carter, 2001; Wierst & Kummeling, 2004). These findings cannot be attributed to low power since the sample was large enough to detect significant changes in both variables under investigation. Several factors may contribute to these findings. For instance, it is possible that since half of the students did not seem to have a lot of experience with alcohol, they were less likely to have experienced some of the unpleasant immediate negative effects of drinking (e.g. hang-over, inability to concentrate etc). This could have decreased their motivation to modify existing drinking patterns. On the other hand, some participants claimed to having had more than 20 drinks a month at the pre-intervention period, with a small percentage consuming more than 40 drinks. It is possible that their drinking habits had become so ingrained that they had already developed tolerance to the substance. As a result, they were less likely to perceive themselves as having drinking problems.

It is worth pointing out two factors that may have influenced the statistical data. First, some male participants claimed that they had not been out with friends for few weeks prior to the start of the intervention due to hunting season. Hunting remains a popular recreational activity amongst the Maltese. Secondly, the intervention was done a few weeks prior to Easter, a time when teens are more likely to go out and drink. These factors could have skewed the data in such a way that the amount of alcohol consumed at pre and post-intervention periods may not necessarily be a true reflection of the amount habitually consumed by participants.

Other factors could have contributed to the lack of reduction in alcohol consumption. The strong social acceptance of alcohol may undermine school-based messages and interventions aimed to moderate its consumption (Rundle-Thiele, Russell-Bennett, Leo & Dietrich, 2013). Children in Malta are exposed to alcohol quite early in their lives (Borg Ellul, 2008; Saliba, 2008). The availability of alcohol at social gatherings such as village feasts, carnival celebrations, football matches, baptisms and other family reunions is the norm in Malta. Since alcohol is so much ingrained in Maltese culture, young people may find it difficult to understand the potential dangers of alcohol consumption. Thus, teens are being bombarded with mixed messages. Educational efforts aimed to deter problematic alcohol abuse could be a cause of confusion, especially if parents also drink. Changing alcohol consumption among teens requires an overall change in the cultural mentality of Maltese people, something which is not easy to modify.

Despite the lack of significant reductions in alcohol consumption in the intervention group, the significant increase in alcohol consumption at the post-intervention period in the control is interesting. It seems that the intervention could have prevented an increase in alcohol consumption in the group exposed to the alcohol expectancy challenge. Summer recess and other logistics did not make it possible to assess alcohol consumption at longer follow-up periods, something worthy of further investigation. It is also possible that more intensive interventions may be required with individuals who have more experience with alcohol. Since some students had already started experimenting with alcohol prior to the study, delivering AEC with younger students might yield promising results.

Findings from this study also seem to indicate that challenging of alcohol expectancy may not be enough to reduce alcohol consumption in youths. Individuals possessing higher drinking refusal self-efficacy skills (DRSE) are less likely to consume alcohol than those who do not (Jang et al., 2013). Drinking refusal self-efficacy is more salient cognitive construct than alcohol expectancies and building these skills may be more effective than the mere challenging of alcohol expectancies (Connor, George, Gullo, Kelly & Band Young, 2011). Incorporating the training of refusal skills and strengthening decision-making ones can enhance the efficacy of prevention programs (Agabio, Trincas, Floris, Mura, Sancassiani, et al., 2015). Individuals with low DRSE skills may benefit from interventions aimed to help them limit their intake of alcohol and slow the speed of drinking, thereby reducing the impact of health hazards (Ehret, Tehniat, Ghaidarov & LaBrie, 2013). Parental monitoring may boost drinking refusal skills in adolescents (Laghi, Lonigro, Baiocco & Baumgartner, 2013). Active involvement from behalf of parents is an important part of preventive programs (Jang, Cho & Yoo, 2012; Winters et al., 2007). Educational efforts to reinforce the important role that parents play in setting good examples by drinking in moderation and honest discussions about alcohol is important in shaping teen's attitudes towards alcohol consumption and in establishing safe limits of drinking (Ryan, Jorm & Lubman, 2010). Conclusively, the delivery of parental educational programs in conjunction with adolescent interventions may maximize the effectiveness of preventive efforts.

The effectiveness of local health promotion messages aimed to raise awareness of the health hazards of excessive alcohol consumption amongst youths are worth investigating. Enforcing legal restrictions on the selling of alcoholic beverages to minors may partly help to curb the problem of binge drinking. Given Malta's small size and limited venues of entertainment for youths, activities encouraging healthier ways of spending time in Malta should be incorporated alongside educational programs.

Strengths and limitations

This research adopts a clustered randomized controlled design which does not only allow the direct effects of the intervention to be evaluated but which also increases

ecological validity. Another strength of this research is the use of a large sample that could have allowed the detection of an effect. The adequate follow-up period helped to determine a detailed assessment of long-term changes in drinking behaviour and alcohol expectancies amongst study participants. Loss to follow-up was 16% which is considered as an acceptable attrition rate for evidence-based studies (Fewtrell, Kennedy, Singhal, Martin, Ness, et al., 2008).

As with other quantitative studies, this research has a number of limitations. It was not always possible to distribute questionnaires at the desired follow-up periods, mostly due to restrictions imposed by the school setting. Moreover, although sessions with the experimental group were conducted in the same week, the consecutive delivery of sessions on the same day was not possible as this would have caused major disruption to lessons. This means that the intervention may have lost some of its effectiveness. It would also have been ideal to repeat post-interventions measures at a longer follow-up period.

Although self-report measures are important research tools, participants may not always be honest in their replies (Lelkes, Krosnick, Marx, Judd & Park, 2012). Self-report tools are subject to social desirability bias. Although confidentiality was ensured, students may have felt uncomfortable disclosing certain information. During the process of data collection, a good number of participants wanted repeated reassurance that parents would not have access to the data collected. Boredom by the length of questionnaires could also have influenced participants' replies. Finally, although students were requested to fill questionnaires alone, one cannot exclude they could have worked in pairs.

Conclusion and future directions

Despite these limitations, some future directions have been identified. First, the intervention group exhibited lower levels of alcohol consumption at post-intervention. Although interventions do not necessarily have to be lengthy to be effective, experimentation with alcohol from an early age seems to have an impact on the

effectiveness of alcohol expectancy challenges. It would be interesting to investigate whether a brief refresher or booster session at the post-intervention period would have made any difference in alcohol consumption and to conduct longer follow-up periods. Future research could also investigate whether programs and AEC incorporating parental involvement and the teaching of parenting skills could enhance the effectiveness of AEC. Since alcohol consumption is deeply rooted in Maltese culture, educational efforts to help dispel common myths regarding the harmless nature of alcohol need to include both parents and students. These may be combined with extra-curricular family and community activities encouraging healthier ways of spending time. Future studies could also examine other ways of boosting DRSE skills in students, possibly via the use of role-plays where the skills to be mastered can be practiced. The incorporation of motivational approaches in combination with AEC is another area that merits further investigation and may enhance the effectiveness of the intervention.

Differences in health have a social origin (Dahlgren et al., 2001). Certain factors may increase the risks of addiction including family history, psychological problems, lack of family involvement, peer pressure and economic deprivation (Buu, DiPiazza, Wang, Puttler, Fitzgerald et al., 2009; Zucker, Donovan, Masten, Mattson & Moss, 2008). While it is not always possible to minimize risk factors, increasing protective factors may counteract risks. Delivering brief interventions in schools can help reduce health inequalities. This is especially true given the fact that the students attending local government schools in Malta come from diverse backgrounds. Finally, it is worth investigating whether AEC involving primary school students would delay the onset of early drinking behaviour.

References

- Aas, H., Leigh, B. C., Anderssen, N., & Jakobsen, R. (1998). Two year longitudinal study of alcohol expectancies and drinking among Norwegian adolescents. *Addiction*, 93, 373-384.
- Agabio, R., Trincas, G., Floris, F., Mura, G., Sancassiani, F., & Angermeyer, M. C. (2015). A systematic review of school-based alcohol and other drug prevention programs. *Clinical Practice and Epidemiology in Mental Health*, 11(1), 102–112.
- American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist*, 47(12), 1597-1611.
- Arpa, S. (2011). *European school survey project on alcohol and other drugs. Students' survey in secondary schools: National report*. Malta: Sedqa.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behaviour change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice Hall.
- Becker, M. H., & Rosenstock, I. M. (1984). Compliance with medical advice. In A. Steptoe & A. Matthews (Eds.), *Healthcare and human behaviour* (pp. 135–152). London: Academic Press.
- Borg Ellul, D. (2008). *Risk perception, awareness and prevention measures to reduce underage drinking and the illegal purchase of alcohol in Malta*. UK: University of Leicester.

Botvin, G. J. (1985). The life-skills training program as a health promotion strategy: theoretical issues and empirical findings. *Special Services in the Schools, 1*, 9–23.

British Psychological Society (2009). *Code of conduct, ethical principles and guidelines*. Leicester: British Psychological Society.

Brown, S. A., Christiansen, B. A., & Goldman, M. S. (1987). The alcohol expectancy questionnaire: An instrument for the assessment of adolescent and adult alcohol expectancies. *Journal of Studies on Alcohol, 48*, 483–491.

Buu, A., DiPiazza, C., Wang, J., Puttler, L. I., Fitzgerald, H. E., & Zucker, R. A. (2009). Parent, family, and neighbourhood effects on the development of child substance use and other psychopathology from preschool to the start of adulthood. *Journal of Studies of Alcohol and Drugs, 70*, 489–498.

Caria, M. P., Faggiano, F., Bellocco, R., Galanti, M. R., and the EU-Dap Study Group (2011). Effects of a school-based prevention program on European adolescents' patterns of alcohol use. *Journal of Adolescent Health, 48*, 182–188.

Christiansen, B. A., Goldman, M. S., & Inn, A. (1982). Development of alcohol-related expectancies in adolescents: Separating pharmacological from social-learning influences. *Journal of Consulting and Clinical Psychology, 50*(3), 336–344.

Christiansen, B. A., Smith, G. T., Roehling, P. V., & Goldman, M. S. (1989). Using alcohol expectancies to predict adolescent drinking behaviour after one year. *Journal of Consulting and Clinical Psychology, 57*, 93–99.

Connor, J. P., George, S. M., Gullo, M. J., Kelly, A., & Band Young, R. M. (2011). A prospective study of alcohol expectancies and self-efficacy as predictors of young adolescent alcohol misuse. *Alcohol and Alcoholism, 46*(2), 161–169.

Corbin, W. R., McNair, L. D., & Carter, J. A. (2001). Evaluation of a treatment-appropriate cognitive intervention for challenging alcohol outcome expectancies. *Addictive Behaviours*, 26, 475–488.

Cruz, I. Y., & Dunn, M. E. (2003). Lowering risk for early alcohol use by challenging alcohol expectancies in elementary school children. *Journal of Consulting and Clinical Psychology*, 71(3), 493-503.

Cruz, I. Y., & Dunn, M. E. (2005). *Challenging alcohol expectancies to reduce alcohol consumption in high school students*. Unpublished manuscript.

Dahlgren G., & Whitehead M. (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute for Future Studies.

DeBenedittis, P. (2011). *Why brief classroom interventions challenging alcohol expectancies can be an effective preventive strategy*. Retrieved from medialiteracy.net

de Oliveira Benites, A. P., & Ribeiro Schneider, D. (2014). Alcohol consumption by female teenagers: The family as a risk and a protection factor. *The International Journal of Mental Health Promotion*, 16(2), 91-102.

Drakes, J., & Goldman, M. S. (1998). Expectancy challenge and drinking reduction: Process and structure in the alcohol expectancy network. *Experimental and Clinical Psychopharmacology*, 6, 64–76.

Dunn, M.E., & Goldman, M.S. (1996). Empirical modelling of an alcohol expectancy network in elementary-school children as a function of grade. *Experimental and Clinical Psychopharmacology*, 4, 209-217.

Dunn, M. E., & Goldman, M. S. (2000). Validation of MDS-based modelling of alcohol expectancies in memory: Age and drinking-related differences in expectancies of children assessed as first associates. *Alcoholism: Clinical and Experimental Research*, 24(11), 1639-1646.

Ehret, P. J., Ghaidarov, T. M., & LaBrie, J. W. (2013). Can you say no? Examining the relationship between drinking refusal self-efficacy and protective behavioural strategy use on alcohol outcomes. *Addictive Behaviours*, 38, 1898–1904.

Fewtrell, M. S., Kennedy, K., Singhal, A., Martin, R. M., Ness, A., Hadders-Algra, M., Kiletzko, B., & Lucas, A. (2008). How much loss to follow-up is acceptable in long-term randomized trials and prospective studies? *Archives of Disease in Childhood*, 93, 458-461.

Foxcroft, D.R., & Tsertsvadze, A.A. (2011). Universal school-based prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*, 11 (5), CD009113.

Goldman, M.S. (1999). Risk for substance abuse: Memory as a common etiological pathway. *Psychological Science*, 10, 196-198.

Goldman, M. S., Brown, S. A., & Christiansen, B. A. (1987). Expectancy theory: Thinking about drinking. In H. T. Blane, & K. E. Leonard (Eds.), *Psychological theories of drinking and alcoholism* (pp. 181–266). New York: Guildford Publications.

International Agency for Research on Cancer. (2007). *Alcoholic beverage consumption and ethyl-carbamate (urethane)*. *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*. Retrieved from http://monographs.iarc.fr/ENG/Meetings/vol_96-summary.pdf

Jang, S. A., Cho, N., & Yoo, J (2012). Understanding the antecedents of Korean high school students' drinking refusal self-efficacy: Parental influence, peer influence, and behaviour. *Global Journal of Health Science*, 4 (1), 10–21.

Jang, S. A., Rimal, R. N., & Cho, N. (2013). Normative influences and alcohol consumption: The role of drinking refusal self-efficacy. *Health Communication*, 28(5), 443-451.

Jester, J. M., Wong, M. M., Cranford, J. A., Buu, A., Fitzgerald, H. E., & Zucker, R. A. (2014). Alcohol expectancies in childhood: Change with the onset of drinking and ability to predict adolescent drunkenness and binge drinking. *Addiction*, 110(1), 71-79.

Jones, B. T., Corbin, W., & Fromme, K. (2001). Half full or half empty, the glass still does not satisfactorily quench the thirst for knowledge on alcohol expectancies as a mechanism of change. *Addiction*, 96(11), 1672-1674.

Kendler, K.S., Chen, X., Dick, D., Maes, H., Gillespie, N., Neale, M, C., & Riley, B. (2012). Recent advances in the genetic epidemiology and molecular genetics of substance use disorders. *Nature Neuroscience*, 15, 181-189.

Kuntsche, E., Rossow, I., Simons-Morton, B., Ter Bogt, T., Kokkevi, A., & Godeau, E. (2012). Not early drinking but early drunkenness is a risk factor for problem behaviours among adolescents from 38 European and North American countries. *Alcoholism: Clinical and Experimental Research*, 37(2), 308–314.

Laghi, F., Lonigro, A., Baiocco, R., & Baumgartner, E. (2013). The role of parenting styles and alcohol expectancies in teen binge drinking: A preliminary investigation among Italian adolescents and their parents. *Drugs: Education, Prevention and Policy*, 20 (2), 131-139.

Leigh, B. C., & Stacy, L. W. (2004). Alcohol expectancies and drinking in different age groups. *Addiction*, 99, 215-227.

Lelkes, Y., Krosnick, J. A., Marx, D. M., Judd, C. M., & Park, B. (2012). Complete anonymity compromises the accuracy of self-reports. *Journal of Experimental Social Psychology*, 48(6), 1291-1299.

Mancini, M.A., Linhorst, D.M., Broderick, F., & Bayliff, S. (2008). Challenges to implementing the harm-reduction approach. *Journal of Social Work Practice in the Addictions*, 8(3), 380-408.

Musher-Eizenman, D. R., & Kulick, A. D.(2003). An alcohol expectancy-challenge prevention program for at-risk college women. *Psychology of Addictive Behaviours*, 17 (2), 163–166.

National Institute on Alcohol Abuse and Alcoholism (2005). *Alcohol alert – Brief interventions. Number 66.* Retrieved from <http://pubs.niaaa.nih.gov/publications/AA66/AA66.pdf>

Nicolai, J., Moshagen, M., & Demmel, R. (2012). Patterns of alcohol expectancies and alcohol use across age and gender. *Drug and Alcohol Dependence*, 126(3), 347-353.

Patrick, M. E., Wray-Lake, L., Finlay, A, K., & Maggs, J. L.(2010). The long arm of expectancies: Adolescent alcohol expectancies predict adult alcohol use. *Alcohol and Alcoholism*, 45(1), 17-24.

Randolph, K. A., Gerend, M. A., & Miller, B. A. (2006). Measuring alcohol expectancies in youths. *Journal of Youth Adolescence* 35, 935–948.

Rehm, J., Room, R., & Taylor, B. (2008). Method for moderation: measuring lifetime risk of alcohol-attributable mortality as a basis for drinking guidelines. *International Journal of Methods in Psychiatric Research*, 17(3), 121-183.

Rohsenow, D. J. (1983). Drinking habits and expectancies about alcohol's effects for self versus others. *Journal of Consulting and Clinical Psychology*, 51, 752–756.

Rundle-Thiele, S., Russell-Bennett, R., Leo, C., & Dietrich, T. (2013). Moderating teen drinking: Combining social marketing and education. *Health Education*, 113(5), 392–406.

Ryan, S.M., Jorm, A. F., & Lubman, D.I. (2010). Parenting factors associated with reduced adolescent alcohol use: a systematic review of longitudinal studies. *Australian and New Zealand Journal of Psychiatry*, 44, 774–83.

Saliba, M. (2008). Dealing with alcohol abuse within the family. *Maltese Family Doctor*, 17(1), 6–8.

Scott-Sheldon, L. A. J., Terry, D. L., Carey, K. B., Garey, L., & Carey, M. P. (2012). Efficacy of expectancy challenge interventions to reduce college student drinking: A meta-analytic review. *Psychology of Addictive Behaviours*, 26(3), 393–405.

Singleton, R. A. (2007). Collegiate alcohol consumption and academic performance. *Journal of Studies on Alcohol and Drugs*, 68, 548–555. Retrieved from <http://www.jsad.com/>

Sobell, L.C., & Sobell, M.B. (1992). Timeline Follow-back: A technique for assessing self-reported ethanol consumption. In J. Allen & R. Z. Litten (Eds.), *Measuring alcohol consumption: Psychosocial and Biological Methods* (pp. 41-72). Totowa, New Jersey: Humana Press.

Stacy, A. W., Widaman, K. F. & Marlatt, G. A. (1990). Expectancy models of alcohol use. *Journal of Personality and Social Psychology*, 58, 918–928.

Van Amsterdam, J., & van den Brink, W. (2013). Reduced-risk drinking as a viable treatment goal in problematic alcohol use and alcohol dependence. *Journal of Psychopharmacology*, 27, 987-997.

Velazquez, E. (2015). *Analysis of environmental variables, mental health variables and treatment outcome amongst Latino male adolescent substance abuse* (Unpublished master's thesis). The Chicago School of Professional Psychology.

Webb, J, Baer, P, Caid, C, McKelvey, R., & Converse, R. (1992). Development of an abbreviated form of the Alcohol Expectancy Questionnaire for Adolescents (AEQ-A). *Journal of Early Adolescence*, 12(4), 441–456.

Wierst, R.W., & Kummeling, R.H.C. (2004). An experimental test of an alcohol expectancy challenge in mixed gender groups of young heavy drinkers. *Addictive Behaviours*, 29, 215–220.

Winters, K. C., Leitten, W., Wagner, E., & Tevway, T. O. (2007). Use of brief interventions for drug abusing teenagers within a middle and high school setting. *Journal of School Health*, 77(4), 196-206.

Zamboanga, B.L., Ham, L. S., Van Tyne, K., & Pole, N. (2011). Alcohol expectancies among adolescent nondrinkers: They may not be drinking now, but they're "thinkin bout it". *Journal of Adolescent Health*, 49, 105–107.

Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Paediatrics*, 121(4), S252– S272.

Appendix 1 - Student consent form

A clustered randomized trial for the prevention of alcohol misuse among Maltese teenagers

Dear Participant

This study is being undertaken as part of a Professional Doctorate in Health Psychology. I would like to invite you to participate in a study. Before you decide whether you would like to take part, it is important that you understand why the research is being done and what it would involve for you. Please take time to read the following information carefully and discuss it with others if you wish. Do not hesitate to ask if something is not clear or if you would like more information.

What is the purpose of the study?

This study aims to investigate what Maltese teenagers think about alcohol. It aims to evaluate the effectiveness of a number of sessions that are currently being delivered at your school. Sessions are part of an educational preventive program delivered by the Anti-Substance Abuse Focal Person and will be held during normal school hours.

Why have I been invited?

Since lessons are usually held with Form 4 classes, all Form 4 students are being invited to participate in this study.

Do I have to take part?

Participation is voluntary and you **do not have to** participate if you do not want to. Should you decide to take part, you will be asked to sign a consent form. However, you can still change your mind later and withdraw from the study at any stage. You do not have to answer to questions which you feel are too personal or intrusive. Participation will not affect your examination assessments or results in any way. You will not be penalized for not participating and the services you receive from school will not change.

Expenses and Payments

Participating students have the chance of winning an ice watch.

What will happen if I take part and what do I have to do?

If you decide to participate, you will be asked to fill in a questionnaire. This contains questions about beliefs teenagers may have about alcohol. It will also contain questions about whether you drink alcohol and how often, if any. The questionnaire should take about 30 minutes to complete and will be administered during normal school hours. When possible, it will be filled in during free lessons.

Two separate sheets were given to control and intervention group

Control group

Following this, you will receive some information about alcohol. You will be asked to fill in the questionnaire again at a later stage.

Intervention group

Following this, you will have 3-4 sessions on alcohol. Sessions will be delivered as a class and you will receive information on alcohol, on beliefs teenagers have about alcohol and how these arise. Sessions will be carried out during normal school hours, possibly during free lessons. Following this information, you will be asked to fill in the questionnaire again at a later stage.

What are the possible disadvantages and risks of taking part?

Some questions are personal in nature. It is possible that some questions may remind you of unpleasant experiences you may have had in the past in relation to alcohol. Depending on the situation, the school guidance, counsellor or psychologist will be there to support you, should the need arise.

What are the possible benefits of taking part?

Control group

Some of the benefits of taking part include increased knowledge on the harmful effects of alcohol. You also have the chance of winning an ice watch. No other benefits are foreseen.

Intervention group

Some of the benefits are increased knowledge on the harmful effects of alcohol on teenagers, learning to say you are in situations where you feel pressured to drink and increased knowledge of the benefits of not drinking too much. Alternative and healthy ways of spending time without having to drink alcohol will also be shared as a group. You also stand the chance of winning an ice watch. Apart from that, no other benefits are foreseen.

What will happen when the research study stops?

Any data collected will be used only for the purpose of this case study and is strictly confidential. Data will be locked in a safe place. Apart from my supervisor and myself, no other person will have access to information collected. After it has served its purpose, all data collected will be destroyed. Contact details are provided below should you have any questions about this case study or should you wish to be debriefed about the outcome of this research.

Will my taking part in the study be kept confidential?

Only the researcher and supervisor will have access to the information collected. All information is strictly confidential unless there is evidence of harm to self or others. Should this arise, a joint decision of how to proceed will be taken.

What will happen to results of the research study?

Following the analysis of the data, a report will be written for the purpose of a portfolio which will be presented as part of a doctorate course. It is possible that results of this report will be published in a peer reviewed journal. Nevertheless, no names or any identifiable information will be published. Should you want to be informed about results of this research, a copy can be obtained upon request by sending an e-mail to the researcher.

What will happen if I don't want to carry on with the study?

Should you decide to withdraw from the study, you will not suffer any adverse consequences. Please note that although you may refrain from completing the questionnaire, you will still be required to attend the sessions since these are part of the normal educational sessions carried out in class with secondary school students.

What if there is a problem?

Should you encounter any problem, please do not hesitate to contact Mr Raymond Camilleri, Research Director at the Department of Education [REDACTED] or Ms [REDACTED], Gozo College Principal. The latter can be contacted on [REDACTED]. If you would like to complain about any aspect of the study, City University London has established a complaints procedure via the Secretary to the University's Senate Research Ethics Committee. To complain about the study, you need to phone + [REDACTED]. You can then ask to speak to the Secretary City University London Senate Research Ethics Committee and inform them that the name of the project is:

A clustered randomized trial for the prevention/treatment of alcohol abuse among Maltese teenagers

You could also write to the Secretary:

Anna Ramberg
Secretary to Senate Research Ethics Committee
Research Office, E214
City University London
Northampton Square

London
EC1V 0HB
Email: [REDACTED]

Who has reviewed the study?

This study has been approved by City University London Senate Research Ethics Committee.

Further information and contact details

Researcher Pamela Portelli: [REDACTED]

Supervisor Dr Clare Eldred: [REDACTED]

Thank you for taking the time to read this information sheet

Participant consent form

A cluster randomized controlled trial for the prevention of alcohol misuse among Maltese teenagers

1.	I agree to take part in the above City University London research project. I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records. I understand this will involve questions related to alcohol, whether I drink any alcoholic beverages and how much, if any.	
2.	This information will be held and processed for the following purpose(s): The data from questionnaires will be analysed and an article based on findings will be written. Finding will be presented and submitted as part of a portfolio for a doctorate degree. It is possible that the article may be published in a local or international journal in the future. Information collected is confidential. No identifiable data will be shared.	
3.	I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
4.	I agree to City University London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.	

Name of Participant

Signature

Date

Parent consent form

Dear Parents/Guardians

I am a guidance teacher within the Directorate for Educational Services. I am responsible for the primary and secondary prevention of substance abuse in schools. I am currently reading for the professional Doctorate in Health Psychology. As part of my studies, I am currently working on a supplementary report to assess the efficacy of substance abuse preventive lessons. All Form 4 students are being invited to participate, with the aim of delivering a timely intervention to prevent excessive consumption of alcohol.

Participants will be asked to fill in a questionnaire with questions pertaining to alcohol consumption and frequency, if any, as well as questions relating to expectancies students may have about alcohol. The questionnaire should take about 30 minutes to complete and will be administered during normal school hours. Following this, students will be allocated to one of two conditions. The first condition consists of a prevention/intervention session on alcohol abuse delivered in a class format. Participants in the second condition will receive information about harmful consequences of alcohol. Participants are requested to complete the questionnaire again after the session or delivery of information. Previous studies employing a similar design have been found to be effective in preventing and reducing alcohol consumption among adolescents. Details of such studies can be given on request.

Parental consent is required for carrying out any kind of intervention involving participants under 16 years of age. Please take your time to reflect on whether you want your child to participate. Participation is entirely voluntary. Any data collected will be used only for the purpose of this study and is strictly confidential. You have a right to have your child withdraw from the study at any point should you change your mind about your child's contribution. Should this happen, you will not suffer any adverse consequences. You may also choose to change your mind later and stop participating, even if you agreed earlier, and the services you and/or your child receive from the department will remain unchanged. After it has served its purpose, all data collected will be destroyed. Contact details are provided below should you have any questions about this case study or should you wish to be debriefed about the outcome of this research. This piece of work follows ethical guidelines and principles as dictated by the British Psychological Society, City University London and the Education Department in Malta. It is being followed

Please complete the section below if you want your child to participate. Participants have the chance of winning an ice watch. Thank you in advance for your cooperation.

Kind regards
Pamela Portelli
Msc Health Psychology



Project Title: A randomized controlled trial for the prevention/treatment of alcohol abuse among Maltese teenagers

I agree that my child(full name of child) for whom I am a guardian may take part in the above City University London research project. The project has been explained to and to me, and I have read the Participant Information Sheet, which I may keep for my records.

I understand that agreeing to take part may mean that I am willing to allow Ms Pamela Portelli to:

- Complete questionnaires asking my child about alcohol consumption & expectancies s/he may have about alcohol
- Attend a number of lessons aimed to raise awareness on the harmful effects of alcohol

Data Protection

This information will be held and processed for the following purpose(s):

- To assess students' expectancies about alcohol and challenge these expectancies
- To teach students about the harmful effects of alcohol
- To teach students alcohol refusal skills
- To assess the effectiveness of the prevention/intervention sessions carried out at school

I understand that any information (full name of child/person) provides is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.

AND

I also understand that 's (full name of child/person) participation is voluntary, that s/he can choose not to participate in part or all of the project, and that s/he or I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

AND

I understand that confidentiality cannot be guaranteed for information which might be disclosed during sessions held at school when students are together as a class.

Signature:

Date:

The information collected in this research may eventually be published in an international journal. However no identifiable information will be provided. Only the name of the country in which the research was carried out will be published.

Participant's name:

Participant's age:

Parent's/Guardian's name:

Your relationship to participant:

If appropriate, reason(s) why s/he cannot give written consent:

Signature of Parent/Guardian:

Date:

Appendix 2 - Screening questionnaire

Please take your time to complete this form. If you feel uncomfortable writing your name please write your class register number or a nickname instead for future reference. All information is **strictly confidential**.

Section A

Personal Identifier Code: _____ Date of birth: _____

Form/Class: _____ Age: _____

Gender: Male ☐ Female ☐

Ethnic group (Please tick one):

Maltese ☐ Any other white background ☐ Other ethnic groups ☐

Section B: Please read the following statements about the effect of alcohol. If you think the statement is true or mostly true, then tick "true". If you think that the statement is false, or mostly false, or rarely happens to most people, then tick "false". When the statements refer to "drinking alcohol", you may think in terms of any alcoholic beverage such as beer, wine, whiskey, liquor, rum, scotch, vodka, gin, or various alcoholic mixed drinks. Whether or not you have had actual drinking experience yourself, you are to answer in terms of how you think alcohol affects the typical or average drinker. It is important that you respond to every statement.

	True	False
1. People are harder to get along with after they have had a few drinks of alcohol		
2. Drinking alcohol creates problems		
3. It is easier to open up and talk about one's feelings after a few drinks of alcohol		
4. Drinking alcohol makes a bad impression on others		
5. People drive better after a few drinks of alcohol		
6. Drinking alcohol can keep a person's mind off problems at home		
7. Teenagers drink alcohol in order to get attention		
8. Parties are not so fun if people drink alcohol		
9. People feel more caring and giving after a few drinks of alcohol		
10. It is easier to play sports after a few drinks of alcohol		

11. A person can do things better after a few drinks of alcohol		
12. Drinking alcohol makes people more friendly		
13. Drinking alcohol is OK because it allows people to join in with others who are having fun		
14. When talking with people, words come to mind easier after a few drinks of alcohol		
15. Drinking alcohol makes people worry less		
16. People drink alcohol because it gives them a neat, thrilling, high feeling		
17. Drinking alcohol makes people feel more alert		
18. Alcohol increases arousal, it makes people feel stronger and more powerful and it makes it easier to fight		
19. Sweet alcoholic drinks taste good		
20. A few alcoholic drinks makes people less shy		
21. Most alcoholic drinks taste good		
22. Most people think better after a few drinks of alcohol		
23. Alcohol helps people stand up to others		
24. People do not worry as much about what others think of them after a few drinks of alcohol		
25. People understand things better when they are drinking alcohol		
26. Drinking alcohol makes a person feel less uptight		
27. People act like better friends after a few drinks of alcohol		
28. Drinking alcohol loosens people up		
29. Most alcohol tastes terrible		
30. Alcohol makes people more relaxed and less tense		
31. Having a few drinks of alcohol is a nice way to enjoy holidays		
32. It is fun to watch others act silly when they are drinking alcohol		
33. Teenagers drink alcohol because they feel forced to do so by their peers		
34. A few drinks of alcohol makes it easier to talk to people		
35. People can control their anger better when they are drinking alcohol		
36. People have stronger feelings when they are drinking alcohol		
37. Alcoholic beverages make parties more fun		
38. Alcohol makes people better lovers		
39. Drinking alcohol gets rid of a person's feelings that he/she		

is not good as other people		
40. Drinking alcohol relaxes people		
41. Drinking alcohol can keep a person's mind off his/her mistakes at school		
42. It is easier to drink in front of a group of people after a few drinks of alcohol		
43. People get better in moods after a few drinks of alcohol		
44. Drinking alcohol helps teenagers do their homework		

Section C

a) What is the total number of alcoholic drinks consumed during these past 30 days?





Did not drink	<input type="checkbox"/>	5-6	<input type="checkbox"/>
1-2	<input type="checkbox"/>	7-8	<input type="checkbox"/>
3-4	<input type="checkbox"/>	9-10	<input type="checkbox"/>
More than 10	<input type="checkbox"/>		

b) On how many days did you drink alcohol these past 30 days? _____

c) What is the maximum number of drinks consumed on one occasion during these past 30 days? _____

Section D

This calendar is about your drinking patterns. It aims to give an indication of what your drinking was like these past 90 days. To do this, please follow the instructions given by your administrator. Filling out the calendar is not hard! Please try to be as accurate as possible. Don't worry if you do not have perfect recall! Put a number in for each day of the calendar. On days when you did not drink alcohol, write the number '0'. On days when you consumed alcohol, write down the number of drinks that you had. If you are not sure how much you drank on a particular day, give it your best estimate. Also think about how much you drank on holidays, events such as parties, football matches, feasts, birthdays etc. Please ask the researcher if you have any questions at any point when filling out this sheet. (sample below)

1 Standard Drink is Equal to							
	One 12 oz can/bottle of beer		One 5 oz glass of (12%) regular wine		1 ½ oz of hard liquor (e.g. rum, vodka, whiskey)		1 mixed or straight drink with 1 ½ oz hard liquor

Start Date: _____ End date: _____

2013	SUN	MON	TUES	WED	THURS	FRI	SAT
S	1	2	3	4	5	6	7
E	8 Xaghra Feast	9	10	11	12	13	14
p	15	16	17	18	19	20	21 Public
	22	23 School	24	25	26	27	28
	29	30					

Thank you for your time and participation!

Appendix 3: Outline of prevention program

AEG-G: Following a quick round of introductions, students in the AEC-G were asked to generate lists with some of the 'good' and 'not-so-good things' of drinking alcohol. Items were written down on a visible whiteboard and positive expectancies related to the subscales above were emphasised. The concept of expectancies was then introduced. This was followed by a group discussion on the role of expectancies in drinking behaviour, a brief description of alternative evidence proving otherwise (e.g. Darkes & Goldman, 1993; Marlatt & Rohsenow, 1981) and a challenging of items listed. A presentation with information about alcohol and health hazards of teenage drinking was shown. In order to increase perceived susceptibility, immediate rather than long-term consequences of drinking were emphasized. A harm-reduction approach was encouraged throughout, with an emphasis on 'safe' drinking limits. Illustrations of typical situations where Maltese teenagers usually drink and local drinks were used. Pictures of popular adverts were used in the power-point to show how the media helps strengthen the formation of alcohol expectancies. A group brainstorming activity encouraged students to think of barriers in the local environment that make it hard not to drink and to identify ways of overcoming these barriers. The difference between assertive, aggressive and passive behaviour was explained briefly. Tips on how to be assertive were provided. In the final session, students were encouraged to come up with alternative and healthy ways of spending time in the local community. Suggestions of healthy past-times were given.

Prevention/Intervention Program

Aims:

- To build a rapport with students
- To assess students' understanding of alcohol consumption and expectancies
- To challenge students' expectancies on positive effects of alcohol
- To educate about the harmful effects of alcohol on teenagers
- To explore healthy and alternative ways of spending time

Resources: assessment questionnaires, interactive whiteboard, power-point, large sheets of paper for brainstorming activity.

Duration: 2 hours 15 minutes

Step 1: (0 - 10 minutes)

Breaking the ice - quick round of introductions

Step 2: (10 - 30 minutes)

Brainstorming activity in small groups:

What are some of the 'good' things about drinking alcohol?

What are some of the 'not-so-good' things about drinking alcohol?

Is there something you don't like about drinking?

What are some aspects you are not so happy about?

What are some things you would not miss when binge drinking or drinking too much?

Step 3: (30 - 50 minutes)

Power-point:

What is a unit? Standard drinks & number of units in alcoholic beverages

What is binge drinking?

Gender and age differences in alcohol consumption

Alcohol, the law and underage drinking

Short and long-term health consequences of alcohol consumption

Step 4: (50– 1.20 hour)

Power-point:

What are expectancies?

- Dispelling myths about alcohol & challenging alcohol expectancies identified by groups
- Asking participants to come up with statements to refute each of the items they initially came up with and ask them to challenge AEQ items endorsed by other students in different groups
- Discuss whether alcohol helps meet previously identified needs or not (eg to be more sociable)
- Provision of information of how alcohol expectancies can influence behaviour
- Pin-pointing the fact that these associations may not always be true and are learned (from peers, media, family etc)
- Giving information of previous research on AEC and the outcome of this research
- Dispelling the most popular myths about alcohol

Step 5: (1.20 – 1.40 minutes)

- Brainstorming: What are some of the benefits of not drinking too much?
- Identify ways to minimize drinking too much on one occasion
- Guidelines for low risk drinking

Step 6: (1.40 – 2 hours)

- Difference between assertive, passive and aggressive behaviour
- Tips on how to be assertive are provided briefly

Step 7 (2 hrs – 2.15 minutes)

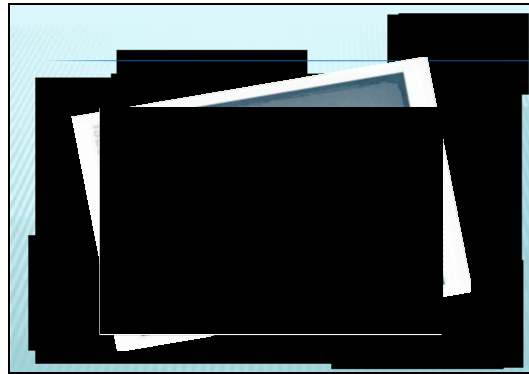
- Brainstorm alternative ways of spending time
- Exploring healthier leisure activities that are available locally (e.g. diving, cycling, movies, restaurants, bowling, barbeques, swimming, night hikes, etc)
- Discuss barriers to engaging in these activities and ways of overcoming these barriers
- Closure & brief recap

Alcohol Expectancy Challenge Power-point

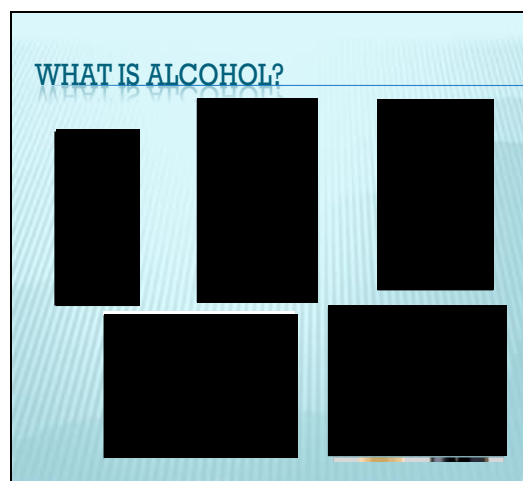
Slide 1



Slide 2



Slide 3



Slide 4

ALCOHOL, THE MALTESE CULTURE & THE LAW

Alcohol consumption much higher among Maltese teenagers when compared to other European countries

Slide 5

BRAINSTORMING ACTIVITY

- ✦ What are some of the 'good' things about drinking alcohol?



- ✦ What are some of the not-so-good things about drinking? (benefits of not drinking)

Slide 6

WHAT IS BINGE DRINKING?

- ✦ Drinking too much on one occasion (+5 for adult men, + 4 for women)

Or

- ✦ Drinking more than the recommended daily limits

Slide 7

EXPECTANCIES

- * Beliefs we hold about the world
- * Influence the way we behave
- * Are not necessarily true...
- * Directly related to alcohol consumption

I WANNA THROW A PARTY WITH FAKE ALCOHOL AND SEE HOW MANY PEOPLE ACT WASTED.

www.fakatablog.com

Slide 8

SOME EXAMPLES

- * Some examples:
 - + Darkes & Goldman
 - + Marlatt & Rohsenow

Slide 9

STATEMENT 1

- * Alcohol makes you happy and high. It seems like magic.
- * False, although alcohol may give you a 'buzz' when it hits your system, alcohol is a depressant which makes you feel drowsy and down.

Slide 10

STATEMENT 2

- ✖ Alcohol makes sexual experiences more enjoyable
- ✖ False, although alcohol lowers inhibitions, it slows down responses & impairs judgement, making you less likely to practice safer sex. It also causes fertility problems.

Slide 11

STATEMENT 3

- ✖ Alcohol gets rid of pain & problems
- ✖ False, problems are still there when you sober up, or they might be worse due to impulsive behaviour. Although alcohol may temporarily relieve pain, it can worsen pain sufferers may face.

Slide 12

STATEMENT 4

- ✖ Alcohol improves social relations, making you less shy.
- ✖ False. Limited quantities of alcohol may disinhibit behavior. But as alcohol intake is increased, a person may become chemically dependent on drug and increasingly withdrawn from meaningful social interactions.

Slide 13

STATEMENT 5

- ✗ Drinking alcohol isn't dangerous
- ✗ False, drinking alcohol leads to hospital admissions for intoxication, alcohol poisoning, coma, death due to suicide, homicide, drowning & car accidents, just to mention a few.

Slide 14

STATEMENT 6

- ✗ Parties are not much fun if there is no alcohol.
- ✗ False. When drunk responsibly, alcohol can enhance the enjoyment of whatever activity one is participating in. However, you can still enjoy yourself without drinking or without drinking too much. You are also less likely to suffer from the after effects of a hangover.

Slide 15

STATEMENT 7

- ✗ Drinking alcohol makes people worry less and be less tense.
- ✗ False, although a few drinks can reduce tension & improve mood, anxiety and depression levels usually increase after many drinks (Adesso, 1985). Worrying is likely to increase due to doing things you will regret later.

Slide 16

STATEMENT 8

- * People can control their anger better when they drink.
- * False, people who drink have problems managing their anger and often fail to express it in a healthy way. They often do not recognize why they are angry and misdirect their anger on those around them.

Slide 17

STATEMENT 9

- * I can drink and still be in control
- * False, drinking impairs your judgment, can make you do things you will regret later such as have unprotected sex or being aggressive, being involved in date rape or damaging property, for instance.

Slide 18

STATEMENT 10

- * There is no point in postponing drinking until I am older
- * False, research shows that the longer you postpone drinking, the less likely you are to experience alcohol related problems

Slide 19

STATEMENT 11

- ✗ I know what I am doing even though I have had a few drinks
- ✗ False, drinking impairs you thinking. Your impairment is related to the Blood alcohol content. This depends on your weight. After one unit, your BAC can be 0.02%. This slows reaction time and makes it difficult to focus on more than one thing at a time.

Slide 20

WHAT IS A UNIT?

 Standard glass of wine (175ml) 11.5% ABV 2 units	 Large glass of wine (250ml) 12% ABV 3 units	 Bottle of wine (750ml) 12% ABV 9 units
 Pint of strong lager or beer 5.3% ABV 3 units	 Pint of normal strength lager or beer 3.5% ABV 2 units	 Can of normal strength lager (500ml) 4% ABV 2 units
 Spirits double (50ml) 40% ABV 2 Units	 Alcopop bottle (275ml) 5% ABV 1.4 units	 Spirits single (25ml) 40% ABV 1 unit

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ALCOHOL KNOW YOUR LIMITS



Units per day

Slide 22

IMMEDIATE EFFECTS OF ALCOHOL

- ✖ Nausea
- ✖ Headaches
- ✖ Hangover
- ✖ Dizziness
- ✖ Vomiting & shaking
- ✖ Impaired judgment
- ✖ Over-sleeping the next day
- ✖ Disorientation
- ✖ Impaired judgement

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ALCOHOL & THE TEENAGE BRAIN

- ✖ Anxiety
- ✖ Mood swings
- ✖ Forgetfulness & memory problems
- ✖ Death of brain cells/impaired brain development
- ✖ Learning problems
- ✖ Self harm or suicidal thoughts
- ✖ Impaired judgement
- ✖ Psychological dependence
- ✖ Problems with decision making

Slide 24

TEENAGERS & ALCOHOL

- Liver problems
- STD's & risky sexual practices
- Alcohol poisoning
- Choking
- Organ failure
- Traffic accidents
- Teenage pregnancy
- Relationship problems

Slide 25

TEENAGERS & ALCOHOL

- * Aggression, violence & impulsivity
- * Date rape
- * Depression, anxiety & irritability
- * Saying things you might regret later on
- * Changes in personality
- * A gateway to other illicit drugs
- * Legal problems
- * Low self esteem

Slide 26

WHERE DO ALCOHOL EXPECTANCIES COME FROM?

Slide 27

WHAT ARE SOME BARRIERS THAT PREVENT TEENAGERS FROM NOT DRINKING TOO MUCH?

Slide 28

HOW CAN WE OVERCOME THESE BARRIERS/AVOID DRINKING TOO MUCH?

- ✖ Avoid taking out a lot of money when going out
- ✖ Decide on how much you are going to drink before you start and stick to it
- ✖ Switch to lower strength drinks
- ✖ Switch to drinks with higher volume of non-alcohol content
- ✖ Avoid hanging out with friends who drink too much
- ✖ Stick to single shots of spirits rather than doubles
- ✖ Identify alternative ways of coping with stress or anger
- ✖ Inform others of your intention to cut down
- ✖ Learn to say no

Slide 29

WHAT IS ASSERTIVENESS?

- ✖ Win-win approach
- ✖ Open & honest communication where both parties feel happy & respected
- ✖ Asking for what you want from others
- ✖ Saying 'no' without feeling guilty

Slide 30

WHAT IS PASSIVE BEHAVIOR?

- ✖ Lose – win situation
- ✖ Violating your rights by not expressing how you feel/think
- ✖ Allowing others to decide for you & take advantage of you
- ✖ Pleasing others to avoid conflict
- ✖ Causes stress, anxiety & worry

Slide 31

AGGRESSIVE BEHAVIOR

- * I win, you lose
- * Expressing thoughts/feelings/beliefs in a hurtful way
- * Putting others down
- * Superiority
- * Dominating, forcing and punish others
- * Results in added stress and not being liked by others

Slide 32

THE ABC'S OF ASSERTIVENESS

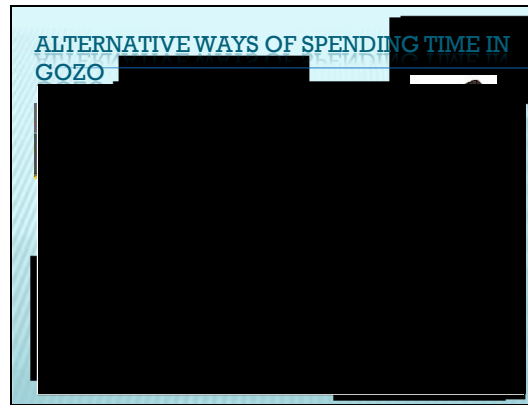
- + Use the word 'I' as often as possible: eg I feel...
- + Describe the hurtful/problematic behaviour: I feel hurt when you raise your voice
- + Make a request: I feel sad when you do not listen. I feel better when you tell me what you think.

I feel A (feeling) when you B (action). I feel better when you C (request)

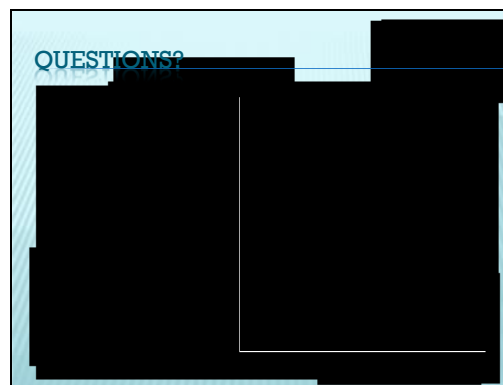
Slide 33

YES I CAN!

Slide 34



Slide 35



A quality review of smart-phone applications for the management of pain

Abstract

Background: Smart-phone pain management apps are recent technological utilities that have not been studied extensively. The lack of regulatory body assessing the content of existing apps means that their quality is often unknown.

Objectives: This review aims to assess the quality of smart-phone apps that claim to provide information and treatment of pain conditions. It assesses the degree to which apps adhere to evidence-based practices in psychological research for pain management and which apps stand the best chance of being effective for consumers. Another aim is to identify potential apps health care professionals may wish to recommend to clients.

Methods: Pain management apps on the official iPhone and Android stores were searched in December 2013. Those containing a psychological component in the app description were downloaded and rated for quality using a checklist devised by two researchers. The checklist was based on cognitive behaviour therapy (CBT) guidelines, since the latter is the most effective intervention for computerized programs.

Results: 195 apps met inclusion criteria. Although CBT is a promising alternative to traditional psychological interventions, only 6 apps endorsed theoretical reference to CBT principles. Existing apps are often constructed by lay people or software developers, with little input from health care professionals.

Conclusion: Pain apps sometimes promise a solution to pain without a consideration of app content. The development of evidence-based apps and rigorous evaluation of any long-term outcomes is important in enhancing understanding of the potential of these apps.

Keywords: smart phones, pain management, psychological, computerized cognitive behaviour therapy

Introduction

Pain is the most common reason prompting individuals to seek professional help (Disorbio, Bruns & Barolat, 2006). Pain is often organic in nature. Conclusively, medical approaches play a crucial role in pain alleviation. Nevertheless pharmacological treatments sometimes fail to eliminate pain or may only provide temporary relief. A holistic understanding of pain requires the adoption of a bio-psychosocial framework (Engel, 1980). The latter is especially relevant when pain is of a persistent nature and when it causes major disruptions to the individual's life.

Psychological factors play an important role in the experience of pain and increase the complexity of chronic pain conditions (Linton & Shaw, 2011). They can predict the person's adjustment and the extent of disability exacerbated (Vlaeyen, Crombez & Goubert, 2009). The comprehensive remits of persistent pain may lead to an array of psychological stressors. Since all pain experiences involve the interplay of physiological and psychological factors, these dimensions are continuous rather than dichotomous (Sarafino, 1994). A consideration of the social impact of chronic pain is another important part of assessment since pain can have adverse effects on the quality of life of the sufferer (Kroenke, Outcalt, Krebs, Bair, Wu, et al., 2013). Conclusively, adopting a bio-psychosocial framework will ensure a deeper understanding of the patient's condition and help in developing a comprehensive care-plan (Disorbio et al., 2006).

Psychological interventions over the internet

Psychological interventions can be extremely beneficial in helping patients manage feelings of distress and in fostering medicinal adherence, mostly via psycho-educational efforts. The most popular interventions include behavioural treatments, cognitive therapies, cognitive behaviour therapy and acceptance and commitment therapy (Disorbio et al., 2006; Morley, 2008).

Over the past few years, e-health or health care via internet accessibility has revolutionized the availability of health care services (Meier, Fitzgerald & Smith,

2013). Recent years have witnessed the growth of online interventions aimed to foster healthier behaviours such as those aimed to help persons quit smoking cessation (Wang & Etter, 2004) or lose weight (Gold, Burke, Pintauro, Buzzell & Harvey-Berino, 2007). These interventions often encourage active involvement from behalf of users and yield more effective outcomes than those that do not incorporate a self-help component (Monteagudo & Moreno, 2007; Samoocha, Bruinvels, Elbers, Anema & Van der Beek, 2010).

The National Institute for Health and Care Excellence (NICE) is an internationally recognized governing body that sets standard for high quality healthcare. NICE does not possess a set of guidelines for managing general pain conditions. Nevertheless, guidelines for an early onset of persistent non-specific low back pain dictate the incorporation of CBT principles (NICE, 2009). Similar findings were disseminated by the International Association for the Study of Pain (IASP). The IASP was founded in 1973 and is the leading professional forum supporting the holistic study of pain. *Pain* is the association's only peer-reviewed journal, encompassing the dissemination of research on pain treatment. According to a recent systematic review (Bender, Radhakrishnan, Diorio, Englesakis & Jadad, 2011) published on *Pain*, computerized cognitive behaviour therapy (CCBT) reveals encouraging results for pain management among diverse age-groups. CCBT is quite structured and this feature renders it a practical web-based treatment (Przeworski & Newman, 2006).

Smartphone applications for the management of chronic pain

Although several studies have attempted to assess the quality of internet-based health interventions, smart-phones apps have not been studied extensively. Smart-phones are more sophisticated than ordinary phones, offering sophisticated technological facilities and increased ease of internet access. They provide '*an essential, any time, any place portal into the entire world wide web of knowledge*' (Kamel Boulos, Wheeler, Tavares & Jones, 2011). A good number of downloadable mobile apps tackle diverse topics, thereby attracting a broad spectrum of service users.

Smart-phone apps complement telemedicine by providing global advice on health-related aspects (Martinez, Phillips, Carillho, Thomas, Sindi et al., 2008). Health applications incorporating mobile links are often referred to as mHealth or Mobile Health. The World Health Organization (2011) defines the latter as medical and public health practices supported by mobile devices such as mobile phones, patient monitoring devices, personal digital assistants and other wireless devices. Apps facilitate goal-setting and provide almost immediate feedback to service users, thereby increasing client involvement and self-management strategies (Vardeh, Edwards, Jamison & Eccleston, 2013) For instance, eCAALYX (Kamel Boulos et al., 2011) was designed to increase communication between older people experiencing multiple chronic conditions and health care professionals. It proved effective in encouraging the self-management of health conditions.

Evaluation of smart-phone applications

Despite the increasing number of smart-phone applications, few high quality trials have evaluated their effectiveness (Vardeh et al., 2013). The gap in literature is particularly evident when it comes to pain management, where a thorough literature search resulted in the retrieval of one study only. Kristjánsdóttir, Fors, Eide, Finset, Stensrud et al (2013) tested the efficacy of a 4-week smart-phone delivered intervention aimed to reduce catastrophizing and increase day-to-day functioning in women with pain. The intervention comprised a chronic pain rehabilitation program complemented by a smart-phone app incorporating CBT principles. A reduction in symptom level was observed in the intervention group, suggesting that smart-phone apps can be easily incorporated in existing rehabilitation programs to yield beneficial outcomes.

Despite promising findings, few studies have examined the quality of existing apps. Conclusions drawn from previous literature are of some concern. For instance, Rosser and Eccleston (2011) found that pain apps seem to pay little attention to evidence-based practices and are often constructed by engineers rather than health-care professionals. The potential harm that can result from these apps is worrying.

The need for this review

Research on mobile technology is still in its infancy. There is a lack of expert overseeing of health apps. Moreover, the absence of a professional body regulating app content means that some apps may mislead service users and instil unrealistic expectations (Terry, 2010). Relying solely on smart-phone apps to diagnose or manage pain conditions without resorting to professional advice may aggravate health problems. Although a review of smart-phone apps on the generic conditions of pain has already been conducted, hundreds of apps are released yearly. Investigating app quality and content can shed light on their potential effectiveness or harmful consequences. Chronic pain sufferers are often willing to do anything to alleviate pain, especially when pharmacological attempts fail. Nevertheless, web-based apps may mislead individuals (Rosser & Eccleston, 2011). On the other hand, apps are the new trend of future telemedicine (Ardito, 2010). Smart-phones are small, practical, lightweight, affordable and convenient, offering immediacy, accessibility and confidentiality. Evidence-based apps may be a useful tool when used in adjunct to other therapies.

Objectives

Building upon the previous work and framework by Rosser et al. (2011), this study aimed to review developer's descriptions of smart-phone apps that claim to provide information and treatment for pain conditions. A main area of investigation was the degree to which apps adhere to evidence-based practices in psychological research for pain management. This study also aims to identify which of the existing apps stand the best chance of being effective for consumers and identify potential apps health care professionals may wish to recommend to patients.

Methods

Search Protocol

A search on the official iPhone (App Store) and Android (Android Market) app stores was conducted between December 2013 and January 2014. These two operating

systems were chosen since Android is the most popular operating system, selling more devices than any other competitor (Emerson, 2012; Gupta, Cozza, Nguyen, Milanesi, Shen et al., 2012) whilst Apple's iPhone is one of the best selling smartphones, providing access to over 8.000 health-related apps (App Genome Report, 2011). Apart from that, very few apps were retrieved from other platforms in Rosser et al's (2011) review.

The *health and fitness*, *lifestyle* and *medical* categories, when present, were searched to identify potential apps. Broad search terms (Appendix 1) identified from previous systematic reviews on web-based interventions for managing pain (Bender, Radhakrishnan, Diorio, Englesakis & Jadad, 2011; Macea, Gajos, Armynd, Calil & Fregni, 2010) were incorporated to ensure a comprehensive search, exhaustive of all existing apps. Since Rosser et al's (2011) review did not specify the date range for app inclusion, this study included all retrieved apps, irrespective of date of release.

Previous studies have applied the star rating system to identify the most popular and favourite apps (Azar, Lesser, Laing, Stephens, Aurora et al., 2013; Breton, Fuemmeler, & Abrams, 2011; Cowan, Van Wagenen & Brown, 2013). However, a closer look at existing apps revealed that the star rating system was inaccurate since some apps had never been reviewed or were rated by very few individuals. Since this methodology could have resulted in the exclusion of potentially better quality apps, an exhaustive and comprehensive search was carried out to identify all relevant apps.

Inclusion and exclusion criteria

Inclusion criteria were as follows: 1) aimed solely at patient consumers; 2) including the word 'pain' in the app description; 3) advertise that the app was specifically designed for managing pain conditions; 4) limited to English language and 5) compatible with Android and iPhone. Both paid and free apps were included. Apps aimed solely at providing links for subscriptions to online magazines were included in the list of retrieved apps but were not rated for quality. Exclusion criteria included 1) apps aimed solely to prevent pain; 2) apps aimed solely at health care professionals; 3)

language other than English and 4) apps providing information on services offered in particular pain clinics, centres or related to liability insurance.

Data extraction strategy

Data was collected mainly from app descriptions. Once all existing apps were reviewed, two separate procedures were used for apps that contained a psychological component versus those that did not. The presence of a psychological component was determined in two ways. Apps were included when the app description clearly stated that a psychological component was included in its contents. When in doubt, the app was downloaded. When the latter was absent, a description incorporating a psycho-educational element with a cognitive and/or behavioural component as endorsed by CBT guidelines was considered meeting the inclusion criteria.

Apps containing a psychological component

Apps containing a psychological component were purchased and/or downloaded. A data extraction table (Appendix 2) was used to summarize relevant information from these apps. In order to evaluate the psychological quality of each app, a preliminary checklist based on CBT was devised by two researchers, with the aim of rating app quality. While guidelines employed in clinical settings may not be appropriate for a mobile app, CBT guidelines were used because they have been successfully applied to computerized pain-management interventions (Berman, Iris, Bode & Drengenberg, 2009; Dear, Titov, Perry, Johnston, Wootton et al., 2013). Smart-phones come under the latter category. CBT is also the first line of treatment for pain management endorsed by the IASP and by NICE guidelines. Apart from the latter reason, no specific guidelines for mobile apps exist (Abrom, Padmanabhan, Thaweethai & Phillips 2011). Following an examination of the content of a few apps, the checklist (Appendix 3) was finalized and used to rate and score each app. Items on the checklist were mutually exclusive and there was no overlapping between item categories. This led to a thorough definition of what should and should not be included in every item on the checklist. Apps were allocated 0 points if the particular feature was absent and 1 if

the feature was present. Scores were independently reviewed by the two researchers. Following guidelines for systematic reviews, the Delphi method was used and discrepancies were resolved by mutual agreement. The maximum score a particular app could obtain on the checklist was 20.

Apps with no psychological component

Adopting the framework used by Rosser et al. (2011), apps that did not contain a psychological component but enough information to determine content in relation to presumed therapeutic components were included. Although these apps were not downloaded and reviewed for quality, descriptive data was extracted and recorded in the table (Table 3 results section). Content was determined mainly from app description.

Results

A total of 360 apps were identified. Pain apps were retrieved from the *medical, health and fitness, lifestyle* and *books and references* categories. Out of these, 165 apps were excluded for the following reasons: provision of information on services offered by a medical institution/clinic only, diagnostic apps with no pain management tips, too little information provided in the description, apps aimed for GP's or medical students, apps no longer retrievable, apps aimed solely to connect people experiencing similar pain conditions and apps in language other than English. A total of 195 apps met inclusion criteria. This is more than double the amount of apps (75% increase) retrieved by Rosser et al (2011) and confirms that the number of apps released yearly is on the increase. Unlike findings disseminated by Rosser et al (2011), most apps were available through the Android market. Nevertheless, although the Android platform was searched first, some apps that were available on both platforms were coded under the former operating system. Moreover, although some apps (N = 26) had different names, the content was the same and were therefore eliminated. The price of apps varied. Nonetheless, the majority were free of charge. The highest priced app was 9.99 dollars while the lowest priced was 0.99 dollars. Few apps that

consisted of books or magazines were a mini-version of the full pay-for-download application and served to illustrate contents of the full app. 12 apps offered a limited or 'lite' version of the original app, whilst imposing restricted access to few of its features. Access to all content was provided in the *Pro* or *Plus* versions. Most *lite* versions were free of charge except for 2 which were a cheaper alternative of the full downloadable app.

File sizes ranged from 178K to 44MB. Very few apps provided details of the date of release. On the other hand, most apps provided information on the latest update which ranged from January 2010 till December 2013. Most apps relied on text-based information. Few apps incorporated standardized pain measurement instruments. Those that did included the Low Back Pain Questionnaire, Abbey Pain Scale, Visual Analogue Scale, Face Rating Scale, Face Legs Activity Cry Consolability Scale, the Fibromyalgia Impact Questionnaire and its revised version and the Wong Baker Faces Pain Scale.

Quite a few apps (N = 39) incorporated a medical explanation of the aetiology of pain. They offered information about particular pain conditions, promoted the teaching of skills to manage pain and provided information on treatments available. Nevertheless, the source of advice of most apps is unknown. Only 15% reported consultation with a general practitioner (GP) or other medical professionals when devising app content. A few app developers admitted they were no GP's but claimed to have sufficient experience to offer professional advice. Professions included paediatricians, landscape gardeners, hypnotherapists, physiotherapists, neurologists, rehab experts, orthopaedic physical therapists and engineers. More often than not, the profession was unclear. Some apps made reference to recognized pain or health societies including the National Health Service, American Chronic Pain Association, Arthritis Consumer Experts, Arthritis Research Centre, National Arthritis Awareness Program, The American College of Rheumatology (ACR), The Centre for Disease Control, Interventional Spine and Pain Management, National Fibromyalgia Association and UK Fibromyalgia.

App content and aims

Apart from pain relief, apps provided information on particular pain conditions and treatments. They were served to track, record, analyze and share pain experience, to diagnose conditions, to create professional pain reports, to improve strength and flexibility, to reverse physiological factors leading to chronic pain, to control inflammation, to disseminate latest research on pain management and identify pain triggers. Most apps included textual information. A few used visual images, graphs, video links and calendars to illustrate and clarify content. Two apps employed technology to provide vibration massage. 61% included the provision of education skills training. 32% comprised the self-monitoring of pain frequency and/or intensity. 17% contained information related to relaxation training. These included audio material for inducing hypnosis and meditation. Finally, 7 apps incorporated audio-visual material to teach yoga postures. Table 3 is an overview of self-help methods, app content, aims and number.

Table 3: App content and aims

Self-help component	Content	Aims	Number of applications
Education skills training	Information provision Electronic manual	Condition disease information	31
		Treatment information	20
		Exercise training	16
		Tai Chai	1
		Acupuncture & acupressure	11
		Natural remedies (eg magnetic therapy, heat & ice compression, aromatherapy, homeopathy etc)	40
Self-monitoring	Diary tracking	Condition tracking over time/medication/appointment reminder	52
	Pain scale only	Pain intensity assessment	9
	Posture monitoring	Body angle reading and response	1
Relaxation training	Audio relaxation	Meditation/chakra	3
		Hypnosis/Imagery	16
		Yoga	7
		Pilates	1
		Binaural beats/music	3
	Vibration Massage	Physical massage provision	2
	Other audio	Frequencies & harmonics	2

Pain condition and intervention duration

Some apps dealt with general health problems. Others focused on specific conditions including arthritis pain (24%), migraine (16%), back pain (13%), headache (12%) and fibromyalgia (7). The remaining apps targeted other pain conditions including joint pain, sciatica, knee, neck, breast, testicular and abdominal pain. More often than not, the same app could be applied to a range of chronic pain conditions. This was true for 88 apps. Only two app provided details of the duration of their intervention namely Habit Changer Pain Reduction and Pain Management Hypnosis. The time required for completing the former was 42 days while for the latter was 8 weeks. Consistent with Rosser's et al's review, none of the available apps reported a randomized controlled trial aimed to test the effectiveness of its content.

Characteristics of quality rated apps

Only 6 apps incorporated a psychological component. When the word *psychological* was not present in the app description, the latter was mainly deduced from app content. Of these, only 2 had quality scores higher than 11 namely Web MD Pain Coach and Habit Changer. On the other hand, most apps meeting inclusion criteria scored below 10 in the quality assessment checklist. Details of these apps are provided in Table 4. Further details including prices, file size, pain condition, aims and duration, when specified, can be found in Appendix 4. Although some apps rated for psychological component achieved modestly high scores, the professional background of app content developer was often unclear. There was no relation between the size, cost and the quality. Indeed, one of the best apps was free of charge.

Table 4: Characteristics of included apps

App name	App category	Profession of app content developer	Score on quality checklist	Price
Web MD Pain Coach	Health & Fitness	Physician reviewed	15	Free
Back Pain relief	Health & Fitness	Profession unclear	9	Free
Pain Tricks	Medical	Reviewed by paediatric medical professionals	9	Free

		working within the NHS		
Habit Changer	Health & Fitness	Unclear although authors claim to be trained in CBT & behaviour change	14	1.99 dollars
Fibromyalgia guide	Health & Fitness	Not specified	5	Free
Living with fibromyalgia	Books and references	Landscape gardener	7	€5.86

Habit Changer: This app scored quite high on the assessment checklist. It consists of a 42-day digital program aimed to encourage positive life changes, raise awareness of unhealthy habits and replace them with healthier ones. App developers claim it is based on CBT principles and neuro-plasticity. An automated message encourages task completion. The S.T.O.P. technique is used to stop racing thoughts and interrupt unhealthy cycles of negative thinking. Users are encouraged to focus on the here and now rather than worry about the future or think exclusively on pain. Self-praise for progress made is encouraged. A social networking connectivity feature enables users to post comments, insights and successes. Additional support is provided via a Facebook or Twitter link.

Pain tricks: The app targets a younger audience. It consists of a number of *tricks* aimed to make medical procedures less scary. Contents were reviewed by paediatric doctors working within the NHS. Authors claim that tricks were adapted from evidence-based medical research incorporating cognitive pain management strategies. Colourful illustrations and simple phrases encourage parents to prepare children for what to expect during particular medical procedures. Distraction techniques, relaxation exercises and engaging in pleasant and absorbing activities are encouraged. Although the app did not obtain a high review, the few customer posts were quite positive.

Web MD Pain Coach: This app received the highest quality rating score. Although it was not subject to a control trial evaluation, content is based on evidence-based quality guidelines and endorsed by a medical board. Individualized tips for specific

problems are provided and help users identify symptoms, triggers and treatments for particular pain conditions. A journal allows users to record pain intensity and duration. The goal section allows users to engage in physician-approved goals and encourage the setting of specific targets to alleviate and cope with pain. Supporting tips and access to evidence-based articles are also provided.

Back Pain Relief & Living with fibromyalgia: Both apps consist of downloadable books giving information about specific pain conditions. Advice on pain coping is also provided. Nevertheless, although the content seems to contain medically valid information, the source of advice is unclear. The back pain relief app directs the user to evidence-based articles supplied by the NHS, WebMD or the Mayo-clinic. Although both apps make brief reference to psychological treatments for managing pain, none of them actually provide specific psychological advice or tips on coping, hence the low scores in the quality assessment checklist.

Fibromyalgia guide: Although this app is not a book, contents are similar to text-based sources. The information given seems medically valid but the source of advice is unclear. The app aims to psycho-educate user about the role of psychological factors in the maintenance of pain, hence its inclusion in the list. Nevertheless, no further reference to psychological advice is provided.

Discussion

This study is an extension of a previous review aimed to examine the content and quality of smart-phone applications for pain management. It entails of a quality review of 195 apps from the iPhone and Android's market to determine the extent to which apps adhere to psychological pain management theories. Consistent with Rosser et al's (2011) findings, the number of pain apps has proliferated in the market over these past years. Moreover, although results are mostly based on app descriptions, they seem to support findings reported in previous research highlighting a minimal theoretical basis for facilitating self-management or behaviour change (Cowan et al., 2013; Pagoto, Schneider, Jojic, DeBiasse & Mann, 2013). Thus, although apps are on

the increase, most app developers are not health care professionals trained to provide evidence-based advice or to deliver therapeutic interventions but individuals with no background in health-care. Of interest is the variety of slogans used to advertise apps. These include *'unlock the Fun'* for back pain relief, *'starve off'* chronic injury or *'melt away in minutes'* for pain reduction. Others apps promised to relieve *'all the pain in the human body'* and to contain *'just stuff that makes the pain go away'*. Although these slogans have a marketing purpose to attract users, the potential of service users being misled is likely. Moreover, although most apps are relatively cheap, users are sometimes encouraged to purchase products with little or no scientific value. This is a worrying factor. Relying on unprofessional advice may worsen pain symptoms. The establishment of a professional regulatory body certifying app quality is important in addressing this problem. Certification of best quality apps would ensure that users make an informed choice before purchasing or downloading products.

Despite the extensive literature highlighting the importance of a bio-psychosocial approach to pain management (Engel, 1980; Lumley, Cohen, Borszcz, Cano, Radcliffe, Porter et al., 2011), few apps incorporated a bio-psychosocial component. Indeed, most adopted a biomedical approach to the aetiology and treatment of pain, with a heavy reliance on pharmacological therapy and natural remedies. Moreover, although CCBT is a promising alternative to traditional psychological interventions, only 6 apps endorsed theoretical reference to CBT principles. Emotional Freedom Techniques (EFT) were included, albeit briefly in one application (Chronic Pain Indiana). Nonetheless, content revolved mostly round hypnotherapy. A previous trial revealed that self-administered EFT may produce surprisingly good results when used in conjunction with other treatments and rehabilitation programs (Brattberg, 2008). Findings support the imminent need for a collaborative effort between app developers and health care professionals.

Very few apps included links connecting users to professionally monitored social networks. Most links on app descriptions served to answer technical questions or to direct users to the app developer website. Conclusively social support did not stand out as being an important requisite in most apps. Although some apps did incorporate

a social networking site such as Twitter or Facebook, the identity and profession of the source offering advice was often unclear. Of the downloaded apps, only Web MD, Pain Tricks and the Habit Changer incorporated a supportive element. Social support and optimism not only improve the quality of life of chronic pain sufferers but help reduce depressive symptoms and promote long-term functioning (Ferreira & Sherman, 2007; Inghelbrecht, Inghelbrecht, Daenen, Hachimi-Idrissi, Hens et al., 2011). Taken together, these omissions are a serious weakness of existing pain apps. The inclusion of social support is only one of the several features needed to improve the quality of existing apps. Results of CCBT for the management of chronic pain over the internet are promising (Bender et al., 2011; Macea et al., 2010) and may provide an additional theoretical backbone for app developers.

If smart-phone apps are modified to include features of evidence-based pain management strategies, research will still need to determine their effectiveness and long-term outcomes, if any. The checklist used to rate the quality of apps in this study was based on guidelines from systematic reviews for online interventions. Conclusively, further research is needed to determine whether review findings may be applicable for smart-phone apps, mostly due to the fact that app stores often impose limits on app sizes. It is possible that such limitations may lead to omitting potentially important information.

MedMD was one of the best rated apps. It is the only app holding a URAC health website accreditation. The latter is a symbol of quality of health information published on the web and is earned when information delivered is credible, when it has been closely reviewed and when it meets high standards for material delivery. Conclusively, it is probably one of the apps health care professionals may wish to recommend to their patients. Previous research has already identified the potential of this app in helping users manage their pain (Davis, 2012). Pain tricks and Habit Changer are also promising although they serve different purposes. Pain tricks may be an effective way of helping children cope with painful procedures but is more suited for younger age groups. Although Habit Changer is not as informative as Web MD, the provision of daily tips, challenges and reminders may make it an attractive tool when used in

adjunct to other evidence-based apps. What is promising about this app is its practical element, something which is other apps seem to lack. The possibility of testing of these apps in a RCT may reinforce and highlight their clinical effectiveness.

Strengths and limitations

To the author's knowledge, this is the first study using an evidence-based checklist to rate the quality of pain management apps and their level of adherence to best practice. Such a checklist may serve as a preliminary identification of the best features that need to be present in good quality apps and to shed light on limitations of existing apps in meeting these criteria. It has also helped to identify the apps health care professionals may find useful for potential clients. A comprehensive search strategy aiming to identify all apps served to eliminate sampling problems such as lack of representation or generalisability. Thus, unlike other studies, this research has included all relevant apps available on the two biggest platform developers.

As with other research, this review has some limitations. Evaluating the quality of pain management apps is a challenging endeavour. Although app description provided a good overview of app content, the initial app assessment was based on descriptions. It is therefore possible that some good quality apps may have been missed or were misclassified. Although a thorough search was made, apps incorporating a pain management feature that did not include the word 'pain' or the name of a specific pain condition in the app title may have been missed. The assessment quality checklist was based on information gathered from systematic reviews for managing chronic pain. Conclusively, acute pain conditions may not warrant from a psychological intervention, which may explain the absence of a psychological component in some apps. Some subjectivity was involved when devising the checklist. Thus, other researchers may come up with different items in the quality checklist and hence score apps differently. It is also unclear to what extent items in the checklist may have covered all important characteristics of included apps. Finally, given the constant emergence of new apps on the market, a replication of this study may result in the identification of new and potentially relevant apps.

Future directions

This review was useful in identifying those apps that are most effective for managing diverse pain conditions. Most apps fail to conform to evidence-based recommendations. Moreover, only few apps adhere to established IASP guidelines and suggestions provided in previous systematic reviews for the management of pain. Health care professionals should exercise caution when recommending pain self-management apps to clients. Pain sufferers would benefit immensely from apps incorporating theory-based designs. It would be ideal if app developers report their app performance before their app is released on the market. The possibility of establishing a trusted site from where tested and evidence-based apps are available for download and screened by a regulating body should be explored.

Conclusion

Current smart-phone applications for pain management rarely adhere to evidence-based guidelines. Although few apps recommend or link the user to proven psychological treatments, future apps may nonetheless serve as useful tool for managing chronic pain conditions. The development of evidence-based apps, the rigorous evaluation of long-term outcomes and the possibility of testing apps in randomized controlled trials is important in enhancing our understanding of app potential.

References

Abroms, L. C., Padmanabhan, N., Thaweethai, L., & Phillips, T. (2011). iPhone apps for smoking cessation. *American Journal of Preventive Medicine*, 40(3), 279–285.

App Genome Report. (2011). Retrieved from:
<https://www.lookout.com/resources/reports/appgenome>

Ardito, S. C. (2010). Healthcare reform: A follow-up. *Searcher*, 18(8), 10–13.

Azar, K. M. J., Lesser, L. I., Laing, B. Y., Stephens, J., Aurora, M. S., Burke, L. E., & Palaniappan, L. P. (2013). Mobile applications for weight management. Theory-based content analysis. *American Journal of Preventive Medicine*, 45 (5), 583–589.

Bender, J. L, Radhakrishnan, A., Diorio, C., Englesakis & M, Jadad, A. R. (2011). Can pain be managed through the Internet? A systematic review of randomized controlled trials. *Pain*, 152, 1740–50.

Berman, R. L., Iris, M. A., Bode, R., & Drengenberg, C. (2009). The effectiveness of an online mind-body intervention for older adults with chronic pain. *Journal of Pain*, 10, 68–79.

Brattberg, G. (2008). Self-administered EFT (Emotional Freedom Techniques) in individuals with fibromyalgia: A randomized trial. *Integrative Medicine*, 7(4), 30–35.

Breton, E. R., Fuemmeler, B. F., & Abrams, L. C. (2011). Weight loss, there is an app for that! But does it adhere to evidence-informed practices? *Translational Behavioural Medicine*, 1, 523-529.

Cowan, L. T., Van Wagenen, S. A., Brown, B. A., Hedin, R. J., Seino-Stephan, J., Hall, P. C., & West, J. H. (2013). Apps of steel: Are exercise apps providing consumers with realistic expectations? A content analysis of exercise apps for presence of behaviour change theory. *Health Education and Behaviour*, 40(2), 133–9.

Davis, Z. (2012). *iPhone app from WebMD helps people manage chronic pain*. Retrieved from <http://0global.factiva.com.wam.city.ac.uk/ha/default.aspx>

Dear, B. F., Titov, N., Perry, K. M., Johnston, L., Wootton, B. M., Terides, M. D., Rapee, R. M., & Hudson, J. L. (2013). The pain course: A randomised controlled trial of a clinician-guided Internet-delivered cognitive behaviour therapy program for managing chronic pain and emotional well-being. *Pain*, 154(3), 942-950.

Disorbio, J. M., Bruns, D., & Barolat, G. (2006). Assessment and treatment of chronic pain: A physician's guide to a bio-psychosocial approach. *Practical Pain Management*, 1–10.

Emerson, R. (2011). *The Huffington post. Android apps more popular than iOS apps, ABI research study finds.* Retrieved from http://www.huffingtonpost.com/2011/10/25/android-apps-ios-abi-research-study_n_1030595.html

Engel, G. L. (1980). The clinical application of the bio-psychosocial model. *American Journal of Psychiatry*, 137, 535–544.

Ferreira, V. M., & Sherman, A. M. (2007). The relationship of optimism, pain and social support to well-being in older adults with osteoarthritis. *Aging and Mental Health*, 11(1), 89–98.

Gold, B. C., Burke, S., Pintauro, S., Buzzell, P., & Harvey-Berino, J. (2007). Weight loss on the web: A pilot study comparing a structured behavioural intervention to a commercial program. *Obesity*, 15(1), 155–164.

Gupta, A., Cozza, R., Nguyen, T. H., Milanesi, C., Shen, S., De La Vergne, H., Zimmerman, A., Lu, CK., Sato, A., & Glenn, D. (2012). *Market share: Global devices, worldwide 1Q12.* Retrieved from <http://www.gartner.com/DisplayDocument?ref=clientFriendlyUrl&id=2015915>

Inghelbrecht Nijs, J., Inghelbrecht, E., Daenen, L., Hachimi-Idrissi, S., Hens, L., Willems, B., Roussel, N., Cras, P., & Bernheim, J. (2011). Long-term functioning following whiplash injury: The role of social support and personality traits. *Clinical Rheumatology*, 30(7), 927-925.

Kamel Boulos, M, N., Wheeler, S., Tavares, C., & Jones, R. (2011). How smart-phones are changing the face of mobile and participatory healthcare: An overview, with example from eCAALYX biomedical engineering. *OnLine*, 10, 24.

Kristjánsdóttir, O. B., Fors, E. A., Eide, E., Finset, A., Stensrud, T. L., van Dulmen, S., Wigers, S. H., & Eide, H. (2013). A Smartphone-based intervention with diaries and therapist-feedback to reduce catastrophizing and increase functioning in women with chronic widespread pain: Randomized controlled trial. *Journal of Medical Internet Research*, 15(1), e5.

Kroenke, K., Outcalt, S., Krebs, E., Bair, M. J., Wu, J., Chumbler, N., & Yu, Z. (2013). Association between anxiety, health-related quality of life and functional impairment in primary care patients with chronic pain. *General Hospital Psychiatry*, 35(4), 359-365.

Linton, S. J., & Shaw, W. S. (2011). Impact of psychological factors in the experience of pain. *Journal of the American Physical Therapy Association*, 91, 700-711.

Lumley, M. A., Cohen, J. L., Borszcz, G. S., Cano, A., Radcliffe, A. M., Porter, L. S., Schubiner, H., & Keefe, F. J. (2011). Pain and emotion: A bio-psychosocial view of recent research. *Journal of Clinical Psychology*, 67(9), 942–968.

Macea, D. D., Gajos, K., Armynd, Y., Calil, D., & Fregni, F. (2010). The Efficacy of web-based cognitive behavioural interventions for chronic pain: A systematic review and meta-analysis. *The Journal of Pain*, 11(10), 917-929.

Martinez, A.W., Phillips, S.T., Carillho, E, Thomas, S.W., Sindi, H., & Whitesides, G. M. (2008). Simple telemedicine for developing regions: Camera phones and paper-based micro-fluidic devices for real-time, off-site diagnosis. *Analytical Chemistry*, 80, 3699-3707.

Meier, C. A., Fitzgerald, M. C., & Smith, J. M. (2013). eHealth: Extending, enhancing, and evolving health care. *Annual Review of Biomedical Engineering*, 15, 359-382.

Monteagudo, J. L., & Moreno, O. (2007). Towards the establishment of a European research area. *Patient Empowerment*, 1–84.

Morley, S. (2008). The psychology of pain. *British Journal of Anaesthesia*, 101(1), 25–31.

National Institute for Health and Care Excellence (NICE, 2009). Early management of persistent non-specific low back pain. Retrieved from <http://www.nice.org.uk/nicemedia/live/11887/44343/44343.pdf>

Pagoto, S., Schneider, K., Jojic, M., DeBiasse, M., & Mann, D. (2013). Evidence-based strategies in weight-loss mobile apps. *American Journal of Preventive Medicine*, 45(5), 576–582.

Przeworski, A., & Newman, M. G. (2006). Efficacy and utility of computer-assisted cognitive behavioural therapy for anxiety disorders. *Clinical Psychologist*, 10(2), 43-53.

Rosser, B. A., & Eccleston, C. (2011). Smartphone applications for pain management. *Journal of Telemedicine and Tele-care*, 17(6), 308-12.

Samoocha, D., Bruinvels, D. J., Elbers, N. A., Anema, J. R., & Van der Beek, A. J. (2010). Effectiveness of web-based interventions on patient empowerment: A systematic review and meta-analysis, *Journal of Medical Internet Research*, 12(2), e23.

Sarafino, E. (1994). *Health Psychology. Bio-psychosocial Interactions*. USA: John Wiley & Sons.

Terry, M. (2010). Medical apps for smart-phones. *Tele-medical Journal of E Health*, 16, 17–22.

Vardeh, D. V., Edwards, R. R., Jamison, R. N., & Eccleston, C. (2013). There's an app for that: Mobile technology is a new advantage in managing chronic pain. *Pain: Clinical Updates*, 21(6), 1-8.

Vlaeyen, J. W., Crombez, G., & Goubert, L. (2009). The psychology of chronic pain and its management. *Physical Therapy Reviews*, 12, 179–188.

Wang, J., & Etter, J. (2004). Administering an effective health intervention for smoking cessation online: the international users of stop-tabac. *Preventive Medicine*, 39(5), 962–968.

World Health Organization. (2011). mHealth: New horizons for health through mobile technologies: Second global survey on eHealth. Geneva: World Health Organization.

Appendix 1 – Search terms

'Chronic pain', 'pain', specific chronic pain conditions including 'fibromyalgia' or 'chronic fatigue syndrome' or 'chronic low back pain' or 'whiplash associated disorder' or 'WAD' or 'repetitive strain injury' or 'RSI' or 'dystrophy back pain', 'migraine', 'headache', 'arthritis', 'migraine', 'headache', 'osteoarthritis', 'rheumatoid arthritis', 'myofascial pain', 'neuralgia', 'abdominal pain', 'abdominal recurrent pain', 'musculoskeletal pain', 'cancer pain', 'post operative pain', 'dysmenorrhea' and 'low back pain'.

Appendix 2 – Data extraction table

The data extraction table contained the following information:

- *The title of the application*
- *Year of release/last updated*
- *Author's name and profession, any other professionals involved*
- *Price, when applicable*
- *The target population and age, when applicable*
- *File size*
- *The type of pain condition being addressed*
- *The aims of the application*
- *Presentation & type of content (images, text, photos, videos etc)*
- *Any links for contacting health care professionals and/or experts in the area*
- *Duration of intervention, where reference to an intervention is specified*
- *Medical validity of information*
- *Category app was in*

Appendix 3 – Quality checklist

Checklist	Name of app
Specific to pain management	
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	
Use of a pain diary	
Incorporation of activity pacing/physical activity	
Guidelines for better sleep/insomnia	
Stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophizing, passive coping, active coping)	
Problem solving strategies	
Health eating	
Incorporating a medication regime to alleviate pain	
Dealing with symptoms of depression or with difficult emotions	
Psycho-education about pain and how it effects overall functioning	
Cognitive restructuring/ challenging automatic thoughts	
Encouraging social support	
Pleasant events scheduling	
Other (miscellaneous)	
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	
App subject to control trial evaluation	
Based on quality guidelines (NICE)	
App based on quality guidelines or refers to credible evidence	

based literature/source	
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Appendix 4 – Details of pain apps

Web MD Pain Coach – found on both iphone and android playstore

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0
Use of a pain diary/journal/tracker	1
Encouraging/incorporating pacing/physical activity	1
Guidelines for better sleep/insomnia	1
Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	1
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophizing, passive coping, active coping)	1
Problem solving strategies	0
Health eating	1
Incorporating or encouraging a medication regime to alleviate pain	1
Dealing with symptoms of depression or with difficult emotions	1
Psycho-education about pain condition	1
Cognitive restructuring/ challenging automatic thoughts	1
Encouraging social support	1
Pleasant events scheduling	1
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	1
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	0
App based on quality guidelines or refers to credible evidence based literature	1

Total score	15
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Checklist	
Title of app	Web MD Pain coach
Year of release	Not specified but last update was in November 2013
Author's name and profession, any other professionals involved	Physician reviewed
Price, when applicable	Free
Target population/age	Not applicable
File size	30M
Type of condition being addressed	Back pain, neck pain, nerve pain, fibromyalgia, migraine, osteoarthritis, rheumatoid arthritis
Aims of the app	A mobile companion to help users through daily health and wellness choices so they can manage their chronic pain better; offers personalized experience as physician-reviewed tips related to user's specific condition are delivered daily to individual.
Presentation of content (text, photos, images etc)	Slideshows, text, videos
Links for contacting health care professionals or experts in the area	Yes
Duration of the intervention, if specified	No an intervention but an app to help users manage pain
Number of users	Not specified
Offers some medically valid information	Yes
Category	Health and Fitness

Back Pain Relief – android playstore

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0

Use of a pain diary/journal/tracker	0
Encouraging/incorporating pacing/physical activity	1
Guidelines for better sleep/insomnia	0
Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	1
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophizing, passive coping, active coping)	0
Problem solving strategies	0
Health eating	1
Incorporating or encouraging a medication regime to alleviate pain	1
Dealing with symptoms of depression or with difficult emotions	0
Psycho-education about pain condition	1
Cognitive restructuring/ challenging automatic thoughts	0
Encouraging social support	0
Pleasant events scheduling	0
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	1
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	1
App based on quality guidelines or refers to credible evidence based literature	1
Total score	9

Checklist	
Title of app	Back Pain Relief – Stop Sciatica now
Year of release	Last updated February 2013
Author's name and profession, any other professionals involved	App promises secrets from experts, it is unclear who these may be
Price, when applicable	Free
Target population/age	Not specified

File size	1.4M
Type of condition being addressed	Sciatica
Aims of the app	Steps to understanding symptoms of sciatica, reducing back pain & tips on proven non-invasive treatments
Presentation of content (text, photos, images etc)	Text, images and photos, video
Links for contacting health care professionals or experts in the area	Not specified in app description
Duration of the intervention, if specified	Not an intervention, mostly giving information about sciatica and when to seek professional help
Number of users	Not clear
Offering some medically valid information	Ebook containing some medically valid information for easing back pain & reducing strain
Category	Health and Fitness

Pain tricks - iphone store

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0
Use of a pain diary/journal/tracker	0
Incorporating/encouraging pacing/physical activity	0
Guidelines for better sleep/insomnia	0
Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	1
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophization, passive coping, active coping)	1
Problem solving strategies	0
Health eating	0

Incorporating or encouraging a medication regime to alleviate pain	0
Dealing with symptoms of depression or with difficult emotions	0
Psycho-education about pain and how it effects overall functioning	1
Cognitive restructuring/ challenging automatic thoughts	0
Encouraging social support	1
Pleasant events scheduling	1
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	1
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	1
App based on quality guidelines or refers to credible evidence based literature/source	1
Total score	9

Checklist	
Title of app	Pain tricks
Star rating	4+ although not enough ratings by customers
Year of release	August 2012
Author's name and profession, any other professionals involved	Cilein Kearns
Price, when applicable	Free of charge
Target population/age	For children and adults
File size	21.5MB
Type of condition being addressed	Painful medical procedures
Aims of the app	Provides simple tricks are for kids and their parents to do any time they are in pain, or are having a medical procedure that they are afraid of, especially if it might be painful, such as an injection. It is useful those living with chronic (long lasting) disease, who may experience many medical procedures in the course of their care.
Presentation of content (text, photos, images etc)	Has some text but uses a lot of graphics for children, quite nicely illustrated and appealing
Links for contacting health care professionals or experts in the	Link directs user to a website for pain management

area	
Duration of the intervention, if specified	Not an intervention, more of techniques for coping with painful procedures
Number of users	Not specified
Medical validity of information	Reviewed by pediatric medical professionals working in the NHS
Category	Medical

Habit changer –iphone

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0
Use of a pain diary/journal/tracker	1
Incorporation of activity pacing/physical activity	1
Guidelines for better sleep/insomnia	0
Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	1
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophization, passive coping, active coping)	1
Problem solving strategies	1
Health eating	0
Incorporating or encouraging a medication regime to alleviate pain	1
Dealing with symptoms of depression or with difficult emotions	1
Psycho-education about pain and how it effects overall functioning	1
Cognitive restructuring/ challenging automatic thoughts	1
Encouraging social support	1
Pleasant events scheduling	1

Advice from qualified health care professionals (GP's, psychologists or trained personnel)	0
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	1
App based on quality guidelines or refers to credible evidence based literature/source	1
Total score	14

Checklist	
Title of app	Habit changer Pain reduction
Star rating	4+
Year of release	Released June 2010
Author's name and profession, any other professionals involved	Larry Tobin & Carey White – trained in cognitive behaviour therapy and behaviour change respectively
Price, when applicable	1.99 dollars
Target population/age	Not specified
File size	0.6MB
Type of condition being addressed	General pain conditions
Aims of the app	To help users break free from the cycle of pain by changing their habits and the way they relate to pain
Presentation of content (text, photos, images etc)	Images, text, messages
Links for contacting health care professionals or experts in the area	Yes
Duration of the intervention, if specified	42 day challenge
Number of users	Not specified
Medical validity of information	Information is based on evidence
Category	Health and fitness

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0
Use of a pain diary/journal/tracker	0
Incorporating/encouraging pacing/physical activity	1
Guidelines for better sleep/insomnia	0
Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	0
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophization, passive coping, active coping)	0
Problem solving strategies	0
Health eating	1
Incorporating or encouraging a medication regime to alleviate pain	1
Dealing with symptoms of depression or with difficult emotions	0
Psycho-education about pain and how it effects overall functioning	1
Cognitive restructuring/ challenging automatic thoughts	0
Encouraging social support	0
Pleasant events scheduling	0
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	0
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	0
Endorsed by credible health professionals or association	0
Total score	5

Checklist	
Title of app	fibromyalgia
Star rating	3.7
Year of release	Last updated May 2013
Author's name and profession, any other professionals involved	No names provided
Price, when applicable	Free of charge
Target population/age	All ages
File size	211K
Type of condition being addressed	fibromyalgia
Aims of the app	To provide general information about the condition and treatments
Presentation of content (text, photos, images etc)	Text & images
Links for contacting health care professionals or experts in the area	No links provided from description
Duration of the intervention, if specified	Not specified
Number of users	Not clear
Medical validity of information	Information seems medically valid although source is unclear
Category	Health and fitness

Living with fibromyalgia – android

Checklist	
Specific to pain management	1
Measures of subjective pain experiences via standardized assessment tools to assess any changes in symptoms (eg McGill pain questionnaire)	0
Use of a standardized measure of mood or affect (eg Beck's Depression Inventory)	0
Use of a pain diary/journal/tracker	0
Incorporating/encouraging pacing/physical activity	1
Guidelines for better sleep/insomnia	1

Incorporation of advice for stress management & relaxation techniques (eg PMR, deep breathing exercises, autogenic training, imagery, yoga, mindfulness meditation, hypnosis etc)	1
Fostering cognitive coping and appraisal (Coping strategies questionnaire and subscales, e.g. catastrophization, passive coping, active coping)	0
Problem solving strategies	0
Health eating	1
Incorporating or encouraging a medication regime to alleviate pain	1
Dealing with symptoms of depression or with difficult emotions	0
Psycho-education about pain and how it effects overall functioning	1
Cognitive restructuring/ challenging automatic thoughts	0
Encouraging social support	0
Pleasant events scheduling	0
Advice from qualified health care professionals (GP's, psychologists or trained personnel)	0
App subject to control trial evaluation	0
Based on quality guidelines (NICE)	0
App based on quality guidelines or refers to credible evidence based literature/source	0
Total score	7

Checklist	
Title of app	Living with fibromyalgia
Star rating	2.5
Year of release	Updated November 2011
Author's name and profession, any other professionals involved	Anton Weeding – a landscape gardener
Price, when applicable	5.86 Euros
Target population/age	All age groups
File size	2.1M

Type of condition being addressed	Fibromyalgia
Aims of the app	To provide information on the disease and different types of treatments
Presentation of content (text, photos, images etc)	Text based
Links for contacting health care professionals or experts in the area	No information provided
Duration of the intervention, if specified	No instructions as to duration
Number of users	Not specified
Medical validity of information	Information seems medically valid
Category	Books and references

Section C

Unit 1: Generic Professional Practice

Introduction

This section is a reflection of a four-year journey towards the completion of my professional development as an applied health psychologist. Arising job opportunities have enabled me to apply health psychology principles and competencies to new horizons and in different settings.

Background

During my first two years of practice, I held the post of an anti-substance abuse guidance teacher within the Ministry of Education. I was responsible for the primary and secondary prevention of substance abuse amongst all school students within the Gozo College. Brief, opportunistic psychological interventions were carried out with adolescents on a one-to-one basis in cases of abuse or alleged abuse. Primary prevention sessions targeting adolescents aimed to reduce the hazards of both licit and illicit substances. Part of my work involved delivering awareness talks to parents, teachers and other members of the Senior Management Team. Apart from promoting health, the talks aimed to psycho-educate significant others and equip them with the skills needed to help teenagers who may be misusing substances.

In my third year of practice, I was employed as a trainee health psychologist within the Mental Health Service. I worked alongside a team of consultants, doctors, basic specialist trainees, nurses, social workers and occupational therapists. I was responsible for the delivery of behaviour change interventions and the provision of psychological advice and guidance to individuals experiencing mental health problems. Mental health problems often co-exist with physical problems. Whilst working in this setting, I also had the opportunity of working with individuals suffering from diverse health conditions including glaucoma, obesity, cancer, hypertension and diabetes, just to mention a few. Given my area of study, I was assigned to work with a consultant psychiatrist specializing in the field of addiction. Indeed, a good proportion of my work was carried out with drug addicts. Apart from risk assessments and group

sessions, psychological interventions incorporating motivational interviewing techniques were used with the aim of encouraging clients to take up rehabilitation programs.

Whilst working within the Mental Health Services, I also did some voluntary work at the local pain clinic. This involved the provision of psychological advice and support to patients who were having problems coping with pain. Pain conditions ranged from fibromyalgia, arthritis, migraines, complex regional pain syndrome, degenerative diseases and other complications resulting from accidents or operations. These experiences prove to be great learning curves and have equipped me with the tools needed to work with different populations.

1.1: Implementing and maintaining systems for legal, ethical and professional standards

Although the maintenance of legal, ethical and professional standards are crucial in any work setting, they were indispensable in my job. This was mostly due to the reason that I was working with two vulnerable populations, namely minors and individuals with mental health problems.

Reflection

Living and working in a small community such as Malta sets the potential for role conflicts and boundary issues. Indeed, people are well known to each other and the likelihood of meeting clients outside the work setting is relatively high. In order to establish and maintain healthy professional boundaries, I tried to avoid revealing personal information about myself, including the disclosure of contact details. Students, patients and relatives of patients sometimes attempted to contact me outside working hours, mostly via e-mails or social media networks. Such instances served to provide personal insight on the importance of explaining my role as a service provider and on the limits of my availability outside work hours at the beginning of every therapeutic relationship. Moreover, although I was always friendly with my clients, I had to make sure it was clear that I was not their friend.

Attachment to therapist and the crossing of boundaries in the therapist-client relationship is a possible occurrence in long-term therapeutic interventions (Constantino, Castonguay, Zack & DeGeorge, 2010). This is especially true for vulnerable clients experiencing complex health problems, those lacking social support and those with dependent personalities. The fostering of patient empowerment did not happen overnight. It was slowly achieved via ongoing reflective practice, regular supervision and the application of health psychology constructs. These included boosting clients' sense of self-efficacy in order to help them achieve a sense of mastery and control over everyday situations.

Working in substance abuse meant I occupied a very distinct role within the school setting. An obvious conclusion drawn by school personnel was that students talking to me were abusing from substances. In order to reduce gossip networks, I took extra precautions to safeguard the identity of referred students. Some precautions entailed the safekeeping of referral forms, case notes and other important documentation, avoiding talking to students outside the therapeutic setting, using case sensitive passwords for databases and the use of client pseudonyms during supervision sessions. Some of these precautions were also applicable within the mental health setting. In accordance with the British Psychological Society's guidelines (BPS, 2008), confidentiality and the breaching of confidentiality were explained to clients at the first point of contact. More often than not, behaviour change interventions were carried out in private therapy rooms. Measures for personal safety when working with clients were also taken. These included ensuring therapy rooms were equipped with safety mirrors or see-through glass doors, the presence of emergency buttons, when applicable, immunization against communicable diseases when working with drug addicts and ensuring the presence of a member of staff outside the therapy room.

Other issues related to the implementation and maintenance of legal and professional standards involved consulting with significant others. According to the National Policy for Substance Abuse (Ministry of Education, 2001), parents play a leading role in matters pertaining to the safety and well-being of children. I ensured parents were always involved in issues related to substance abuse or alleged abuse. Parent

consultations were held in an office outside the school building away from nosy onlookers. This helped maintain confidentiality and provided a more appropriate venue for the discussion of personal and sensitive information. The same was true within a mental health setting. I consulted with health care professionals regularly, particularly in cases of alleged harm to self or others, or during client disclosures of criminal intentions/acts. In accordance with provisions dictated by the Mental Health Act (Cap 525 of the Laws of Malta), I consulted with family members and other professionals when patients lacked the mental capacity to take decisions. Clients were referred to external agencies/professionals when I felt that their exigencies exceeded my professional competencies and abilities. These included referral to family therapy services or counselling.

Reflection

Some of my course competencies revolved round the delivery of behaviour change interventions via evidence-based research. Obtaining ethical approval for conducting psychological research proved to be a challenging but fulfilling experience. Since research projects were conducted with different populations, ethical approval from different entities was needed. Despite being lengthy and laborious, this process helped me become more aware of potential risks associated with research involving human participants. It also helped me become more mindful of elements of good practice and identify potential research implications I might have overlooked. Abiding to guidelines dictated by the BPS's (2009) code of conduct also helped ensure the maintenance of professional standards for the safety of self and others.

1.2: Contribute to the continuing development of self as a professional applied psychologist

Throughout my four years of practice, I attended diverse CPD activities. Apart from participation in core course workshops organized by City University, I also attended other CPD sessions organized by external entities. These included a seminar on

mindfulness, an online smoking cessation course organized by the National Centre for Smoking Cessation and Training, addiction workshops, a cognitive behaviour therapy seminar, a conference on palliative care, a conference on stress and a seminar on nutrition, just to mention a few (Please refer to Appendix section in practice log for copies of certificates). I also delivered workshops to diverse audiences including health care professionals, Basic Specialist Trainees, voluntary organizations such as the Mental Health Association, and training sessions to professionals within the education department. More often than not, teaching and training sessions were also a form of continuous professional development. This was mostly due to the fact that preparation entailed literature searches and reading of articles to gain increasing knowledge of the topic chosen by the training institutions. These workshops enabled me to put health psychology theories to practice and adjust my teaching content to populations of different backgrounds and levels of education.

Working in different settings also meant I had to find opportunities to increase my awareness of specific evidence-based psychological interventions, familiarity with different mental and physical problems and their implications, keeping up to date with new illicit drugs on the market, a good knowledge of work policies as well as familiarization with pharmacological treatments and their effects. This was quite a challenge, given the diversity of problems encountered.

Finally, I have recently teamed up with a group of colleagues, with the aim of setting up the Gozitan Society of Professional Psychologists. The aim of this society is to raise awareness of the profession of psychology within the local context, to deliver a number of CPD sessions to the general public or health care professionals and to disseminate psychological research to interested parties. The first talk was held in June 2015. The target audience comprised doctors, the main theme being the fostering of doctor-psychologist collaboration. Preparation for talk delivery entailed literature search and reading to gain increased understanding of the origin and basis of the most common psychological evidence-based practices. The anticipated date for the launching of the society is end of 2015.

Workplace and university supervision

Reflection

Apart from university supervision, I also attended workplace and private supervision to ensure I had access to competent consultation and advice. My supervisors helped me engage in reflective practice and provided invaluable guidance for handling difficult and complex cases. Supervision was useful in helping me tackle difficult situations at work, including problems being accepted in a clinical environment. The reflective diary was also a valuable contribution to my professional development. I discussed bits and pieces during supervision and this helped increase my self-awareness, reflect on my strengths and weakness as an applied psychologist and identify ways of improving my performance at work. Supervision was also a cathartic experience that helped prevent burnout, particularly when clients committed suicide or died. When I started working in mental health, my initial motto was to embark on a journey to cure clients. I was finding it difficult to accept the fact that sometimes, there is nothing you can do to help a person. Occasionally, I found myself feeling quite upset for no apparent reason, only to realize later on that I was carrying my clients' problems with me. Supervision was an important asset in this respect. I slowly learned to let go of factors that were beyond my control and to take more care of myself and my needs. I slowly and painfully learned to keep my sanity in a difficult and challenging environment.

Publications and presentations

Having completed pieces of research in different areas of interest, I am in the process of trying to publish some of the work with my City University supervisor. The process of submission and acceptance in peer-reviewed journals has been like a roller-coaster ride, full of ups and downs. Conclusively, I am more aware of aspects of good quality research and of the importance of identifying the most appropriate journal for my study.

Although my attempts at publication in peer-reviewed journals have been challenging, I had the opportunity to publish my MSc thesis in a local journal entitled the Journal of Education Studies in 2012. In November 2013, I presented results from my systematic review in a conference entitled *Psychological Health and Well-being* organized by the University of Malta (UOM). I also presented my smart-phone study at a workshop organized by the UOM in February 2014. I had the opportunity to participate in a symposium on the occasion of the World Arthritis Day and presented at a conference organised by the Arthritis and Rheumatism Association Malta on Pain Coping in September 2015. I am also in the process of publishing my smart-phone study in the British Journal of Pain. These experiences proved to be quite useful. First, they helped boost my presentation skills. Conclusively, I feel more confident when presenting in front of large audiences. Second, the discussion at the end of presentations helped identify potential areas of research I could look into in the future.

Reflection

Following a presentation at the UOM, I was asked to provide supervision to undergraduate psychology students and to teach a psychology module at the UOM. The former experience proved to be a process of guided discovery. It helped me become more aware of my role as a supervisee and supervisor, of boundary issues related to the supervision process and of the importance of collaborative meaning-making. Moreover, although I was the 'expert', I also learned a lot from my supervisees. I also gained more confidence when guiding students to conducting psychological research.

1.3: Provide psychological advice and guidance to others

As an anti-substance abuse guidance teacher, psychological advice revolved mainly round psycho-educating students about the harmful effects of substances and delivering brief interventions to help them quit smoking or cut down on drinking. According to Winters, Leitten, Wagner, O'Leary and Tevway (2007), schools are a viable setting for conducting brief evidence-based interventions mostly due to ease of

accessibility and the possibility of an early and timely intervention. I relied on a number of evidence-based theories including the Health Belief Model (Rosenstock, 1966), the Education Model (Green & Kreuter, 2005), Social Cognitive Theory (Bandura, 1986) and the Transtheoretical Model (Prochaska & DiClemente, 1986). I also used motivational interviewing, relapse prevention and cognitive behaviour therapy to guide clients towards behaviour change. Sometimes, clients were provided with advice on healthier ways of spending time, ways of managing anger and coping with cravings. My work experience as a smoking cessation advisor with the NHS back in 2009 proved to be an asset in this regard.

I also provided psychological advice to parents. I raised awareness of the warning signs and symptoms of abuse, on the harmful effects of passive smoking, on the importance of parents as role models, particularly when it comes to consuming substances such as alcohol and medication, tips on how to talk to teens about drugs and advice when to seek professional help. Guidance to teachers and other professionals was also provided in cases of abuse or alleged abuse. I was also part of the teaching stream of the psychology module for basic specialist trainees. My sessions revolved round theories of stress management, bereavement and loss, doctor-patient communication and professional ethics. Psychological advice and feedback was provided as deemed appropriate.

Whilst working with clients at the pain clinic, I relied mostly on cognitive behaviour therapy, mindfulness and techniques from acceptance and commitment therapy (ACT).

1.4: Provide feedback to clients

Feedback was provided in diverse settings and occasions. During my first two years of practice, psychological feedback was provided to students, parents and other professionals working within the education department. Feedback revolved mostly round providing advice in terms of the best way forwards in order to meet the holistic needs of students. In my opinion, constructive feedback entails a mutual exchange of

information between all parties involved. As a result, clients were encouraged to verbalize their feelings and opinions in a safe and non-judgmental environment. This process helped ensure they were involved in the decision-making process and therefore more responsible in restoring their health. In order to ensure material was appropriate to the target audience, evaluation sheets were provided after talks. The audience was requested to nominate useful and least useful aspects of sessions as well as provide suggestions for future talks. Actionable feedback from trusted colleagues who attended my talks also helped to highlight important things I might have overlooked. This helped me reflect on my work and revise it accordingly to grow professionally.

Psychological feedback was also provided within a mental health setting. Clients were provided with feedback on outcomes of testing or performance, when appropriate. Feedback in the form of psycho-education about the adoption of healthier lifestyles was also provided on a day-to-day basis. Apart from that, timely feedback on risk assessment or outcomes of psychological interventions was provided to health care professionals as deemed necessary. This was especially important in revising or assessing treatment outcomes. Finally, I also provided feedback to undergraduate students, mostly in relation to professional advice for completion of psychological research. The latter job exposure increased my knowledge of qualitative methods to data analysis.

The consultancy case study comprised the revision of the National Policy of Substance Abuse. Booklets aimed to provide information about the most popular drugs and their effects as well as ways of abstaining in high-risk situations. This was a very challenging piece of work, particularly in terms of meeting agreed deadlines. It entailed working collaboratively with staff within the education department, providing them with feedback on work completed and ensuring that the work met the client's needs.

With the introduction of the new Mental Health Act in October 2014, part of my job entailed the assessment of newly admitted clients. Assessments comprised a clinical interview, personality testing, the General Health Questionnaire and the Substance

Abuse Subtle Screening Inventory. Feedback was passed on to all stakeholders involved, mostly consultants, nurses and staff from the rehabilitation team. This feedback was important in devising an individualized care-plan for each client. It helped provide a framework on which to build the psychological intervention. Sometimes, feedback involved educating patients about the importance of medication adherence.

Overall reflection

My stage 2 training was no easy journey. I often felt overwhelmed with the amount of work to be completed. Although a few of the skills learned in my first job were transferrable, most were not. Moreover, changing job twice throughout my training was quite stressful. It also meant putting my case studies aside for a few days, doing a lot of background reading and familiarizing myself with the new workplace setting. Four years is a long time. Conclusively, I had to strike a balance between demands imposed by the course, work and other things going on in my personal life. I am not the same person I was prior to starting the course. On several occasions, I had to step out of my comfort zone. This process included being physically distant from my family, travelling alone in a foreign country and working away from home.

Working as a health psychologist within the Mental Health Service was probably the biggest challenge. Health psychology in Malta is a relatively new area. Conclusively, I encountered a lot of resistance from managers. Sometimes, employers make no distinction between what a person can and cannot do. The primary priority is task completion and statistics, irrespective of the skills and abilities of staff. I was recently asked to teach some modules of the MSc in Health Psychology Course opening at the University of Malta next scholastic year. Looking back, I am quite proud of my accomplishments. The completion of case studies in different areas has contributed to a varied portfolio, to expanding my remit of job opportunities and to the introduction of health psychology within a mental health setting. Last but not least, I have finally learned to approach challenges in a different way, namely as an opportunity for self-growth rather than a dreaded experience. I have learned to live by Jeffers' (2007)

inspiring motto which changed my outlook to life, namely “Feel the fear but do it anyway”.

References

Bandura A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs NJ: Prentice-Hall.

British Psychological Society. (2008). *Generic professional practice guidelines*. Leicester. The British Psychological Society.

British Psychological Society. (2009). *Code of ethics and conduct*. Leicester. The British Psychological Society.

Constantino, M. J., Castonguay, L. G., Zack, S. E., & DeGeorge, J. (2010). Engagement in psychotherapy: Factors contributing to the facilitation, demise, and restoration of the working alliance. In D. Castro-Blanco & M. S. Karver (Eds.), *Elusive alliance: Treatment engagement strategies with high-risk adolescents* (pp. 199–209). Washington, DC: American Psychological Association Press.

Green, L. W., & Kreuter, M. W. (2005). *Health promotion planning: An educational and ecological approach* (4th ed.). New York: McGraw Hill.

Jeffers, S.(2009). *Feel the fear but do it anyway: How to turn your fears and indecisions into confidence and action*. New Zealand: Random House Group Limited.

Ministry for Education. (2001). *Tackling substance abuse. National policy – Procedures for schools in Malta*. Retrieved from https://education.gov.mt/en/education/student-services/Pages/Psycho-Social_Services/Anti-Substance-Abuse.aspx

Prochaska, J.O., & Di Clemente, C.C. (1986). Towards a comprehensive model of change. In W.R. Miller and N. Heather (Eds), *Treating addictive behaviours: Processes of change*. New York: Plenum Press.

Rosenstock, I. M. (1966). Why do people use health services? *Millbank Memorial Fund Quarterly*, 44, 94–127.

The Mental Health Act, Ministry for Justice, culture and local government, Cap 525.

Retrieved from

<http://justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11962&l=1>

Winters, K. C., Leitten, W., Wagner, E., & O’Leary Tevway, T. (2007). Use of brief interventions for drug abusing teenagers within a middle and high school setting. *Journal of School Health*, 77(4), 196–206.

Unit 3 - Consultancy

Setting: Education Division, Ministry for Education, Malta

Client: Service Manager, Education Psycho-Social Services

Aims: Revising and updating the National Policy of Substance Abuse

Target group: School age students

Introduction

This case study shows how requests for consultancy were assessed to be later developed, reviewed and evaluated using evidence-based consultancy models.

3.1: Assess requests for consultancy

Context of consultancy

The initiative to set up the Substance Abuse Procedures (SAP) was taken in 1999 by the Minister of Education. Procedures are incorporated within a national policy containing step-by-step guidelines to be followed in situations of abuse/alleged substance abuse in schools. They apply to all educational establishments catering for students under 18 years of age. A booklet with information on the most commonly abused drugs accompanied the original policy. In 2001, the Directorate for Educational Services appointed Focal Persons to help schools administer the SAP. Focal Persons are also responsible for the primary and secondary prevention of substance abuse in schools. At the time this work was completed, I was the Focal Person responsible for the Gozo College.

Identifying clients' needs and expectations

In September 2012, my Service Manager approached me about this piece of consultancy, with the aim of revising the National Policy on Substance Abuse in

schools. The first official meeting in March 2013 was an opportunity to ask questions and begin discussions for developing this project. According to Earll and Bath (cited in Michie & Abraham, 2007), the bottom line of every piece of consultancy involves a clear identification of the client's needs. Since the client was unable to attend for the whole meeting, the existing policy was discussed with all Focal Persons. The meeting proved to be a good starting point where reasons for revision were identified by the whole team (please refer to minutes of 2nd meeting).

A Process Consultation (PC) approach was adopted during the first preliminary meetings. PC entails what goes on between the helper and person being helped (Schein, 1999). The PC model requires a collaborative relationship between client and consultant. This approach is necessary at the beginning of any helping process and will clarify the kind of help needed (Schein, 1999). During the second meeting, the Service Manager asked me to complete the consultancy and to identify updates needed. Such situations are a common occurrence in PC since clients often need help in diagnosing problems. Having revised the list drafted by the whole team, the client's expectations became clearer:

- *Establishing clearer guidelines on who can refer and when*
- *Devising 2 new booklets to accompany the policy*

This process served to reduce the initial sense of dependency often experienced by clients. Apart from that, PC stresses the importance of mutual diagnosis and serves to remind both parties that problems are ultimately owned by the client. It is only the latter who knows what will and will not work for her organization.

Reflection

I did not know the client intimately enough to decipher conscious or unconscious feelings operating within the helping relation. Nevertheless, forces arising out of the social structures this consultancy was embedded in were inevitable. Being brought in as a 'consultant' may have caused feelings of discomfort in my client, mostly due to the fact that usually she was the one taking all the decisions and I was the one following orders. Slowly, I started becoming conscious of other psychodynamic forces

going on inside me. Honestly enough, I liked the sensation of being 'one-up' for once, as Schein calls it. Overcoming tensions due to 'superiority' required an effort. Involving the client as much as possible helped establish a status-equilibrating environment whereby both consultant and client remain in power.

Background and literature review

Substances abuse is a worldwide problem and Malta is no exception. The phenomenon is also prevalent amongst younger generations. An alarming yet normative and commonplace practice amongst Maltese teenagers is the high consumption of alcohol. According to latest European School Survey on Alcohol and other Drugs (ESPAD, Arpa, 2011), 56% of teens in Malta engage in frequent episodes of binge drinking. This percentage is much higher than the European average of 39% (Arpa, 2011). Efforts to reduce the harmful health consequences of substances are an indispensable investment.

Disparities in health are social in origin (Whitehead, Dahlgren & Gilson, 2001). According to the PRECEDE/PROCEDE model (Green & Kreuter, 1999), effective health promotion requires a thorough understanding of behavioural and environmental factors contributing to particular health problems. While it is not always possible to minimize risk factors, increasing protective ones may help counteract risks. Developing practical and actionable targets at a national level can reduce health disparities and sustain the health status of individuals (Dahlgren et al., 2001; Whitehead, Scott-Samuel & Dahlgren, 1998). The Education Department's decision to establish a policy for substance abuse is one way of narrowing health gaps within the local community, thereby acting as a buffer against adverse health consequences that may result (Detailed literature in 'Preface & Background' section of policy).

Reflection

Good theories for public health policies need to be practical and provide clear guidelines that can be implemented in real-life situations (Breton & De Leeuw, 2010). I only realized how complicated policies can be when I started highlighting sections that

needed revision. Identifying processes that would facilitate or compromise the effectiveness of the policy and the gap between formulation and implementation was no easy tasks. Brummelman and Walton's (2015) description fits the task perfectly: 'If you want to understand something, try changing it'.

Assess feasibility of consultancy

The Service Manager had been asked to review the policy by the Director General. Although this task was outside my usual job description, she asked me to undertake this piece of work since I was a trainee health psychologist.

The previous policy had been drafted by a team of professionals. However, the initial drafting process would be fulfilled by myself on consultation with the Focal Persons and Service Manager. Once completed, the draft copy and booklets would be submitted to the Director General for revision before the finalizing and launching process. It was not yet agreed whether booklets would be printed alongside the policy or placed on the Department's website to cut down on printing expenses.

One of the anticipated constraints was the unrealistic deadline for completion. Following the first official meeting in March 2013 where the client wanted this work completed by May 2013, a new deadline for July 2013 was negotiated.

Reflection

Following the initial request to revise the policy in September 2012, I tried to set up several meetings with the client to discuss her expectations. Nonetheless, all meetings had been cancelled from her side. Moreover, my e-mails were left unanswered. I could not help feeling daunted at the prospect of completing this consultancy within the given deadline. Having good time-management and planning skills is one of my assets. Since I could not take things at my own pace, this project started becoming a stressful rather than enjoyable experience. I felt uncomfortable confronting the client. Ensuring respectful limits of communication meant I had to work around her rather than directly through her. Luckily enough, my familiarity with the setting was an asset to meeting the deadline. Despite feeling uncomfortable working outside my comfort zone,

everyday situations often require flexibility. Another learning point at this stage was to be more assertive with clients in future consultancies, especially in the setting of realistic timeframes.

3.2: Planning the Consultancy

Determining aims and objectives & produce implementation plans

The first step involved a clear identification of the aims and objectives of the work (Minutes of meetings Appendix 1). These were clarified during the initial meetings. Ensuring a smoother referral process and improving the quality of service was a key driver for the work and a necessary outcome if the project was to be successful.

The next step consisted in identifying personnel to be involved at different stages in the drafting process. Although the booklets and literature search were based on an individual effort, certain decisions as to why the policy needed revision and what aspects to revise and include had to be taken as a team (client identification & requests in Appendix 2). The key personnel were:

- The Service Manager
- Focal Persons within the Anti-Substance Service
- Inspector from the Police Drug Squad

Following initial meetings, a timetable with specific timescales for completion was devised (Appendix 3).

Theoretical framework underpinning consultancy

According to Schein (1999), a PC approach is important during the first preliminary meetings as it helps the consultant '*access one's ignorance*' and understand what was is really being asked. Following a clarification of expectations, I found myself switching from PC to the *Purchase of Expertise* model when working on the booklets since I was

quite knowledgeable about the topic. This model assumes that the client ‘purchases’ some information or expert service she is unable to provide for herself.

Reflection

Successful consultancy requires setting aside one’s preconceptions, stereotypes and expectations (Schein, 1999). Since I was the first person to occupy the post of Focal Person in Gozo, my role was still at the embryonic stage of my job. One of the biggest challenges was overcoming my own motivations for revising the policy (such as increasing referrals in Gozo, thereby helping me establishing my own niche). This was not an easy task. I kept reminding myself that the reasons for revision were not about me but for the sake and safety of students.

3.3: Establish, develop and maintain working relations with clients

The physical distance of two hour travel to my manager’s office was partly contributing to difficulties in maintaining good working relations. Moreover, the client often rescheduled appointments at the last minute. When meetings did happen, contact occurred via face-to-face consultations. These were useful in updating the client with the work completed so far and to discuss any difficulties encountered. Since the client often came up with other work-related agendas for discussion, there was often not enough time to discuss all items on my list. Conclusively, most of the communication involved regular meetings with the intermediate client who was also a Focal Person. Meetings were regularly spaced to allow completion of a piece of work, discussion and making the necessary amendments before proceeding further. This was the best approach to take since any decisions of what to include at the start of the policy would influence the successive parts. On the other hand, meetings with intermediate clients progressed smoothly and served to facilitate interactive discussions and strengthen teamwork as everyone felt involved in the drafting process. Minutes of meetings and a draft copy of completed work was submitted to my manager at different stages for feedback.

Reflection

Schein (1999) stresses the importance of fair exchange between parties and the fostering of helping relationships with clients. Adopting such an approach with the contact client proved to be a challenge, mostly due to my futile attempts at setting up appointments and the cancellation of meetings from behalf of the client.

Cultural rules have a significant impact on the helper-client relations, especially when interactions involve crossing of statuses or rank levels (Schein, 1997). The person holding a superior position must still perceive the sense of being in control. The image given must fit the cultural stereotype of socially acceptable behaviour. Although I was brought in as a consultant, I was still a subordinate to my client and I had to manage the helping process without violating the cultural rules of interaction by staying within the bounds of my role. Schein believes that relationships often need to be sustained in spite of disappointing interactions. Being brought in as a consultant might have meant that my client was claiming less social value than she was actually worth. Possibly, the late or cancelled appointments could have been the client's approach of re-equilibrating the situation. On a more positive note, this experience helped strengthen the rapport with the intermediate clients who were my workplace colleagues.

Consultancy Contract

A written proposal forming the basis for the contract (Appendix 4) was prepared. Written records of agreement can be beneficial, even when a legal contract does not exist (Remley, 1993) and reduce the possibility of future conflicts due to misunderstandings.

3.4: Conduct consultancy

The project kicked off in mid-March 2013. In accordance with PC, the first step involved familiarizing myself with existing policies to have a clearer idea of their role within a school setting and a search on the drafting of policies. In this case, the policy was a set of guidelines aimed to ensure a safe school environment, free from harmful substances. I also needed to familiarize myself with the legal parameters for the

regulation of substances in Malta. This was followed by a revision of the old policy, highlighting areas that I felt needed modification, making the necessary changes and meeting with intermediate clients for feedback. A literature search on the health effects of the most common street drugs and health promotion models which act as theoretical frameworks for the booklets was also carried out.

A multi-theory approach was adopted when devising booklets. Educating individuals about the harmful consequences of engaging in a particular behaviour by increasing knowledge and skills is one way of preventing health problems (Green & Kreuter, 2005). Apart from general information about drugs, the parents' booklet contained information on the harmful effects of passive smoking and on ways of safeguarding children from these effects. Practical and easy tips to reduce the impact of passive smoking were included. Visual materials and definitions of difficult terms served to aid understanding.

According to Health Belief Model (Rosenstock, 1966), the likelihood of performing health-related behaviours depends on the perceived severity and susceptibility of the health problem as well as perceived benefits and barriers of taking preventive action. In order to increase perceived severity, illustrations showing the harmful effects of substances on teenagers were used. Similarly, Fisher and Fisher's (1992) Information, Motivation and Behavioural Skills (IBM) model postulates that initiation and maintenance of health behaviours requires the effective dispersion of information applicable to the target audience. Conclusively, booklets aimed to focus on the immediate rather than long-term hazards of substance abuse. The main message was that teens are still susceptible to health risks of substance abuse and the best way of taking preventive action is to refrain from using substances.

Barriers that may prevent teens from not using substances include peer pressure, stress, anger and cultural factors (Saliba, 2008; Zucker, Donovan, Masten, Mattson & Moss, 2008). Tips on how to overcome peer pressure were included. Since alcohol is very much ingrained in Maltese culture, a harm-reduction approach rather than total abstinence was encouraged. Booklets also contained tips on how to cut down on binge drinking and quit smoking. Benefits and possible incentives of not taking drugs

were included as motivators and to reinforce the chances of engaging in the particular health behaviour (Bandura, 1986). Pictures of teens with possible phrases to use when saying no to drugs were used to boost refusal skills. As a result, tips on how to boost self-esteem and strategies of overcoming peer pressure were included. Bandura's Social Cognition Theory (SCT, 1986) holds that expectancies individuals have about the outcomes of engaging in particular behaviours determine the behaviour's future occurrence. Booklets challenged some of the common expectancies and misconceptions students may have about drugs.

Self-efficacy is an important mediating variable between knowledge, attitudes, skills and behaviour (Bandura, 1986). In order to increase students' confidence, readers were encouraged to think of previous successes in the past which they could apply to smoking cessation attempts. Moreover, it was stressed that although giving up a habit is not easy, it is possible to quit. Another important construct of SCT is emotional coping or the ability to cope with arousing situations (Perry, Baronawski & Parcel, 1990). Tips on how to manage stress and anger were given. SCT also holds that observational learning plays a crucial role in the acquisition of a particular behaviour. Conclusively, booklets contained phrases reminding parents that they are role models for their teens. Parents were also encouraged to acknowledge the difficulty of overcoming peer pressure when talking with their children and that they have been there themselves. It was hoped that this would help teens identify themselves more with parents.

Finally, the Stages of Change model (Prochaska, DiClemente & Norcross, 1992) was used to motivate individuals towards overcoming a habit.

Reflection

This consultancy proved to be a demanding piece of work, not only in terms of the workload but also when applying theoretical models to practice. More specifically, representing the rich depths of health psychology theories at a practical level without losing their effectiveness was not easy. This task was hard to master and is something I slowly learned to do in my job setting. Another challenge was making the content of

booklets understandable to audiences with different educational backgrounds and literacy levels. The latter was partly overcome via the use of illustrations and plans to translate the booklets in Maltese language.

3.5: Monitoring the implementation of consultancy

Given the unavailability of the Service Manager, meetings with the intermediate client were an asset to discuss upcoming problems and when major decisions were required. When in doubt, issues raised were discussed with the Service Manager for further consultation. According to PC, the client needs to be actively involved in the diagnostic process and in generating a remedy (Schein, 1999). This is because the diagnosis is itself an intervention and ultimately, it is the client's responsibility to generate a solution. Meetings with the contact client were very useful in ensuring the work completed coincided with the client's requests and in making sure I was on the right track. According to Schein, active listening and inquiry helps the consultant gather relevant information and gain a better understanding of the problem. It also ensures time is spent wisely.

Reflection

The monitoring process did not turn out as planned due to changing client's expectations. Although this was a stressful period, this experience proved to be a learning curve on how to manage multiple relations within an organization and on how to maintain positive relations with individuals, despite occasional disagreements.

3.6: Evaluate the impact of consultancy

The completion of the drafting process in July 2013 would be followed by a thorough revision from the Director General and other stakeholders, and not an end in itself. It was not clear when the policy would be published and launched. Policies are often messy and disjointed and can remain static for long periods of time, mostly due to political and legal implications that interfere with the process of completion (Exworthy, 2008). Policies often have no start, nor end point, only a middle (John,

2000). Although I worked in the department, I was unaware of hidden agendas the Department may have. During the revision process, I discovered that policy had already been revised, only to become outdated and never published. Possibly, the strict deadline could have been dictated by political implications due to a recent change in government.

It was difficult to evaluate the impact of the policy at this point in time. Nevertheless, it was possible to evaluate the booklets and their reception by the target audience. This was done by giving an evaluation form and collecting feedback from parents, teachers, the Service Manager and the Focal Persons (Appendix 5-7). The Service Manager seemed satisfied with the end result (see minutes of meeting 8). Deliberate feedback is important in stimulating and facilitating learning (Schein, 1999). This process proved to be very useful in highlighting areas I had overlooked. Booklets were revised accordingly.

Overall reflection

This was my first experience of working on a policy that would have wide-ranging implications at a national level. The journey towards completion was not plain sailing and things did not always go as expected. Organizational structures are never perfect, there will always be barriers and facilitating factors when working with different individuals. In an ideal setting, appointments are never cancelled, expectations are clear and specific, disagreements are resolved amicably and all parties are happy. Nevertheless, in real life, characters clash, individuals may not always get along due to underlying factors operating in every human interaction and organizational culture. Despite these shortcomings, I was happy with the outcome. I truly believe that you cannot create learning experience, you must undergo it.

References

Arpa, S. (2011). *European school survey project on alcohol and other drugs. Student survey in secondary schools: National report*. Malta: Sedqa.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs NJ: Prentice-Hall.

Breton, E., & De Leeuw, E. (2010). Theories of the policy process in health promotion research: A review. *Health Promotion International*, 26(1), 82–90.

Brummelman, E., & Walton, G. M. (2015). If you want to understand something, try to change it. Social psychological interventions to cultivate resilience. *Behavioural and Brain Sciences*, 38, e96.

Dahlgren, G., & Whitehead, M. (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute for Futures Studies.

Earll, L., & Bath, J. (2004). Consultancy: What is it, how do you do it, and does it make any difference? In S. Michie & C. Abrahams (Eds.), *Health psychology in practice*. Oxford: Blackwell.

Exworthy, M.(2008). Policy to tackle the social determinants of health: Using conceptual models to understand the policy process. *Health Policy and Planning*, 23, 318–327.

Fisher, J.D., & Fisher, W.A.(1992). Changing AIDS risk behaviour. *Psychological Bulletin*, 111(3), 455–474.

Green, L. W., & Kreuter, M. W.(1999). *Health promotion and planning: An educational and ecological approach*. Mountain View, CA: Mayfield.

John, P. (2000). *Analysing public policy*. London: Continuum.

Perry, C., Baronawski, T., & Parcel, G. (1990). How individuals, environments and health interact: Social learning theory. In K. Glanz., F.M. Lewis., & B. K. Rimer. (Eds.), *Health behaviour and health education: Theory, research and practice* (pp.161-186). San Francisco: Jossey-Bass.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change - Application to addictive behaviour. *American Psychologist*, 47, 1102–1104.

Remley, T. P. (1993). Consultation contracts. *Journal of Counselling and Development*, 72, 157–158.

Rosenstock, I. M. (1966). Why do people use health services. *Millbank Memorial Fund Quarterly*, 44, 94–127.

Saliba, M. (2008). Dealing with alcohol abuse within the family. *Maltese Family Doctor*, 17(1), 1-34.

Schein, E. (1987). *Process consultation. Volume 2. Lessons for managers and consultants*. Reading, MA: Addison-Wesley.

Schein, E. H. (1999). *Process consultation revisited- Building the helping relationship*. USA: Addison-Wesley.

Whitehead, M., Dahlgren, G., & Gilson, L. (2001). *Developing the policy response to inequities in Health: A global perspective. Challenging inequities in health care: From ethics to action*. New York: Oxford University Press.

Whitehead, M., Scott-Samuel, A., & Dahlgren, G. (1998). Setting targets to address inequalities in health. *Lancet*, 351, 1279-1282.

Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Paediatrics*, 121(4), S252– S272.

Appendix 1 – Consultancy minute meetings

Anti-Substance Abuse Meeting Minutes – 1st meeting

Date:	25-9-2012	
Members Present:	Ms S. C. (Service Manager) Pamela Portelli (Focal Person), E. C. (Focal Person), D. B. (Focal Person) A. S. (Focal Person)	
Agenda:	Plans for next scholastic year CPD National Policy for substance abuse ESPAD Results & meeting with Sedqa Health Promotion Unit training opportunities Database system	
Topic discussed:	Person responsible	Outcomes
Drama Unit activity	All	The possibility of distributing leaflet devised by SAPT to students during the Drama Unit Activity was discussed. Leaflets will be printed at a printing press and given out accordingly. Modifications to leaflet were also discussed, including colours of new logo for unit. Dates of drama unit activity are: 19/10, 25/10, 26/10, 8/11, 9/11, 15/11, 16/11, 22/11, 23/11, 29/11, 30/11, 6/12, 7/12, 14/12.
Health Promotion Unit	All	The opportunity for training of team members in collaboration with the Health Promotion Unit was raised. Ms S.C. will be contacting Ms M.M. to discuss this. We also talked about the distribution of posters and other promotional material donated by the Health Promotion Unit.
ESPAD survey results	Ms S.C. & team members	The case of the student who died as a result of inhalant abuse was brought up. Team members were encouraged to familiarize themselves with ESPAD results and evaluate how Maltese adolescents compare to other European teenagers. Plans for a meeting between Ms S.C. and Ms S. A. are in place. The aim will be to check the possibility of having survey results by region/geographical area. This will help identify which students are most at risk and devise a prevention/intervention program for these students. The importance of consideration of cultural factors was highlighted.
Guidance teachers in schools	Ms S.C.	The importance of collaboration with guidance teachers was stressed. SAPT members are to attend Monday meetings with guidance teachers as deemed necessary and in

		accordance with topics being discussed.
Meeting with PSD Education Officer and Sedqa	Ms S.C, D. B. & A. S.	Plans for a meeting with the EO & Sedqa team re overlapping of material covered with students were discussed.
Oasi	Ms S.C. & Pamela Portelli	A meeting with Oasi will be planned in Ms S.C. future visit to Gozo. The meeting will tackle topics covered in schools and possibility of referrals.
Gozo Office	Ms S.C. & Pamela Portelli	The need for a printer, phone, filing system, internet accessibility in the Gozo premises was brought up.
Database system	Ms S.C. & A.S.	The need for a new database system was discussed. The current database is not school based. A. will ask Jenny to send a reminder re this. The new system will require statistical input including number of cases, persons involved, number of times student was seen by SAPT members and type of intervention carried out as well as referrals made, if any.
Caritas & Drug Addict Talk	E.C.	The possibility of bringing an ex drug addict to talk to students was discussed. This activity will be held in collaboration with Caritas. It was decided that this activity would need careful monitoring by a professional and that questions would be prepared in advance. Monitoring of the kind of questions asked will be easier as a result.
WOW program	Ms S.C.	Members were encouraged to attend this activity.
Talk by lawyer working in education department	Team members	The possibility of attending a talk to know the legal procedure to follow in certain cases was expressed.
Policy	Pamela Portelli	The policy needs updating. A draft copy of the policy has to be set by the end of the scholastic year. Pamela will be working on this in consultation with relevant stakeholders & A.S.

Minutes of Meeting – 2nd Meeting

Date:	14 th March 2013
Members Present:	Ms S.C. (initial part of meeting) Pamela Portelli (Focal Person), A.S. (Focal Person)
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse

Topic discussed:	<u>Outcomes- The following reasons were identified by the team:</u>
Why does the existing policy need updating	<p>The current policy needs updating to reflect the changing needs of society as compared to 11 years ago when it was initially implemented. The aim of the new policy is to ensure a smoother referral process whereby all stakeholders involved have clearer guidelines of the steps to be taken in case of alleged/actual substance abuse by a student or member of staff.</p> <p><u>It also needs to incorporate:</u></p> <p>Clearer guidelines on the referral system, including the role of guidance teachers, teachers, anti-substance team, school and college counsellors, psychologists and other professionals.</p> <p>Clearer description of what substance abuse entails, and that substance abuse is not limited only to drugs but may include any other mind altering substances, including medication, inhalants, solvents and cigarettes, hence both legal & illegal drugs.</p> <p>Clearer guidelines & criteria of when the Service Manager, Director General, College Principals, Drug squad and focal person should be informed</p> <p>Clearer guidelines of what to do when substance-abuse related paraphernalia are found within school premises</p> <p>Clearer guidelines to policy users, that abuse may involve episodes or instances when students are exposed to an unsafe environment, both within the school setting and after school hours.</p> <p>An updating of addresses & phone numbers of persons/agencies involved</p> <p>Clearer description of who will have access to the information (referral forms) about the student/member of staff concerned</p> <p>Clearer guidelines of who to refer to in case of referral to external agencies (i.e. the role of Caritas, Youth in Focus, Oasi, Sedqa & Appogg)</p> <p>Clearer guidelines of what happens when parent is abusing from substances & when a student is being exposed to an unsafe environment</p> <p>Whether focal person will liaise with guidance teacher responsible for that particular form or with an appointed guidance teacher responsible for all the work related to substance abuse</p> <p>Who and under what circumstances one should inform College Principals</p> <p>The role of Health & Safety teachers when there is need of first aid</p> <p>The role of Social Workers when alleged abuser is not attending school since the team does not do any home visits</p> <p>That in case of separated parents or absence of parents, the primary legal</p>

Work to be carried out during the next couple of weeks	guardian of child is the first point of contact That schools have the duty to work in collaboration with focal persons and allocate time for consecutive prevention lessons as deemed necessary by stakeholders involved. Literature search on existing policies & on substance abuse in general
Planned dates for next meetings	22 nd March, 23 rd April, 16 th May, 22 nd May, 6 th June, 27 th June, 1 st July.

Minutes of Meeting – 3rd Meeting

Date:	22 nd March 2013
Members Present:	Ms S.C. (Service Manager) Pamela Portelli (Focal Person), A.S. (Focal Person)
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	Following the initial meeting where all focal persons were present (A.S., P.P., & D. B.), the aim of this meeting was to discuss and revise the points raised by the team with the Service Manager. This was mostly to revise the initial outcomes/expectations as to why the existing policy needs updating. Thus, the revised reasons for updating the policy include (changes highlighted in italics):
Review of outcomes discussed by team members	<p>To reflect the changing needs of society as compared to 11 years ago when it was initially implemented. The new policy will help to ensure a smoother referral process whereby all stakeholders involved have clearer guidelines of the steps to be taken in case of alleged/actual substance abuse by a student or member of staff.</p> <p>Clearer guidelines on the referral system, including the role of guidance teachers, teachers, anti-substance team, school and college counsellors, psychologists and other professionals.</p> <p><i>Using DSM IV criteria or other terms reviewed from literature¹, a clearer description of what substance abuse entails, and that substance abuse is not limited only to drugs but may include any other mind altering substances, including medication, inhalants, solvents and cigarettes, hence both legal & illegal drugs. This also includes energy drinks. Legal parameters of the term should be taken into consideration.</i></p> <p>Clearer guidelines & criteria of when the Service Manager, Director General,</p>

¹ Items in italics denote changes requested by service manager

	<p>College Principals, Drug squad and Focal Person should be informed</p> <p>Clearer guidelines of what to do when substance-abuse related paraphernalia are found within school premises</p> <p>Clearer guidelines to policy users, that abuse may involve episodes or instances when students are exposed to an unsafe environment, both within the school setting and after school hours.</p> <p>An updating of addresses & phone numbers of persons/agencies involved</p> <p>Clearer description of who will have access to the information (referral forms) about the student/member of staff concerned, <i>including legal implications this may have.</i></p> <p>Clearer guidelines of who to refer to in case of referral to external agencies (i.e. the role of Caritas, Youth in Focus, or <i>any other external health care professionals</i>, Oasi, Sedqa & Appogg)</p> <p>Clearer guidelines of what happens when parent is abusing from substances & when a student is being exposed to an unsafe environment, <i>as well as the role of Child Safety Services/ Police should these situations arise.</i></p> <p>Who and under what circumstances one should inform College Principals, <i>especially when user is a member of staff or when a substance is found within the school premises.</i></p> <p>The role of Health & Safety teachers when there is need of first aid</p> <p>The role of Social Workers when alleged abuser is not attending school since the team does not do any home visits</p> <p>That in case of separated parents or absence of parents, the primary legal guardian of child is the first point of contact</p> <p><i>The importance of prevention, intervention & compensation in cases of abuse</i></p> <p><i>Clearer guidelines on procedures in cases under care order</i></p> <p>It was agreed that P.P. would revise the existing booklet and devise 2 separate booklets rather than one, one targeting students and one targeting parents/guardians and teachers.</p> <p><u>The aims of the new student booklet are:</u></p> <ul style="list-style-type: none"> • To provide information on the most commonly abused street drugs and on new drugs on the market • To provide information on the harmful effects of substances on teenagers' health • Tips on how to avoid substance abuse in the first place • Tips on how to overcome peer pressure • Tips on how to cope with stress and anger • Healthier ways of spending time • As a user friendly aid on how to cut down on binge drinking and
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Revision of existing booklet to be incorporated with the new policy	<p>smoking</p> <ul style="list-style-type: none"> Information on when drug abuse has become a problem and where to seek professional help <p><u>The aims of the new parent booklet are:</u></p> <ul style="list-style-type: none"> To provide information on the most commonly abused street drugs and on new drugs on the market To provide information on the harmful effects of substances on teenage health How to safe-guard children and prevent substance abuse Possible reasons as to why teenagers start abusing from substances How to recognize early signs and symptoms of abuse What to do in case you suspect your child is abusing from substances When and where to seek professional help
Timeframe	Although not specified yet, the policy needs to be updated as soon as possible and a draft copy to be submitted within the next 6 months.
Work to be carried out during the next couple of weeks	Literature search on existing policies & on substance abuse in general; to review the Police Act Chapter 101 on substance abuse and identify relevant legal implications/aspects that need to be taken into consideration.
Planned date for next meeting	Monday 8 th April

Ms S.C.
Service Manager

A.S.
Focal Person

Pamela Portelli
Focal Person

Minutes of Meeting – 4th Meeting

Date:	23 rd April 2013
Members Present:	Pamela Portelli – Focal Person A.S. – Focal Person
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	<p>First Aid Techniques: One of the issues P.P raised during this meeting was whether to include the First Aid Techniques Form at the back of the policy. This was mostly due to the fact that the Focal Persons are not trained in delivering first aid assistance. A.S & P.P agreed that when it comes to first aid, the role of Health and Safety Teachers needs to be clearly specified in the policy. This issue will also be discussed with the Service Manager</p>

	<p>during the next policy meeting.</p> <p><u>Prevention & Intervention delivered by the Anti-substance Unit:</u></p> <p>Although the role of the Focal Person is clearly stated in the new draft, P.P. suggested to include a small paragraph on the service the unit delivers in school. It was therefore agreed that P.P. will include a brief description of the content of sessions and the aim of preventive strategies. Since the Directorate for Education Services offers a holistic service and contributions are made through other timetabled subjects, P.P will be included in these points in the new draft.</p> <p><u>Disciplinary Procedures:</u> The old policy does not mention anything when it comes to disciplinary procedures taken in case of substance abuse by students. It was agreed that P.P. would include a brief paragraph on such measures. The measures taken will be at the discretion of the school and the Directorate and depend on the type of substance consumed.</p>
Planned date for next policy meeting	16 th May 2013

A.S. (Focal Person)

Pamela Portelli (Focal Person)

Minutes of Meeting – 5th Meeting

Date:	16 rd May 2013
Members Present:	Pamela Portelli – Focal Person A.S. – Focal Person
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	<p><u>Legal aspects:</u> The team feels that policy needs to incorporate Legislative aspects in accordance with the Laws of Malta in terms of action to take whenever drugs are found within a school environment or whenever an individual is abusing from drugs. This is not mentioned in the existing policy. P.P will contact Inspector J. C. from Police Drug Squad to obtain this information. A paragraph on this will be included in the new policy. This will make the policy more in line with National Standards, more credible and official.</p> <p><u>Glossary of terms:</u> On reviewing existing policies, P.P suggested including a glossary of terms in the policy. This will make the policy more user-friendly and more understandable to the lay population. A list of terms retrieved from a literature search was revised with A.S. The team came to an agreement as to which terms need to be included in the new draft.</p> <p><u>Overview of procedures:</u> The team feels that the existing procedures need revision to make the steps clearer. This is especially true for Procedure B. Procedures need to state that the Focal Person will liaise in collaboration with other professionals. It was agreed that the policy needs to clearly state that the Head of School is the person responsible for the implementation of this policy. Moreover, P.P feels that the policy needs to</p>

Planned date for next policy meeting	<p>clearly state that any substance found in the school premises must not be destroyed but handed to the policy drug squad. Although this may sound obvious, P.P. feels this has to be put to writing since she encountered one such incident recently. It was agreed this aspect would be included in the new draft.</p> <p>22nd May 2013</p>
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A.S. (Focal Person)

Pamela Portelli (Focal Person)

Minutes of Meeting – 6th Meeting

Date:	22 rd May 2013
Members Present:	Pamela Portelli – Focal Person A.S. – Focal Person
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	<p>Parents' refusal for help from Unit: One concern identified when P.P was revising the policy was the way forward in situations when parents of a student who is abusing from drugs refuse help from the Unit. This was one issue brought up during the meeting. The team came up with the possibility of having a written declaration signed by parents in such situations. Nevertheless, since the team is not in a position to make such decision, it was agreed that this issue will be discussed with the Service Manager.</p> <p>Reviewing of prevention & intervention strategies: It was agreed that the policy should specify that the service given to students in individualized in such a way to target the students' particular needs. P.P. will be including this aspect in the new draft.</p> <p>SAP Referral Form: During a casual encounter with a guidance teacher, it became clear that teachers were not aware of the fact that any individual can refer students to the Unit. This particular individual thought that only the head of school can refer students. It was agreed that P.P. would make this point explicit in the policy.</p> <p>Drug Testing: P.P raised the issue of whether the new policy should incorporate the right of the school to have medical reports stating that students are substance abuse free. Currently, drug testing is not included in the existing policy. This aspect will be discussed with the Service Manager.</p>
Planned date for next policy meeting with Service Manager	June 6 th 2013

Minutes of Meeting – 7th Meeting

Date:	6 th June 2013
Members Present:	Ms S.C. (Service Manager) Pamela Portelli (Focal Person) A. S. (Focal Person)
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	<u>Students and Parents' booklets:</u>
Booklets for policy	<p><u>Copyright:</u> S.C. highlighted the importance of copyright issues. The booklets are owned by the Education Department and Anti-substance Unit. This needs to be stated on both booklets.</p> <p><u>Translation:</u> S.C. pointed out that it would be useful to print a copy of the booklets in Maltese as well as English language. S.C. mentioned the possibility of having a particular individual from the education department translate these booklets.</p> <p><u>Parents' denial that their teen may be using drugs:</u> S.C. raised the issue that certain parents are often in denial when someone points out their child may be using drugs. This issue might hinder prompt help seeking behaviour and aggravate the problem. This point needs to be included in the parents' booklet.</p> <p><u>Positive effects of drugs:</u> S.C. said that there is no denial that certain drugs cause pleasant sensations in the user. As a result, the booklets need to incorporate both the pleasant and immediate effects of the substance while highlighting the harmful consequences of use. We also discussed the importance of incorporating a harm reduction approach when it comes to alcohol. This is mostly due to the fact that alcohol is very much part of our culture and that despite educational efforts, adolescents will consume alcohol anyway.</p> <p><u>Prevention program delivered by Unit:</u> It would be ideal if the policy includes a brief description of the prevention program the Anti-substance Abuse Service delivers in secondary schools.</p>
Policy	<p><u>Drug testing:</u> A main concern rose when discussing the policy with the Focal Person was the issue of drug testing. No mention of drug testing is included in the current policy. The unit feels that students who are abusing from hard drugs may be a hazard to other students or members of staff working within the school environment. As a result, the possibility of</p>

Planned date for next policy meeting with Service Manager	<p>having a report written by a professional stating that the student is fit for school is important. S.C. suggested including this issue in the new draft but that ultimately whether this is implemented is up to the Director and Director General.</p> <p><u>Applicability of Policy:</u> Another issue raised during this meeting was whether the policy shall apply to all educational establishments in the Maltese islands, including those in residential facilities for minors. This was mostly due to the fact that this would include departments that are not part of the Directorate for Educational Services but still offer an educational service to the general public. S.C. suggested highlighting this issue in the revised draft of the policy. She will discuss this with the Director General and Director during the next policy meeting.</p> <p>1st July 2013</p>
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Ms S.C.
Service Manager

A.S.
Focal Person

Pamela Portelli
Focal Person

Minutes of Meeting – 8th Meeting

Date:	27 th June 2013
Members Present:	Pamela Portelli – Focal Person A.S. – Focal Person
Agenda:	<ul style="list-style-type: none"> Updating the National Policy of Substance abuse
Topic discussed:	<p><u>List of contact persons to be included in the policy:</u> It was decided that a list of organizations/services, name of contact, phone number, address and website would be included at the end of the policy. The list of phone numbers needs revision.</p> <p><u>Role of parents/guardians:</u> The role of parents needs to be included in the policy. It should include clearly specify that parents need to take the leading role in matters pertaining to discipline and that their support in the implementation of this policy needs to be highlighted.</p> <p><u>Confidentiality:</u> It was agreed that a paragraph on confidentiality issues needs to be included in the policy. The policy needs to specifically state that schools are obliged to limit as much as possible the number of people involved in managing an abuse incident and that such information will not be disseminated to the general public, electronic media or print.</p> <p><u>The consumption of substances at school activities:</u> P.P. was concerned</p>

Planned date for next policy meeting with Service Manager	<p>about the consumption of alcohol during school activities. Although it is often taken for granted that this should not happen, this aspect is not included in the existing policy and P.P. feels that this needs to be put to writing in the new policy draft. P.P. witnessed a school graduation and Christmas party where both students and teachers were present and where the latter were consuming alcoholic beverages. P.P. feels alcohol should be banned during these activities. It was mutually agreed to include this aspect in the new draft and to discuss this with the Service Manager during the next policy meeting.</p> <p>1st July 2013</p>
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A.S. (Focal Person)

Pamela Portelli (Focal Person)

Minutes of Meeting – 9th Meeting

Date:	1 st July 2013
Members Present:	<p>Ms S.C. (Service Manager)</p> <p>Pamela Portelli (Focal Person)</p> <p>A. S. (Focal Person)</p> <p>D. B. (Focal Person)</p>
Agenda:	<ul style="list-style-type: none"> Revising the work done on the policy Revising the policy booklets Plans for the next scholastic year
Topic discussed:	<u>Students and Parents' booklets:</u>
<p>Booklets for policy</p> <p>Policy</p>	<ul style="list-style-type: none"> All members present completed evaluation forms for booklets. Overall S.C. was satisfied with the work completed. P.P. is to revise booklets according to feedback given (Appendix 5). S.C. asked P.P. to include a brief literature search in the introductory part of the policy. This should incorporate the reasons as to why policies are needed and an outline of the situation in Malta when it comes to substance abuse among students. S.C. said that the guidelines or procedures are not part of the policy per se and need to go in the appendix section. The aims of the policy need to go at the beginning of the policy. The term Focal Persons needs to be replaced as S.C. feels this is no longer an appropriate term to define the work being carried out by team members. Up to this date, a term to replace it has not been agreed upon. Since the individuals working in the department may change, job titles should be used rather than actual names. S.C. will set up a meeting with the Director General in the next scholastic year. Material will be present in bullet point on a power-point. The term 'service' will replace 'unit' when referring to the work done by the Focal Persons within the Anti-Substance Abuse Unit.

	<ul style="list-style-type: none">• It is important that the policy specifies that team members carry out one-to-one interventions with students. This point had already been incorporated in the new draft.
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Ms S.C.
Service Manager

A.S.
Focal Person

Pamela Portelli
Focal Person

D.B.
Focal Person

Appendix 2 - Assessing requests for consultancy

The need for updating the policy came as a result of complaints regarding the lack of clarity of the referral process, especially who had the authority to make referrals and when, lack of clarity on confidentiality issues, the need for clearer definition of terms, revision of phone numbers, the inclusion of new external agencies that providing help for addiction, clearer guidelines of the role of different stakeholders involved and the replacement of the old logo of the unit.

According to Schein (1999), the identification of the client at the early stages of consultancy is important since every intervention will have a direct or indirect impact on other stakeholders. Based on Schein's criteria, the following clients were identified:

Contact client: The Service Manager who initially approached me about this project

Intermediate client: Persons involved in the early meetings, namely the Focal Persons from the Anti-Substance Service

Primary clients: The Ministry of Education who approached the Director General (DG) about this piece of work

Unwitting clients: Parents, all staff employed within the Education Department and any other individual visiting the school and having direct or indirect contact with students

Ultimate clients: Although not directly involved in this consultancy, these included all students attending an educational institution and who are legally minors

Involved non-clients: During one of the meetings, the Service Manager pointed out that an individual from an external agency had contacted her to inquire about any updates of the revision process. The Manager said that hidden agendas were at stake, one of which included obtaining a copy of the booklets with the aim of editing and publishing them under the company's name. The importance of copyright was highlighted.

Earll and Bath (2004) also mention *sponsors* and *stakeholders* in any piece of consultancy. In this case, the *sponsor* was the Service Manager who facilitated the necessary permissions to proceed with this piece of work. On the other hand, since this is a national policy, the *stakeholders* included all citizens having suspecting of abuse or alleged abuse by students or member of staffs and who in turn have the legal and moral obligations to report such incidents to the department.

Appendix 3 - Consultancy plan and time scale

September 2013:

- First working party meeting
- Identification of need for revision of policy
- Assignment of roles for work to be done
- Formulation of draft consultancy contract

March 2013:

- Literature review on existing policies
- 2nd & 3rd working party meetings with Focal Persons to identify of areas in old policy that needed revision
- Consultation with Service Manager to discuss clients' expectations & revision of dates for deadline of draft copy
- Review consultancy frameworks & theoretical models
- Revision & formulation of new consultancy contract
- Setting up of dates for future meetings

April – May 2013:

- Identification of key personnel to be involved in the monitoring process
- Fourth, fifth & sixth working party meetings to consult on new areas that could be included in the policy & other areas to be omitted
- Literature search on health promotion models for booklets
- Literature search on the most popular drugs on the market
- Literature search on Stress & Anger Management skills
- Drafting of policy booklets

June 2013:

- Sixth & seventh working party meetings to consult on areas to be included/omitted in policy

- Completion of draft copy of booklets & sending copy to Service Manager for revision
- Eight working party meetings with Service Manager
- Discussions for possibility of translation
- Literature review on legal implications of abuse in Malta & consultation with Police Drug Squad

July 2013:

- Ninth & final end of year meeting with Service Manager & Focal Persons
- Draft copy of policy completed & submitted to Service Manager for revision
- Evaluation of parents' and students' booklets
- Evaluation of policy by Service Manager
- Revising booklets based on feedback collected
- Completion of literature review to be included in the introductory part of the policy
- Updating phone numbers & addresses of external agencies
- Making final modifications to policy & booklets

Appendix 4 – Consultancy agreement

N.B: Most of the work would be carried out during working hours. As a result, there was no additional payment involved. Moreover, any travel expenses or costs for printing would be covered by the department. Since the client initially came up with different expectations and deadlines, the first consultancy contract had to be revised. Following a negotiation process, a new contract was drafted and timescales agreed upon as shown below.

28th September 2012

Consultancy agreement (Version 1)

Contact client: Ms S.C. (Service Manager, Education Psycho-social Services), Education Department, Malta.

Consultant: Ms Pamela Portelli (Focal Person, Anti-substance Abuse Unit)

Project name: National Policy – Tackling Substance Abuse

Agreement start date: September 2012

Agreement end date: July 2013

Purpose:

The Substance Abuse Procedures, or SAP for short, are a set of step-by-step procedures that should be adopted by all educational establishments in Malta and Gozo whenever a substance is found within the school boundaries or whenever someone within the education department is suspected of using harmful substances. These procedures are written down in a policy which acts as a central reference point for all school staff, the overall aim being to ensure that the school environment is kept safe and substance abuse free. Due to changing needs of society as compared to 11 years ago when the policy was initially implemented, the need for updating the existing policy has been identified.

Objectives of the consultancy:

The aim of this piece of consultancy is to revise the existing policy in order to improve the overall referral system and the efficiency of the service, thereby reducing the overlapping of professional services.

Costs**Payment for the consultancy:**

These will be covered by the Ministry for Education under the employment contract for Pamela Portelli who is currently employed as a guidance teacher within the Education Psycho-Social Services.

Travel expenses:

Travel costs are covered by the Ministry for Education and are paid on an annual basis to cover all travelling carried out by the employee in terms of work-related cases/services.

Monitoring the consultancy:

The consultancy will be monitored via regular meetings between the Focal Person (A. S), Pamela Portelli and the Service Manager. No formal dates have been scheduled with the client although regular monthly or bi-monthly meetings have been set up with the Focal Persons. The drafting process will be reviewed between June - July 2013.

Timescale:

A draft copy of the policy has to be completed by the first week of July 2013.

Signatures:

Ms S.C.

Service Manager

Ms Pamela Portelli

Anti-substance Abuse Guidance Teacher

NB: This is not a legally binding document and is being used only for training purposes.

Date: 22nd March 2013

Consultancy agreement (Version 2)

Contact client: Ms S.C. (Service Manager, Education Psycho-social Services), Education Department, Malta.

Consultant: Ms Pamela Portelli (Focal Person, Anti-substance Abuse Unit)

Project name: National Policy – Tackling Substance Abuse

Agreement start date: September 2012

Agreement end date: July 2013

Purpose:

The Substance Abuse Procedures, or SAP for short, are a set of step-by-step procedures that should be adopted by all educational establishments in Malta and Gozo whenever a substance is found within the school boundaries or whenever someone within the education department is suspected of using harmful substances. These procedures are written down in a policy which acts as a central reference point for all school staff, the overall aim being to ensure that the school environment is kept safe and substance abuse free. Due to changing needs of society as compared to 11 years ago when the policy was initially implemented, the need for updating the existing policy has been identified.

Moreover, alongside this policy, the consultant is to design 2 booklets, one for parents and one for students. The aim of these booklets is to provide information on the physical, social, behavioural and psychological hazards of the most commonly abuse drugs as well as tips on how to avoid substance abuse in the first place.

Objectives of the consultancy:

The aim of this piece of consultancy is to revise the existing policy in order to improve the overall referral system and the efficiency of the service, thereby reducing the overlapping of professional services. The aims of the booklets are to serve as user

friendly guides on the most commonly abused substances, their effects and where and when to seek help.

Costs

Payment for the consultancy:

These will be covered by the Ministry for Education under the employment contract for Pamela Portelli who is currently employed as a guidance teacher within the Education Psycho-Social Services.

Travel expenses:

Travel costs are covered by the Ministry for Education and are paid on an annual basis to cover all travelling carried out by the employee in terms of work-related cases/services.

Monitoring the consultancy:

The consultancy will be monitored via meetings between the Focal Person (A. S), Pamela Portelli and the Service Manager. No formal dates have been scheduled with the client although regular monthly or bi-monthly meetings have been set up with the Focal Persons. The drafting process will be reviewed between June - July 2013.

Timescale:

A draft copy of the policy has to be completed by the first week of July 2013.

Signatures:

Ms S.C.

Service Manager

Pamela Portelli

Anti-substance abuse guidance teacher

NB: This is not a legally binding document and is being used only for training purposes.

Appendix 5 - Parents' booklet evaluation form

I appreciate your help in evaluating this booklet. Please indicate your rating of the booklet in the categories below by circling the appropriate number, using a scale of 1 (poor) through 4 (excellent). Thank you for your time and for your feedback.

<u>Parents' booklet for Policy</u>	<u>Rating</u>			
	1 (poor)	2 (fair)	3 (good)	4 excellent
<u>Table of contents:</u> Material is presented in an order that makes sense				
<u>Glossary:</u> Unfamiliar or specialized terms are well defined				
<u>Bibliography:</u> List of reference books used by author is comprehensive				
<u>Writing style:</u> Material presented is understandable to the lay audience				
<u>Page Layout:</u> The text is complemented/supported by graphic elements (pictures, illustrations etc) that do not crowd the page or overwhelm reader with too much textual or visual information.				
<u>Graphics:</u> Pictures are relevant and informative and supplement the main ideas of the particular page they are displayed in.				
<u>Graphics:</u> Graphics are located with the text they refer to rather than pages before or after it.				
<u>Tips:</u> Tips augment the text by expanding on point or ideas mentioned in the text. Tips are practical and suggest behaviours that are not too difficult to master				
<u>Information:</u> The booklet gives adequate information about the different types of drugs available				
<u>Information:</u> The booklet provides adequate information on the harmful effects of substances on teenage health				
<u>Information:</u> The booklet gives enough information on possible reasons as to why teens start abusing from substances in the first place				
<u>Skills:</u> Information contributes to equipping parents with some of the skills needed to safeguard children from substance abuse				
<u>Signs:</u> The booklet gives enough information on signs and symptoms parents should watch out for that may be indicative of substance abuse				
<u>Practical Information:</u> Information given could be put to practice				
<u>Information:</u> Information is appropriate and adapted to the local context				
<u>Information:</u> Booklet contains information of when and where to seek additional help				

Other comments:

Please feel free to add any additional comments or feedback. *Thank you for your time!*

Appendix 6- Feedback on consultancy booklets

Feedback on parents' booklets

Booklets were evaluated by 10 different individuals comprising Focal Persons, the Service Manager and parents of different educational backgrounds. Feedback from one parent was given by phone.

Parents' booklet for Policy	Rating			
	1 (poor)	2 (fair)	3 (good)	4 (excellent)
Table of contents: Material is presented in an order that makes sense	x		x x	x x x x x
Glossary: Unfamiliar or specialized terms are well defined			x x x	x x x x x
Bibliography: List of reference books used by author is comprehensive			x x x x	x x x x x
Writing style: Material presented is understandable to the lay audience			x x x x x	x x x
Page Layout: The text is complemented/supported by graphic elements (pictures, illustrations etc) that do not crowd the page or overwhelm reader with too much textual or visual information.		x x	x x x x	x x x
Graphics: Pictures are relevant and informative and supplement the main ideas of the particular page they are displayed in.			x x	x x x x x x
Graphics: Graphics are located with the text they refer to rather than pages before or after it.			x	x x x x x x x
Tips: Tips augment the text by expanding on point or ideas mentioned in the text. Tips are practical and suggest behaviours that are not too difficult to master				x x x x x x x x
Information: The booklet gives adequate information about the different types of drugs available			x	x x x x x x x
Information: The booklet provides adequate information on the harmful effects of substances on teenage health				x x x x x x x x
Information: The booklet gives enough information on possible reasons as to why teens start abusing from substances in the first place			x x	x x x x x x
Skills: Information contributes to equipping parents with some of the skills needed to safeguard children from substance abuse			x x x	x x x x x
Signs: The booklet gives enough information on signs and symptoms parents should watch out for that may be indicative of substance abuse			x x x x	x x x x x
Practical Information: Information given could be put to practice			x	x x x x x x x
Information: Information is appropriate and adapted to the local context		x		x x x x x x x
Information: Booklet contains information of		x	x x x (l	x x x x x

when and where to seek additional help			don't know about that)	
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Other comments:

- Removal of explicit pictures of energy drinks and medication where names of product are visible
- To include the social & ethical consequences of taking drugs
- To mention the Anti-substance Service first in the further help section
- To include the phone numbers of Appogg (Child Abuse Service), Ambulance, Director General, Health Promotion, Oasi, Caritas, Sedqa & when to seek help (x2)
- To highlight the fact that all drugs cause harm during pregnancy, something that was omitted in the booklet
- More pictures for parents/students who cannot read
- Possibility of using bullets instead of whole sentences to make it easier to read text and to reduce amount of text
- To use different colours for each group of drugs (although this will be revised by publishing agency), hence adopting a similar format in point form
- To include brief section on what parents have to look for (i.e. drug related paraphernalia) that may be indicative of abuse in the parents booklet
- To make a reference to Maltese law i.e. include the fact that the department follows guidelines dictated by the Laws of Malta
- Repetition of the words 'they say' on page 17, 2nd paragraph
- Suggestion not to use US English format
- Suggestion to split page 10 in 2, page 13 'Stimulants, Hallucinogens & Depressants' in italics, page 19 wording in the picture not clear enough, tone down the background of pictures on page 28-29, page 39 use a clearer font, regarding contents, I suggest use Chapter 1, 2 3 etc.
- Include larger print
- 'inadvertant' is too difficult word, pg 42 – not clear what you mean
- Page layout can be better
- You marked bibliography section as references, not as bibliography
- Some pages are overwhelming with material, too many cluttered pictures
- The reddish spotted page is hardly readable
- Lighter graphics pg 36/37 & 46/47, graphics not clear on page 21 & 30
- Hyphenation: user-friendly, far-reaching, decision-making, self-esteem, side-effects, non-judgmental, second-hand smoking, mood-swings, high blood-pressure, peer-pressure should all be hyphenated
- Grammar: 'to prevent your child from using harmful substances' better than 'to prevent that your child 'suggestions for' better than 'of', a lesser percentage

(pg 35), page 14: 'may come' rather than 'make come' as a big shock, page 15: listed items should be in capital letter (including 'Social withdrawal')

- I would decide between addressing the reader with 'you' or in the 3rd person, i.e. using 'one' and stick to it, Moreover, at some points it seems that you are addressing the teen rather than the parent. A case in point page 38. I think it is better if the address to parents is maintained throughout.
- Page 13: in depressants: 'make one' better than 'make you'
- I think there is some missing information in the phrase on page 16 that I am highlighting: 'they are using Confront your child'
- Page 16: So if you teen is smoking should read 'your teen'
- Page 15: space between 'unexplained need for money' and 'stealing'
- Page 16 – 17 should be in larger font, maybe spread over more than 2 pages
- British or American: I would use British
- Last 4 items in table of contents are not indexed
- Words like 'thereby, reinforced, self-diagnosis, portrayed, federal laws, compliance, inadvertent are a bit difficult for the average Maltese lay person to understand (x2)

Additional comments:

- Well presented & well illustrated
- Booklet is interesting & informative
- Content is not too long nor too short, some images are very effective
- Text not too long nor boring & well balanced by pictures
- Tips are good & handy
- Long & short term effects of drugs well explained
- Talks about the subject should be given especially to parents who are unable to follow book
- This would have been a handy too when I was still teaching at school
- Keep up the good work
- Well organized and easy to understand
- A very good approach, not all too negative but very informative by the usual standards

Comments via phone calls

- 'Education Division' instead of 'Education Department' in foreword section
- I had to read the whole booklet to understand the content
- What you wrote on caffeine is not true, I drink a lot of coffee and don't suffer from any side effects!
- Overall I found it informative and interesting

Student's evaluation handout

Dear student, I appreciate your help in evaluating this booklet. Please take some time to answer the questions below. This evaluation will be used to improve the booklet.

	Strongly agree	Agree	Disagree	Strongly disagree
The booklet added to my knowledge on drugs.				
The material is presented in a way that is easy to understand.				
Tips given are easy to follow and make sense.				
The pictures used are relevant and useful for understanding the contents.				
I would recommend the booklet to friends.				
The material presented is interesting.				
I found that material useful.				

Please feel free to add any additional comments.

Thank you for your time!

Appendix 7 – Feedback from students

Feedback was collected from 11 secondary school students of different ages and gender. Amendments to the booklet were made based on feedback gathered.

	Strongly agree	Agree	Disagree	Strongly disagree
The booklet added to my knowledge on drugs.	xxxxxxx	xxxx		
The material is presented in a way that is easy to understand.	x	xxxxxxxxxx		
Tips given are easy to follow and make sense.	xxxxxx	xxxxx		
The pictures used are relevant and useful for understanding the contents.	xxxxxxx	xxxx		
I would recommend the booklet to friends.	xxxxxx	xxxxx		
The material presented is interesting.	xxxxxx	xxxx	x	
I found that material useful.	xxxxxx	xxxxx		

Additional comments:

- The pictures aid understanding, the sections in the booklet make it easier to follow
- Less words (x4) and more pictures (x3)
- Too many words, not enough pictures – Teenagers will find it boring and won't really care to read it if long, they will read the first page and stop
- Some pages have too many words; tips are easy to follow
- The booklet is divided in interesting topics and they are very helpful/useful (x2)
- It is really interesting and helpful

NB: It is important to point out that although I did the booklets myself, they will be edited by a publishing agency. This means that the overall layout, formatting and pictures still need to be modified accordingly. However, up to this date, it is still unclear when this will happen.

Unit 4: Teaching & training – Case study 1

Delivery of a substance-abuse prevention module

Setting: Secondary School, Gozo College

Target audience: Form 3 students (N = 23)

Introduction

During my first 2 years of practice, I held the post of anti-substance abuse guidance teacher within the Directorate for Educational Services. I was the key person responsible for the primary and secondary prevention of substance abuse amongst students within the Gozo College. This case study was completed during working hours as part of my job description. It comprises a substance abuse prevention module delivered to a class of 13-year old secondary school students, spread out over six-45 minute sessions. Although the teaching topic was part of students' curriculum, I was able to develop my own aims and objectives, structure sessions according and prepare teaching and training resources myself. A draft copy of the sessions was shown to my supervisor prior to delivery of content in order to elicit appropriate feedback.

Plan and design training programs that enable students to learn about psychological knowledge, skills and practice

Assess training needs

In order to assess training needs, students were requested to complete a handout (Appendix 1) with statements on alcohol and cigarettes. This handout helped elicit teaching and training needs of target audience. It also helped identify any gaps in knowledge (Appendix 2). Apart from that, students were asked to elicit desired learning outcomes and expectations at the start of the module (Appendix 3).

Reflection

The first activity requesting students to come up with a list of expectations did not work as desired, particularly due to the fact that the audience came up with very few statements. Within the local school environment, teachers usually have their own list of expectations and things which need to be covered during lessons and students are rarely involved in this process. As a result, I did not dwell much on this task and moved on to the next one. Looking back, I realized that this activity could have raised issues I might have overlooked. The possibility of using prompts or a brainstorming activity and giving students ample time to dwell on learning outcomes and expectations could have elicited more information. This would have enabled me to structure time accordingly. It is also something which I plan to do in future sessions.

Identify training program structure and content

The themes of smoking and alcohol are covered briefly in the Form 1 *Personal and Social Development* school syllabus. Since the subject is compulsory across all forms, the topics were not novel to students. Nevertheless, my 14 years of teaching experience have taught me that students tend to have a lot of misconceptions about substance misuse. For instance, one prevalent and common assumption is the fact that students often perceive binge drinking as relatively harmless, especially if it happens on an occasional basis. Research reveals that repetition helps consolidate understanding, irrespective of the individual's learning style (Topcu, 2008). Moreover, given the high prevalence of smoking and alcohol consumption amongst Maltese teenagers (Hibell, Guttormsson, Ahlstrom, Balakireva, Bjarnason et al., 2007), I felt that the topic was very appropriate and relevant to the target audience. The material was devised and structured in a way to make it appealing to teenagers, mostly by incorporating visuals and avoiding over-loading of content.

Selecting training methods and producing training material

As outlined above, the presentation was delivered over a number of sessions spread out on a number of days. This was done following the consideration of timetable and

other school restrictions (see Appendix 4 for outline of sessions). Given that students' attention span tends to decrease after periods of continuous listening (Goss Lucas & Bernstein, 2005), I did not delve into much detail during power-point presentations (Appendix 5). Apart from that, most slides were self-explanatory. I also tried to avoid long explanations. Health psychology models were incorporated in the teaching and training material. For instance, constructs from the Health Belief Model (Becker & Rosenstock, 1984) were included during session delivery. According to this model, the likelihood of taking preventive action and of performing health-related behaviour depends on the perceived threat and seriousness of the health problem and the individual's susceptibility to developing the condition. Three short videos (Videos 1 - 3 on USB in practice log) were shown to students to reinforce the harmful effects of substance misuse on teenagers, hence depict the severity of health problems that could arise following consumption of alcohol or smoking. Another message I tried to get across was the fact that although teens are still young, they are still susceptible to health risks, with some effects being immediate. Thus, the best way to prevent health problems is to avoid smoking or drinking in the first place.

The accommodation of diverse learning styles requires incorporating different approaches to teaching, including experiential learning activities, a supportive environment, drawing into the personal world of the learner and using a multi-faceted approach is conducive to assimilation of content (Bromley, 2013). I used diverse techniques to facilitate the learning process and to capture and maintain students' interest. I also tried to make use of real-life examples when giving explanations. This helped make the content more understandable. It was also something students could identify with. Class discussions and group work were also used. These help to stimulate development of ideas and higher levels of cognitive discourse (Galton, Hargreaves & Pell, 2009).

In line with the health belief model, individuals are more likely to engage in preventive action when the perceived benefits outweigh the costs. Behaviour change is also more likely when individuals feel they have the ability to overcome perceived obstacles. Conclusively, the disadvantages of using substances were emphasized. Students were

also encouraged to come up with a list of perceived barriers for taking preventive action. Possible ways of overcoming these barriers were brainstormed and discussed as a group. According to Dahlgren and Whitehead's (1999) Social Model of Health, social, individual and environmental factors play a crucial role in the maintenance of health-related behaviours and disease. These factors were kept in mind whilst preparing the teaching and training sessions. I was also particularly conscious of the Maltese context during the delivery of content. Although Maltese law prohibits the selling and consumption of alcohol and cigarettes to individuals under 18, the law is neither being strictly enforced nor supported, particularly at venues of entertainment. Moreover alcohol is easily accessible from public places such as grocers, coffee shops, restaurants and supermarkets, just to mention a few. Given these implications, although total abstinence from alcohol was emphasized throughout, students were also given some information on the recommended limits of alcohol consumption for adult members of the opposite sex. Thus, should students still decide to drink alcohol in the near future, they would be aware of safe limits of drinking.

Reflection

Actionable feedback given from trusted colleagues who have observed previous teaching and training sessions was particularly useful in helping me revise the material accordingly. I tried to be open to constructive criticism and reflect on my teaching methods in order to grow professionally. Feedback was also useful in highlighting important things I may have overlooked or which could be improved upon. Since students have different learning styles, abilities and requirements, it is impossible to find a one-size fits all model. I tried to incorporate a mixture of experiential and didactic methods of teaching to enhance the learning process. I find that role-plays are also well received among students, which is another reason why I tried to incorporate them in the session. Apart from being fun, they give students the opportunity to practice and apply the material being taught. Role-plays also fulfilled the role of vicarious experiences since they allowed students to watch their own peers engage in the desired behaviour successfully. They acted as a form of direct guidance and allowed students to internalize more fully the concepts being taught.

Produce training material

Apart from the health belief model, I also made use of other health promotion theories when planning sessions. One of the most prominent and influential models for promoting health and well-being is the Education Model (Green & Kreuter, 2005). The aim of this model is to provide individuals with the necessary information regarding the consequences of engaging in particular behaviours and to enable them to make informed choices. According to this model, learning is enhanced when material is presented in a meaningful and understandable way (Naidoo & Wills, 2009). Conclusively, psycho-education was used throughout. I tried to make use of simple words students could understand and avoid technical terms or psychological jargon. I also used visual aids to complement textual information and to attract students' attention. Students were given a handout containing tips on how to be assertive. They were also given a leaflet at the module with some useful information they could go back to after the session. These tools served to facilitate and consolidate the learning process.

Constructs from Social Cognitive Theory were also included (Bandura, 1986). According to the latter, role models can be an effective way of promoting healthy behaviours. I made use of a short clip depicting a famous film star (See Video 3 on USB). This video contained a mild fear arousing message, with the aim of enhancing motivation to avert threat posed by excessive alcohol consumption and to increase active persuasion. Since fear arousing messages could result in denial or avoidance strategies, they need to be coupled with coping methods (Witte & Allen, 2000). Conclusively, I tried to teach students some skills that could enhance the desired behaviour.

One of the skills entailed boosting students' sense of self-efficacy. The latter term was coined by Bandura (1977) and refers to the individual's belief in their ability to accomplish and master certain tasks. Individuals are more likely to engage in behaviours for which they perceive to have a high sense of self-efficacy than those they feel unable to handle. Self-efficacy beliefs are so powerful that they can act as

self-fulfilling prophecies (Vitale, 2012). Performance outcomes or past experiences have a significant impact on an individual's sense of self-efficacy (Bandura, 1977). Keeping this in mind, I tried to boost students' sense of achievement by asking them to think of a challenging situation they had previously encountered and managed to master, even if this was unrelated to the topic at hand. For instance, some students gave examples of learning a musical instrument or a new language. This was followed by a brainstorming activity whereby students were encouraged to think of ways of applying the same skills that allowed them to master the activity to a future situation where they may feel pressured to smoke or drink. These included persistence and keeping in mind the target goal, for instance. Verbal persuasion strategies are another way of developing self-efficacy skills (Schwarzer, 2014). This was mostly done by reminding students that they had the ability to say no and by trying to instil confidence in them. Finally, students were also given the opportunity to practice self-refusal skills in groups.

I tried to gauge the tasks given according to the needs of the audience. This was done by trying to strike a balance between overly simple tasks and moderately challenging ones. This was true when devising the true/false worksheet and when writing out the role-plays. According to Bandura (1977), a moderately challenging content is another way of boosting self-efficacy, mostly due to the fact that it does not instil a fear of failure but provides a stimulating and meaningful learning environment.

Using appropriate media to deliver material

Materials used included a laptop, interactive whiteboard, markers, power-point, handouts, role-play cards and some cardboard sheets for group work activities. Use of technology within a classroom setting improves teachers' professional productivity and promotes student learning (Dunn & Rakes, 2010).

Reflection

My teaching experience was an asset to fulfilling this competence and I have used skills acquired these last 14 years to my advantage. I have taught students with special

needs, low-stream classes and high-achievers. As I result I felt quite confident that the material produced was age- appropriate and delivered in an understandable format. I have also learned that teaching can be informative as well as fun and tried to include humour when appropriate. This served to create a more positive learning environment by breaking down barriers to communication between the students and myself. It also helped me build a rapport with students and I felt they were less inhibited to ask questions or pass comments, thereby encouraging active participation.

Deliver training programs

Implementing training methods and facilitating learning

Luckily enough, students were not in their class before the start of session. This gave me ample time to make sure everything was working properly. In order to facilitate learning and encourage participation, I used an ice-breaker and did a quick round of introductions. Students were encouraged to ask questions and add comments throughout the delivery of content. They were also encouraged use the whiteboard during the brainstorming activity. Active participation enables students to explore issues of interest, fosters deeper levels of thinking thereby facilitating encoding, storage and retrieval of information. It also serves to motivate the audience and encourage learning (Hackathorn, Solomon, Blankmeyer, Tennial & Garczynski, 2011; Hadjioannou, 2007).

Reflection

My work experience as a smoking cessation advisor at Islington PCT in 2009 was particularly useful in increasing my knowledge of the harmful effects of smoking and how difficult it is to actually stop. As a result, I felt more confident in answering students' questions. I was also able to use real-world applications and examples to convey concepts in a meaningful and contextual way. I realized that these examples not only aid understanding but were inspiring for some students. I also find it helpful to preserve those good examples that arise out of the moment. I do not only reuse them but reflect on how they can be improved to enhance learning. Making an effort to

remember students' name helped me involve them more in the teaching process and to sustain their attention.

Plan and implement assessment procedures for training programs

Identifying, selecting and producing assessment methods

Learning was assessed throughout by using a number of questions, particularly after explanations. These questions enable students to clarify concepts learned and helped me assess understanding. The kind of questions raised by students themselves, the class discussions and group work activity were a confirmation that students had been following the material being delivered. The true/false handout given at the start and end of sessions was an informal learning assessment. It was devised via a literature search on the topic and from knowledge gained whilst working as a smoking cessation advisor.

Individuals find it easier to adopt healthy behaviours when they can practice skills learned and when they are able to apply them to real-life situations (Forsyth, 2003; Naidoo & Wills, 2000), hence the use of role-plays. Feedback and positive reinforcement given to students after this activity served to clarify the meaning of assertive behaviour and to help students improve on this skill. It also helped to instil an internal locus of control and empower students by showing them it is possible to overcome peer pressure and to safe-guard their health.

Ensuring appreciation of assessment methods and produce records of progress

Data from the handout revealed that the majority of students had a good grasp of the material covered. This was evident from the number of incorrect answers prior to the teaching module and the number of correct answers at the end of the module (refer to Appendix 2).

Reflection

Since this was a class of high-achievers, the overall atmosphere in class seemed very competitive. I had no doubt students would get good scores on completing the handout the second time round. Although I informed them this was not a test, most

were striving to get their answers correct. I did not want to instil a sense of competition and wanted the session to be different from other exam-oriented ones. My aim was to equip students with knowledge and skills they can use for life. Possibly, the use of a quiz might have been a more informal and enjoyable way to consolidate learning, something worth considering in future sessions.

Evaluate training programs

Evaluate training, identify factors contributing to training, and identify improvements for future sessions

At the end of the module, students were given an informal evaluation form, requesting them to nominate useful and least useful aspects of sessions, alongside some open-ended questions allowing them to make suggestions for future sessions (Form and responses in Appendix 6).

Reflection

From previous sessions, I realized students may become anxious on hearing about the harmful effects of cigarettes, especially if a close relative smokes. With this in mind, I decide to briefly mention the type of help services available, the fact that it is possible to quit smoking and that some benefits of quitting are immediate. I also informed students of my availability, should the need arise.

Having recently lost a friend to lung cancer, I am very much aware of my strong beliefs of not smoking. Being mindful of these feelings at this particular point in time, I realize I do have a tendency to get carried away when giving factual information. Looking back, I believe it would have been more beneficial to spend less time on the power-point while allotting more room for discussion and role-plays, as suggested by one of the students in the evaluation form.

Since teaching is my profession, I decided it made sense to start working on this competence first. Indeed, I have had ample time to reflect and revise my teaching methods. Overall, I felt quite satisfied with the session and with the feedback given. Completion of this part of the competence served to affirm my belief that I could

actually achieve all competences in due time as long as I use reflexivity to improve my performance.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84(2), 191-215.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs NJ: Prentice-Hall.

Becker, M. H., & Rosenstock, I. M. (1984). Compliance with medical advice. In A. Steptoe., & A. Matthews (Eds.), *Health Care and Human Behaviour*. London: Academic Press.

Bromley, P. (2013). Active learning strategies for diverse learning styles: Simulations are only one method. *Political Science & Politics*, 46(4), 818-822.

Dahlgren, G., & Whitehead, M. (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute of Futures Studies.

Dunn, K. E., & Rakes, G.C.(2010). Learner-centeredness and teacher efficacy: predicting teachers' consequence concerns regarding the use of technology in the classroom. *Journal of Technology and Teacher Education*, 18(1), 57-81.

Forsyth, D. R. (2003). *The professor's guide to teaching: Psychological principles and practices*. Washington, DC: American Psychological Association.

Galton, M., Hargreaves, L., & Pell, T. (2009). Group work and whole-class teaching with 11- to 14-year-olds compared. *Cambridge Journal of Education*, 39(1), 119–140.

Goss Lucas, S., & Bernstein, D. A. (2005). *Teaching psychology: A step by step guide*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Green, L. W., & Kreuter, M. W. (2005). *Health promotion planning: An educational and ecological approach* (4th ed.). New York: McGraw Hill.

Hackathorn, J., Solomon, E. D., Blankmeyer, K. L., Tennial, R. E., & Garczynski, A. M. (2011). Learning by doing: An empirical study of active teaching techniques. *The Journal of Effective Teaching*, 11(2), 40-54.

Hadjioannou, X.(2007). Bringing the background to the foreground: What do classrooms environments that support authentic discussions look like? *American Educational Research Journal*, 44, 370-399.

Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A., & Kraus, L. (2007). *The 2007 ESPAD Report, Substance use among students in 35 European Countries*. Stockholm: Modintryckoffset AB.

Naidoo, J., & Wills, J. (2000). *Health promotion: Foundations in practice* (2nd ed.). UK: Bailliere Tindall.

Schwarzer, R. (2014). *Self-efficacy: Thought control of action* (Ed.). New York: Routledge.

Topcu, A. (2008). Intentional repetition' and learning style: Increasing efficient and cohesive interaction in asynchronous online discussions. *British Journal of Educational Technology*, 39(5), 901–919.

Vitale, C. (2012). Influencing the psychological health of a student. Lessons from the theories of self-fulfilling prophecy and self-efficacy. *American String Teacher*, 62(2), 22-24.

Witte, K., & Allen, M. (2000). A meta-analysis of fear appraisal: Implications for effective public health campaigns. *Health Education and Behaviour*, 27(5), 591–615.

Appendix 1 – True false fact sheet

Name: _____ Form: _____



Alcohol and cigarettes fact sheet – Write true or false

Session 1

Last session

	<i>True or False?</i>	<i>True or False?</i>
Nicotine is a poison found in cigarettes		
Alcohol can make the teenage brain shrink in size		
An adult male should not exceed 3-4 units of alcohol a day while an adult female should not exceed 2-3 units a day		
Having a full meal before drinking heavily will stop you from getting drunk		
Alcohol is a stimulant		
Nicotine in itself is not harmful		
Tobacco contains about 100 harmful chemicals		
A can of beer, a glass of wine, and a shot of liquor all have the same amount of alcohol.		
Alcohol can make you high, happy and helps you sleep.		
Cigarettes can reduce stress and anxiety levels.		
Alcohol does not cause memory loss and weight gain but can cause different types of medical conditions including heart disease		
People are more likely to get drunk if they switch drinks, such as from wine to beer, during one evening rather than sticking with the same kind of drink		
Cigarettes contain tar, carbon monoxide and nicotine		
If alcohol is used regularly the effect it produces is reduced so the amount has to be increased to have the same effect		
Nicotine in tobacco reaches the blood within 10s after smoke is inhaled		

Appendix 2: Answers to alcohol and cigarettes factsheet

Assessment of learning outcomes obtained by calculating percentage of correct answers

1. Nicotine is a poison found in cigarettes:
Start of first session: 83% correct, 3% did not answer End of session: 100% correct
2. Alcohol can make the teenage brain shrink:
Start of first session: 74% correct, 6% did not answer End of session: 97% correct
3. An adult male should not exceed 3-4 units of alcohol a day while an adult female should not exceed 2-3 units a day:
Start of first session: 87% correct End of session: 100% correct
4. Having a full meal before drinking heavily will stop you from getting drunk:
Start of first session: 83% correct End of session: 100% correct
5. Alcohol is a stimulant:
Start of first session: 39% correct, 9% did not answer End of session: 100% correct
6. Nicotine in itself is not harmful:
Start of first session: 26% correct, 9% did not answer End of session: 100% correct
7. Tobacco contains about 100 harmful chemicals:
Start of first session: 6% correct, 9% did not answer End of session: 100% correct
8. A can of beer, a glass of wine and a shot of liquor all have the same amount of alcohol:
Start of first session: 43% correct, 3% did not answer End of session: 100% correct
9. Alcohol can make you high, happy and helps you sleep:
Start of first session: 48% correct End of session: 97% correct
10. Cigarettes can reduce stress and anxiety levels:
Start of first session: 70% correct End of session: 100% correct

11. Alcohol does not cause memory loss and weight gain but can cause different types of medical conditions including heart disease:

Start of first session: 39% correct, 3% did not answer End of session: 100% correct

12. People are more likely to get drunk if they switch drinks, such as from wine to beer, during one evening rather than when they stick to the same kind of drink:

Start of first session: 78% End of session: 100% correct

13. Cigarettes contain tar, carbon monoxide and nicotine:

Start of first session: 97% correct, 3% did not answer End of session: 100% correct

14. If alcohol is used regularly the effect it produces is reduced so the amount has to be increased to have the same effect:

Start of first session: 43% correct, 12% did not answer End of session: 100% correct

15. Nicotine in tobacco reaches the blood within 10s after smoke is inhaled:

Start of first session: 70% correct, 15% did not answer End of session: 100% correct

Appendix 3 – Student feedback

Students' feedback in relation to '*What do we expect out of these sessions?*'

- *How many chemicals are there in a cigarette?*
- *What is a unit?*
- *Can alcohol be good for the body?*
- *How much alcohol can be consumed daily by males and females?*
- *The effects of alcohol and cigarettes on teenagers*

Appendix 4: Teaching & training plan

Class: Form 3 students

Duration: Six 45-minute sessions

Overall aims of module:

- *To highlight the dangers of alcohol & cigarettes to health*
- *To help students understand what addiction is*
- *To raise awareness of the role of health psychology principles in relation to addiction*
- *To help students identify external circumstances that could lead to substance abuse*
- *To equip students with simple techniques to overcome peer pressure*
- *To help students understand the wider implications of substance abuse & its influence on relationships*
- *To identify healthier alternatives of spending time*
- *To teach students some simple stress management techniques*

Session 1

Resources: True/ False handout, interactive whiteboard, markers, cardboard sheets

Time: 45 minutes

Objectives:

- Getting to know each other & breaking the ice
- Introducing the topic of substance abuse
- Raising awareness of how substances can interfere with a person's goals/dreams/physical functioning
- To get students to start thinking about the harmful effects of smoking
- To identify students' expectations of the sessions
- To identify gaps in knowledge on the theme of addiction

Step 1: Icebreaker (8.30 – 8.35am)

Quick round of introductions

Step 2: (8.35 – 8.50am)

Icebreaker The outline of a human body is drawn on the interactive whiteboard. The following body parts and what they represent are also listed:

Head: dreams, goals and aspirations

Ears: things we like to listen to

Eyes: how we like other people to see us

Shoulders: challenges we face

Hands: things we like to make or do

Stomach: things we like to eat

Heart: things we feel strongly about

Right foot: places we would like to visit

Participants are invited to list things close to the corresponding body part in relation to the items mentioned above. This is done graffiti style, free form etc. A group discussion on what participants have listed follows.

Processing questions:

What are common interests? Shared goals? Dreams?

Were there any themes?

What are the things we feel strongly about?

What things can interfere with these dreams/goals?

How do these relate to our group?

Step 3: (8.50 – 9.00am)

Students are invited to write down any expectations of the module on cardboard sheet.

Step 4: (9.00 – 9.15am)

Students are requested to fill in True/False handout. Afterwards, the teacher asks the following questions:

Where did you learn about alcohol & cigarettes?

Where did you get this information?

How do you know if the information is accurate?

Session 2

Resources: computer, overhead projector, speakers, interactive whiteboard, video, power-point on cigarettes, crossword 'Tobacco & Smoking'

Time: 45 minutes

Objectives:

- To help students understand the harmful effects of smoking & passive smoking
- To help students understand what addiction is
- To help students understand the role of nicotine in addiction
- To help students understand common nicotine withdrawal symptoms & why they occur
- To recognize the harmful ingredients in a cigarette

Step 1: (9.15 – 9.30am)

Students are shown a short video depicting the toxins released by cigarettes and are invited to give their reactions to the video. A class discussion follows as to possible reasons why teenagers make use of cigarettes. The role of how psychological factors (personality, media, social factors, experimentation, boredom, family history) can lead to smoking initiation and the theme of addiction is thus introduced.

Step 2: (9.30 – 9.45am)

Power-point presentation on cigarettes to highlight the hazards of cigarettes on various organs of the body (slides 1 – 13)

Step 3: (9.45 – 9.55)

A brief class discussion follows as to some of the benefits of not smoking and of not starting to smoke in the first place.

Step 4: (9.55 – 10.00am)

To consolidate learning students are given the crossword 'Tobacco & Smoking' to complete at home. This is followed by a brief recap of what was done today.

Session 3

Resources: computer, overhead projector, speakers, interactive whiteboard, Video 2 on alcohol, power-point on alcohol

Time: 45 minutes

Objectives:

- To help students understand the harmful effects of alcohol on the female teenage body
- To help students understand when alcohol abuse might be a problem
- To raise awareness of the holistic effects of alcohol
- To understand what a unit of alcohol is
- To help students realize that the effects of alcohol vary from person to person
- To help students identify ways of overcoming barriers to drinking/smoking

Step 1: (8.30 – 8.40am)

Brief round of how we are feeling today

Brief recap of what was done during previous sessions & checking if students have any questions on 'Tobacco & Smoking' crossword

Step 2: (8.40 – 9.00am)

Power-point presentation of alcohol & short video

Step 3: (9.00 – 9.15am)

Group work: Students have to come up with a list of barriers within the local environment that prevent them from not smoking/drinking and with ways of overcoming these barriers.

Session 4

Resources: Role play cards, video 3 'Alcohol True Stories', computer, interactive whiteboard, speakers

Time: 45 minutes

Objectives:

- To encourage students to think and assess their assertiveness skills
- To identify situations where it is especially important to be assertiveness & to practice assertiveness skills
- To help students think of how the local environment and life circumstances can lead to substance abuse

Step 1: (9.15 – 9.35am)

A student from each group reports what was discussed in the previous session on barriers to substance abuse and ways of overcoming these barriers. This is followed by a class discussion.

Step 2: (9.35 – 9.45am)

Video 3: Alcohol True Stories & short class discussion on video

Step 3: (9.45 – 9.55am)

Students are given the following situation to discuss as a class:

After walking out of a store where you purchased some items, you discover you were short-changed by 3Euros. What do you do?

- a) Let it go since you are already out of the store. After all it's only 3 Euros.
- b) Return to the clerk and inform him/her of the error and ask for your money.

- c) You become angry, you go to the manager in charge, say you were cheated by the assistant and demand your money back.

The differences between assertive, aggressive and passive behaviour are highlighted.

Step 4: (9.55 – 10.00am)

Closure of session & question time

Sessions 5 & 6

Resources: Role-play cards, computer, interactive whiteboard, power-point, computer, Assertiveness handout, True/False handout, evaluation forms.

Time: 45 minutes

Objectives:

- to consolidate hazards of substance abuse
- to allow students the opportunity to practice being assertive & give them feedback on this
- to encourage students to choose healthy ways of spending time
- to highlight the psychological, social and emotional consequences of addictions and how substance abuse can affect relations with others
- to equip students with some tips of how to cope with stress

Step 1: (8.30 – 8.40am)

Quick round of how we are feeling today and recap of what was done in previous sessions

Step 2: (8.40 – 8.50am)

A class discussion as to why it is important to be assertive follows. Teacher gives out handout 'What is assertiveness?' which contains guidelines for assertive behaviour.

Step 3: (8.50 – 9.20)

Students are divided in groups. The task for the next activity is explained. Students are allowed some time to prepare for a role-play thereby practicing assertiveness skills. This is followed by time for feedback/tips on how they can learn to be more assertive.

Step 4: (9.20 – 9.35am)

Power-point slides 25 - 30

Step 5: (9.35– 9.50am)

Students are asked to go back to 'True/False Handout which was done in session one to see what they have learned. Any questions are addressed at this point. Students' initial expectations of lessons are reviewed to see if these have been met.

Step 6: (9.50 – 10.00am)

Students are also requested to fill in the evaluation sheet. They are given a leaflet with some useful information on alcohol and cigarettes. Contact details are also provided.

Tobacco & Smoking

Name: _____



1.		2.		3.			4.		5.
	6.								
									7.
8.									
				9.				10.	
		11.				12.	13.		
14.									
		15.							

Across

Down

1. The best place to put a lit cigarette	2. Because you are getting less oxygen, smoking can make you feel _____.
3. This can grow in a smoker's lungs.	3. It won't hurt if you don't light it.
6. What nicotine, heroin, and cocaine have in common.	4. These help move germs that cause _____ out of the lungs
8. It is sometimes used to kill bugs on crops.	5. What smokers can't do as well as non smokers.
9. This makes a smoker's lungs brown, sticky	7. How nicotine and carbon monoxide travel through the body
10. This passes from a pregnant woman's blood to the blood of her unborn baby.	8. Nicotine makes your blood vessels more
11. How smokers finally quit	10. This happens when smokers try to get mucus and tar out of their lungs
12. Smokers' food doesn't taste as _____.	13. You can't always tell if there is carbon monoxide
14. This gas gives you energy, strength, and life.	
15. Carbon monoxide makes drivers _____ to react to emergencies.	



What is Assertiveness? *Assertiveness is:*

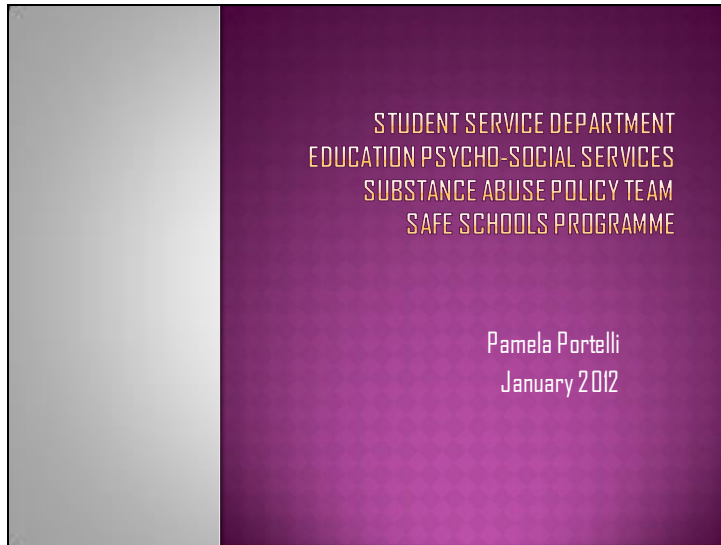
- ✓ *Acknowledging and being honest about your own feelings to yourself and others*
- ✓ *Keeping eye contact while being clear, specific and direct in what you say*
- ✓ *Asking for clarification if you are uncertain about something*
- ✓ *Keeping calm and sticking to the point*
- ✓ *Being respectful of the rights of other persons*
- ✓ *Not letting yourself be shouted down*
- ✓ *Being prepared to say no – firmly and clearly*
- ✓ *Not allowing people to make you feel guilty if you can't do something*
- ✓ *The right to decide what you feel able to do or not to do*
- ✓ *Being aware that body language gives off clear messages*
- ✓ *Keeping eye contact, use a firm tone of voice, be positive and not going over the top with apologies.*



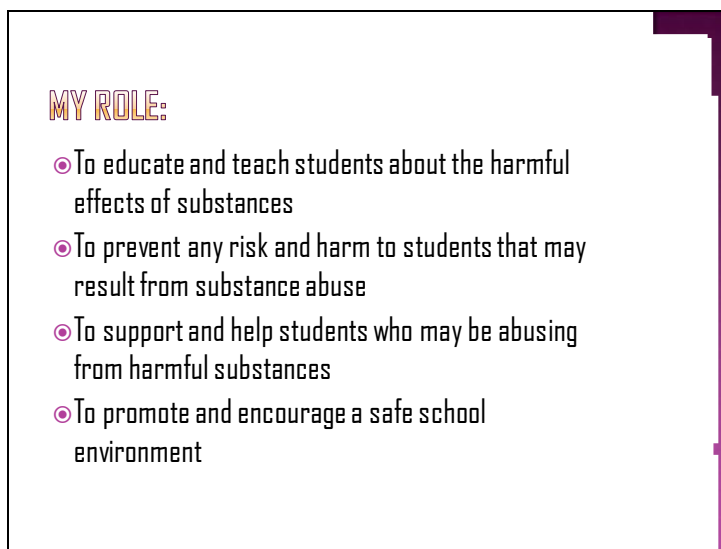
Role play cards

<p>You go over to a mutual friend's house with your girlfriends. You are watching a movie on TV, and your girlfriend and your friend want to go out back and smoke a cigarette. You didn't even realize that she used cigarettes, until now. She encourages you to come along and try it out. When you refuse, your friends start calling you a nerd.</p>	<p>You and some of your friends heard that there is a party on Friday night. You decide to go with a friend, and when you get there, you are amazed. Everyone is having such a great time. Some of your friends who have been there for a while tell you they are having a good time drinking vodka, and they are encouraging you to do the same.</p>
<p>One of your friends decides to have a party because his/her parents are away for the weekend. Everyone is supposed to bring some alcohol from home. You know that some of your friends steal their parent's alcohol, but you have never done this, as you know they disapprove of you drinking. Your friends insist that you get some alcohol along.....</p>	<p>You are at a party, and your friend's older sister and her boyfriend took you there. When it is time to leave, you and your friend are worried because her sister is completely drunk, and is saying that she is going to drive.</p>
<p>All of your friends are smokers....they go out to the smoking area every morning, between classes, and at lunch. After learning about smoking in health class and all of the dangers, you have finally managed to quit. A friend comes over and offers you a cigarette. You don't want to smoke but you don't want to lose all your friends either.....</p>	<p>You are in a bar with your friends. A guy you have liked for a while finally plucks up the courage to come and talk to you. He offers you a drink. You tell him you want a coke and he gets you a beer instead. You tell him you did not order that and he starts laughing, telling you he thought you were joking when you ordered the coke.</p>

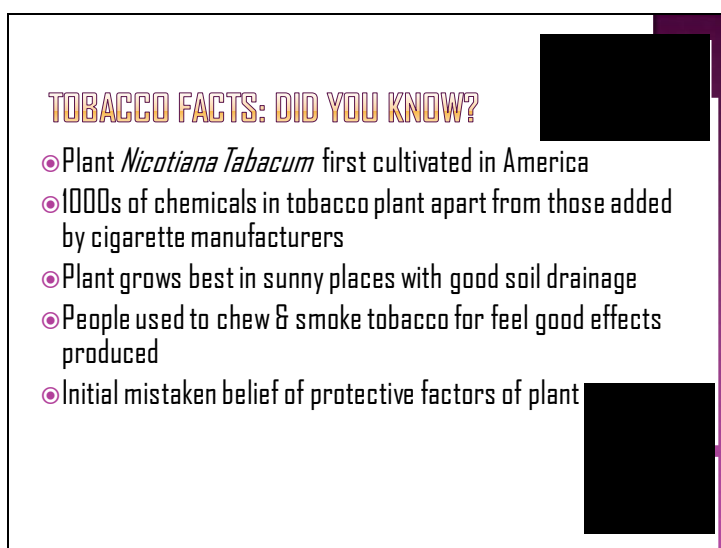
Appendix 5 – Power-point presentation for teaching and training session



Slide 1



Slide 2



Slide 3

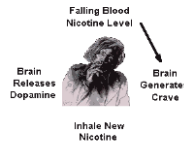
THE ROLE OF NICOTINE

- Both a stimulant and relaxant
- Produces short-lived feel good effects in user
- Cigarettes designed to ensure fast delivery of nicotine to maximize addictive effects
- Nicotine on its own is not harmful but very addictive like drugs
- Large dose of nicotine causes overdose
- It reaches the blood within 10s after smoke is inhaled
- Cigars are larger, take longer to smoke and release more toxins

Slide 4

WHAT IS ADDICTION?

- Craving for cigarettes
- Difficulty stopping smoking
- Withdrawal symptoms if you try to stop
 - headaches, nausea, irritability, problems sleeping, increased appetite, poor concentration, coughing, depression & anxiety



Slide 5

DID YOU KNOW?

- Tobacco contains over 4000 harmful chemicals & tar!



Slide 6

TOBACCO & THE TEENAGE BRAIN

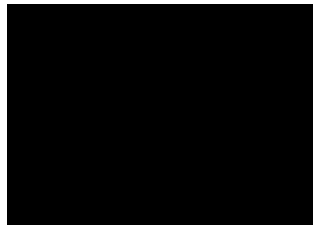
- ◉ Tobacco keeps you awake
- ◉ It causes lack of concentration which can influence academic achievement
- ◉ Causes addiction due to nicotine which is greater in teenagers
- ◉ It can cause headaches and make you dizzy
- ◉ It can make you nervous, moody, anxious, depressed & tired
- ◉ It can cause mental problems among teenagers
- ◉ Slows down responses



Slide 7

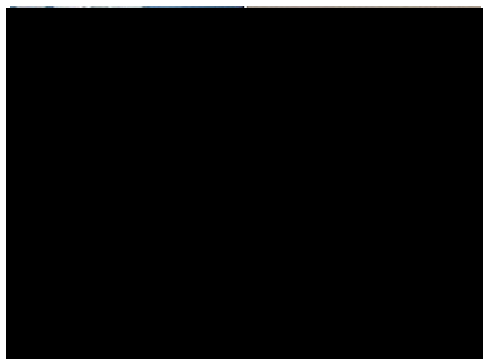
TOBACCO AND YOUR HEART

- ◉ Heart rate increases
- ◉ Heart disease
- ◉ Constriction of blood vessels
- ◉ Weakened immune system
- ◉ Blocked blood vessels
- ◉ High blood pressure
- ◉ Weakened pumping of heart
- ◉ Heart has to pump harder during exercise
- ◉ Increased risk of stroke at a young age



Slide 8

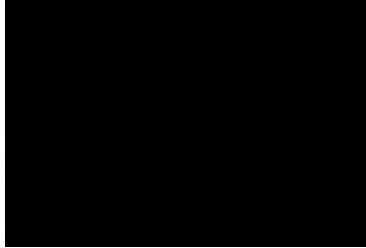
HEALTHY HEART VS UNHEALTHY HEART



Slide 9

EFFECTS OF TOBACCO ON TEENAGE LUNGS:

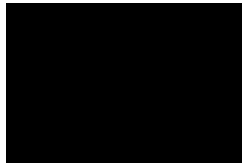
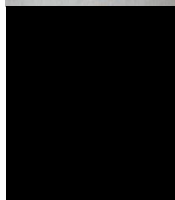
- ◉ Decreased lung capacity and breathlessness
- ◉ Increased risk of throat and lung cancer
- ◉ Coughing spells
- ◉ Bronchitis and asthma
- ◉ Excess phlegm production
- ◉ Increased risk of infection
- ◉ Poor lung growth and function



Slide 10

EFFECTS OF TOBACCO ON YOUR MOUTH & SKIN

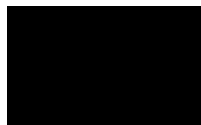
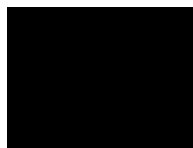
- ◉ Diminished capacity to taste food
- ◉ Bad breath and bad taste in mouth
- ◉ Yellow and brown stains on teeth
- ◉ Receding gums and permanent gum loss
- ◉ Sensitive teeth & tooth decay
- ◉ Sores, patches and lumps in mouth
- ◉ Premature wrinkled skin
- ◉ Stains on hands
- ◉ Bad smell in hair



Slide 11

WHAT IS PASSIVE SMOKING?

- ◉ Breathing in second-hand smoke
- ◉ Is a main cause of premature death
- ◉ Can cause sudden death in infants
- ◉ Can cause low birth weight in pregnant women as CO & other toxins pass to baby from placenta
- ◉ Children & teens exposed to passive smoking are more likely to start smoking

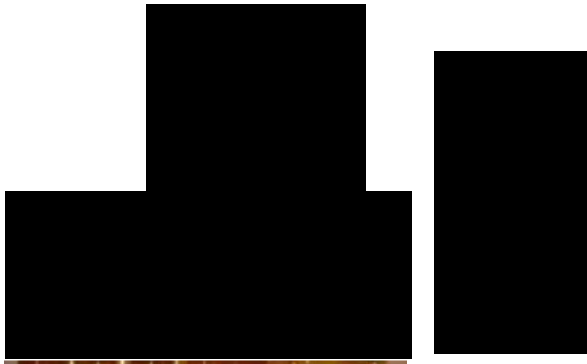


Slide 12

NOW CAN YOU THINK OF SOME BENEFITS OF NOT SMOKING?

Slide 13

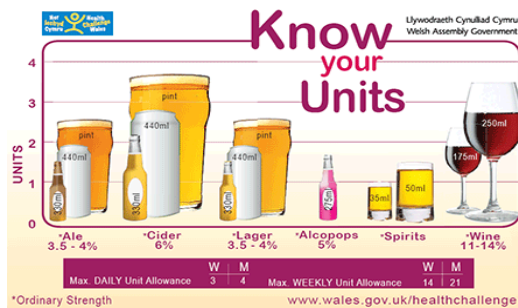
ALCOHOL: WHAT DOES IT LOOK LIKE?



Slide 14

HOW MUCH IN A UNIT?

- A grown up male should drink no more than 3-4 units a day
- A grown up female should not drink more than 2-3 units a day



Slide 15

EFFECTS OF ALCOHOL DEPEND ON:

- ◉ Age
- ◉ Amount & type of alcohol consumed
- ◉ Time taken to consume it
- ◉ Gender, weight, body size, and percentage of body fat
- ◉ Amount of food in the stomach
- ◉ Use of medications, including non-prescription drugs
- ◉ Mindset of the individual at the time of consumption
- ◉ Setting in which the drinking takes place

Slide 16

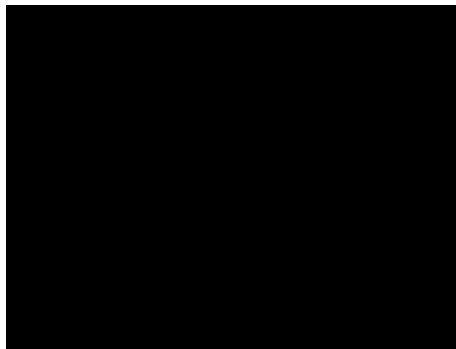
ALCOHOL & THE TEENAGE BRAIN

- ◉ Learning problems including lower scores on memory tests and decreased attention
- ◉ Irreversible brain damage and mental problems
- ◉ Reduction in brain size
- ◉ Killing of brain cells
- ◉ Poor concentration, memory lapses
- ◉ Slower reaction time
- ◉ Lack of muscle coordination & balance
- ◉ Slurred speech



Slide 17

ALCOHOL & THE TEENAGE BRAIN



Slide 18

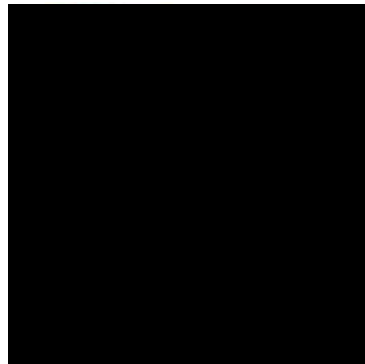
ALCOHOL: THE TEENAGE LUNGS, THE HEART & LIVER

- ◉ Increased risk of infections
- ◉ Can cause breathing & alcohol poisoning
- ◉ Choking
- ◉ Weakened pumping of heart
- ◉ Heart failure
- ◉ Death
- ◉ Liver cirrhosis (inflammation & destruction of liver cells)
- ◉ Liver hepatitis
- ◉ Liver failure & coma



Slide 19

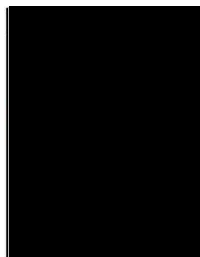
ALCOHOL AND YOUR LIVER



Slide 20

OTHER HEALTH PROBLEMS ASSOCIATED WITH ALCOHOL

- ◉ Increased risk of breast cancer in females
- ◉ Problems with fertility
- ◉ Harm to the unborn baby (Fetal Alcohol Syndrome)
- ◉ Irritation of stomach & stomach ulcers
- ◉ Flushed skin
- ◉ Weight gain
- ◉ Soft, brittle & thin bones



Slide 21

ALCOHOL: EFFECT ON MOODS, THOUGHTS & BEHAVIOR

- ◉ Aggression
- ◉ Violence & impulsivity
- ◉ Risky sexual practices & increased risk of pregnancy and STDs
- ◉ Depression, anxiety & irritability
- ◉ Suicidal thoughts
- ◉ Saying things you might regret later on
- ◉ Changes in personality
- ◉ A gateway to other illicit drugs
- ◉ Emotional swings
- ◉ Psychological dependence



Slide 22

SIGNS OF ALCOHOL ADDICTION

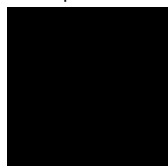
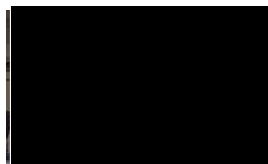
- ◉ You cannot quit drinking or control how much you drink
- ◉ You need to drink more to get the same effects
- ◉ You have problems concentrating at school
- ◉ You hurt yourself/others because of drinking
- ◉ You drink despite knowing the harmful effects it may have on your health
- ◉ You don't enjoy yourself unless you have a drink



Slide 23

GROUP WORK:

- ◉ What factors may make it difficult for teenagers to stop drinking/smoking?
- ◉ Can you think of ways to overcome these barriers?



Slide 24

EFFECTS OF ALCOHOL ON RELATIONSHIPS

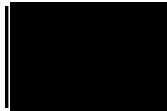
- ◉ Alcohol as a third party in a relationship
- ◉ Fighting & arguing
- ◉ Strain on relationships due to unemployment problems
- ◉ Saying things you will regret later on
- ◉ Increased risk of date rape
- ◉ Relationship breakup
- ◉ Multiple sexual partners
- ◉ Financial strains and borrowing of money from friends
- ◉ Hurting friends by turning away from them & seeking others with similar patterns of use
- ◉ Friends joining the addiction of binge drinking



Slide 25

SOCIAL CHANGES BROUGHT ABOUT BY ADDICTIONS

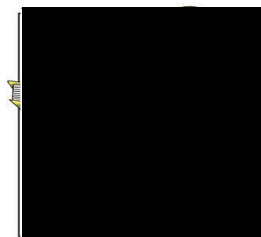
- ◉ Problems at school (absenteeism, expulsion or suspensions)
- ◉ Isolation
- ◉ Loss of interest in social activities
- ◉ Missing out on social activities
- ◉ Problems with significant others
- ◉ Hanging out with friends who are likely to engage in addictive behaviors
- ◉ Hurting others as a result of increased aggression & violence
- ◉ Hurting self & others if drinking & driving



Slide 26

COPING WITH STRESS

- ◉ Talk to a friend & seek support
- ◉ Practice being assertive
- ◉ Time management
- ◉ Think positive
- ◉ Take some time out
- ◉ Exercise
- ◉ Balancing study & leisure
- ◉ Practice hobbies
- ◉ Eat healthy
- ◉ Get a good night sleep
- ◉ Importance of self control



Slide 27

HEALTHY WAYS OF SPENDING TIME

- ⦿ Camping
- ⦿ Fishing
- ⦿ Hikes
- ⦿ Swimming
- ⦿ Drama
- ⦿ Photography
- ⦿ Singing
- ⦿ Other types of sports
- ⦿ Dancing
- ⦿ Modeling
- ⦿ Pottery
- ⦿ Arts & crafts
- ⦿ Board games
- ⦿ Cinema
- ⦿ Music
- ⦿ Riding bike



Slide 28

QUESTIONS????



Slide 29

WE ARE HERE TO HELP! TOGETHER WE CAN MAKE A DIFFERENCE!

Contact details:

- ⦿ Pamela Portelli, Guidance Teacher within the Substance Abuse Unit Gozo, Safe Schools Programme: 21553548

Slide 30

Appendix 6 - Evaluation

Please take the time to fill in this evaluation sheet. You do not need to write your name.

Name of school: Gozo College Girls Secondary School Form: _____

1. How did you find the sessions on substance abuse?

☐ very interesting

☐ interesting

☐ Not interesting at all

2. What did you like most? _____

3. Is there something in relation to alcohol and cigarettes you would have liked to talk about that was not covered during the lessons?

Yes ☐ No ☐

4. If yes, on what topic would you have liked more information about?

5. Do you think there was enough time for the lesson? Yes ☐
No ☐

6. The teacher was helpful/ not helpful: Yes ☐
No ☐

7. Did you find these lessons useful? Yes ☐
No ☐

8. Would you like to have similar sessions in the future? Yes ☐
No ☐

What did you learn during these sessions? _____

Is there something you would have liked to be done differently and if yes, what was that?

Thank you for your feedback!

Appendix 7- Evaluation forms & students' feedback

1. How did you find the sessions on substance abuse?

Very Interesting: 79%

Interesting: 21%

Not interesting at all: 0%

2. What did you like most?

The icebreaker: 4%

The videos: 38%

Information on the dangers of cigarettes and alcohol: 13%

The presentation: 4%

3. Is there something in relation to alcohol and cigarettes you would have liked to talk about that was not covered during lessons?

No: 92%

Yes: 4%

4. If yes, on what topic would you have liked more information about?

Drugs: 4%

Effects of substances during pregnancy: 4%

5. Do you think there was enough time for the sessions?

Yes: 62%

No: 38%

6. The teacher was helpful/not helpful:

Yes (helpful): 100%

No: 0%

7. Did you find the sessions useful?

Yes: 100%

No: 0%

8. Would you like to have similar sessions in the future?

Yes: 100%

No: 0%

9. What did you learn during these sessions?

That sugar added to drinks can mask the taste of alcohol: 4%

The harmful effects of alcohol and cigarettes on female teenagers: 71%

The harmful effects of cigarettes and alcohol if taken in large quantities: 4%

The amount of units one can have in a day: 8%

That cigarettes contain a lot of chemicals and that nicotine is not harmful: 4%

The addiction caused by cigarettes: 4%

*I liked the fact that we were given unusual information about cigarettes,
usually all talks are about drugs so this was more interesting: 4%*

10. Is there something you would have liked to be done differently and if yes,
what was that?

Lessons were interesting: 4%

More time to prepare for role plays: 4%

*Everything was perfect and the activities were great, I really liked the lesson:
12%*

No: 96%

Teaching and training Case Study 2 – Health Care Professionals

Theme: Stress Management

Venue: Gozo General Hospital, Gozo

Date: May 2012

Time: 2 hours

Trainees: 5 nurses, 1 GP, 1 occupational therapist, 1 speech therapist (N = 8)

Background

Working with the education department provided me with limited opportunities to working directly with health care professionals. Conclusively, I contacted the medical superintendent of the Gozo General Hospital to inquire about the possibility of delivering some workshops to staff members. It was agreed they would benefit from a stress management workshop to be conducted during specific times in between shifts or as part of breaks so as not to disrupt the smooth running of hospital wards. E-mail with details of the workshop was sent to all staff. Interested parties were to contact me by e-mail.

Setting

The session was conducted in the hospital's lecture room. Since the room available was quite small, each workshop was limited to no more than 10 participants.

Planning and designing training program

Assessing training needs and identifying content

Two weeks prior to training, interested participants were requested to submit their *wish list* via e-mail. Unfortunately enough, only two replied. Feedback from the latter was added to my own list of aims and expectations (Appendix 1). At the start of the workshop, participants were invited to introduce themselves and asked whether they wanted to add anything to the list. I tried to involve everyone from the start. Given the

small group, I was hoping for an interactive session. I went through the list again at the end of the session to ensure I had covered all of my trainees' expectations.

Selecting training methods & approaches

Since I had no knowledge of the trainees' background, my first challenge was to facilitate content delivery whilst meeting the diverse learning styles of my audience. Kolb's Adult Learning Style Inventory (2005) was e-mailed to all participants prior to the workshop (Appendix 2) to get a clearer idea of most appropriate methodology for workshop delivery. Nonetheless, I only received two completed inventories a day prior to the session. This did not give me ample time to prepare and structure the content accordingly. Moreover, feedback from most participants was missing. Conclusively, I decided to use a mixture of pedagogical, experiential and interactive approaches. I started the workshop by introducing a theoretic component since this is a prerequisite to comprehensive learning (Knowles, Swanson & Holton, 2005). This included information on Seyle's general adaptation syndrome (1956) to illustrate individual stress responses and Cannon's fight or flight model (1932) to show physiological changes in response to stress levels.

Reflection

Having taught teenagers for over 14 years, I was finding it difficult to switch from a young population to an adult one. This was particularly true when conducting my first workshops. Upon reflection, I realized I hurried through some of the material. I assumed that unlike teenagers, health care professionals would be familiar with some of the content and felt I did not need to dwell too much on explaining certain points. Further practice has enabled me to shift my teaching style accordingly. I also realized that having a medical background does not necessarily entail a sense of self-awareness and a clear understanding of the psychological effects of stress.

Produce training material & appropriate use of media

Following a thorough search of health psychology literature, I devised my own materials (Appendix 3: session and power-point). I found the Stress Vulnerability Model (Zubin & Spring, 1977) particularly useful. According to the latter, although a

genetic predisposition may render the individual more susceptible to mental illness, bio-psychosocial stressors are equally important in triggering mental health problems. This also means that reducing the impact of everyday stressors and learning effective ways of coping with stress are likely to be protective factors and act as buffers to mental illness. Stress is also a very subjective phenomenon. Thus, one aim of the workshop was to foster self-awareness amongst participants, with the hope of identifying personal stress triggers. This was done via the incorporation of the stress diary.

Another aim was to equip participants with tools to cope with everyday stressors. This was complemented by eliciting unhelpful versus helpful ways of coping and via the use of interactive discussions. Previous workshops revealed that practical exercises were very well received by participants, as opposed to large chunks of theoretical content. Practical exercises provide individuals with the opportunity to reinforce skills learned (Bromley, 2013). Some of the exercises, such as tensing/relaxing were a tool which participants could apply anywhere. They did not require specific equipment or resources and were not time consuming. As a result, they were something participants could easily incorporate in their daily routine. I devised a booklet which trainees could refer to after the session (see practice log under teaching case study). A copy of the session was shown to my supervisor for feedback prior to workshop delivery.

Other additional resources used included a laptop, projector, flipchart paper, power-point presentation, cardboard sheets, markers and pens.

Deliver training program

Having delivered a few prior workshops, I felt that teaching smaller groups was often better than larger ones. First, smaller groups allow more room for brainstorming and creative problem solving (Cohen & Lotan, 2014). Second, social loafing or the tendency to exert less effort in group activities was less likely to occur. Third, I was able to provide individual attention to trainees, particularly during practical exercises. Fourth, participants seemed more at ease practicing exercises in a smaller setting. Dimming the lights during this activity helped foster a more comfortable environment. Since smaller groups were more likely to create space for discussion, some exercises

were taking much longer than anticipated. I tried to ensure that participants were focused on the topic at hand rather, particularly when the conversation seemed to be going off track. I also used immediacy. Sometimes, trainees seemed particularly distressed about incidents at work, particularly the death of a young client. I had to put my slides on hold or skip some of the content. Nonetheless, this was important since such incidents are a living reality amongst health care professionals.

Reflection

Contrary to my initial assumptions, health care professionals are not necessarily familiar with psychological jargon. Nor are they always well-equipped to handle workplace stressors, despite their knowledge of human bodily functions and extensive knowledge of the physical effects of stress. I tried to render psychological content more accessible to the target audience by using lay terminology and via the use of simple language. For instance, I replaced the word 'cognitions' with 'thoughts', 'grounding' with 'here-and-now'. I also told my audience to stop me at any time if they had any questions or wanted to add any comments.

Some of the relaxation exercises, such as diaphragmatic breathing require some practice to master. In fact, teaching this exercise took longer than anticipated. I also tried to boost their sense of self-efficacy and instil the belief that they can learn to change certain unhealthy habits. Trainees were asked to think of challenging situations they had manage to master and to apply the skills learned to seemingly difficult tasks.

Planning and implementation assessment procedures

At the end of the workshop, participants completed an evaluation form requesting them to rate several aspects of the workshop and their confidence in practicing skills learned (Appendix 4).

Evaluate training programs

I was quite happy with the feedback given (Appendix 5). The overall feeling was a craving for these kinds of sessions. Moreover, there are no full-time psychologists

employed at the hospital. The lack of psychological support at the hospital was strongly felt, as confirmed by a senior nurse manager.

The workshops conducted in hospital helped me become more in tune with the realities and experiences faced by hospital staff. At that point in time, this was a novel work environment for me. Write my personal reflections after each session helped me improve on future sessions. Overall, this was a very positive and rewarding experience. I felt quite confident in my ability to conduct further sessions, should the opportunity arise.

References

Bromley, P. (2013). Active learning strategies for diverse learning styles: Simulations are only one method. *Political Science & Politics*, 46(4), 818-822.

Cannon, W. B. (1932). *The wisdom of the body*. New York: Norton.

Cohen, E.G., & Lotan, R. A. (2014). *Designing group work: Strategies for the heterogeneous classroom* (3rd ed.). New York: Teachers College Press.

Knowles, M. S., Swanson, R. A., & Holton, E. F. (2005). *The adult learner: The definitive classic in adult education and human resource development* (6th ed.). California: Elsevier Science and Technology Books.

Kolb, A., & Kolb, D. (2005). The Kolb learning style inventory-version 3.1 2005 technical specifications. Hay-Group. Retrieved from http://www.hayresourcesdirect.haygroup.com/Learning_Self_Development/Assessments_surveys/Learning_Style_Inventory/Overview.asp

Seyle, H. (1956). *The stress of life*. New York: McGraw-Hill.

Zubin, J., & Spring, B. (1977). Vulnerability: A new view of schizophrenia. *Journal of Abnormal Psychology*, 86, 103–126.

Further resources for developing teaching & training materials

Huggard, P. K., & Huggard, E. J. (2008). *When the caring gets tough: Compassion fatigue and veterinary care*, *VetScript*, 14–16.

Lazarus, R. S. (1990). Theory-based stress measurement. *Psychological Inquiry*, 1, 3–13.

Powell, T. (2000). *Stress-free living*. London: Dorling Kindersley Ltd.

Powell, T. (2012). *The mental health handbook – A cognitive behavioural approach*. USA: Speechmark Publishing Limited.

Sarafino, E. (1994). *Health psychology – Bio-psychosocial interactions* (2nd ed.). USA: John Wiley & Sons.

Varvogli, L., & Darviri, C. (2011). Stress management techniques: Evidence-based procedures that reduce stress and promote health. *Health Science Journal*, 5(2),74–89.

Wilding, C., & Milne, A. (2010). *Cognitive behavioural therapy*. UK: McGraw-Hill Company.

Appendix 1 - Needs assessment

What would you like to gain from this workshop? What are your expectations?

Learning ways of how to relax

Learning ways how to control stress rather than stress controlling you

Learn ways of overcoming worrying thoughts

Keeping calm at work despite emergencies

Managing anxiety in relation to working conditions

Not taking work problems home

Dealing with stress caused by relationship problems at work

Personal note and reflection:

Attendance to the workshop was voluntary. I therefore assumed that attendees were experiencing some form of stress, either in the workplace setting or in their personal life. I also assumed they were motivated to be there since no extrinsic incentive was provided. Keeping this in mind, I was particularly conscious of my need to satisfy my audience and tried as much as possible to meet their expectations. Previous workshops have taught me that occasionally, trainees come up unrealistic expectations, particularly when the duration was taken into consideration. I sometimes felt pressured to find immediate solutions to their problems. Occasionally, I was bombarded with questions and barely given enough time to answer them. Conclusively, I started successive workshops by setting out realistic expectations and informing my audience that the session was not meant to eliminate all their stress but rather to equip them with some tips to handle stress-related issues. I offered my availability after the workshop should they wish to discuss personal matters.

From a bio-psychosocial perspective, stress can affect health through various pathways, including behavioural and physiological ones. Stress induces unhealthy behaviours like smoking, excessive consumption of alcohol or overeating. It can also lead to poor functioning of the immune system and increased stress hormones via the activation of the sympathetic nervous system (Selye, 1956). Although the latter is

involuntary, the regular practice of simple breathing exercises and progressive muscle relaxation can help switch on the parasympathetic nervous system and produce a calming effect. The exercises chosen are not only effective but produce immediate calming effects.

I have to admit I was quite drained after the workshops. Participants brought up a lot of issues. I recall one instance when one of the nurses was being particularly difficult. He started putting down all my arguments. His wife, who was also present and who was also a nurse, seemed embarrassed. I felt frustrated and helpless. I did not know what to do or what to say. Conclusively, I just empathized, pointing out he seemed very upset about the overall work atmosphere. I must have opened a can of worms as most participants started expressing their frustration of the lack of cooperation between managers and members of staff. At that point I realized his anger was not directed at me. Surprisingly enough, the 'difficult' nurse complimented me at the end of the session, asking me whether there would be follow-up sessions! It seems that the workshop was a cathartic experience for some participants, which in itself was quite positive. The workshop was also helpful in increasing doctor-nurse communication, as evident from feedback given at the end of one session.

Ironically enough, I was quite apprehensive and stressed about my performance, particularly in the first workshops. I assumed that HCP know it all and that I could not afford to make mistakes. Another factor that increased my anxiety was the presence of my family doctor. As a result, I made sure I was quite knowledgeable about the topic and tried to anticipate questions asked. I also felt the need to understand the biology component behind the relaxation exercises, just in case participants asked about that. My background in physical sciences was extremely helpful in this respect. Throughout the workshops, I realized my initial fears were exaggerated and that I had enough knowledge to talk at length about stress. I was also confident and able to answer all questions asked. My feared ex-family doctor did not say much during the workshop, he only patted my shoulder before leaving and whispered "prosit", meaning "well done". Another doctor asked for my power-point, commenting he found the content of personal benefit. This helped boost my confidence. I also realized that HCP do not

always know it all. For instance I was surprised to find out that one nurse did not know that coffee was a stimulant that can boost heart rate and increase anxiety.

Planning of future workshops

During sessions with larger groups, I found myself keeping an eye on the clock and did not allow enough time for group discussions. Looking back, I plan to allow more room for this in future sessions since participants would have benefitted from the sharing and identification of coping strategies. Further elaboration on the use of a stress diary would be helpful in illustrating how this can increase self-awareness of stressful situations. Although the workshop was not a therapeutic intervention, participants could have brought up issues which I myself could have been unable to handle. I plan to have the name of a contact reference in future sessions, should this arise.

The theme of religion and spirituality came up a few times. I plan to include a spiritual component in future sessions. I also plan to include more health psychology theories and delve further into the link between personality, lifestyle and stress. Since time was an issue, the latter were only discussed briefly. I also plan to ask for more time when delivering future workshops.

Appendix 2 – Kolb’s Adult Learning Style Inventory (2005)

Dear Participant

Please take your time to go through this brief questionnaire by ranking the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job or at school. Then, using the spaces provided, rank a “4” for the sentence ending that describes how you learn **best**, down to a “1” for the sentence ending that seems **least** like the way you learn. Be sure to rank all the endings for each sentence unit. There are no right or wrong answers. All replies are confidential. **Please do not forget to answer the last question at the end of the questionnaire.**

Example of completed sentence set:

1. When I learn: 2 I am happy, 1 I am fast, 3 I am logical, 4 I am careful.

Remember: 4 = *most* like you, 3 = *second most* like you, 2 = *third most* like you, 1 = *least* like you

When I learn	A _____	I like to deal with my feelings	B _____	I like to think about ideas	C _____	I like to be doing things	D _____	I like to watch and listen
I learn best when	_____	I listen and watch carefully	_____	I rely on logical thinking	_____	I trust my hunches and feelings	_____	I work hard to get things done
When I am learning	_____	I tend to reason things out	_____	I am responsible about things	_____	I am quiet and reserved	_____	I have strong feelings and reactions
I learn by	_____	feeling	_____	doing	_____	watching	_____	thinking
When I learn	_____	I am open to new experiences	_____	I look at all sides of the issues	_____	I like to analyze things, break them down into parts	_____	I like to try things out
When I am		I am an observing		I am an active		I am an intuitive		I am a logical

learning	_____	person	_____	person	_____	person	_____	person
I learn best from	_____	observation	_____	personal relations	_____	rational theories	_____	a chance to try out and practice
When I learn	_____	I like to see results from my work	_____	I like ideas and theories	_____	I take my time before acting	_____	I feel personally involved in things
I learn best when	_____	I rely on my observations	_____	I rely on my feelings	_____	I can try things out for myself	_____	I rely on my ideas
When I am learning	_____	I am a reserved person	_____	I am an accepting person	_____	I am a responsible person	_____	I am a rational person
When I learn	_____	I get involved	_____	I like to observe	_____	I evaluate things	_____	I like to be active
I learn best when	_____	I analyze ideas	_____	I am receptive and open minded	_____	I am careful	_____	I am practical

What are your expectations of this workshop and what do you hope to achieve out of it?

Thank you for your time!

Appendix 3 - Teaching plan

Aims of workshop:

- To raise awareness of the fact that stress is not necessarily a bad thing
- To highlight the relation between thoughts, feelings and behaviours in relation to the experience of stress
- To teach participants some simple stress management techniques
- To highlight the dangers of stress to health
- To highlight the role of health psychology to stress management

Objectives:

By the end of the workshop, participants will have:

- Increased knowledge of the difference between eustress and distress
- Increased knowledge of the role of health psychology to managing stress and what health psychology is
- Increased knowledge of the benefits of simple breathing exercises to manage stress
- Increased familiarity and confidence in practicing progressive muscle relaxation and diaphragmatic breathing techniques
- Increased knowledge of how stress builds up in the body and how it manifests itself

Models of learning

The workshop will utilize a combination of pedagogical, interactive and experiential approaches.

Pedagogical: Power-point & handouts

Interactive: Group discussions

Experiential: Practicing of exercises

Materials: laptop, projector, flipchart paper, cardboard sheets, markers, pens, power-point, handouts, evaluation forms, Kolb's Adult Learning Style Inventory (2005).

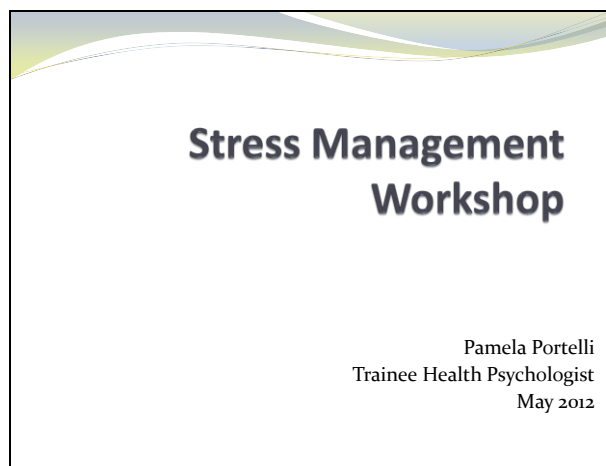
Duration: 2 hours (*Extra time was allowed at the end to answer any questions and fill in the evaluation*)

Outline of session/workshop

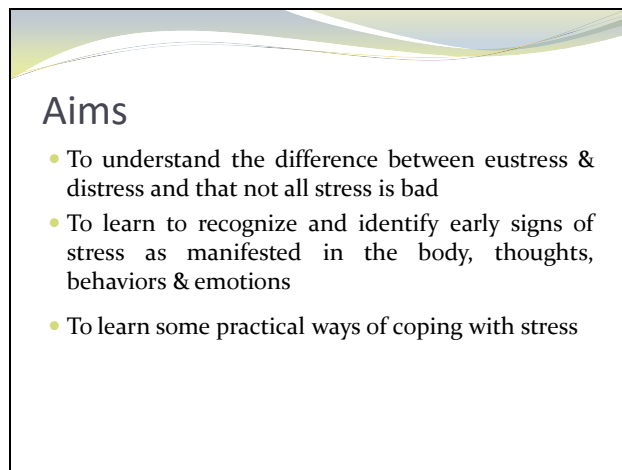
Steps	Objectives	Time
Introductions and expectations	To allow participants to introduce themselves, find out what they know on the subject and to assess their expectations of the session	3.00 – 3.10pm
Brainstorming activity: What is stress?	To raise awareness of the fact that stress is very subjective and that the accumulation of minor hassles contribute to increased stress	3.10 – 3.15pm
Introducing the GAS model, fight/flight response & Yorkes-Dodson Law	To raise awareness of the body's response to stress To raise awareness of that fact that 'fight-flight' response is ill-equipped to deal with modern stressors To show that moderate amounts of stress can be beneficial but that prolonged periods of stress can result in burnout/ill-health	3.15 – 3.20pm
A CBT model of stress	To raise awareness of powerful relation between behavioural, emotional & physiological responses to stress and how these in turn can affect health To raise awareness of the fact that some behavioural responses triggered by stress are beyond conscious awareness (e.g. overeating) To raise awareness of the fact that although stress in itself does not cause illness, several factors mediate the stress-illness link	3.20 – 3.30pm
Group work	To highlight the fact that there is a fine line between positive and negative stress To encourage sharing of different coping strategies To identify productive and less productive ways of dealing with stress	3.30 – 3.50pm

Managing stress	<p>To equip learners with tips of how to reducing stress</p> <p>To provide tips of how to incorporate stress management strategies according to one lifestyle & preferences</p> <p>To teach participants the benefits of using a stress diary and how this can help raise awareness of situations in their lives that trigger stress in order to take immediate action before stress builds up</p> <p>To show learners that stress has a bio-psychosocial nature and the importance of social support in managing stress</p>	3.50 – 4.10pm
Changing behaviour & exercise	<p>To help learners realize that simple lifestyle changes and the learning of simple skills can reduce the amount of stress experienced</p> <p>To raise awareness of the benefits of physical exercise in stress reduction and production of feel-good hormones</p>	4.10 – 4.15pm
Diaphragmatic breathing & PMR exercise	<p>To teach participants a simple and quick way of preventing build-up of stress and to cope with it</p> <p>To teach participants the difference between tense and relaxed muscles and that are often not aware of how stress is building up</p>	4.15 – 5.00pm
Revision of expectations & evaluation	To clarify any issues, to make sure all expectations have been met, to answer any questions and to allow participants to fill in evaluation forms	

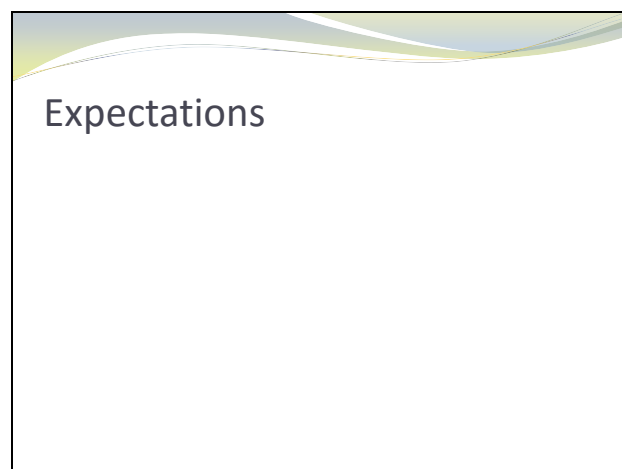
Teaching & training material: Power-point



Slide 1



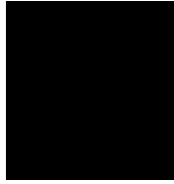
Slide 2



Slide 3

What is stress?

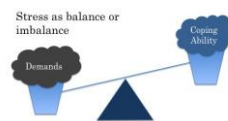
Can you give some examples of stressful situations?



Slide 4

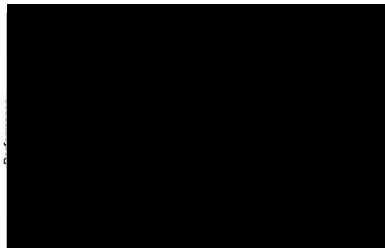
Stress is a mismatch between:

- The demands/perceived threat imposed upon person by everyday life
- Perceived ability to cope with these demands (Lazarus & Launier, 1975)



Slide 5

Is stress bad? (Hebb, 1955)



Slide 6

How does the body respond to stress?

- Alarm
- Resistance
- Burnout/Exhaustion (Selye's GAS, 1956)
- Fight-flight response (Cannon, 1932)



Slide 7

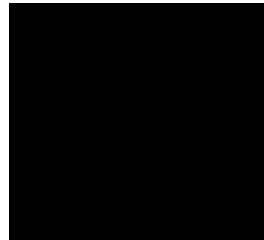
Types of stressors

- External
 - Physical Environment
 - Daily Hassles
 - Social Interactions
 - Organizational
 - Major life events
- Internal
 - Lifestyle choices
 - Personality
 - Negative self talk
 - Upbringing

Slide 8

Physical signs and symptoms

- High blood pressure
- Muscle tension
- Migraine and headaches
- Lowered immune system
- Stomach ulcers
- Shallow breathing
- Dry mouth
- Tiredness
- Excess sweating, blushing



Slide 9

Behavioral & emotional signs and symptoms:

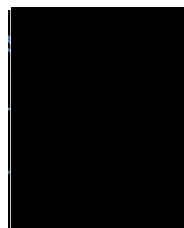
- Sleep problems
- Overeating/loss of appetite
- Excessive drinking/smoking
- Aggression and anger
- Emotional outbursts or over-reaction
- Social withdrawal
- Depression
- Moodiness
- Feeling overwhelmed



Slide 10

Some effects of stress on thoughts:

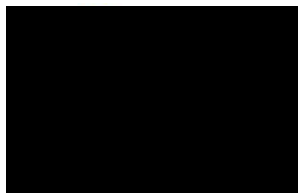
- Difficulty concentrating and making decisions
- Forgetfulness
- Disorganization
- Anxious or racing thoughts
- Increased sensitivity to criticism
- Poor judgement
- Constant worry



Slide 11

Group work

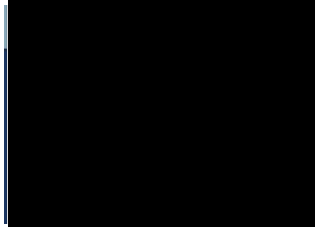
- What do you do when you are stressed?
- What do you do to reduce stress?
- Are there healthier alternatives to dealing with stress?



Slide 12

Self awareness & introspection

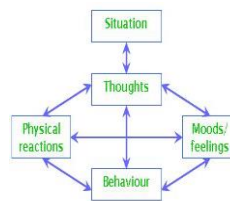
- Identify sources of stress & how it builds up
- Identify personal strategies for dealing with stress



Slide 13

Stress Management Techniques

- Reducing physical symptoms
- Changing thoughts
- Altering behaviors



Slide 14

Changing thoughts

- Focusing on the here and now
- Setting realistic goals
- Positive self-talk
- Focusing on strengths rather than weaknesses
- Reframing situation
- Recognizing compassion fatigue
- Acceptance of the fact that sometimes we can't do anything to help patients
- Not feeling guilty for suffering of others



Slide 15

Changing behaviors

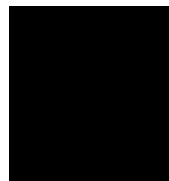
- Regular breaks from tending to patients
- Breaks unrelated to traumatic events
- Balance work & leisure
- Containment (Sapolsky, 2003)
- Assertiveness
- Social support & talking it all out
- Laughter & tears as natural stress mitigators
- Refer when necessary
- Time management & organization



Slide 16

Other lifestyle changes

- Relax and pamper yourself on regular basis
- Eat healthy calming foods & avoid caffeine
- Cut down on alcohol & cigarettes
- Get a good night sleep
- Yoga & meditation
- Develop hobbies & interests
- Take an imaginative journey



Slide 17

Exercise

- Decreases blood pressure
- Lowers heart rate & protects from heart disease
- Slows down breathing and enhances lung function
- Keeps muscles in good shape & eases muscle tension
- Keeps weight down & energy levels up
- Keeps blood flowing and improves circulation
- Produces 'feel' good hormones that act as natural anti-depressants
- Helps us metabolize excessive stress hormones



Slide 18

Diaphragmatic breathing

- Natural way of reducing physical symptoms of anxiety & worry
- Importance of practicing not only in a crisis situation but learning to apply this skill 'whenever and wherever'



Slide 19

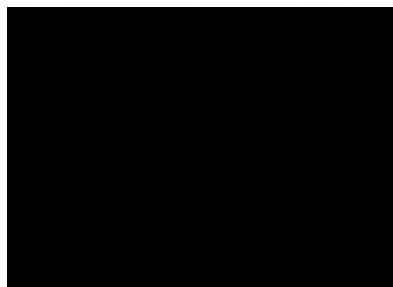
Progressive muscle relaxation

- Can be done anywhere and anytime
- Is useful if you suddenly find yourself in the middle of a stressful situation
- Be patient, relaxation does not come naturally but requires practice!



Slide 20

Questions & revision of expectations



Slide 21

Appendix 4 – Evaluation Form

Gozo General Hospital - Stress management workshop evaluation form

Please take your time to read through the statements below to give your ratings on this workshop by putting a cross to indicate your response to each of the items listed. Your feedback is highly valued and would help improve the quality of future sessions. Thank you for your help and cooperation. Responses are confidential and anonymous.

Occupation: _____

Item	Poor	Satisfactory	Good	Very good	Excellent
The duration of the workshop was....					
The presentation and delivery of content was..					
The quality of material presented was.....					
The relevance of the workshop to my work setting was.....					
The presenter was...					
The exercises were.....					
The opportunity to ask questions was.....					
The experience I gained was....					
Is there something in relation to stress that you would have liked to talk about but was not discussed?					
What did you find most valuable in terms of learning that you anticipate using in your life/work?					
Is there something you would have liked to be done differently or something you did not like? Please provide specific details					
What was the most useful aspect of this workshop?					
Any further comments or suggestions?					

How confident do you feel in practicing some of the stress management skills taught in this workshop? Circle the best answer:

Very Confident 5 4 3 2 1 Not confident at all

Thank you for your feedback!

Appendix 5 - Feedback

1. The duration of the workshop was:

Good: 37.5% Very Good: 50% Excellent: 12.5%

2. The presentation and delivery of content was:

Good: 12.5% Very Good: 75% Excellent: 12.5 %

3. The quality of material presented was:

Very Good: 87.5% Excellent: 12.5%

4. The relevance of the workshop to my work setting was:

Good: 25% Very Good: 25% Excellent: 50%

5. The presenter was:

Very Good: 37.5% Excellent: 62.5%

6. The exercises were:

Very Good: 75% Excellent: 25%

7. The opportunity to ask questions was:

Very Good: 12.5% Excellent: 87.5%

8. The experience I gained was:

Good: 12.5% Very Good: 87.5%

9. Something which was not discussed? : 0%

10. What did you find most valuable in terms of learning that you anticipate using in your life/work?

Breathing exercises (x5)

PMR technique (x1)

How to manage time (x1)

Practical exercises (x1)

11. Is there something you would have liked to be done differently or something you did not like?

Maybe other coping strategies (x1), more time for the workshop

12. What was the most useful aspect of this workshop?

Practical exercises (x3)

Learning of simple methods to cope with stress (x1)

Enjoyed relaxation exercise to the full (x1)

Group discussions (x1)

I had some time in which I could relax and learning something (x1)

13. Any further comments?

Interesting workshop (x1)

More learning opportunities/workshops in the future (x3)

Further sessions in the future will be very helpful and useful (x1)

14. How confident do you feel in practicing some of the stress management skills taught in this workshop?

5 (37.5% - very confident), 4 (50% - quite confident), 3 (12.5%- confident)

Unit 5: Implementing interventions to change health-related behaviour

5.1a: Assessing client suitability for health-related behaviour intervention

During my first two years of practice, I was employed as an anti-substance abuse guidance teacher within the Directorate for Educational Services. This case study describes an intervention designed to help two students quit smoking. Reese (names changed for confidentiality), aged 14, was referred by the head of school after being caught smoking on the school bus. Kristal, aged 13 was referred (referral form in section F of practice log) by the school guidance after friends expressed their concern about her smoking behaviour.

A main challenge in delivering behaviour change interventions within a school setting was students' reluctance to admit they are abusing from substances. This was mostly due to fear of punishment by parents or teachers. Conclusively, the first contact with clients is crucial and can substantially influence personal motivation for change (Rollnick, Miller & Butler, 2008). Consistent with a Motivational Interviewing (MI) style, I try to adopt a non-judgemental, non-confrontational and empathic approach when working with clients. Contrary to my initial expectations, both students admitted they smoked. Students were given a questionnaire (Appendix 1) with appropriate scales. This included the Adolescent Stages of Change (Pallonen, Velicer, Prochaska, Rossi Bellis et al., 1998; Stern, Prochaska, Velicer & Elder, 1987) and Smoking Decisional Balance (Velicer, DiClemente, Rossi & Prochaska, 1990) to gauge the importance of smoking for them and determine their readiness for change. Assessing the number of cigarettes smoked per day and previous quit attempts gives an indication of the amount of support individuals might need (McEwen, Hajek, McRobbie & West, 2006).

Reflection

Build a rapport with clients and getting them to open up about the nature of their problem takes time. Timetable restrictions imposed by the school setting are a major obstacle. A clear explanation of confidentiality issues during the first session, an empathic approach and a caring and supportive attitude help a lot in this respect.

An effective intervention helps individuals move along the stages of change by targeting stage-specific needs (Prochaska & Diclemente, 1983). Reese had unsuccessfully tried to quit smoking several times, Kristal had never contemplated quitting. In order to motivate her, a decisional balance (Appendix 2) was used to explore the pros and cons of smoking. Life goals and values and how smoking might interfere with these were explored. Having obtained the client's permission, I gave her a leaflet with some information about smoking cessation (Section F of practice log). This approach helped her move from the pre-contemplation to the preparation and ultimately the action stage and give the quit attempt a try.

5.1b Identify and negotiate the behaviour change goals of clients

Since clients were best friends, it was mutually agreed we would work together to achieve this common goal. A *quit buddy* can be a great source of support and going through the process of quitting together can increase quit success rates (American Cancer Society, 2008). It also served to help students understand their responsibility towards each other. Thereafter, I explained the kind of support given. I emphasised the importance of a serious quit attempt, preparation for quit date and the 'not a single puff' rule (Hajek, 1989), making them aware that one puff is what it takes to resume smoking (West, 2006). A target quit date is usually negotiated with clients and is typically the day of the second session, giving clients enough time to prepare for smoking cessation. Both clients decided they would quit immediately, mostly due to fear of parents finding out they still smoked. I was a bit concerned about their decision to quit immediately. As a result, the first session took much longer than anticipated since the preparation had to be done there and then.

The department does not possess a Carbon Monoxide (CO) monitor and information obtained from students is based on self-report. Although I cannot prescribe Nicotine Replacement Therapy (NRT) within a school setting, I provided information on NRT products to students who are heavily addicted or who are finding it hard to quit. Clients opted not to use NRT. I was a concerned since the questionnaire revealed that both students were addicted to nicotine. Moreover, adolescents are more likely to become addicted despite not smoking everyday (DiFranza, Savageau, Fletcher,

Ockene, Rigotti et al., 2002). Nevertheless, a recent randomized controlled trial demonstrated the efficacy of an internet-based smoking cessation intervention without the use of NRT (Brendryen, Drozd & Kraft, 2008). Apart from that, there is insufficient evidence for the effectiveness of NRT and bupropion for tobacco cessation among young people (Grimshaw & Stanton, 2010).

Timing of appointments was negotiated, taking into account Christmas activities, school outings and public holidays, while avoiding having students miss out on lessons or on the same lesson each week.

Reflection

I perceived some stigma from members of staff or other students towards referred clients. To avoid disclosing the nature of a student's problem, I habitually took a few simple precautions. These included giving students a note (to give to class teachers to excuse them for missing out on a particular lesson) simply stating they were in the guidance room, without being too explicit on who they were with. I also avoided picking students from their class so as not to make them give away reasons why they had been summoned to the guidance room. When possible, I tried to book the guidance room in advance and see students there to prevent having to search the whole school with them to find a place where to hold the session.

5.1c: Assess determinants of relevant current behaviour/presenting challenges

The questionnaire helped collect information about clients' smoking behaviour and details of previous quit attempts. It incorporated the Hooked on Nicotine Checklist (HONC) which has excellent psychometric properties and is a sensitive measure of the severity of addiction in adolescents (DiFranza et al., 2002; Wellman, DiFranza, Savageau, Godiwala, Friedman et al., 2005). It also included the Smoking Self-Efficacy/Temptations Scale and the Smoking Decisional Balance to assess cognitive, behavioural and situational determinants of smoking. This helped me devise an individualized intervention targeting students' particular needs.

Both clients socialised with a group of non-smokers. The biggest challenge was the weekend. Gozo is a very small community, places of entertainment are limited and most teenagers on the island gather in two particular pubs. Although the indoor anti-smoking legislation in Malta was introduced in 2004, the law is not reinforced and most pubs are full of smokers. Moreover, despite legal restrictions, minors can still buy cigarettes from most pubs and cigarette vending machines are easily accessible. Lately Reese had not been allowed out during weekends. Although she was not happy with this arrangement, this prevented her being exposed to smokers during her quit attempt when cravings were at their strongest. On the other hand, Kristal's behaviour was worrying as she and her friends frequented these pubs and were surrounded by smokers. Avoiding hanging out in such places during weekends was an option she was not willing to consider.

5.1d: Develop a behaviour change plan based on cognitive-behavioural principles

The Directorate for Educational Services does not provide specific training for delivering behaviour change interventions. Luckily enough, I had trained and worked as a Smoking Cessation Advisor with the National Health Services at Islington Primary Care Trust 3 years ago. I also attended a few workshops on Motivational Interviewing for Health Trainers at Camden PCT. Both experiences were an asset for this placement. A Cognitive Behaviour Therapy workshop organised by City University in February 2012 helped brush up my clinical skills. As a refresher, I did a Stage 1, Stage 2 and Mental Health training online courses offered by the National Centre for Smoking Cessation and Training (CPD certificate in practice log). Apart from the monthly workplace supervision, I attended an extra supervision session while delivering this intervention (Appendix 3).

A recent systematic review on tobacco cessation interventions (Grimshaw & Standon, 2010) revealed a lack of sufficient evidence for the widespread implementation of any one model with young people. Rather, combining components from various theoretical backgrounds including MI, psychological support and cognitive behaviour therapy (CBT, Beck, 1970) yield the most effective outcomes. I based my intervention on different theoretical models including relapse prevention (Marlatt & Gordon,

1985), contingency management techniques, cognitive behaviour therapy (Beck, 1970) and withdrawal-oriented therapy (Hajek, 1989).

The department does not offer a Stop Smoking Service. My role entailed the primary and secondary prevention of substance abuse, with most interventions comprising of brief opportunistic advice. Sometimes students were only seen once, sometimes more, depending on nature of the problem and their willingness to work on the target behaviour. All this happened within limitations imposed by a school setting including timetable restrictions, lessons, school activities and holidays. Since exams were a few months away and both students were willing to quit smoking, I was able to provide more intensive support. Although the intervention was mostly based on withdrawal-oriented therapy, it differed in several ways. First, students did not use NRT. Secondly, there was no rigid adherence to the 7 week program. I used immediacy to deal with other important issues that came up during the sessions. I also used other approaches as deemed necessary. Sessions were loosely based on the following format (Appendix 4):

Session 1: Building motivation for change, goal setting and negotiation, explaining type of support offered; Preparation for quit date

Session 2: Coping with cravings and withdrawal symptoms

Session 3 -5: Relapse prevention & coping with a lapse

Session 6: Conclusion & establishing future contact

Reflection

Sometimes I felt students were eager to see me to miss lessons. Conclusively, part of the intervention was delivered during break-time while trying to stick to no more than 30 minutes per session. The latter was especially difficult when issues unrelated to smoking (such as problems with teachers) came up. Although discussing these issues would have helped build a better rapport with clients, time restrictions made this difficult. Conclusively, students were referred to the guidance teacher. Although we did occasionally deviate from the topic at hand, I slowly learned to re-focus the

conversation on the target behaviour. I also realized that interventions do not necessarily have to be lengthy to be effective.

Cognitive, behavioural and situational facilitators of behaviour change

I used cognitive behaviour therapy (Beck, 1970) techniques in individual interventions. The cravings journal helped identify cognitive, emotional, situational and habitual patterns of smoking behaviour. Since students decided to quit there and then, the journal was used to identify situations where they usually smoked and habitual ways of behaving. As identified via the decisional balance sheet, the main reason for quitting was fear of being punished by parents. The secondary reason was health hazards of smoking.

Behavioural and situational factors:

For both clients, smoking was a joint habitual pattern occurring outside school in the morning or during weekends. Reese also smoked one cigarette outside a garage in a quiet street in her village before going home from school.

Anticipating and planning for high risk situations helps prevent relapse (Marlatt & Gordon, 1985). We identified personal barriers that made it hard not to smoke such as being in a particular place or during a certain time of the day and explored ways of managing these situations. A *Personal Emergency Handout* was also used to brainstorm ways of coping, should emergency situations arise. Students were encouraged to refer to handouts used during sessions as deemed necessary. Situations that might require evasive action, cigarette refusal skills and assertiveness were also role-played.

We came up with the following solutions:

- To stop each other/ask friends to stop them when they reached for a cigarette
- Not taking unnecessary money when going out and setting this money aside
- Walking away from high risk situations or situations that were likely to trigger feelings of anger
- Not buying cigarettes, nor offering each other cigarettes

- Informing friends of their quit attempt
- Taking a different and busier route home
- Keeping personalized reminder cards with reasons for quitting to use in high risk situations
- Avoid drinking alcohol or consuming non-alcoholic drinks that were not associated with smoking behaviour
- Throwing away smoking-related paraphernalia (lighters, breathe fresheners)
- Listening to music, texting each other, going for walks or seeking help from guidance teacher or friends when emotionally upset
- Using safe smoking substitutes such as gum or inhalator during Christmas and New Years' activities

Reflection

A month into the intervention, Kristal revealed she had a lighter in her satchel. Despite highlighting this could easily trigger a relapse, she refused to throw it out due to its unusual colour. Eventually, it was mutually agreed her aunt would keep it for her until she was over the habit. I tried hard not to show my frustration of having this hidden from me for such a long time. Upon further reflection, I realised that Kristal could have been afraid or uncomfortable disclosing this beforehand and that it was only at that point in time that she felt she could trust me enough. It is also made me think of incidents where I might have been too forceful of my own beliefs and judgements.

Cognitive factors

For both clients, smoking served to relieve stress and manage anger. I addressed common myths about smoking by highlighting that nicotine is a stimulant and that non-smokers are less stressed than smokers (McEwen et al., 2006). According to the Health Belief Model (Rosenstock, 1966), the likelihood of performing health-related behaviour depends on the perceived threat and seriousness of the problem and the perceived susceptibility of harmful health implications. As a result, I tried to focus on immediate rather than long-term consequences of smoking. These included breathlessness which would interfere with their hobby of dancing or bad smell in hair

and mouth. Finally, we also discussed smoking expectancies that often act as a self-fulfilling prophecy (Darkes & Goldman, 1993) and that although they associate smoking with anger reduction, it does little to solve any underlying problems.

I find Gordon and Marlatt's (1985) use of metaphors especially useful when explaining the process of smoking cessation to students. I often associate quitting smoking with a car journey having both easy and difficult stretches of highway and *road signs* along the way. Being equipped with a good road map, tool box, a full tank and spare tyre helps to reach the target destination. I also use the 'urge surfing' metaphor whereby cravings are associated with a huge wave that loses its energy and subsides very quickly if not acted upon. In order to empower clients, I ask them to come up with their own ways of coping with urges before giving any suggestions myself. The importance of having healthy snacks at hand was also discussed since hunger was a common and prevalent withdrawal symptom.

Kristal was not sure she could go without smoking during the Christmas period. I tried to help her focus on the here and now, without worrying too much of the future. I also highlighted that Christmas was still a few weeks away and that cravings would have decreased by then. We jointly came up with the following solutions:

- Challenging irrational thoughts associated with smoking (e.g. I don't need a cigarette to calm down)
- Taking on the new identity of a *non-smoker* (West, 2006)
- Using counter-conditioning, we identified healthier alternatives to deal with stress (diaphragmatic breathing)
- Counting to 20 before acting
- Keeping busy or using distraction
- Using positive self-talk rather than self-defeating statements

Motivators and rewards for not smoking

In order to boost clients' self-efficacy, we discussed things they managed to master in the past, even if unrelated to smoking (Marlatt & Gordon, 1985). Discussion of previous lapses and relapses served as learning opportunities (Prochaska & Diclemente, 1983). I also like to use Thomas Edison's light bulb example. Rather than failing 10,000 times in lighting a bulb, he found 10,000 ways why it did not work. Complementing them for turning up for our appointment was another way of boosting students' self-efficacy (Rollnick et al., 2008).

Clients were encouraged to come up with their own reasons for change. Both clients' main motivation was fear of punishment by parents. Although I felt this was not a good enough reason to quit, I kept reminding myself that it is the clients' own reasons for change, and not mine, that were most likely to trigger behaviour change (Rollnick et al., 2008). They were also helped to set specific, realistic and achievable goals by trying to go smoke-free for a week rather than a whole lifetime. This served to make the task more manageable (Marlatt & Gordon, 1985). I continuously praised them for their effort and kept reminding them that cravings will become less severe after each consecutive week.

A handout with immediate and long-term health benefits of not smoking also served to motivate them. We also agreed on small rewards at the end of each week they manage to go smoke-free. I also used contingency management to motivate them and we agreed in holding a small 'party' in the guidance room at the end of the intervention.

5.1e: Ensure monitoring and support for behaviour change plan

Consistent with withdrawal oriented therapy, clients were provided with intensive support throughout the whole duration of the intervention. Students were also informed of my availability during the week should they need additional support.

Reflection

One anticipated problem was supporting clients during the Christmas holidays. As a teacher, I cannot disclose personal contact details. I needed to establish clear limits for safe connections between myself as a service provider and my clients. Having discussed this during supervision, it was mutually agreed I would call students from the Education Department during this period.

Another uncertainty brought forward during supervision was how to handle the fact students failed to turn up for initial weekly appointments twice. I decided to confront them about this, saying it was ok if they changed their mind about the intervention and that I respected their decision as long as I was informed about it. This confrontation helped strengthen our relationship and students started respecting me more. From that day on, they never missed another appointment.

Since I had no CO monitor, I had to find alternative ways of monitoring the behaviour change. Clients were requested to fill in a weekly questionnaire assessing any decline of urges and withdrawal symptoms. All this was based on self-report and there was no way of verifying students' replies. Nevertheless, I was confident they were honest as I managed to build a good rapport with clients.

5.1f & 5.1g: Evaluate outcome & negotiate completion/follow up as necessary

Despite not being a requisite of the department, students were asked to fill in an evaluation form (Evaluation forms & feedback in Appendix 5). They were also encouraged to give feedback and suggestions with the aim of improving the existing service. It was agreed I would be contacting them monthly to see how they were doing. A post-intervention questionnaire (Appendix 6 for questionnaire and scores) was also given following the intervention. Finally, students were also welcomed to come to the guidance room to see me if needed. Clients had been smoke-free for 6 months prior to the summer holidays.

Conclusion

Overall I was quite satisfied with this intervention. Both clients were easy to work with and I was happy that they succeeded at their goal. I learned to facilitate school-based smoking cessation interventions using different evidence-based methods and tailoring them to the audience at hand. I have also greatly improved my MI skills and learned to apply it in different situations, not just in relation to smoking cessation. My greatest achievement so far has been in creating the need for my role within a school setting, a post which was non-existent up to a year ago. Apart from taking the time to reflect and improve on my performance, I am pleased I played a role in improving the overall health of students. Although I plan to find ways of reaching more students, quality is more important than quantity. I am glad I made a difference in the life of these 2 students.

References

- American Cancer Society. Guide to quitting smoking. Retrieved from http://www.cancer.org/docroot/PED/content/PED_10_13X_Guide_for_Quitting_Smoking.asp.
- Beck, A. T. (1970). Cognitive therapy: Nature and relation to behaviour therapy. *Behaviour Therapy*, 1, 184-200.
- Brendryen, H., Drozd, F., & Kraft, P. (2008). A digital smoking cessation program delivered through internet and cell phone without nicotine replacement (happy ending): Randomized controlled trial. *Journal of Medical Internet Research*, 10(5), 1438–8871.
- Darkes, J., & Goldman, M. S. (1993). Expectancy challenge and drinking reduction: Experimental evidence for a mediational process. *Journal of Consulting and Clinical Psychology*, 61, 344-353.
- DiFranza, J.R., Savageau, J. A., Fletcher, K., Ockene, J. K., Rigotti, N. A., McNeill, A. D., Coleman, M., & Wood, C. (2002). Measuring the loss of autonomy over nicotine use in adolescents: The development and assessment of nicotine dependence in youths (DANDY) study. *Archives of Paediatric Adolescent Medicine*, 156, 397-403.
- Grimshaw, G., & Stanton, A. (2010). *Tobacco cessation interventions for young people*. *Cochrane Database of Systematic Reviews*, 8.
- Hajek, P. (1989). The Practical Business of Treatment 4 – Withdrawal-oriented therapy for smokers. *British Journal of Addiction*, 84, 591-598.

Marlatt, G.A., & Gordon, J.R. (1980). Determinants of relapse. Implications for the maintenance of behaviour change. In P.O. Davidson, & S.M. Davidson (Eds.), *Behavioural medicine: Changing health lifestyles* (pp. 410-452). New York: Brunner Mazel.

Marlatt, G.A., & Gordon, J.R. (1985). *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviours*. Guilford Press: New York.

McEwen, A., Hajek, P., McRobbie, H., & West, R. (2006). *Manual of smoking cessation – A guide for counsellors and practitioners*. Blackwell Publishing: UK.

Pallonen, U. E., Velicer, W. F., Prochaska, J. O., Rossi, J. S., Bellis, J. M., Tsoh, J. Y., Migneault, J. P., Smith, N. F., & Prokhorov, A.V. (1998). Computer-based smoking cessation interventions in adolescents: Description, feasibility, and six-month follow-up findings. *Substance Use and Misuse*, 33(4), 935-965.

Prochaska, J., & Diclemente, C. (1983). Stages and processes of self-change of smoking: Towards an integrated model of change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.

Rollnick, S., Miller, W. R., & Butler, C. C. (2008). *Motivational interviewing in health care. Helping patients change behaviour*. New York: Guilford Press.

Rosenstock, I. M. (1966). Why do people use health services? *Millbank Memorial Fund Quarterly*, 44, 94–127.

Stern, R.A., Prochaska, J.O., Velicer, W.F., & Elder, J.P. (1987). Stages of adolescent cigarette smoking acquisition: Measurement and sample profiles. *Addictive Behaviours*, 12, 319-329.

Velicer, W. F., DiClemente, C. C., Rossi, J. S., & Prochaska, J. O. (1990). Relapse situations and self-efficacy: An integrative model. *Addictive Behaviours*, 15, 271-283.

Wellman, R. J. DiFranza, J., Savageau, J. A., Godiwala, S., Friedman, K., & Hazelton, J. (2005). Measuring adults' loss of autonomy over nicotine use: The hooked on nicotine checklist. *Nicotine and Tobacco Research*, 7(1), 1-5.

West, R. (2006). *Theory of addiction*. Oxford: Blackwell.

Appendix 1 – Questionnaire

Gozo College Secondary Schools, Malta

Please take your time to complete this questionnaire. All information is strictly confidential and will be used only to determine the best intervention according to your own particular needs.

Name: _____

Date of birth: _____

Age: _____

Gender: Male ☐ Female ☐

Ethnic group:

Maltese ☐ Any other white background ☐ Other ethnic groups ☐

How many cigarettes do you smoke per day? _____

What is the maximum amount you smoke per day? _____

At what age did you start smoking? _____

Why did you start smoking? _____

Have you ever tried to quit before? Yes ☐ No ☐

If yes, how many times? _____

How long has it been since your last attempt? _____

What is the longest time that a quit attempt has lasted in the past?
_____ months

Why did you start smoking again? _____

Have you ever used any Nicotine Replacement Therapy? Yes ☐ No ☐

If yes, what did you use? (patches, gum, lozenges, etc) _____

Stages of Change (Adolescent Version)

Are you currently a smoker? (Please tick one)

- Yes, I currently smoke ☐
- No, I quit within the last 6 months ☐
- No, I quit more than 6 months ago ☐
- No, I have never smoked ☐

In the last year, how many times have you quit smoking for at least 24 hours?

Are you seriously thinking of quitting smoking? (Please tick one)

- Yes, within the next 30 days ☐
- Yes, within the next 6 months ☐
- No, not thinking of quitting ☐

Smoking Self Efficacy/Temptation

Listed below are situations that lead some people to smoke. The aim of these questions is to assess HOW TEMPTED you may be to smoke in each situation. Please answer them using the following five point scale:

- 1 = Not at all tempted
- 2 = Not very tempted
- 3 = Moderately tempted
- 4 = Very tempted
- 5 = Extremely tempted

- With friends at a party ☐
- When I get up in the morning ☐
- When I am very anxious and stressed ☐
- Over coffee while talking and relaxing ☐

When I feel I need a lift	<input type="checkbox"/>
When I am very angry about something or someone	<input type="checkbox"/>
With my boyfriend or close friend who is smoking	<input type="checkbox"/>
When I realize I have not smoked for a while	<input type="checkbox"/>
When things are not going my way and I feel frustrated	<input type="checkbox"/>
Total score:	<input type="checkbox"/>

Hooked on Nicotine Checklist

Have you tried to quit but couldn't?	Yes	No
Do you smoke now because it is really hard to quit?	Yes	No
Have you ever felt like you were addicted to tobacco?	Yes	No
Do you ever have strong cravings to smoke?	Yes	No
Have you ever felt like you really needed a cigarette?	Yes	No
Is it hard to keep from smoking in places where you are not supposed to? When you haven't used tobacco for a while OR when you tried to stop smoking?	Yes	No
Did you find it hard to concentrate because you couldn't smoke?	Yes	No
Did you feel more irritable because you couldn't smoke?	Yes	No
Did you feel a strong need or urge to smoke?	Yes	No
Did you feel nervous, restless or anxious because you couldn't smoke?	Yes	No
Total Score:	<input type="checkbox"/>	

Smoking: Decisional Balance (Short Form)

The following statements represent different opinions about smoking. Please rate HOW IMPORTANT each statement is to your decision to smoke according to the following five point scale.

1 = Not important

2 = Slightly important

3 = Moderately important

4 = Very important

5 = Extremely important

- | | |
|--|----------------------|
| 1. Smoking cigarettes relieves tension. | <input type="text"/> |
| 2. I'm embarrassed to have to smoke. | <input type="text"/> |
| 3. Smoking helps me concentrate and do better work. | <input type="text"/> |
| 4. My cigarette smoking bothers other people. | <input type="text"/> |
| 5. I am relaxed and therefore more pleasant when smoking. | <input type="text"/> |
| 6. People think I'm foolish for ignoring the warnings about cigarette smoking. | <input type="text"/> |

Total Score:

Scores at pre-intervention

Clients' scores on questionnaire at pre-intervention

Reese:

1. Stages of Change: Contemplation (previous unsuccessful quit attempt 3 months ago, planning to quit in the next 6 months)
2. Score on Smoking Self Efficacy/Temptations scale: 30
3. Hooked on Nicotine Checklist: 8/10 *
4. Smoking Decisional Balance: Pros Score: 13, Cons Score: 10⁺

Kristal:

1. Stages of Change: Contemplation stage (no previous quit attempt, planning to quit in the next 30 days)
2. Score on Smoking Self Efficacy/Temptations scale: 34
3. Hooked on Nicotine Checklist: 7/10 *
4. Smoking Decisional Balance: Pros Score: 13, Cons Score: 9⁺

**Both participants scored higher than 0 which means they are already hooked on Nicotine.*

+For both participants, the pros or benefits of smoking outweigh the cons or costs

Clients' scores on questionnaire at post-intervention

Reese:

1. Stages of Change: Active Maintenance
2. Score on Smoking Self Efficacy/Temptations scale: 9
3. Hooked on Nicotine Checklist: 0/10 *

Kristal:

1. Stages of Change: Active Maintenance
2. Score on Smoking Self Efficacy/Temptations scale: 9
3. Hooked on Nicotine Checklist: 2/10 *

Appendix 2 – Decisional balance

Week 1 - Safe Schools Program, Anti-Substance Abuse, Malta

Name: _____ School: _____ Age: _____

Decisional balance sheet – Smoking			
Continuing as before		Making a change	
What are some of the good things about quitting? Benefits	What are some of the not so good things about quitting? Costs	What are some of the costs of quitting? Costs	What are some of the good things about making a change? Benefits

Appendix 3 - Minutes for supervision

Date: 12/12/12

Contact method: face to face

Duration	Areas of work discussed	Units/specific competencies addressed
1 hour	<p>The main area of work discussed during this supervision session was the behaviour change intervention. I am currently working with 2 clients to help them quit smoking. An outline of the intervention was given. One of my main concerns was following clients during the Christmas holidays since the school is closed. Issues relating to boundaries and ways of doing this were discussed. It was suggested to call students from the education department. This would solve the problem of having to disclose personal contact details to clients while still being able to follow and support them during this period.</p> <p>Another issue discussed was what action to take when clients fail to turn up for appointments. It was suggested that the best way to handle this situation was to confront clients re this and ask what their concerns/issues/fears are.</p> <p>The problem of students missing on lessons to attend appointments was also brought up. Issues relating to ways of maintaining confidentiality as regards the students' problem were explored. These included not picking students up myself from class and being cautious not to disclose any information which may reveal the students' problem to the rest of the class or to the class teacher.</p> <p>During this supervision session I also discussed an intervention I was planning to deliver at the Boys Secondary School in relation to alcohol abuse. An outline of the intervention was given. Problems I had with screening questionnaires were raised. For instance, although having high validity and reliability, some questionnaires such as the Rutgers Alcohol Problem Inventory included statements such as 'I think I have a</p>	<p>Behaviour change intervention (smoking cessation)</p> <p>Brief prevention/ intervention for alcohol abuse</p>

	<p>drinking problem’ or ‘Sometimes I feel guilty about my drinking. In reality I was finding that although this particular class did have a problem with alcohol misuse, they failed to realize their drinking was excessive. The best way of dealing with this problem was to rely on more than one scale. Another problem was filling in of questionnaires due to reading difficulties. The implications of dividing students in small groups, reading out the questionnaire and explaining it to them was explored. Issues relating to validity of self-report and extreme scores were also discussed. Although I was planning to discard the latter, my supervisor suggested including these as outlier scores while commenting on factors that could have caused these extremities such as not understanding the question, not understanding what a unit of alcohol was or trying to impress me. The possibility of repeating the questionnaire and carrying out the intervention during the Christmas period (which could act as a confounding variable) were also discussed. Problems with follow up due to students leaving school soon were also discussed.</p> <p>Finally my supervisor suggested mentioning reflections from similar interventions conducted with other classes in the write up, should I decide to use this piece of work as a case study.</p>	
--	--	--

Appendix 4 – Behaviour change intervention material

My Cravings Journal

Name: _____

Cigarette number	Date	Time	Craving level (1 – 10, 1 minimum, 10 maximum)	What I was doing	Who I was with	How I was feeling before (stressed, angry, happy, sad)	How I felt after	When I quit I plan to deal with this by.....
(Ex) 1	4/4/2012	10.00am	4	at home watching TV	alone	bored	calm	Doing something interesting such as reading a book I enjoy
1								
2								
3								
4								
5								
6								
7								

Week 2: You do not have to wait a long time to start noticing some of the benefits of quitting smoking. Look at the list below to see what you stand to gain!

Time	Beneficial health changes that take place
-------------	--

20 min	Your blood pressure and pulse return to normal. Circulation improves – especially in your hands and feet
8 hours	Your blood oxygen levels return to normal and your chance of having a heart attack falls. Nicotine level in the blood is reduced by half.
24 hours	Carbon monoxide and nicotine have started leaving your body. Your lungs start to clear out mucus and debris.
48 hours	Congratulations! Your body is now nicotine free. Your sense of smell and taste improve.
72 hours	Your breathing is easier and you have more energy for sports and other activities.
2–12 weeks	Circulation is improved. It is easier to walk or exercise, to play football or swim. Your appearance also improves. Your skin loses its grey pallor and your face looks more radiant.
3–9 months	Coughing and wheezing decline. Your lung efficiency is up by 5 – 10%. Breathing problems start fading away. Say goodbye to shortness of breath.
5 years	You now have only half the chance of getting a heart attack compared to a smoker
10 years	The chance of getting lung cancer is now half that of a smoker. Your chances of having a heart attack are now the same as someone who never smoked.

Week 2 - Smoking Cessation Weekly Form

Name		For each of the following please show on a scale from 1-5 how you have been feeling during the past week											
		<div style="display: flex; justify-content: space-between; width: 100%;"> 1 2 3 4 5 6 </div> <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 10px;"> not at all slightly moderately quite a bit very much extremely </div>											
Session	How many cigarettes did you smoke this week?	Depressed	Irritable	Restless	Hungry	Poor concentration	Poor sleep	Anxious	Mouth ulcers	Craving to smoke	Headache	Dry mouth	Other (please specify) _____
Week 1													
Week 2													
Week 3													
Week 4													
Week 5													
Week 6													
Week 7													

How confident are you that you will manage not to smoke this week? (1 = not confident at all, 5 = very confident)

1-----2-----3-----4-----5

1-----2-----3-----4-----5

1-----2-----3-----4-----5

1-----2-----3-----4-----5

1-----2-----3-----4-----5

1-----2-----3-----4-----5

1-----2-----3-----4-----5

Session 2 – Week 2

Preparation for Quitting Smoking

Lifestyle changes

Quitting smoking is one of the best things you can do for your health. Although quitting is not an easy task, with a bit of will power and support you can succeed at your goal.

Can you think of a situation where you were successful at getting something done? Write this down. _____

What did you do to succeed? _____

Did you have anyone to support you in this? List these people. _____

Can you think of someone who can support you in your decision to quit or who can help you cope in high-risk situations?

How will you reward yourself at each step of the way? List rewards you will give yourself at the end of each week or day you are successful.

Week 1: _____

Week 2: _____

Week 3: _____

Week 4: _____

Week 5: _____

Week 6: _____

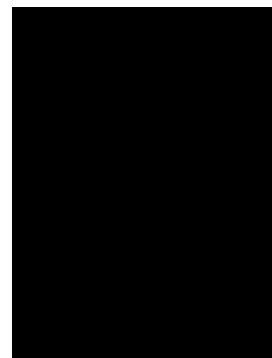
Week 3 - Coping with Withdrawal Symptoms

A lot of people start smoking again because they feel they cannot cope with withdrawal symptoms. These can be physical or psychological and although unpleasant, they are a sign that your body is starting to cleanse itself and recover. They are usually worst in the first week and less severe during the second. Cravings and urges do not last forever. They last only a few seconds and will eventually lessen too. Below are some suggestions but you may have some ideas of your own as well, so add these up to the tips given below.

Symptoms	What is happening	How to cope
Desire to smoke	Brain is missing nicotine	Cravings will lessen the first few days
Coughing & dry mouth	Lungs are clearing out tar	Symptoms will improve quickly, warm drinks can help
Hunger	Your metabolism is changing, soon food will start to taste better	Eat a healthy diet & drink lots of water
Trouble sleeping	This can be due to nicotine leaving your body	This should last for only a few weeks. Cut down on coffee, energy drinks, tea and get plenty of exercise
Dizziness	The brain is getting more oxygen	This should go away after a few days
Mood swings, poor concentration & irritability	These are signs of nicotine withdrawal & will pass	Ask for support

Here are some other ways of coping with cravings. Tick those that apply to you or which you think you can find helpful.

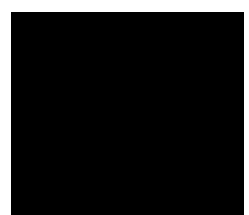
- ☐ Keep yourself busy
- ☐ Think about something else or distract yourself
- ☐ Take a few deep breaths
- ☐ Go for a walk or into another room
- ☐ Drink a glass of water
- ☐ Talk to someone who can support you
- ☐ Look back at your list of reasons for stopping
- ☐ Go on an imaginative journey
- ☐ Challenge your thoughts

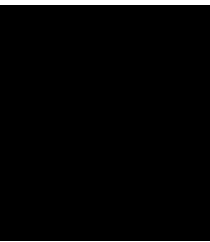
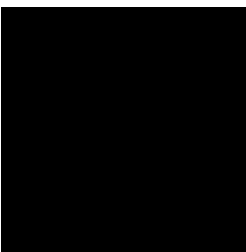
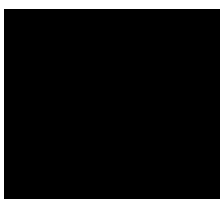
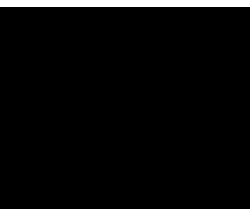


If you have some ideas of your own, write them down here:

Week 3 - Reminder cards for stopping smoking

In the cards below list some of the good reasons why you decided to quit smoking. Cut these out and keep them in a handy place such as your wallet or satchel. Use these cards as a reminder of why you want to quit whenever you get cravings to smoke.





Week 7- Managing and identifying unhelpful thoughts

People sometimes have a tendency to think things are worse than they really are.

Can you identify some of these in yourself? What can you do differently?

Type of thought	Example	Alternative and balanced thoughts
Either/or thinking: Seeing things in black or white with no in-between	Either I am a loser or a winner, either I am bad or good	
Overgeneralizing: If something happens once, it will happen every time	I am never going to be able to quit smoking, I always screw up!	
Catastrophizing: Taking something small that happened and exaggerating it	Since I have had 2 relapses, I will never be able to stay clean.	
Expecting the worst: Entering a new situation expecting you will fail even before you try	I'll never be able to quit. I might as well not even try.	
Jumping to conclusions: Making a false connection between one set of circumstances and an outcome	I blew the chance I had. I am never going to be able to quit	
Minimizing: Ignoring the positive factors of a situation or overlooking the negative ones	I am still young, cigarettes wont hurt me, I will quit when I am older I will only take one cigarette or one puff I only managed to quit for a week	
Mindreading: Assuming you know what other people are thinking	My parents/friends think I will never be able to quit	



Appendix 5- Participant feedback form

Dear Participant

Please take your time to read through the statements below to give your ratings on the service provided during these past few weeks in your attempt to quit smoking. Your feedback is highly valued and would help improve the quality of future sessions. Please fill in the form as honestly as you can. You do not need to write your name should you feel uncomfortable doing so. *(feedback received in italics)*

1. Looking back at the first session, do you feel you were given enough information to make a good choice about whether to quit smoking or not?
a) Not enough b) *about right (x2)* c) too much

2. Overall how do you feel about the support given in your attempt to quit smoking?
a) Not enough b) *about right (x2)* c) too much

3. What was/were the most useful aspect/s of the intervention?

Not disappointing the ones who are taking the time to help me get through quitting smoking, support not to smoke when out with friends

4. Is there something you would have liked to be done differently or something you did not like? Please provide specific details. *No*

5. In your opinion, in what ways can the service be improved to reach more students?

Share my story, share the word

6. Do you have any suggestions for other students trying to give up smoking?

The people that help you get through this are very kind and they'd do anything for you to get you through quitting smoking, Plus more healthier if you don't smoke. Don't give up

Thank-you for your time and participation and congratulations in succeeding to quit smoking!

Appendix 6 – Follow-up screening

Gozo College Secondary Schools – 6 months post follow-up questionnaire

Please take your time to complete this questionnaire. All information is strictly confidential and will be used only to determine the best intervention according to your own particular needs.

Name: _____ Date of birth: _____

Age: _____ Gender: Male ☐ Female ☐

Ethnic group:

Maltese ☐ Any other white background ☐ Other ethnic groups ☐

How many cigarettes do you smoke per day? _____

Stages of Change (Adolescent Version)

Are you currently a smoker? (Please tick one)

Yes, I currently smoke ☐

No, I quit within the last 6 months ☐

No, I quit more than 6 months ago ☐

No, I have never smoked ☐

In the last year, how many times have you quit smoking for at least 24 hours?

Are you seriously thinking of quitting smoking? (Please tick one)

Yes, within the next 30 days ☐

Yes, within the next 6 months ☐

No, not thinking of quitting ☐

Smoking Self Efficacy/Temptation

Listed below are situations that lead some people to smoke. The aim of these questions is to assess HOW TEMPTED you may be to smoke in each situation. Please answer them using the following five point scale:

1 = Not at all tempted

2 = Not very tempted

3 = Moderately tempted

4 = Very tempted

5 = Extremely tempted

With friends at a party	<input type="text"/>
When I get up in the morning	<input type="text"/>
When I am very anxious and stressed	<input type="text"/>
Over coffee while talking and relaxing	<input type="text"/>
When I feel I need a lift	<input type="text"/>
When I am very angry about something or someone	<input type="text"/>
With my boyfriend or close friend who is smoking	<input type="text"/>
When I realize I have not smoked for a while	<input type="text"/>
When things are not going my way and I feel frustrated	<input type="text"/>

Total score:

Hooked on Nicotine Checklist

Have you tried to quit but couldn't?	Yes	No
Do you smoke now because it is really hard to quit?	Yes	No
Have you ever felt like you were addicted to tobacco?	Yes	No
Do you ever have strong cravings to smoke?	Yes	No

Have you ever felt like you really needed a cigarette?	Yes	No
--	-----	----

Is it hard to keep from smoking in places where you are not supposed to? When you haven't used tobacco for a while OR when you tried to stop smoking?	Yes	No
---	-----	----

Did you find it hard to concentrate because you couldn't smoke?	Yes	No
---	-----	----

Did you feel more irritable because you couldn't smoke?	Yes	No
---	-----	----

Did you feel a strong need or urge to smoke?	Yes	No
--	-----	----

Did you feel nervous, restless or anxious because you couldn't smoke?	Yes	No
---	-----	----

Total Score:

Clients' scores at post-intervention

Reese:

1. Stages of Change: Action Stage
2. Score on Smoking Self Efficacy/Temptations scale: 9
3. Hooked on Nicotine Checklist: 0/10

Kristal:

1. Stages of Change: Action Stage
2. Score on Smoking Self Efficacy/Temptations scale: 9
3. Hooked on Nicotine Checklist: 2/10

Section D

A systematic review on the effectiveness of psychosocial interventions for cannabis use among adolescents

Background

Cannabis is the name of the dried leaves and flowers derived from the plant *Cannabis Sativa*. The drug has a long history of medicinal use, with evidence dating as back to 2737 BCE where the drug was an indispensable herb in Chinese medicine. Since then, it has been prescribed for a broad range of conditions including the treatment of nausea and vomiting after chemotherapy, pain relief, improving the quality of life in HIV patients, to treat loss of appetite in anorexic patients, for treating glaucoma and epilepsy, to slow the progression of Alzheimer's disease and to decrease eye pressure, just to mention a few (Bifulco & Pisanti, 2015; Borgelt, Franson, Nussbaum & Wang, 2013; National Institute of Drug Abuse, NIDA, 2011).

For a number of years, a prevalent misconception was the lack of addictive properties of cannabis (Dennis, Babor, Roebuck & Donaldson, 2002) and the belief that it was a softer and harmless drug (Treurnicht Naylor, James & Gottheil, 2011). This view has been discarded, with emerging evidence revealing harmful effects resulting from cannabis use. Despite posing major health concerns, it remains the most commonly used drug, particularly amongst younger age groups (Copeland & Swift, 2009; Elkashef, Vocci, Huestis, Haney, Budney et al., 2008). According to two recent reports, (National Institute of Drug Abuse, NIDA, 2011; European Monitoring Centre for Drugs and Drug Addiction, EMCDDA, 2011), more than 29 million Americans and 22.5 million Europeans over the age of 12 admitted to having used the drug in 2011. Similar findings were disseminated by the other research whereby cannabis ranked as the most widely used daily drug among adolescents and young adults (Thanki, Matias, Griffiths, Noor, Olszewski, et al., 2012). It was also the main reason for admission to substance-abuse treatment facilities.

Hazards of cannabis use

Cannabis Sativa has over 400 chemicals, one of the most psychoactive ingredients being delta-9-tetrahydrocannabinol, or more commonly known as THC. The effects are diverse and wide-ranging, depending on the amount and frequency of consumption. Some physical and psychological short-term effects include memory problems, slowed reaction time, impaired motor coordination, altered judgment and decision making, substantial increase in heart-rate and blood pressure, sudden mood swings, anxiety, euphoria and paranoia (NIDA, 2011). Although the drug is less likely to cause physical addiction, heavy use results in increased tolerance to the drug and in a number of withdrawal symptoms such as headaches, restlessness and lack of appetite (Vandrey, Budney, Kamon & Stanger, 2005). Heavy and long-term use can also cause respiratory problems, psychosis, cognitive impairment and psychological dependence (NIDA, 2011; Treunicht et al., 2011). On the other hand, psychosocial problems include poor educational and occupational outcomes, violent crimes, risky sexual practices and increased risks of illicit drug use (Morgan & Curran, cited in Pertwee, 2014). Since the adolescent brain is still developing, teens are more vulnerable to the effects of the drug.

Treating cannabis use – Evidence based methods

Given the initial assumptions of the harmless nature of the drug, the effectiveness of existing psychological interventions is still at a developmental stage when compared to that for other substances (Elkashef et al., 2008). Indeed, until recently, very few studies using randomized controlled trials had been conducted and most of these focused on adult populations, with interventions for adolescents being minimal (Copeland & Swift, 2009). Moreover, the effectiveness of pharmacological interventions has not been established yet (Copeland & Swift, 2009; Elkashef et al., 2008; NIDA 2011).

The kind of psychological interventions currently being used for treating cannabis dependence are similar to those used for other illicit drugs. Popular treatment

modalities include behavioural therapy, cognitive behaviour therapy (CBT), contingency management, relapse prevention, motivational enhancement, psychotherapy, family therapy and the 12 Step Approach (Bender, Tripodi, Sarteschi & Vaughn, 2011). Despite this diversity, results of studies are mixed. Although some treatments have demonstrated significant differences between treatment and control groups, evidence for the effectiveness and superiority of one intervention over another remains (Nordstrom & Levin, 2007; Volkow, 2005). A lack of robust evidence for the effectiveness of other interventions such as social skills training, relapse prevention, psycho-education, psychodynamic theory and counselling has been observed (Miller, Sorensen & Selzer, 2006). Orford (2008) holds that disappointment over the poor evidence of psychological interventions in the field of addictions is not an isolated case. Bergmark (2009) is also sceptic about the effectiveness of CBT and holds that according to NICE guidelines, CBT *'should not be offered routinely to people presenting for cannabis or stimulant misuse or those receiving opioid maintenance treatment'* (p. 14). Findings from a systematic review by Dutra, Stathopoulou, Basden, Leyro, Powers et al. (2008) reveal a low effect size (0.25) for interventions based on CBT principles. Fairly recent interventions with a growing base of support include Acceptance and Commitment Therapy and Dialectic Behaviour Therapy although these have only recently started being applied to substance abuse (Beckstead, Lambert, DuBose & Linehan, 2015; Stotts, Green, Masuda, Grabowski, Wilson et al., 2012).

Several systematic reviews have been conducted on the topic. For instance, one limitation of Dutra et al's review (2008) was a lack of studies using randomized controlled trials. Moreover, studies focused on adult populations, possibly due to the fact that adolescent groups have not been studied extensively (Crome, 2006). As a result, current interventions being used to treat young substance users are based on treatments that work with adult populations. Adolescents are different from adults and what may work with adults may not necessarily be applicable for younger generations (Crome, 2006). The reasons why adolescents start abusing from drugs are different from those of adults. Finally, physical development transitions and changes in social roles may influence treatment outcomes (Pagliaro & Pagliaro, 2012).

In another meta-analysis, Bender et al (2011) investigated the effectiveness of individual and family-based psychosocial interventions for cannabis use among adolescents. Results revealed small to moderate effect sizes. Limitations identified by the authors included restrictions in key words used. The need to conduct broader searches in the future studies to confirm findings and to investigate further the efficacy of existing interventions was also identified.

Need for the review

In review of existing literature, a synthesis of interventions aimed to reduce cannabis use among adolescents already exists. Diverse psychological interventions applicable to illicit drugs are being employed to address this problem. Nonetheless, measuring the outcomes of specific interventions and choosing the most of effective remains a challenge (Nordstrom & Levin, 2007). Although some of the existing interventions for treating illicit drug use may yield effective outcomes, consideration of the type of substance used cannot be ignored (Bender et al, 2011). Caution needs to be exercised in relation to studies attempting to generalize researching findings across different populations and age groups (Curran & Drummond, 2005). Moreover, little attention has been given to treating cannabis use and it is relatively understudied (Nordstrom & Levin, 2007; Volkow, 2005). Given the high prevalence of cannabis use amongst adolescents between 12 to 19 years (NIDA, 2011), the inconsistent findings from existing trials, the serious health implications of the drug, the fact that the drug is still relatively understudied and the recently established therapies currently being applied to treat addictions (such as DBT and ACT), the need to investigate the efficacy of existing treatments remains a priority.

This review aims to build on and improve findings of Bender et al's (2011) meta-analysis in order to establish the most effective psychological intervention for cannabis use among adolescents. Existing reviews differ from this one in a number of ways. Some have focused on psychiatric populations (Baker, Hides & Lubman, 2010; Hjorthøj, Fohlmann & Nordentof, 2009), while others have focused exclusively on one type of intervention such as mindfulness meditation or motivational interviewing for

both licit and illicit drugs (Smedslung, Berg, Hammerstrom, Steiro, Leiknes et al., 2011; Zgierska, Rabago, Chawla, Kushner, Koehler et al., 2009). Its main strength will be the employment of a comprehensive and systematic search strategy, aiming to be exhaustive of all psychosocial interventions and including only RCT. Hence, broader search terms will be used to identify relevant studies. It also aims to assess risk of bias in previous studies and grade the evidence of primary outcomes amongst this group.

Aims

The aim of the review is to update Bender et al's (2011) meta-analysis from 2008 to 2012 and rate the quality of studies included.

Methodology

Systematic Review Protocol

Following Bender et al's (2011) work, a protocol was created (Appendix 1) to devise the framework for this systematic review.

Search Strategy

Studies led by a psychologist, personnel trained in the delivery of psychosocial interventions or any other health care professional which employed a psychological intervention alone or in conjunction with a pharmacological one were included. Databases were searched from January 2008 till August 2012. This date restriction was applied since trials conducted prior to this date had already been included in the previous meta-analysis. Articles in peer-reviewed journals were hand-searched. Citation, internet searches and reference list from articles were also searched to identify further studies. Authors were contacted to identify any other additional trials. Once identified, all studies were screened for inclusion or exclusion.

Study Selection Criteria

To be included, studies had to meet the following criteria:

1. Focused on adolescents (12 and 19 years) who were using the drug or showed evidence of drug dependent on it. Studies recruiting both adolescent and adult populations that allow specific determinations as to the effectiveness of the interventions for the target age group were also included.
2. Tested a psychological intervention aimed at cannabis use reduction or abstinence and excluding prevention studies.
3. RCT's
4. Included individuals meeting the DSM IV (2000) criteria for 'Substance Abuse Disorder'.
5. Included participants abusing from other illicit substances as long as it was possible to make specific determinations on reduction or abstinence of cannabis use. This was due to the fact that more often than not, individuals who abuse from drugs are often poly-drug users (Crome, 2006) and that alcohol is often abused alongside cannabis (Reiman, 2009).
6. Be published in the English language
7. Have quality scores of 5 or above

No limitations on study length were imposed. The PRISMA (Moher, Liberati, Tetzlaff & Altman, 2009) guidelines were used for the study screening process as shown in Figure 4.

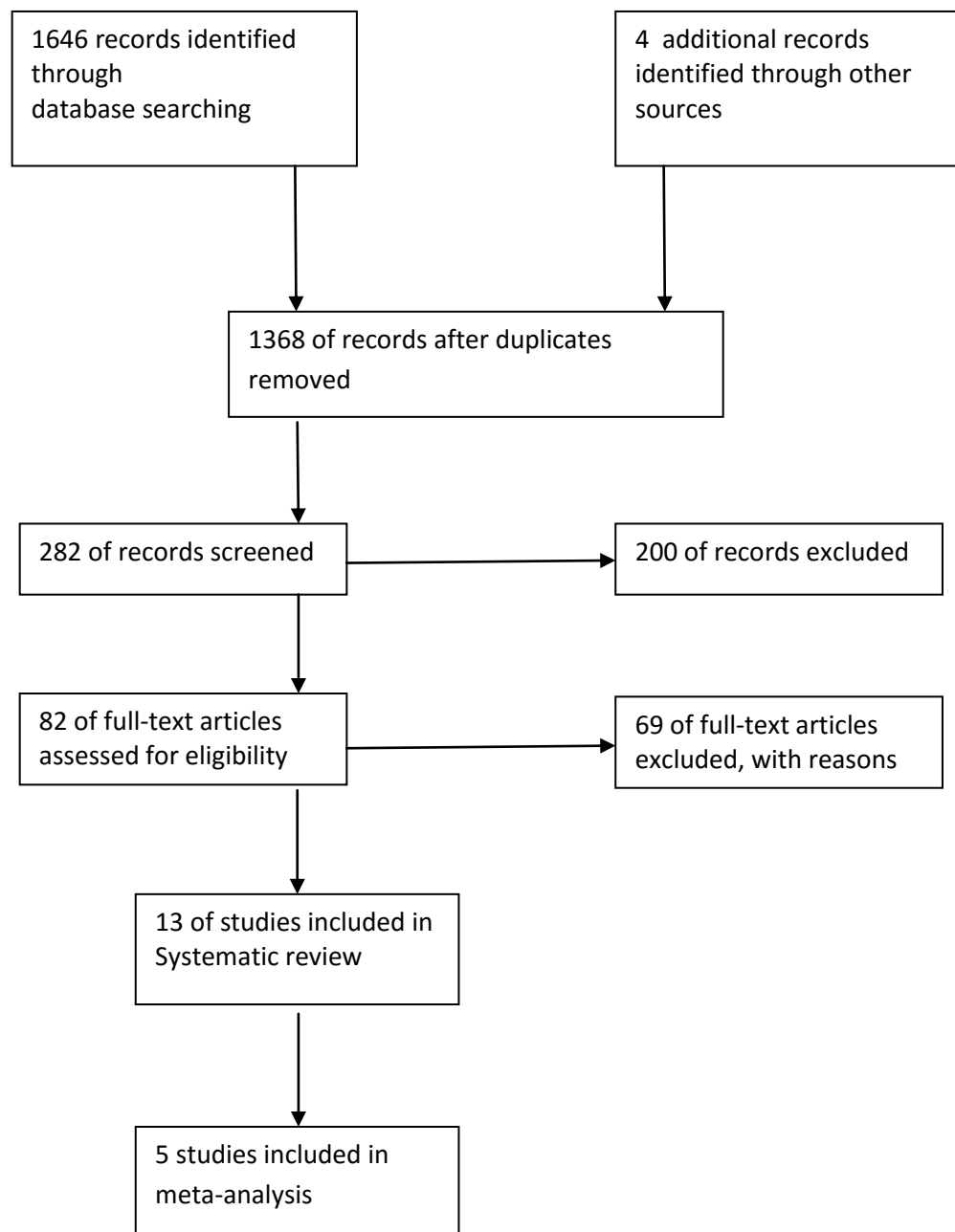


Figure 4: Study screening process diagram

Participants

Adolescents between 12 and 19 years of age

Interventions

Psychological interventions for cannabis use with one or more components of the following components:

behaviour therapy, cognitive therapy, cognitive behaviour therapy, family therapy, client-centred therapy, motivational interviewing, psychotherapy, self-help and internet based interventions, psycho-social treatments, solution-focused therapy, social support, social skills training, contingency management, brief interventions, community reinforcement, relapse prevention, case management, psychodynamic therapy, acceptance and commitment therapy, mindfulness, dialectic behaviour therapy, 12 step approach, motivational enhancement therapy and counselling.

Outcomes

Outcome measures included reduction in use of marijuana or abstinence at the end of the intervention and follow-up, both in terms of number of days of drug use or percentage of drug use in days. Results of studies with clear biomedical validation in terms of marijuana use as well as those reporting statistically significant results were included. Since few studies employed these criteria, additional studies employing self-report measures were included to determine the effectiveness of the intervention/s.

Study design

Randomized controlled trials

Search terms

The following search terms were used to find studies in EBSCOhost (including CINAHL, e-journals, Medline, PsycARTICLES, Psychology and Behavioural Sciences Collection, PsychINFO, & SocIndex), Ovid (Embase, EBM reviews, Cochrane Central Register of Controlled Trials, AMED & OVID Nursing Full Text Plus), Web of Science and Scopus:

randomised control* trial OR randomized control* trial OR RCTS OR random allocation
OR controlled clinical trial*

AND

behavio* and behavio* therapy OR behavio* modification OR counsel* OR cognitive
behavio* therapy OR cognitive therapy OR client cent* OR family therapy OR
motivation* Interview* OR psychotherapy OR psycho therapy OR problem solving OR
problemsolving OR person cent* OR psycho* OR psychoeducation OR psycho
education OR psychosocial OR psycho social OR solution focused therapy OR therap*
OR social support OR client-centered therapy OR person-centered therapy OR
Rogerian therapy OR non-directive therapy OR social support OR contingency
management OR social skills OR brief intervention* OR DBT OR dialectic behaviour
therapy OR dialectic behaviour therapy OR ACT or acceptance and commitment
therapy OR relapse prevention OR psychodynamic therapy OR 12-Step approach OR
12 steps program OR 12 Step model OR 12 step OR TSF OR twelve step facilitation OR
MET OR Motivational Enhancement Therapy OR motivational behavioural coping skills
therapy or MBCT or mindfulness

AND

cannabis or marijuana or marihuana or dependence or drug abuse or drug
dependence or substance abuse or substance use disorder*

AND

Teenager or adolescent or young adult or youth

Search Strategy

Search hits were inspected by reading titles and abstracts. 282 out of 1650 studies
were short-listed for inclusion. Of these, 269 were excluded for the following reasons:

Not being RCT, younger or older age groups where no specific information about the
target age group could be obtained, language other than English (Jouanne, Phan &
Corcos, 2010; Phan, Jouanne & Monge, 2010; Tossmann, Jonas, Rigter & Gantner,
2012), studies where no specific results for cannabis abuse could be extracted, studies
with no psychological component and studies where main focus was not on reduction

in cannabis abuse but on retention in treatment or on therapists' performance or quality assurance.

This procedure resulted in 12 journal articles. One was excluded due to low score in the quality assessment checklist (Werch, DiClemente, Moore, Thombs, Ames et al., 2010). Reference lists of included articles were hand-searched and authors were contacted to check whether they had worked on any other unpublished trial. This resulted in the inclusion of another study. In the final stage, a total of 13 studies met inclusion criteria for this review as shown in Table 5.

Quality assessment checklist

A quality assessment checklist (Appendix 1) was devised by two researchers to rate the quality of studies. Papers were scored on each individual criterion and allocated 0 points if the standard was not met and 1 point if it was. Papers could score a minimum of 0 and a maximum of 10 points. The cut-off point for inclusion was 5 since this was the median score. Scores were independently reviewed by two researchers. The Delphi method was used and discrepancies were resolved by mutual agreement.

Results

Studies were conducted between 2008 and 2012. Sample sizes ranged from 31 to 341 participants and the duration of interventions (including follow-up) ranged from 30 minutes to 18 months. A total of 2069 participants were included in 12 of the studies. In one particular study, the number of participants could not be computed (Esposito-Smythers et al., 2011). Further details are listed in Table 5.

Table 5: Details of studies included in the systematic review

Study	Score	Person/s delivering intervention	Site
Bernstein, E., Edwards, E., Dorfman, D., Heeren, T., Bliss, C., & Bernstein, J. (2009). Screening and Brief Intervention to Reduce Marijuana Use Among Youth and Young Adults in a Paediatric Emergency Department. <i>Academic Emergency Medicine</i> , 16(11), 1174–1185.	7	Peer educator	Emergency department
Conrod, P. J., Castellanos-Ryan, N., & Strang, J. (2010). Brief, Personality-Targeted Coping Skills Interventions and Survival as a Non-Drug User Over a 2-Year Period During Adolescence. <i>Archives of General Psychiatry</i> , 67(1), 85-93.	9	Co-facilitators & counselling psychologists	School
Esposito-Smythers, C., Spirito, A., Kahler, C. W., Monti, P., & Hunt, J. (2011). Treatment of Co-Occurring Substance Abuse and Suicidality Among Adolescents: A Randomized Trial <i>Journal of Consulting and Clinical Psychology</i> , 79(6), 728–739.	8	Therapists & clinical psychologists	Psychiatric hospital
French, M. T., Zavala, S. McCollister, K. E., Waldron, H. B., Turner, C. W., & Ozechowski, T. J. (2008). Cost-effectiveness analysis of four interventions for adolescents with a substance use disorder. <i>Journal of Substance Abuse Treatment</i> , 34, 272–281.	8	Psychology & Master graduates	Outpatient treatment centre
Hendriks, V., van der Schee, E., & Blanken, P. (2011). Treatment of adolescents with a cannabis use disorder: Main findings of a randomized controlled trial comparing multidimensional family therapy and cognitive behavioural therapy in The Netherlands. <i>Drug and Alcohol Dependence</i> , 119, 64–71.	6	Trained therapists	Outpatient addiction treatment centre
Kileen, T. K., McRae-Clark, A., Waldrop, A. E., Upadhyaya, H., & Brady, K. T. (2012). Contingency Management in Community Programs Treating Adolescent Substance	6	Counsellors	Community

Abuse: A Feasibility Study. <i>Journal of Child and Adolescent Psychiatry</i> , 25(1), 33–41.			
Lee, C. M., Neighbors, C., Kilmer, J. R., Larimer, M. E. (2010). A Brief, Web-Based Personalized Feedback Selective Intervention for College Student Marijuana Use: A Randomized Clinical Trial. <i>Psychology of Addictive Behaviours</i> , 24(2), 265–273.	9	Computer based feedback	Home
McCambridge, J., Slym, R. E., & Strang, J. (2008). Randomized controlled trial of motivational interviewing compared with drug information and advice for early intervention among young cannabis users. <i>Addiction</i> , 103, 1809–1818.	10	Trained graduates	College
Milburn, N. G., Iribarren, F. J., Rice, E., Lightfoot, M. Solorio, Rotheram-Borus, Desmond, K, Lee, A., Alexander, K., Maresca, K., Eastmen, K., Arnold, E. M., & Duan, N.(2012). A Family Intervention to Reduce Sexual Risk Behaviour, Substance Use, and Delinquency Among Newly Homeless Youth. <i>Journal of Adolescent Health</i> , 50, 358–364.	5	Trained facilitator	Home
Stanger, C., Budney, A. J., Kamon, J. L., Thostensten, J. (2009). A Randomized trial for contingency management for Adolescent Marijuana abuse and dependence. <i>Drug and Alcohol</i> , 105(3), 240–247.	8	Trained therapists	Community
Stein, L. A. R., Lebeau, R., Colby, S. M., Barnett, N. P., Golembeske, C., & Monti, P. M. (2011).Motivational Interviewing for Incarcerated Adolescents: Effects of Depressive Symptoms on Reducing Alcohol and Marijuana Use After Release. <i>Journal of Studies of Alcohol and Drugs</i> , 72, 497–506.	7	Research counsellors	Prison
Walker, D.D., Stephens, R., Roffman, R., DeMarce, J., Lozano, B., Towe, S., & Berg, B. (2011).Randomized Controlled Trial of Motivational Enhancement Therapy With Non treatment-Seeking Adolescent Cannabis Users: A Further Test of the Teen Marijuana Check-Up. <i>Psychology of Addictive Behaviours</i> ,	9	Counsellors	School

25 (3), 474–484.			
Winters, K. C., Fahnhorst, T., Botzet, A., Lee, S., & Lalone, B. (2012). Brief intervention for drug-abusing adolescents in a school setting: Outcomes and mediating factors. <i>Journal of Substance Abuse Treatment</i> , 42, 279–288.	8	Trained counsellors	School/home

Data Synthesis and Analysis

Few studies reported effect sizes. For those studies where enough information was obtained by contacting authors, data targeting cannabis use outcomes was combined and effect sizes (based on Cohen *d*) calculated. The standardized mean difference between the two groups is reported in Table 6, including additional details of the intervention. Further information on characteristics of included studies is provided in Appendix 2.

For some studies, effect sizes could not be computed. Nevertheless, a statistical synthesis of few of the studies reporting similar outcome measures was possible and individual effect size estimates were combined into a pooled weighted average effect size. The average of effect sizes for cannabis use in the past 90 days was calculated for 5 studies. Since effect sizes were all very small, only results for drug use at 6 months post intervention were pooled. The studies included in the meta-analysis were the ones by Hendricks et al (2011), Lee et al (2010), McCambridge et al (2008), Stein et al (2011) and Walker et al (2011). Characteristics of studies included in the meta-analysis can be found in Table 6 below.

Author	Main psychological intervention	Youth severity cannabis use	Duration of session	Outcomes	Follow up in months	Effect sizes calculated for number of days of cannabis use/joints smoked
Bernstein, E., Edwards, E., Dorfman, D., Heeren, T., Bliss, C., & Bernstein, J. (2009).	MI (N = 68) vs control (N = 71) Total N = 139	Marijuana use 3 or more times in the last 30 days	20 – 30 min intervention + 10 days booster call	Abstinence or reduction in days of cannabis use or consumption	3 & 12	Unable to compute effect sizes for target age group due to Insufficient data
Conrod, P. J., Castellanos-Ryan, N., & Strang, J. (2010).	CBT + MI (N = 81) vs control (N = 64) Total N = 145	SURPS	2 90-min sessions	Odds of reporting drug use event	6, 12, 18 & 24	Time specific intervention effects on % of drug use Reported as Odds Ratio 6 months OR = 1.1 12 months OR = 0.9 18 months OR = 0.7 24 months OR = 0.7
Hendriks, V., van der Schee, E., & Blanken, P. (2011).	MDFT (N = 55) vs CBT (N = 54) Total N = 109	DSM-IV cannabis use disorder	1 hour weekly session for 5-6 months	Abstinence or reduction in days of cannabis use or consumption	3, 6, 9 & 12	Cannabis use past 90 days Reported as Cohen d Month 3 = -0.1454 Month 6 = -0.1082 Month 12 = -0.1321 Cannabis use past 90 days (joints) Month 3 = 0.02 Month 6 = 0.29 Month 12 = -0.05
Walker, D.D., Stephens, R., Roffman, R., DeMarce, J., Lozano, B., Towe, S., & Berg, B. (2011).	MET (N = 103) + CBT (N = 102) vs EFC vs DFC (N = 105) Total N = 310	GAIN-I; nos of days of cannabis use	2 50-min sessions	Days of cannabis use	3	Reported as Cohen d MET vs DFC after 3 months = -0.029 EFC vs DFC after 3 months = -0.151
Kileen, T. K., McRae-Clark, A., Waldrop, A.	CM+ Standard	Substance use disorder using	4 hours on 2 days per week	Drug abstinence as measured by difference	3	No means, SD or effect sizes given

E., Upadhyaya, H., & Brady, K. T. (2012).	treatment (N = 16) vs control Total N = 31	Teen Addiction Severity Index	for 10 – 12 wks	in sustained urine drug screen		
Lee, C. M., Neighbors, C., Kilmer, J. R., Larimer, M. E. (2010).	MI + personalised feedback (N = 171) vs control (N = 170), Total N = 341	GAIN-I + RMPI	Not clear but students received immediate feedback after baseline	Marijuana use in days	3 & 6	Calculated as Cohen d Drug use in the past 3 months At 3 months = 0.0051 (n= 323) At 6 months = -0.0467 (n = 320)
McCambridge, J., Slym, R. E., & Strang, J. (2008).	MI (N = 147) vs DIA (N = 148) N = 295	Cannabis Problem Questionnaire and SDS scale	1 session	Reduction in frequency of cannabis use in days	3 & 6	Calculated as Cohen d Cannabis 30 day frequency after 3 months = -0.112 After 6 months = -0.058 Joints past week after 3 months = 0 Joints past week after 6 months = -0.155
Milburn, N. G., Iribarren, F. J., Rice, E., Lightfoot, M. Solorio, Rotheram-Borus, Desmond, K, Lee, A., Alexander, K., Maresca, K., Eastmen, K., Arnold, E. M., & Duan, N.(2012).	CBT + MI (N = 30) vs standard care (N = 42) Total N = 72	Computerized interviews	5 sessions lasting 60-90mins	Self reported marijuana use over the past 90 days	12	Effect size as Pearson's coefficient = -0.40 (increase in drug use)
Winters, K. C., Fahnhorst, T., Botzet, A., Lee, S., & Lalone, B. (2012).	MI-adol (N = 102) only vs MIadol + parent (N = 96)vs control (N = 42) Total N = 240	DSM-IV substance use disorder	2 60-min sessions	Cannabis use in days after 6 months	6	Effect size Cohen d after 6 months BI-A vs Con = -0.19 BI-AP vs Con = -0.42
Stein, L. A. R., Lebeau, R., Colby, S. M.,	MI vs RT N = 162	DSM-IV	2 ½ hrs	Percentage days of drug use & joints per day after	3 months after	Effect sizes reported as Cohen d Joints per day = 0.008

Barnett, N. P., Golembeske, C., & Monti, P. M. (2011).*				3 months	release	Percentage of days used marijuana = 0.026
Stanger, C., Budney, A. J., Kamon, J. L., Thostensten, J. (2009).	MET/CBT + abstinence based CM (N = 36) vs MET + CBT + attendance CM (N = 33) Total N = 69	Vermont structured diagnostic interview	90 mins for 14 weeks	Mean weeks of documented drug abstinence & mean percentage days of drug use	3, 6 & 9	Effect size Cohen d for treatment x time interaction Post treatment abstinence d = 0.21 Self-reported abstinence d = 0.24
Esposito-Smythers, C., Spirito, A., Kahler, C. W., Monti, P., & Hunt, J. (2011).	CBT (N = 19) vs TAU (N = 17) N = 36	RMPI + TLFB	Weekly sessions for 6 months in acute phase, 18 months in all	30 days abstinence of drug use & drug use	3, 6, 12 & 18	Effect of treatment x time interaction Coefficient reported as OR for days of abstinence = 1.03 Incidence rate ratio for drug use in past 30 days = 0.39
French, M. T., Zavala, S. McCollister, K. E., Waldron, H. B., Turner, C. W., & Ozechowski, T. J. (2008).	FFT (N = 30) vs CBT (N = 31) vs Joint (N = 29) vs control group (N = 30) Total N = 120	DSM-IV	12 hrs	Percentage days of drug use	7	R^2 (r = .387) = 0.15 for % days of drug use after 4 months R^2 (r = 0.224) = 0.05 for % days of drug use after 7 months

Table 5: MI: Motivational interviewing; CBT: Cognitive behaviour therapy; SURPS: Substance use risk profile scale; MDFT: Multi-dimensional family therapy; MET: Motivational Enhancement Therapy; CM: Contingency Management; RMPI: Rutgers Marijuana Problem Index; SDS: Severity of dependence scale; TAU: Treatment as usual; FFT: Family function therapy; RT: Relaxation training; EFC: Educational Feedback control; DFC: Delayed Feedback control; DIA: Drug information & advice; TLFB: Timeline Followback Calendar method; * insufficient data to compute number of participants in each group

Table 6: Meta-analysis study characteristics

Characteristic	Frequency
Publication year	
2008	1
2010	2
2011	2
Intervention being tested	
MI	2
CBT + MET	1
MDFT + CBT	1
MI vs RT	1
Methodological qualities	
Reported baseline characteristics	4
Outcome follow-up lengths	
6 months or less	5
12 months	1
Site/Setting	
Home	1
School/college	2
Outpatient	1
Prison	1

Methodological Quality

All of the 13 studies included were journal article publications. Although some studies included participants over 19 years of age, it was possible to calculate effect sizes for the sample of participants within the target age group of 12-19. In comparison to trials included in Bender et al's review, studies were not limited to the USA but were conducted in other countries including the United Kingdom, Netherlands and Australia. All of the studies provided information on ethnic backgrounds of participants.

The majority used group-based approaches or a combination of individual and family-based sessions. One study tested the efficacy of a web-based intervention while another two focused solely on individual-based interventions. Nearly all studies were conducted at single site locations. Only one study failed to meet requirements for similar participant characteristics at baseline. Quite a few studies (69%) made use of a

standardized manual for the delivery of the intervention. Most studies (77%) also reported specific training of staff and more than half reported therapist supervision (62%) throughout the delivery of the intervention. The majority of studies (85%) employed trained researchers and graduates, with one intervention being delivered by peer educators. As regards follow-up periods, 39% had a follow-up length of 12 months, 23 % had a follow-up of 6 months, 15% had a follow-up of 3 months while 8% had a follow-up period of 7 and 9 months respectively. Only 1 study reported a long follow-up period of 18 months. All studies reported a drop-out of participants over time to some extent. Based on the quality assessment checklist devised for this review, four studies reported unacceptable drop-out rates of more than 25% of participants at follow-up. In two particular studies, drop out was as high as 50% or more. Although attrition is a typical occurrence in studies, it also signifies the loss of valuable information.

Most studies meeting inclusion criteria scored above 8 in the quality assessment checklist. They employed similar methods to reduce cannabis consumption, namely MET and CBT. Two of these studies employed CM and MDFT (Kileen, McRae-Clark, Waldrop, Upadhyaya & Brady, 2012; Stanger et al., 2009) in combination with one of the two therapies outlined above. Nevertheless, only one study (McCambridge et al 2008) fulfilled all quality criteria for this review. The others had some methodological weakness and limitations. More than half had small sample sizes and apart from the study above, only 4 trials (Conrod et al., 2010; Lee et al., 2010; Walker et al., 2011; Winters et al., 2012) based sample sizes on power calculations. Moreover, few did not have an adequate comparison intervention. Only 6 studies (Esposito-Smythers et al., 2011; French et al., 2008; Hendricks et al., 2011; Kileen et al., 2012; McCambridge et al., 2008; Stanger et al., 2009) reported using objective biochemical measures (based on urine/breath tests) to validate primary outcome measures, namely drug abstinence or reduction. Six of the included studies (Conrod et al., 2010; Esposito-Smythers et al., 2011; French et al., 2008; Milburn et al., 2012; Stein et al., 2011; Winters et al., 2012) did not focus exclusively on cannabis but included other risky health practices such as sexual promiscuity, delinquency, other drug dependence diagnosis and suicidality. Conclusively, the total number of participants reported in these studies does not

reflect the total number of adolescents abusing marijuana. Information on characteristics of included studies is provided in Appendix 2.

Overall comparison of treatment effects and study characteristics

The effect sizes for ranged from -0.42 to -0.005 and appear to have a very small to moderate effect, according to Cohen's (1988, 1992) heuristics ($<.20$ = small, $.50$ = moderate, and $>.80$ = large). The value of the pooled average effect size estimates for cannabis use in the past 90 days at 6 month period post intervention was -0.05. This was based on a sample of 1217 participants. No other comparisons could be made.

Overall, intervention approaches did not vary much in their impact on cannabis reduction or abstinence. Several studies employed MI or MET as the main intervention compared to a no intervention control. Despite small effect sizes, studies using MI differed in the extent of reduction in drug use. The most successful study in terms of effect size (-0.42) using MI was the one by Winters et al (2012). Other studies incorporating MI revealed small effect sizes and insignificant results (Lee et al., 2010; McCambridge et al., 2008; Stein et al., 2011). The study by Stein et al (2011) resulted in a 55.3% reduction in percentage days of marijuana use among adolescents in the treatment group compared to 49.7% reduction in the control group. Nevertheless, the effect size was negligible (0.01) and no group differences could be detected. The study was relatively underpowered. Moreover, a reduction in drug use was observed for individuals who scored low on depressive symptoms but not for those with high scores of depression. For the latter group, relaxation training was more effective in reducing marijuana use.

The other study using MI was the one by Bernstein et al (2009). It comprised a 20-30 minute MI based intervention was conducted in a paediatric emergency department and a booster call at 10 days post enrolment. Although 45% of the intervention group reported abstinence at 12 months, no significant difference ($p<0.05$) between treatment and control groups was observed at 3 months follow-up. Outcomes were

based on self-reports and the study was not powered to control for potential confounding variables.

CBT was employed by 8 trials. It was often used in conjunction with other therapies. Effect sizes for CBT ranged from small to very small. Small effect sizes of approximately -0.15 were detected in the studies by Walker et al (2011), McCambridge et al (2008) and Hendriks et al (2011). A negligible effect size in the latter study (0.02) reveals that CBT was not effective in reducing the number of joints smoked in the past 90 days. In all studies, treatment effects tended to decrease over time, with one study reporting a significant increase (Cohen $d=-0.40$) in marijuana use at 12 months follow up in the intervention (Milburn et al., 2012). The study by Conrod et al (2010) used a combination of MET and CBT and scored quite high in the quality assessment checklist. Results revealed an insignificant trend of marijuana use up to a 24-month period in preventing the onset or increase of drug use, with an odds ratio of 1.1 for a 6 month follow-up period.

The studies by Esposito-Smythers et al (2011) and French et al (2008) also scored quite high. The former study reveals promising results in favour of CBT, whereby a significant reduction in marijuana use over time was observed in the intervention ($p < .007$). Two major weakness limiting generalizability are the small sample size and the insufficient data to compute effect sizes. On the other hand, the study by French et al (2008) tested the efficacy of individual, group and family based CBT approaches. Its main strength was the use of a no-intervention control. Moderate (0.40) and weak correlation coefficients (0.22) were observed at 4 and 7 months respectively. Nevertheless, differences were not significant at 7 months post follow-up.

Two studies tested the efficacy of incorporating CM with other psychological interventions. The study by Stanger et al (2009) used CM in combination to CBT and MET. Its strength lies in the reliance on both urinalysis and self-report measures to detect drug abstinence. The authors report 50% rates of non-significant continuous abstinence in the intervention group. CM was incorporated only in the control. Small effect sizes detected ranged from 0.21 – 0.24. The other study used CM in adjunct to

standard community-based treatment (Kileen et al, 2012). Nevertheless no significant group differences in urine drug screening or abstinence ($p = 0.9$) were observed. Apart from that, the sample size was too small for any firm conclusions to be drawn.

Discussion

The most popular treatments currently being used to reduce cannabis use entail CBT, MET and CM techniques. Pooled effects for Cohen d values suggest that psychosocial interventions appear to have a very small effect, with little or no differences observed between experimental and control groups. These findings stand in comparison to those of Bender et al's (2011) whereby psychosocial interventions were moderately effective in reducing adolescent cannabis use. On the other hand, findings of the effectiveness of MDFT over CBT by Hendriks et al (2011) are consistent with those obtained in other studies whereby to date, the superiority of one method over another has not been established (Liddle et al., 2008; Nordstrom & Levin, 2007; Volkow, 2005). Only one study used MDFT in the current review. Given its low score in the quality assessment checklist, it is not possible to determine whether this intervention would yield greater reduction in drug use compared to a control.

Unlike the results reported by Bender et al (2011), MI did not stand out as having a large impact on reducing cannabis use, with most studies demonstrating very small effect sizes. These results are similar to those reported by Smedslung et al's (2011). The latter meta-analysis aimed to assess the efficacy of MI for substance abuse and retention in treatment. Although individuals receiving this type of intervention were more likely to reduce drug intake when compared to the control, follow-up results were not significant. Despite these findings, most studies reveal that compared to other types of interventions, MI seems to have the longest lasting effects. For instance, the study by Bernstein et al (2009) revealed a reduction in cannabis use at 12 months follow-up. It supports the notion that brief interventions do not necessarily have to be delivered by health-care professionals to be effective. It also highlights the important role educators have in fostering health behaviour change. A recent meta-analysis on behaviour change for adolescent substance use also supports the

effectiveness of MI over time (Jensen, Cushing, Aylward, Craig, Sorell et al., 2011). One limitation of Bernstein et al's (2009) study is the insufficient data to calculate effect sizes. As a result, an objective measure of these findings is lacking (Field, 2005). Another important consideration is the fact that this was a small pilot study and participants were not poly-drug users. This stands in comparison to other research that states that individuals usually use cannabis in combination with other drugs, including alcohol (Crome, 2006; Reiman, 2009). Given these limitations, it may be difficult to generalize these findings to other adolescent populations.

Despite contrasting findings, results are promising in favour of MI, especially in supporting the effectiveness of brief interventions. Intervention duration lasted between 20 minutes and 150 minutes. Educational institutions are an ideal setting for the delivery of opportunistic interventions. Brief school-based interventions can be as effective as longer ones and offer promising results among adolescent drug users (Winters, Leitten, Wagner & Tevyaw, 2007), apart from being more cost effective. An additional advantage of school settings is the ease of access to care and greater ecological validity (Waxman, Weist & Benson, 1999).

Both the study by Winters et al (2012) and the one by McCambridge et al (2008) consisted of brief interventions delivered within an educational setting, one difference being that the former included an additional parental session. Larger effect sizes were observed when parents were involved. In a similar way, although the findings of the study by Lee et al (2010) were not significant, results support the importance of family history in substance abuse interventions. Yet again, the study by French et al (2008) reveals that family therapy is the most effective in terms of drug use reduction drug and costs. Conclusively, efforts to incorporate parental involvement in individually tailored sessions can be one way of reducing the extent of substance abuse as compared to no intervention. The study by McCambridge et al (2008) was the only one meeting all inclusion criteria for this review. One of its main strengths was the calculation of abstinence via both urinalysis and self-report. According to a recent report by Harrison, Martin, Enev and Harrington (2007), about one in six young marijuana users are unwilling to report recent drug use. Combining positive self-

report and urinalysis results create the best prevalence estimates of drug use. Finally, given the lack of firm conclusions about the effectiveness of MI among adolescents with co-morbid diagnosis, it is possible that motivational interviewing by itself may not enough to curb the addiction and that the depressive episodes may interfere with treatment effectiveness. Co-morbidity is associated with poorer outcomes, with further research with this kind of population being needed (Curran & Drummond, 2005).

A few studies used CBT in combination with a MET. Findings from this review are mixed. Two such studies were the ones by Conrod et al (2010) and Walker et al (2011). A main strength of both was the fact that unlike the majority of studies included, the control group did not receive any form of intervention. One common limitation is the reliance on self-reports for cannabis drug use. Findings from the former study are consistent with previous research revealing that psychosocial interventions using CBT and MI may be effective in preventing the escalation of the problem rather promoting total abstinence (Winters et al., 2012). This raises questions about whether existing therapies help moderate drug use rather than promoting total abstinence. Moreover, unlike prevalent misconceptions of the lack of addictive properties of the drug, results seem to confirm the fact that marijuana dependence is not so easy to overcome due to withdrawal symptoms caused by THC that make quit attempts harder (Budney & Hughes, 2006). The effectiveness of pharmacological approaches to overcome these symptoms has not been established yet (Budney, Ryan, Vandrey & Stanger, 2010; Copeland & Swift, 2009). This is reflected in the fact that none of the trials have added a pharmacological element to their intervention. Nevertheless drugs like Marinol and Bupirone have shown to improve marijuana withdrawal symptoms. Possibly, combining different behavioural interventions alongside pharmacological treatments could yield more effective abstinence rates (Elkashef et al., 2008).

While the studies seem to support the effectiveness of incorporating CBT and MI, the study by Milburn et al (2012) is inconsistent with these results and with those reported by Bender et al (2011). Authors suspect that the escalation of drug use at a 12 month follow up period may reflect the possibility that youths replaced harder

drugs for marijuana. Nevertheless one cannot conclude that psychosocial interventions are ineffective in reducing marijuana intake. First of all, the study concerned tested the efficacy of a family based CBT approach aimed at reducing sexual risk-taking behaviours, delinquency and substance abuse. The latter was not limited to marijuana but included youths abusing from heavier drugs. Possibly, psychosocial interventions to reduce cannabis abuse may be less effective with poly-drug users. Conclusively, more intensive interventions are needed with youths experiencing multiple psychosocial problems or those abusing from highly addictive substances. Secondly, like most trials included in this review, the control group still received some form of psychosocial intervention. Thus, although all journals have categorized included studies as RCT, less than half received a score of 1 for suitable comparison intervention. Psychosocial interventions used with the controls group included progressive muscle relaxation, imagery, therapeutic interventions, standard psychological treatment, cognitive behaviour therapy and motivational enhancement therapy. Although one aim of this review was to compare the effectiveness of psychosocial interventions versus a no intervention control, it was not possible to draw such a conclusion from all studies, nor was it possible to determine which intervention, if any, yields the best outcomes in terms of abstinence.

It is interesting that one of the studies included in Bender et al's (2011) review incorporated incentive-based interventions. The study by Stanger et al (2009) reveals that incorporating CM monetary vouchers alongside other psychosocial interventions can be an effective during-treatment abstinence incentive (Stanger et al., 2009). Nevertheless, an increase in drug use in the experimental group at 9 months follow up period was observed. Results were only short-lived and that a return to previous or increased frequency of use, is probable once incentives are removed. Although the effectiveness of CM should not be minimised, the use of money as a reinforcer needs to be approached with clinical sensitivity. Possibly, the use of internal and external incentives rather than relying solely on external incentives may result in longer periods of abstinence at post intervention.

Unlike Bender et al's (2012) meta-analysis, none of the studies demonstrated large effects, with findings for CBT and MET being inconsistent and revealing negligible to moderate effect sizes. Conclusively, although a few psychological interventions are employed to reduce cannabis use, firm conclusions could not be drawn. This result is consistent with recent updates published by the National Institute of Drug Abuse (NIDA) holding that CBT and motivational incentives are only moderately effective in treating marijuana dependence. None of the trials have employed mindfulness therapy or dialectic behaviour therapy in their approach, two areas that merit further investigation.

Certain limitations have to be considered. Although a thorough search was made to identify all RCT, most journals have a strict word limit on articles published. This could lead to the omission of relevant and important information which could influence the results outlined above. Despite being a new research area, this review included quite a few trials. Nevertheless, more trials using a no-intervention control are required before firm conclusions about the effectiveness of psychosocial interventions can be drawn. Some subjectivity in pooling of studies and which studies were included in the meta-analysis is another limitation. On the other hand, this meta-analysis has two strengths not accounted for by the Bender et al's (2011) review. One is the broadened of inclusion criteria to reduce the odds that no important studies are left out. Another strength is that participants were not limited to a particular race but reflect a range of ethnic background. Trials included may thus be more representative of diverse adolescent populations.

Conclusion and future directions

Overall, results show some evidence for the effectiveness of psychosocial interventions incorporating MI, CBT and MDFT alone or in combination to reduce the extent of cannabis abuse when compared to no intervention. Parental involvement seems to reduce the incidence of cannabis use amongst adolescents. Nevertheless the latter result could only be concluded from one study. Conclusively, the evidence supporting the effectiveness of psychosocial interventions is low and there is not

enough data to determine which, if any, of the above treatments yields the best outcome in terms of reduction or abstinence. Overall, there remains a need for the development of more effective interventions not only to treat cannabis abuse among adolescents but for preventive and educational efforts to dispel common myths regarding the harmless nature of the drug. Programs and interventions incorporating parental involvement is another area that merits further investigation.

References

Baker, A., Hides, L., & Lubman, D. I. (2010). Treatment of cannabis use among people with psychotic or depressive disorder: A systematic review. *Journal of Clinical Psychiatry*, 71(3), 247-254.

Beckstead, D.J., Lambert, M. J., DuBose, A. P., & Linehan, M. (2015). Dialectical behaviour therapy with American Indian/Alaska Native adolescents diagnosed with substance use disorders: Combining an evidence-based treatment with cultural, traditional, and spiritual beliefs. *Addictive Behaviours*, 51, 84-87.

Bender, K., Tripodi, S. J., Sarteschi, C., & Vaughn, M. G. (2011). A meta-analysis of interventions to reduce adolescent cannabis use. *Research on Social Work Practice*, 21(2), 153-164.

Bergmark, A. (2009). Book review: Drug misuse: Psychosocial interventions. *Addiction*, 104, 676–678.

Bernstein, E., Edwards, E., Dorfman, D., Heeren, T., Bliss, C., & Bernstein, J. (2009). Screening and brief intervention to reduce marijuana use among youth and young adults in a paediatric emergency department. *Academic Emergency Medicine*, 16 (11), 1174–1185.

Bifulco, M., & Pisanti, S. (2015). Medicinal use of cannabis in Europe. *EMBO reports*, 16(2), 130-132.

Borgelt, L. M., Franson, K. L., Nussbaum, A. M., & Wang, G. S. (2013). The pharmacological and clinical effects of medicinal cannabis. *Pharmacotherapy*, 23(2), 195–209.

Budney, A. J., & Hughes, J. R. (2006). The cannabis withdrawal syndrome. *Current Opinion Psychiatry*, 19(3), 233-8.

Budney, A. J., Ryan G. Vandrey, R. G., & Stanger, C. (2010). Pharmacological and psychosocial interventions for cannabis use disorders. *Revista Brasileira de Psiquiatria*, 32(1), 46–55.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd edition). New York: Academic Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.

Conrod, P. J., Castellanos-Ryan, N., & Strang, J. (2010). Brief, personality-targeted coping skills interventions and survival as a non–drug user over a 2-year period during adolescence. *Archives of General Psychiatry*, 67(1), 85-93.

Copeland, J., & Swift, W. (2009). Cannabis use disorder: Epidemiology and management. *International Review of Psychiatry*, 21(2), 96–103.

Crome, I. B. (2006). Overview: Beyond guidelines and guidance—Psychosocial perspectives on treatment interventions for young people with substance problems in the United Kingdom. *Drugs: Education, Prevention and Policy*, 13(3), 203–224.

Curran, V., & Drummond, C. (2005). Psychological treatments of substance misuse and dependence. *Science*, 1-42.

Dennis, M., Babor, T.F., Roebuck, M.C., & Donaldson, J. (2002). Changing the focus: The case for recognizing and treating cannabis use disorders. *Addiction*, 97(1), 4–15.

Diagnostic Statistical Manual of Mental Disorders. (2000).(4th ed., text rev.). Washington, DC: Author.

Dutra, L., Stathopoulou, G., Basden, S. L., Leyro, T. L., Powers, M. B., & Otto, M. (2008). A meta-analytic review of psychosocial interventions for substance use disorders. *American Journal of Psychiatry*, 165, 179–187.

Elkashef, A., Vocci, F., Huestis, M., Haney, M., Budney, A., Gruber, A., & el-Guebaly, N. (2008). Marijuana neurobiology and treatment. *Substance Abuse*, 29(3), 17–29.

Esposito-Smythers, C., Spirito, A., Kahler, C. W., Monti, P., & Hunt, J. (2011). Treatment of co-occurring substance abuse and suicidality among adolescents: A randomized trial. *Journal of Consulting and Clinical Psychology*, 79(6), 728–739.

European centre for drugs and drug addiction (EMCDDA, 2011). *Annual report on the state of drug problems in Europe*. Retrieved from http://www.emcdda.europa.eu/publications/searchresults?action=list&type=PUBLICATIONS&SERIES_PUB=w36

Field, A. (2005). *Discovering statistics using SPSS*. (2nd eds). UK: Sage Publications.

French, M. T., Zavala, S. McCollister, K. E., Waldron, H. B., Turner, C. W., & Ozechowski, T. J. (2008). Cost-effectiveness analysis of four interventions for adolescents with a substance use disorder. *Journal of Substance Abuse Treatment*, 34, 272–281.

Harrison, L. D., Martin, S. S., Enev, T., & Harrington, D. (2007). *Comparing drug testing and self-report of drug use among youths and young adults in the general population*. Rockville, MD: Substance Abuse and Mental Health Services Administration (SAMHSA).

Hendriks, V., van der Schee, E., & Blanken, P. (2011). Treatment of adolescents with a cannabis use disorder: Main findings of a randomized controlled trial comparing multidimensional family therapy and cognitive behavioural therapy in the Netherlands. *Drug and Alcohol Dependence*, 119, 64–71.

Hjorthøj, C., Fohlmann, A., & Nordentoft, A. (2009). Treatment of cannabis use disorders in people with schizophrenia spectrum disorders — A systematic review. *Addictive Behaviours*, 34, 846–851.

Jensen, C. D., Cushing, C. C., Aylward, B. S., Craig, J. T., Sorell, D. M., & Steele, R. G. (2011). Effectiveness of motivational interviewing interventions for adolescent substance use behaviour change. A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 79(4), 433–440.

Jouanne, C., Phan, O., & Corcos, M. (2010). Comparaison de l'efficacité de la multidimensional family therapy (MDFT) versus la treatment as usual explicite (TAUE) dans le traitement de l'abus et de la dépendance au cannabis chez l'adolescent: Présentation du protocole INCANT. *Annales Medico-Psychologiques*, 168, 487–494.

Kileen, T. K., McRae-Clark, A., Waldrop, A. E., Upadhyaya, H., & Brady, K. T. (2012). Contingency management in community programs treating adolescent substance abuse: A feasibility study. *Journal of Child and Adolescent Psychiatry*, 25(1), 33–41.

Lee, C. M., Neighbors, C., Kilmer, J. R., & Larimer, M. E. (2010). A brief, web-based personalized feedback selective intervention for college student marijuana use: A randomized clinical trial. *Psychology of Addictive Behaviours*, 24(2), 265–273.

Liddle, H. A., Dakof, G. A., Turner, R. M., Henderson, C. E., & Greenbaum, P. E. (2008). Treating adolescent drug abuse: A randomized trial comparing multidimensional family therapy and cognitive behaviour therapy. *Addiction*, 103, 1660–1670.

McCambridge, J., Slym, R. E., & Strang, J. (2008). Randomized controlled trial of motivational interviewing compared with drug information and advice for early intervention among young cannabis users. *Addiction*, 103, 1809–1818.

Milburn, N. G., Iribarren, F. J., Rice, E., Lightfoot, M. Solorio, Rotheram-Borus, Desmond, K., Lee, A., Alexander, K., Maresca, K., Eastmen, K., Arnold, E. M., & Duan, N. (2012). A family intervention to reduce sexual risk behaviour, substance use, and delinquency among newly homeless youth. *Journal of Adolescent Health*, 50, 358–364.

Miller, W. R., Sorensen, J. L., Selzer, J.A., & Brigham, G. S. (2006). Disseminating evidence-based practices in substance abuse treatment: A review with suggestions. *Journal of Substance Abuse Treatment*, 31, 25–39.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). *The PRISMA group: Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*. Retrieved from doi:10.1371/journal.pmed.1000097

National Institute of Drug Abuse. (NIDA, 2011). *Marijuana: A update from the national institute of drug abuse*. Retrieved from www.drugabuse.gov

Nordstrom, B. R., & Levin, F. R. (2007). Treatment of cannabis use disorder: A review of literature. *The American Journal on Addictions*, 16, 331–342.

Orford, J. (2008). Asking the right questions in the right way: The need for a shift in research on psychological treatments for addiction. *Addiction*, 103, 875–885.

Pagliaro, L. A., & Pagliaro, A. M. (2012). *Handbook of Child and Adolescent Drug and Substance Abuse: Pharmacological, Development and Clinical Considerations*. New Jersey. John Wiley & Sons.

Pertwee, R. (2014). *Handbook of cannabis*. Oxford: Oxford University Press.

Phan, O., Jouanne, C., & Monge, S. (2010). Un essai clinique randomisé sur la psychothérapie des adolescents dépendants au cannabis. *Annales Medico-Psychologiques*, 168, 145–151.

Reiman, A. (2009). Cannabis as a substitute for alcohol and other drugs. *Harm Reduction Journal*, 6, 35.

Smedslund, G., Berg, R. C., Hammerstrøm, K. T., Steiro, A., Leiknes, K. A., Dahl, H. M., & Karlsen, K. (2011). Motivational interviewing for substance abuse. *Campbell Systematic Reviews*, 6, CD008063.

Stanger, C., Budney, A. J., Kamon, J. L., & Thostensten, J. (2009). A randomized trial for contingency management for adolescent marijuana abuse and dependence. *Drug and Alcohol*, 105(3), 240–247.

Stein, L. A. R., Lebeau, R., Colby, S. M., Barnett, N. P., Golembeske, C., & Monti, P. M. (2011). Motivational interviewing for incarcerated adolescents: effects of depressive symptoms on reducing alcohol and marijuana use after release. *Journal of Studies of Alcohol and Drugs*, 72, 497–506.

Stotts, A.L., Green, C., Masuda, A., Grabowski, J., Wilson, K., Northrup, T. F., Moeller, F. G., & Schmitz, J. M. (2012). A Stage I pilot study of acceptance and commitment therapy for methadone detoxification. *Drug and Alcohol Dependence*, 125(3), 215-222.

Thanki, D., Matias, J. Griffiths, P., Noor, A., Olszewski, D., Simon, R., & Vicente, J. (2012). *Prevalence of daily cannabis use the European Union and Norway: Thematic Papers*. Retrieved from emcdda.europa.eu/attachements.cfm/att_191926_EN_emcdda-daily-cannabis-use-2012.pdf

Tossmann, P., Jonas, B., Rigter, H., & Gantner, A. (2012). Treating adolescents with cannabis use disorder with multidimensional family therapy (MDFT): Main results of a randomized controlled trial. *Sucht, 58*(3), 157–166.

Treurnicht, N. K., James, D., & Gottheil, S. (2011). Marijuana use: Squeal and implications for health promotion. *Health Promotion, 80*(2), 32–35.

Vandrey, R., Budney, A., Kamon, J., & Stanger (2005). Cannabis withdrawal in adolescent treatment seekers. *Drug and Alcohol Dependence, 78*(2), 205-210.

Volkow, N. D. (2005). *Marijuana abuse: National institute on drug abuse research report series*. Retrieved from [http:// www.drugabuse.gov/Research Reports/Marijuana/default.html](http://www.drugabuse.gov/ResearchReports/Marijuana/default.html)

Walker, D.D., Stephens, R., Roffman, R., DeMarce, J., Lozano, B., Towe, S., & Berg, B. (2011). Randomized controlled trial of motivational enhancement therapy with non treatment-seeking adolescent cannabis users: A further test of the teen marijuana check-up. *Psychology of Addictive Behaviours, 25*(3), 474–484.

Waxman, R.P., Weist, M. D., & Benson, D. M. (1999). Toward collaboration in the growing education-mental health interface. *Clinical Psychology Review, 19*(2), 239-253.

Werch, C. E., Bian, H., DiClemente, C. C., Moore, M. J., Thombs, D., Ames, S. C., Huang, I., & Pokorny, S. (2010). A brief image-based prevention/intervention for adolescents. *Psychology of Addictive Behaviours, 24*(1), 170–175.

Winters, K. C., Leitten, W., Wagner, E., & Tevyaw, O. (2007). Use of brief interventions for drug abusing teenagers within a middle high school setting. *Journal of School Health, 77*(4), 196–206.

Winters, K. C., Fahnhorst, T., Botzet, A., Lee, S., & Lalone, B. (2012). Brief intervention for drug-abusing adolescents in a school setting: Outcomes and mediating factors. *Journal of Substance Abuse Treatment, 42*, 279–288.

Zgierska, A., Rabago, D., Chawla, N., Kushner, K., Koehler, R., & Marlatt, A. (2009). Mindfulness meditation for substance use disorders: A systematic review. *Substance Abuse, 30*, 266–294.

Appendix 1 - Systematic Review Protocol

Systematic review objective: A systematic review on the effectiveness of psychological interventions for cannabis use among adolescents

Background

Cannabis is the name of the dried leaves and flowers derived from the plant *Cannabis Sativa*. The drug has a long history of medicinal use, with evidence dating as back to 2737 BCE where the drug was an indispensable herb in Chinese medicine. Since then, it has been prescribed for a broad range of conditions including the treatment of nausea and vomiting after chemotherapy, pain relief, improving the quality of life in HIV patients, to treat loss of appetite in anorexic patients, for treating glaucoma and epilepsy, to slow the progression of Alzheimer's disease and to decrease eye pressure, just to mention a few (Bifulco & Pisanti, 2015; Borgelt, Franson, Nussbaum & Wang, 2013; National Institute of Drug Abuse, NIDA, 2011).

For a number of years, a prevalent misconception was the lack of addictive properties of cannabis (Dennis, Babor, Roebuck & Donaldson, 2002) and the belief that it was a softer and harmless drug (Treurnicht Naylor, James & Gottheil, 2011). This view has been discarded, with emerging evidence revealing harmful effects resulting from cannabis use. Despite posing major health concerns, it remains the most commonly used drug, particularly amongst younger age groups (Copeland & Swift, 2009; Elkashef, Vocci, Huestis, Hanney, Budney et al., 2008). According to two recent reports (NIDA, 2011; European Monitoring Centre for Drugs and Drug Addiction, EMCDDA, 2011), more than 29 million Americans and 22.5 million Europeans over the age of 12 admitted to having used the drug in 2011. Similar findings were disseminated by the other studies, whereby cannabis ranked as the most commonly used daily drug among adolescents and young adults (Thanki, Matias, Griffiths, Noor, Olszewski, Simon, et al., 2012). It was also the main reason for admission to substance-abuse treatment facilities.

Hazards of cannabis use

Cannabis Sativa has over 400 chemicals, one of the most psychoactive ingredients being delta-9-tetrahydrocannabinol, or more commonly known as THC. The effects are diverse and wide-ranging, depending on the amount and frequency of consumption. Some physical and psychological short-term effects include memory problems, slowed reaction time, impaired motor coordination, altered judgment and decision making, substantial increase in heart-rate and blood pressure, sudden mood swings, anxiety, euphoria and paranoia (NIDA, 2011). Although the drug is less likely to cause physical addiction, heavy use results in increased tolerance to the drug and in a number of withdrawal symptoms such as headaches, restlessness and lack of appetite (Vandrey, Budney, Kamon & Stanger, 2005). Heavy and long-term use can also cause respiratory problems, psychosis, cognitive impairment and psychological dependence (NIDA, 2011; Treunicht Naylor et al., 2011). On the other hand, psychosocial problems include poor educational and occupational outcomes, violent crimes, risky sexual practices and increased risks of illicit drug use (Morgan & Curran, cited in Pertwee, 2014). Since the adolescent brain is still developing, teens are more vulnerable to the effects of the drug.

Treating cannabis use – Evidence based methods

Given the initial assumptions of the harmless nature of the drug, the effectiveness of existing psychological interventions is still at a developmental stage when compared to that for other substances (Elkashef et al., 2008). Indeed, until recently, very few studies using randomized controlled trials had been conducted and most of these focused on adult populations, with interventions for adolescents being minimal (Copeland & Swift, 2009). Moreover, the effectiveness of pharmacological interventions has not been established yet (Copeland & Swift, 2009; Elkashef et al., 2008; NIDA 2011).

The kind of psychological interventions currently being used for treating cannabis dependence are similar to those used for other illicit drugs. Popular treatment

modalities include behavioural therapy, cognitive behaviour therapy (CBT), contingency management, relapse prevention, motivational enhancement, psychotherapy, family therapy and the 12 Step Approach (Bender, Tripodi, Sarthschi & Vaughn, 2011; Stephens, Babor, Kadden, Miller & the Marijuana Treatment Project Research Group, 2002). Despite this diversity, results of studies are mixed. Although some treatments have demonstrated significant differences between treatment and control groups, evidence for the effectiveness and superiority of one intervention over another remains (Nordstrom & Levin, 2007; Volkow, 2005). A lack of robust evidence for the effectiveness of other interventions such as social skills training, relapse prevention, psycho-education, psychodynamic theory and counselling has been observed (Miller, Sorensen & Selzer, 2006). Orford (2008) holds that disappointment over the poor evidence of psychological interventions in the field of addictions is not an isolated case. Bergmark (2009) is also sceptic about the effectiveness of CBT and holds that according to NICE guidelines, CBT *'should not be offered routinely to people presenting for cannabis or stimulant misuse or those receiving opioid maintenance treatment'* (p. 14). Findings from a systematic review by Dutra, Stathopoulou, Basden, Leyro, Powers et al (2008) reveal a low effect size (0.25) for interventions based on CBT principles. Fairly recent interventions with a growing base of support include Acceptance and Commitment Therapy and Dialectic Behaviour Therapy although these have only recently started being applied to substance abuse (Beckstead, Lambert, DuBose & Linehan, 2015; Stotts, Green, Masuda, Grabowski, Wilson et al., 2012).

Several systematic reviews have been conducted on the topic. For instance, one limitation of Dutra et al's review (2008) was a lack of studies using randomized controlled trials. Moreover, studies focused on adult populations, possibly due to the fact that adolescent groups have not been studied extensively (Crome, 2006). As a result, current interventions being used to treat young substance users are based on treatments that work with adult populations. Adolescents are different from adults and what may work with adults may not necessarily be applicable for younger generations (Crome, 2006). The reasons why adolescents start abusing from drugs are different from those of adults. Finally, physical development transitions and changes in social roles may influence treatment outcomes (Pagliaro & Pagliaro, 2012).

In another meta-analysis, Bender, Tripodi, Sarteschi and Vaughn (2011) investigated the effectiveness of individual and family-based psychosocial interventions for cannabis use among adolescents. Results revealed small to moderate effect sizes. Limitations identified by the authors included restrictions in key words used. The need to conduct broader searches in the future studies to confirm findings and to investigate further the efficacy of existing interventions was also identified.

Need for the review

In review of existing literature, a synthesis of interventions aimed to reduce cannabis use among adolescents already exists. Diverse psychological interventions applicable to illicit drugs are being employed to address this problem. Nonetheless, measuring the outcomes of specific interventions and choosing the most of effective remains a challenge (Nordstrom & Levin, 2007). Although some of the existing interventions for treating illicit drug use may yield effective outcomes, consideration of the type of substance used cannot be ignored (Bender et al., 2011). Caution needs to be exercised in relation to studies attempting to generalize researching findings across different populations and age groups (Curran & Drummond, 2005). Moreover, little attention has been given to treating cannabis use and it is relatively understudied (Nordstrom & Levin, 2007; Volkow, 2005). Given the high prevalence of cannabis use amongst adolescents between 12 to 19 years (NIDA), the inconsistent findings from existing trials, the serious health implications of the drug, the fact that the drug is still relatively understudied and the recently established therapies currently being applied to treat addictions (such as DBT and ACT), the need to investigate the efficacy of existing treatments remains a priority.

This review aims to build on and improve findings of Bender et al's (2011) meta-analysis in order to establish the most effective psychological intervention for cannabis use among adolescents. Existing reviews differ from this one in a number of ways. Some have focused on psychiatric populations (Baker, Hides & Lubman, 2010; Hjorthøj, Fohlmann & Nordentof, 2009), while others have focused exclusively on one type of intervention such as mindfulness meditation or motivational interviewing for both licit

and illicit drugs (Smedslung, Berg, Hammerstrom, Steiro, Leiknes et al., 2011; Zgierska, Rabago, Chawla, Kushner, Koehler et al., 2009). Its main strength will be the employment of a comprehensive and systematic search strategy, aiming to be exhaustive of all psychosocial interventions and including only RCT. Hence, broader search terms will be used to identify relevant studies. It also aims to assess risk of bias in previous studies and grade the evidence of primary outcomes amongst this group.

Aims

The aim of the review is to update Bender et al's (2011) meta-analysis from 2008 to 2012 and to rate the quality of studies to be included in the review. Search criteria were broadened to be exhaustive and include all kind of psychological interventions for cannabis abuse or dependence.

Methodology

Following Bender et al's (2011) review, this protocol has been created with the aim of devising the framework for this systematic review.

Search Strategy

Studies led by a psychologist, trained personnel or any other health care professional which employed a psychological intervention or a psychological intervention used in conjunction with pharmacological ones will be included. Databases will be searched from January 2008 till August 2012. Articles in peer reviewed journals for 2012 will also be hand-searched. In addition to that, citation, internet searches and reference list from articles and included reviews will be searched to identify further studies of interest. Authors of these studies will be contacted to identify any other additional trials. Once identified, all studies will be screened for inclusion or exclusion.

Study Selection Criteria

To be included, studies have to meet the following criteria:

1. Focused on adolescent participants (12 and 19 years) who were either abusing from, addicted to or dependent on the drug. Studies recruiting both adolescent and adult populations that allow specific determinations as to the effectiveness of the interventions for the target age group were also included
2. Tested a psychological intervention aimed at cannabis use reduction or abstinence and excluding prevention studies
3. Utilized randomized control trials
4. Included individuals meeting the DSM IV (2000) criteria for 'Substance Abuse Disorder'.
5. Included participants abusing from other illicit substances as long as it was possible to make specific determinations on reduction or abstinence of cannabis use. This was due to the fact that more often than not, individuals who abuse from drugs are often poly-drug users (Crome, 2006) and that alcohol is often abused alongside cannabis (Reiman, 2009).
6. Only studies published in English were included.
7. Only studies with scores of 5 and above were included.

Apart from that, no limitations on the length of study will be imposed. The PRISMA (Moher, Liberati, Tetzlaff & Altman, 2009) guidelines will be used for the study screening process.

Participants

Studies recruiting adolescents between 12 and 19 years of age

Interventions

Psychological interventions for cannabis abuse with one or more components of the following methods used to treat addictions:

behaviour therapy, cognitive therapy, cognitive behaviour therapy, family therapy, client-centred therapy, motivational interviewing, psychotherapy, self-help and internet based interventions, psycho-social treatments, solution-focused therapy, social support, social skills training, contingency management, brief interventions, community reinforcement, relapse prevention, case management, psychodynamic therapy, acceptance and commitment therapy, mindfulness, dialectic behaviour therapy, 12 step approach, motivational enhancement therapy and counselling.

Outcomes

Outcome measures will include reduction in use of marijuana or abstinence at the end of the intervention and follow-up, both in terms of number of days of drug use or percentage of drug use in days. Results of studies with clear biomedical validation in terms of marijuana use as well as those reporting statistically significant results will be included. Since it is anticipated that few studies will employ these criteria, additional studies relying on self-report measures will also be included.

Study design

Randomized controlled trials (RCT)

Search terms

The following search terms will be used to find studies in EBSCOhost (including CINAHL, e-journals, Medline, PsycARTICLES, Psychology and Behavioural Sciences Collection, PsychINFO, &SocIndex), Ovid (Embase, EBM reviews, Cochrane Central Register of Controlled Trials, AMED & OVID Nursing Full Text Plus), Web of Science and Scopus:

randomised control* trial OR randomized control* trial OR RCTS OR random allocation OR controlled clinical trial*

AND

behavio* and behavio* therapy OR behavio* modification OR counsel* OR cognitive behavio* therapy OR cognitive therapy OR client cent* OR family therapy OR motivation* Interview* OR psychotherapy OR psycho therapy OR problem solving OR problemsolving OR person cent* OR psycho* OR psychoeducation OR psycho education OR psychosocial OR psycho social OR solution focused therapy OR therap* OR social support OR client-centered therapy OR person-centered therapy OR Rogerian therapy OR non-directive therapy OR social support OR contingency management OR social skills OR brief intervention* OR DBT OR dialectic behaviour therapy OR dialectic behaviour therapy OR ACT or acceptance and commitment therapy OR relapse prevention OR psychodynamic therapy OR 12-Step approach OR 12 steps program OR 12 Step model OR 12 step OR TSF OR twelve step facilitation OR MET OR Motivational Enhancement Therapy OR motivational behavioural coping skills therapy or MBCT or mindfulness

AND

cannabis or marijuana or marihuana or cannabis use disorder or cannabis abuse or cannabis dependence or drug abuse or drug dependence or substance abuse or substance use disorder*

AND

Teenager or adolescent or young adult or youth

Quality assessment checklist

In order to evaluate the quality of each paper, a quality assessment checklist was devised. Papers will be scored on each individual criterion and allocated 0 points if the standard is not met and 1 point if it is. Individual scores will be totalled. Papers can score a minimum of 0 and a maximum of 10 points. The quality checklist was devised by 2 researchers and is as follows:

1. Adequate randomization (needs to be identify)

2. Similar groups at baseline (use of standardise scale to measure quantity, frequency and pattern of cannabis use)
3. Adequate participants (including power analyses or over 100 participants per group in each group)
4. Acceptable dropout rate (25% or more)
5. Inclusion and exclusion criteria specified
6. Suitable comparison intervention
7. A minimum of 3 months follow up
8. Reliable measurement techniques (test retest/ internal consistency/split half)
9. Appropriate statistical analysis
10. Biomarkers confirming self-reported abstinence in 95% of the cases (urine, oral fluids, sweat, blood, hair, SAMHSA 2012) or self reports if the former are not found.

Data extraction and management strategy

A data extraction form (please see below) has been devised and will be used to fill in necessary information from selected studies using Refworks. Data will be placed in a data extraction table. Search hits will be inspected by reading titles and abstracts. Full texts of potentially relevant studies will be obtained and assessed for inclusion. The quality assessment checklist will be used to score each study. The cut-off point for inclusion will be 5 since this is the median score. Scores will be reviewed by two separate researchers independently. The Delphi method of achieving agreement will be used.

References

Baker, A., Hides, L., & Lubman, D. I. (2010). Treatment of cannabis use among people with psychotic or depressive disorder: A systematic review. *Journal of Clinical Psychiatry*, 71(3), 247-254.

Beckstead, D.J., Lambert, M. J., DuBose, A. P., & Linehan, M. (2015). Dialectical behaviour therapy with American Indian/Alaska Native adolescents diagnosed with substance use disorders: Combining an evidence based treatment with cultural, traditional, and spiritual beliefs. *Addictive Behaviours*, 51, 84-87.

Bender, K., Tripodi, S. J., Sarteschi, C., & Vaughn, M. G. (2011). A meta-analysis of interventions to reduce adolescent cannabis use. *Research on Social Work Practice*. 21(2), 153-164.

Bergmark, A. (2009). Book review: Drug misuse: Psychosocial interventions. *Addiction*, 104, 676–678.

Bifulco, M., & Pisanti, S. (2015). Medicinal use of cannabis in Europe. *EMBO reports*, 16 (2), 130-132.

Borgelt, L. M., Franson, K. L., Nussbaum, A. M., & Wang, G. S. (2013). The pharmacological and clinical effects of medicinal cannabis. *Pharmacotherapy*, 23(2), 195–209.

Copeland, J., & Swift, W. (2009). Cannabis use disorder: Epidemiology and management. *International Review of Psychiatry*, 21(2), 96–103.

Crome, I. B. (2006). Overview: Beyond guidelines and guidance—Psychosocial perspectives on treatment interventions for young people with substance problems in the United Kingdom. *Drugs: Education, Prevention and Policy*, 13(3), 203–224.

Curran, V & Drummond, C. (2005). Psychological treatments of Substance Misuse and Dependence. *Science*, 1-42. Retrieved 7th June 2012 from: <http://www.bis.gov.uk/assets/foresight/docs/brain-science/psychological-treatments.pdf>

Dennis, M., Babor, T.F., Roebuck, M.C., & Donaldson, J. (2002). Changing the focus: The case for recognizing and treating cannabis use disorders. *Addiction*, 97(1), 4–15.

Diagnostic Statistical Manual of Mental Disorders. (2000).(4th ed., text rev.). Washington, DC: Author.

Dutra, L., Stathopoulou, G., Basden, S. L., Leyro, T. L., Powers, M. B., & Otto, M. (2008). A meta-analytic review of psychosocial interventions for substance use disorders. *American Journal of Psychiatry*, 165, 179–187.

Elkashef, A., Vocci, F., Huestis, M., Haney, M., Budney, A., Gruber, A., & el-Guebaly, N. (2008). Marijuana neurobiology and treatment. *Substance Abuse*, 29(3), 17–29.

European centre for drugs and drug addiction (EMCDDA, 2011). *Annual report on the state of drug problems in Europe*. Retrieved from http://www.emcdda.europa.eu/publications/searchresults?action=list&type=PUBLICATIONS&SERIES_PUB=w36

Hjorthøj, C., Fohlmann, A., & Nordentoft, A. (2009). Treatment of cannabis use disorders in people with schizophrenia spectrum disorders — A systematic review. *Addictive Behaviours*, 34, 846–851.

Miller, W.R., Sorensen, J.L., Selzer, J. A., & Brighman, G. S.(2006). Disseminating evidence-based practices in substance abuse treatment: A review with suggestions. *Journal of Substance Abuse Treatment*, 31, 25–39.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). *The PRISMA group: Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*. Retrieved from doi:10.1371/journal.pmed.1000097

National Institute on Drug Abuse (NIDA, 2011). *Prescription Drugs: Abuse and Addiction*. Research Report Series. NIH Publication no. 05-4881.

Nordstrom, B. R., & Levin, F. R. (2007). Treatment of cannabis use disorder: A review of literature. *The American Journal on Addictions*, 16, 331–342.

Orford J. (2008). Asking the right questions in the right way: the need for a shift in research on psychological treatments for addiction. *Addiction*, 103, 875–885.

Pagliari, L. A., & Pagliaro, A. M. (2012). *Handbook of Child and Adolescent Drug and Substance Abuse: Pharmacological, Development and Clinical Considerations*. New Jersey. John Wiley & Sons.

Pertwee, R. (2014). *Handbook of Cannabis*. Oxford: Oxford University Press.

Reiman, A. (2009). Cannabis as a substitute for alcohol and other drugs. *Harm Reduction Journal*, 6, 35.

Smedslund, G., Berg, R. C., Hammerstrøm, K. T., Steiro, A., Leiknes, K. A., Dahl, H. M., & Karlsen, K. (2011). Motivational interviewing for substance abuse. *Campbell Systematic Reviews*, 6, CD008063.

Stephens, K. S., Babor, T. F., Kadden, R., Miller, M., & the Marijuana Treatment Project Research Group. (2002). The marijuana treatment project: Rationale, design and participant characteristics. *Addiction*, 97(s1), 109-124.

Stotts, A.L., Green, C., Masuda, A., Grabowski, J., Wilson, K., Northrup, T. F., Moeller, F. G., & Schmitz, J. M. (2012). A Stage I pilot study of acceptance and commitment therapy for methadone detoxification. *Drug and Alcohol Dependence*, 125 (3), 215-222.

Substance Abuse and Mental Health Services Administration (SAMHSA, 2012). *Clinical Drug Testing in Primary Care*. Rockville: HHS Publications.

Thanki, D., Matias, J. Griffiths, P., Noor, A., Olszewski, D., Simon, R., & Vicente, J. (2012). *Prevalence of daily cannabis use the European Union and Norway: Thematic Papers*. Retrieved from emcdda.europa.eu/attachements.cfm/att_191926_EN_emcdda-daily-cannabis-use-2012.pdf

Treurnicht, N. K., James, D., & Gottheil, S. (2011). Marijuana use: Squeal and implications for health promotion. *Health Promotion, 80*(2), 32–35.

Vandrey, R., Budney, A., Kamon, J., & Stanger (2005). Cannabis withdrawal in adolescent treatment seekers. *Drug and Alcohol Dependence, 78*(2), 205-210.

Volkow, N. D. (2005). Marijuana abuse: National institute on drug abuse research report series. Retrieved from [http:// www.drugabuse.gov/Research Reports/Marijuana/default.html](http://www.drugabuse.gov/ResearchReports/Marijuana/default.html)

Zgierska, A., Rabago, D., Chawla, N., Kushner, K., Koehler, R., & Marlatt, A. (2009). Mindfulness meditation for substance use disorders: A systematic review. *Substance Abuse, 30*, 266–294.

Data extraction form

General information:

Author

Article title

Type of publication& date (e.g. journal article, conference abstract)

Study characteristics

Aim/objectives of the study

Study design

Recruitment procedures used (e.g. details of randomization, power calculation, blinding)

Person delivering Intervention

Participant characteristics

Number of participants

Age & gender

Problem characteristics

Inclusion/exclusion criteria

Intervention and setting

Setting in which the intervention is delivered

Description and type of the intervention(s) and control(s)

Outcome data/results

Unit of assessment/biomarkers

Length of follow-up, number and/or times of follow-up measurements

For all intervention group(s) and control group:

Attrition

Record details of any additional relevant outcomes reported

Data Extraction Table

Details from each study will be inputting in the data extraction table below:

Table 7: Data extraction table

Author & Title	Main type of psychological intervention	Youth severity cannabis use	Site	Duration of intervention	Outcomes	Follow up in months

Appendix 2: Characteristics of included studies

Study Bernstein et al	Methods	Participants	Intervention
<p>Authors Bernstein, E., Edwards, E., Dorfman, D., Heeren, T., Bliss, C., & Bernstein, J. (2009). Screening and Brief Intervention to Reduce Marijuana Use Among Youth and Young Adults in a Paediatric Emergency Department. Academic Emergency Medicine, 16 (11), 1174 – 1185.</p> <p>Aim To test whether screening & brief intervention are effective in reducing marijuana consumption among youth and young adults presenting to a Paediatric emergency department</p> <p>Follow-up: 3 & 12 months for assessed control (AC) & intervention group (IG), at 12 months for non-assessed controls (NAC).</p> <p>Treatment: Motivational Interviewing</p>	<p>Randomization: Prospective computer generated randomization</p> <p>Blinding: Both participants & peer educators</p> <p>Power calculation: Not enough participants</p>	<p>Setting Hospital</p> <p>Gender: 60% females</p> <p>Age: 14 – 17 (n = 41)</p> <p>Inclusion criteria: smoked marijuana more than 3 times in the past 30 days, were alert and oriented to person, time, and place, could give autonomous informed consent or assent if they were below the age of 18.</p> <p>Exclusion criteria: 1) could not be interviewed in privacy from accompanying family members, 2) planned to leave the area in the next 3 months, 3) could not provide reliable contact information to complete the follow-up procedures 4) were currently in a residential substance abuse treatment facility 5) were in custody or institutionalized 6) presented for a rape exam or psychiatric evaluation for suicide precautions.</p>	<p>Person delivering intervention Peer Educators</p> <p>Description: A 3 group randomized controlled trial. NAC received a resource handout, written advice about marijuana use risks, and a 12-month follow-up appointment. AC (n = 21) were assessed using standardized instruments and received resources, written advice, and 3- and 12-month follow-up appointments. The IG, received assessment, resources, written advice, 3- and 12-month appointments, a 20-minute structured conversation conducted by older peers, and a 10-day booster telephone call.</p> <p>Outcome: Abstinence at 12 months and changes in pattern of marijuana use 30/68 (45%) of IG vs 16/71 (22%) of AC for the whole study population (n = 139) but could not be determined for 14-17 group. No significant difference in marijuana use in the past 30 days at the 3-month follow-up between the IG and the AC groups was found. At the 12-month follow-up, however, 45% of the IG were marijuana abstinent compared to 22% of the AC group.</p> <p>Biomarkers: none</p>

			Difference: 23% Attrition: IG: 21 lost to follow-up, NAC: 24 & AC 16 Quality Score: 7
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Study by Conrod et al	Methods	Participants	Intervention
<p>Authors Conrod, P. J., Castellanos Ryan, N., & Strang, J. (2010). Brief, Personality-Targeted Coping Skills Interventions and Survival as a Non-Drug User Over a 2-Year Period During Adolescence. <i>Archives of General Psychiatry</i>, 67(1), 85-93.</p> <p>Aim To investigate the efficacy of targeted coping skills interventions on illicit drug use in adolescents with personality risk factors for substance misuse</p> <p>Follow-up: 24 months</p> <p>Treatment: MI & CBT vs control</p>	<p>Randomization: Youths were asked to pick a piece of paper from a hat containing either the letter x or the letter y to specify assignment to the control or intervention conditions in a transparent way</p> <p>Blinding: Only researchers conducting follow up were blind</p> <p>Power calculation: Not enough participants</p>	<p>Setting Secondary school</p> <p>Gender: females</p> <p>Age: 13 – 16 (n = 160)</p> <p>Inclusion criteria: There were no exclusion criteria other than reporting unreliable data (responding inconsistently across the survey or positively to a sham drug item) at baseline assessment and not providing parental consent</p>	<p>Person delivering intervention Special needs teachers, co-facilitators, counselling psychologists</p> <p>Duration: two 90min group sessions</p> <p>Description: Participants were randomly assigned to a control no-intervention condition or a 2-session group coping skills intervention targeting 1 of 4 personality profiles including sensation seeking, impulsivity, anxiety sensitivity and hopelessness</p> <p>Outcome: The intervention was associated with a non-significant trend for reduced odds of taking up marijuana use ($\beta = -0.3$; robust SE=0.2; $P=.09$; OR=0.7; 95% CI, 0.5- 1.0). Analyses including the same covariates as earlier indicated non-significant trends for intervention effects on marijuana use uptake at 18 months ($\beta = -0.3$; SE= 0.2; $P = .12$) and 24 months ($\beta=-0.3$; SE=0.2; $P=.12$). Control group showed significant growth in the number of drugs used as well as more frequent drug use over the 2-year period</p>

			<p>relative to the intervention group.</p> <p>Biomarkers: none</p> <p>Attrition: A total of 638 participants (87%) were assessed at least once over the 2-year follow-up period, 510 (80%) were assessed at least twice, and 396 (62%) were assessed at least 3 times after intervention.</p> <p>Quality score: 9</p>
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Study Hendriks et al	Methods	Participants	Intervention
<p>Authors Hendriks, V., van der Schee, E., & Blanken, P. (2011). Treatment of adolescents with a cannabis use disorder: Main findings of a randomized controlled trial comparing multidimensional family therapy and cognitive behavioural therapy in the Netherlands. <i>Drug and Alcohol Dependence</i>, 119, 64 – 71.</p> <p>Aim To investigate whether multidimensional family therapy (MDFT) is more effective than cognitive behavioural therapy (CBT) in treatment-seeking adolescents with a DSM-IV cannabis use disorder</p> <p>Follow-up: 12 months</p> <p>Treatment: CBT vs Multidimensional family therapy</p>	<p>Randomization: Computer generated list</p> <p>Blinding: No mention of blinding</p> <p>Power calculation: underpowered</p>	<p>Setting Outpatient addiction treatment centre</p> <p>Gender: 71.6% males</p> <p>Age: 13 – 18 (n = 109)</p> <p>Inclusion criteria: Eligible patients were 13–18 years old, had a history of cannabis abuse or dependence in the previous year according to the Diagnostic and Statistical Manual of Mental Disorders, recently used cannabis on a regular basis (≥ 26 days in the 90 days preceding baseline), were willing to participate in the study and study treatments (written informed consent), and had at least one (step) parent or legal guardian who agreed to participate in the treatment and study assessments</p> <p>Exclusion criteria: Patients were barred from the study if they</p>	<p>Person delivering intervention Trained therapists</p> <p>Duration 5-6 months</p> <p>Description: CBT group 5-6 months of 1 hour weekly sessions, MDFT groups 5 – 6 months of 2 weekly sessions</p> <p>Outcome: MDFT was not found to be superior to CBT on any of the outcome measures. Adolescents in both treatments did show significant and clinically meaningful reductions in cannabis use and delinquency from baseline to one-year follow-up, with treatment effects in the moderate range.</p> <p>Biomarkers: Mostly self-reports but urine sample was provided at 12 months</p> <p>Difference: 2.6% treatment response after 12 months</p>

		were currently psychotic (DSM-IV), suicidal or mentally retarded (clinical judgment), needed inpatient or opioid substitution treatment (clinical judgment), lived outside the catchment area of the treatment centre, or insufficiently understood Dutch language.	Attrition: Relatively low follow-up rates were obtained at the month 3 and 6 assessments. Nevertheless, authors did succeed in reaching nearly all adolescents (94.5%) at primary endpoint, after 12 months. Quality Score: 6
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Study Walker et al	Methods	Participants	Intervention
Authors Walker, D.D., Stephens, R., Roffman, R., DeMarce, J., Lozano, B., Towe, S., & Berg, B. (2011). Randomized Controlled Trial of Motivational Enhancement Therapy With Non treatment-Seeking Adolescent Cannabis Users: A Further Test of the Teen Marijuana Check-Up. <i>Psychology of Addictive Behaviours</i> , 25 (3), 474–484. Aim To compare the effects of a brief Motivational Enhancement Therapy (MET) for cannabis use with a brief Educational feedback control (EFC) and a no-assessment control (NAC) among adolescent cannabis users Follow-up: 3 & 12 months Treatment: MET vs EFC plus 4 optional CBT sessions	Randomization: Followed by stratification based on stages of change model Blinding: None reported Power calculation: Calculated by GPower	Setting School Gender: 60.6% males Age: 14 – 19 (n= 310) Inclusion criteria: (1) age (14–19 years old), (2) grade level (9th through 12th), and (3) cannabis use (smoked 9 or more days in the past 30). Exclusion criteria: Individuals were excluded if they (1) were not fluent in English, (2) had a thought disorder that precluded full participation, or (3) refused to accept randomization to a condition.	Person delivering intervention counsellors Duration 1 hour 30 min Description: The MET and EFC conditions each consisted of two 45–50 minute sessions scheduled approximately one and two weeks after the baseline assessment plus four optional CBT sessions for each group Outcome: Participants in both the MET ($p < .001$) and EFC ($p < .05$) conditions reported significantly fewer days of cannabis use compared to non-assessed controls. However, the frequency of cannabis use did not differ significantly between the MET and EFC conditions ($p < .05$). Baseline cannabis use decreased at 3 months and remained reduced at 12 months, but there was no significant difference by condition in the overall analysis

			<p>Biomarkers: none</p> <p>Difference: 2% (not significant)</p> <p>Attrition: 98% at the 3-month follow-up and 91% at 12-months follow-up, with no differences in attrition</p> <p>Quality Score: 9</p>
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Study Kileen et al	Methods	Participants	Intervention
<p>Authors Kileen, T. K., McRae-Clark, A., Waldrop, A. E., Upadhyaya, H., & Brady, K. T. (2012). Contingency Management in Community Programs Treating Adolescent Substance Abuse: A Feasibility Study. <i>Journal of Child and Adolescent Psychiatry</i>, 25(1), 33–41.</p> <p>Aim To explore the feasibility of integrating a cost-effective CM procedure into standard community treatment for adolescents with primary marijuana use disorders</p> <p>Follow-up: 3 months</p> <p>Treatment: Contingency Management (CM) plus standard treatment vs standard treatment</p>	<p>Randomization: It was not possible to randomize participants according to the level of standard treatment they received or the severity of marijuana use.</p> <p>Blinding: None reported</p> <p>Power calculation: Very small sample to detect power</p>	<p>Setting: Community substance abuse treatment centre</p> <p>Gender: 81% males</p> <p>Age: 14- 18 years</p> <p>Inclusion criteria: Eligibility included adolescents aged 12–18, presence of a primary marijuana use disorder, past 45-day marijuana use, and enrolment in standard treatment at a community treatment program.</p> <p>Exclusion criteria: Adolescents who were suicidal, homicidal, psychotic, or unable to comprehend English were excluded</p>	<p>Person delivering intervention counsellors</p> <p>Duration 80% of the adolescents were receiving treatment four or more hours on two or more days per week. The remaining adolescents were seen once per week in either group or individual therapy for 10-12 weeks</p> <p>Description: Group therapy, including 12-step treatment, relapse prevention, education classes, case management, intensive in-home services, and/or family counselling occurring from 1 to 4 days per week plus CM in intervention group</p> <p>Outcome: There were no group differences in the number of urine drug screening (UDS) provided ($F[1,27] = 0.01, p = .9$), retention ($F[1,27] = 0.035, p = 0.9$), sustained abstinence ($F[1,27] = 0.16, p = .9$), percent</p>

			<p>negative submitted UDS ($F[1,27] = 1.23, p = .3$), or percent negative out of total scheduled UDS($F[1,27] = 0.28, p = .6$). Adolescents in the abstinence based CM experimental condition had 7.6 weeks of continuous abstinence versus 5.1 weeks of continuous abstinence in the control condition ($p = .04$).</p> <p>Biomarkers: urine drug screening</p> <p>Difference: 15%</p> <p>Attrition: Follow up was obtained on 45% of participants.</p> <p>Quality Score: 6</p>
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Study Lee et al	Methods	Participants	Intervention
<p>Authors Lee, C. M., Neighbors, C., Kilmer, J. R., Larimer, M. E. (2010). A Brief, Web-Based Personalized Feedback Selective Intervention for College Student Marijuana Use: A Randomized Clinical Trial Psychology of Addictive Behaviours, 24 (2), 265–273</p> <p>Aim The current study was designed to evaluate a brief, web-based personalized feedback intervention for at-risk marijuana users transitioning to college.</p> <p>Follow-up: 3 & 6 months</p> <p>Treatment: Motivational Interviewing by</p>	<p>Randomization: Stratified randomization& random number generator</p> <p>Blinding: none reported</p> <p>Power calculation: over 100+ in each group</p>	<p>Setting Delivered online</p> <p>Gender: 55.6% females</p> <p>Age: 17 – 19 years (n = 341)</p> <p>Inclusion criteria: Eligibility for the current longitudinal trial was any use of marijuana in the 3 months prior to screening.</p> <p>Exclusion criteria: Not specified</p>	<p>Person delivering intervention Computerized individual personalized feedback</p> <p>Duration: Not clear but feedback was given immediately and participants could return to view web based feedback for 3 months</p> <p>Description: Students in the intervention group received individual personalized feedback based on baseline information. This included feedback about marijuana use, perceived and actual descriptive norms for marijuana use and perceived pros and cons of using marijuana. Skills training tips for</p>

assessing students' readiness to change			<p>avoiding marijuana and making changes in one's use were provided. Perceived high-risk contexts and alternative activities around campus and in the community were provided. Students randomized to the control condition did not receive any feedback or information.</p> <p>Outcome: There were no statistically significant differences found between feedback and control groups on ethnicity, gender, family history, baseline marijuana use, consequences, or contemplation scores.</p> <p>Biomarkers: none</p> <p>Difference: No statistically significant differences</p> <p>Attrition: 94.4% completed follow up after 6 months</p> <p>Quality Score: 9</p>
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Study McCambridge et al	Methods	Participants	Intervention
<p>Authors McCambridge, J., Slym, R. E., & Strang, J. (2008). Randomized controlled trial of motivational interviewing compared with drug information and advice for early intervention among young cannabis users. <i>Addiction</i>, 103, 1809–1818.</p> <p>Aim</p>	<p>Randomization: Computer individual randomization</p> <p>Blinding: Only researcher distributing questionnaire blind to study allocation</p> <p>Power calculation: Yes, a total of 270 participants were needed and a total of 326 were included to</p>	<p>Setting Eleven London Further Education colleges</p> <p>Gender: 69% male</p> <p>Age: 16 – 19 years (n = 326)</p> <p>Inclusion criteria: Eligibility criteria were age 16–19years, weekly or more frequent cannabis use,</p>	<p>Person delivering intervention Researcher practitioners graduated in psychology</p> <p>Description: Participants were randomized to a single-session intervention of MI or drug information and advice-giving</p> <p>Outcome: There were</p>

<p>To test the effectiveness of motivational interviewing (MI) in comparison with drug information and advice in opportunistically securing reductions in drug-related risk among young cannabis users not seeking help.</p> <p>Follow-up: 3 & 6 months</p> <p>Treatment: MI vs advice and information giving</p>	<p>make up for lost to follow up</p>	<p>literacy sufficient For questionnaire completion and English language.</p> <p>Exclusion criteria: participants not meeting inclusion criteria</p>	<p>no differences in outcome between MI and control at either follow-up study interval. Out of 100% participants reporting cannabis use, 79% in MI group and 84% in control were using drug after 3 months.</p> <p>Biomarkers: self-report, although salivary tests were also used and small percentage of participants refused to be tested</p> <p>Difference: 5% difference in drug use between 2 groups at 3 months</p> <p>Attrition: 15% and 18% were lost to follow up at 3 & 6 months respectively</p> <p>Quality Score: 10</p>
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Study Milburn et al	Methods	Participants	Intervention
<p>Authors</p> <p>Milburn, N. G., Iribarren, F. J., Rice, E., Lightfoot, M. Solorio, Rotheram-Borus, Desmond, K., Lee, A., Alexander, K., Maresca, K., Eastmen, K., Arnold, E. M., & Duan, N.(2012). A Family Intervention to Reduce Sexual Risk Behaviour, Substance Use, and Delinquency Among Newly Homeless Youth. Journal of Adolescent Health, 50, 358 – 364.</p> <p>Aim</p> <p>To evaluate the efficacy of a short family intervention in reducing sexual risk behaviour, drug use,</p>	<p>Randomization: a computerized coin toss to assign families to study condition was used for randomization</p> <p>Blinding: the recruitment/assessment team were blind to the study, no mention if participants were as well</p> <p>Power calculation: No mention of power calculation</p>	<p>Setting: home setting</p> <p>Gender: 66.2% females</p> <p>Age: 12 – 17 (n = 151, out of which 72 used marijuana, 30 in intervention vs 42 in control)</p> <p>Inclusion criteria: Eligibility criteria included having been away from home for at least two nights in the past 6 months, not being away for more than 6 months, and having the potential to return home.</p> <p>Exclusion criteria: current abuse or neglect, active psychosis, or current</p>	<p>Person delivering intervention</p> <p>Trained facilitator</p> <p>Description:</p> <p>The intervention consisted of five sessions lasting from 1 ½ to 2 hours administered to the youth and parent(s) together by a trained facilitator at a site selected by the family. Intervention consisted of 1 session per week. Families in the control condition received the “standard care” that they were receiving from the agencies that referred them.</p> <p>Outcome: Marijuana use significantly</p>

<p>and delinquent behaviours among homeless youth.</p> <p>Follow-up: 3, 6 & 12 months</p> <p>Treatment: CBT family-based intervention vs standard treatment</p>		<p>substance intoxication</p>	<p>increased in the intervention condition compared with the control condition ($p = .001$). Intervention participants increased use over the period (from 9 to 12 times in a 3-month period) following intervention, whereas control decreased use (from 13 to 6 times; $p < .001$). Since the intervention did not focus exclusively on marijuana reduction, it could be that youths substituted marijuana for other hard drugs.</p> <p>Biomarkers: none, based on self-report</p> <p>Difference: increase of 3 times use of drug in a 3 month period in intervention group</p> <p>Attrition: 71% (107) completed a 3-month, 58% (87) completed a 6-month, and 46% (69) completed a 12-month assessment</p> <p>Quality Score: 5</p>
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Study Winters et al	Methods	Participants	Intervention
<p>Authors Winters, K. C., Fahnhorst, T., Botzet, A., Lee, S., & Lalone, B. (2012). Brief intervention for drug-abusing adolescents in a school setting: Outcomes and mediating factors. <i>Journal of Substance Abuse Treatment</i> 42, 279–288.</p> <p>Aim</p>	<p>Randomization: no mention of randomization procedure although this was not carried out in identical contexts</p> <p>Blinding: Research assistant blind to treatment condition conducted assessment at baseline and at follow up</p> <p>Power calculation:</p>	<p>Setting: intervention with students conducted at school, with parent at home</p> <p>Gender: 52% males</p> <p>Age: 12 – 18, mean age 16.3 (n = 315) of which 59 met criteria for cannabis abuse dependence and 181 met criteria for cannabis dependence diagnosis</p>	<p>Person delivering intervention Trained counsellors</p> <p>Description: Adolescents and their parents were randomly assigned to receive either a two-60 minute session adolescent-only (BI-A), two-60 minute session adolescent and additional parent session (BI-AP), or assessment-only</p>

<p>To evaluate the use of two brief intervention conditions for adolescents who have been identified in a school setting as abusing alcohol and other drugs.</p> <p>Follow-up: 6 months</p> <p>Treatment: Motivational interviewing and self-change programs</p>	<p>No mention of power although authors say that sample size was not large</p>	<p>Inclusion criteria: Study eligibility required that the student (a) be between 13 and 18 years of age; (b) scored 26 or greater on the Personal Experience Screening Questionnaire (c) was not currently receiving treatment in another drug treatment program (d) not report during the research assessment the presence of an acute psychiatric problem or medical condition and (e) agreed to participate along with the parent</p> <p>Exclusion criteria: Students not meeting inclusion criteria</p>	<p>control condition (CON). Sessions with parents included a behavioural integrative and family therapy based approach.</p> <p>Outcome: Both intervention groups (BI-AP and BI-A) revealed better outcomes compared with the CON group, post hoc tests, $p < .05$) on days of cannabis and alcohol use. Secondly, the BI-AP showed significantly better outcomes ($p < .05$) than the BI-A and CON groups on days of cannabis use, cannabis abuse symptoms, and cannabis dependence symptoms). Significant chi-square results were obtained on all measures at 6 months follow up, range $\chi^2(2) = 7.6-10.6$, all p levels $< .05$; range $d = 1.8-2.1$, except for percentage absence of cannabis dependence symptoms ($p < .06$).</p> <p>Biomarkers: self report</p> <p>Difference: Differences in mean between cannabis use days at intake and after 6 months are as follows: 11.9% for BI-A group, 16% for BI-AP group and 11.5% for CON group, effect size 0.2, BI-AP < BI-A < CON</p> <p>Attrition: At the 6-month follow-up, there were four attrition cases (BI-A, two cases; BI-AP, one case; CON, one case).</p> <p>Quality Score: 8</p>
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Study Stein et al	Methods	Participants	Intervention
<p>Authors Stein, L. A. R., Lebeau, R., Colby, S. M., Barnett, N. P., Golembeske, C., & Monti, P. M. (2011). Motivational Interviewing for Incarcerated Adolescents: Effects of Depressive Symptoms on Reducing Alcohol and Marijuana Use After Release. Journal of Studies of Alcohol and Drugs, 72, 497 – 506.</p> <p>Aim Motivational interviewing to reduce alcohol and marijuana use among incarcerated adolescents was evaluated</p> <p>Follow-up: 3 months Treatment: Motivational Interviewing (MI) vs Relaxation training (RT)</p>	<p>Randomization: Randomization was accomplished via random numbers table in advance and placed in an envelope by the project coordinator.</p> <p>Blinding: Research staff conducting assessments were blind to treatment</p> <p>Power calculation: sample size relatively underpowered</p>	<p>Setting: juvenile correctional facility</p> <p>Gender: 84% males (n = 162)</p> <p>Age: Mean 17.10 years</p> <p>Inclusion criteria: Adolescents were included in the study if they met any of the following substance use screening criteria: (1) in the year before incarceration they (1a) used marijuana or drank regularly (at least monthly) or (1b) drank heavily (five or more standard drinks for boys, four or more standard drinks for girls) at least once, (2) they used marijuana or drank in the 4 weeks before the offense for which they were incarcerated, or (3) they used marijuana or drank in the 4 weeks before they were incarcerated.</p> <p>Exclusion criteria: Inadequate substance use data or not meeting inclusion criteria</p>	<p>Person delivering intervention Research counsellors</p> <p>Description: The program consists of 2½hr relaxation training or Motivational Interviewing.</p> <p>Outcome: Compared with those who received relaxation training, adolescents who received motivational interviewing had significantly lower rates of alcohol and marijuana use at follow-up.</p> <p>Biomarkers: self-report</p> <p>Difference: For adolescents low in depressive symptoms early in incarceration, at 3 months after release the MI group showed a 55.3% reduction in percentage of days used marijuana compared to 33.0% in the RT group. For adolescents receiving RT, at 3 months after release, those with high depressive symptoms early in incarceration showed a 49.7% reduction in percentage of days used marijuana, whereas the low depression group showed a 16.8% reduction.</p> <p>Attrition: 3 withdrew from study and 5 were lost to follow up</p> <p>Quality Score: 7</p>

Study Stanger et al	Methods	Participants	Intervention
<p>Authors Stanger, C., Budney, A. J., Kamon, J. L., Thostensten, J. (2009). A Randomized trial for contingency management for Adolescent Marijuana abuse and dependence. Drug and Alcohol, 105(3): 240–247.</p> <p>Aim To assess whether an intervention incorporating ME/CBT plus abstinence based CM was more effective than an intervention based on ME/CBT and attendance based incentive program in reductions of marijuana use or abstinence</p> <p>Follow-up: 3, 6 & 9 months</p> <p>Treatment: Motivational Enhancement (ME), Cognitive Behaviour Therapy (CBT) and Contingency Management (CM)</p>	<p>Randomization: Minimum likelihood allocation was used to randomly assign participants via computer sequentially to one of the two treatment conditions while balancing across conditions baseline characteristics that may influence outcome</p> <p>Blinding: Research assistants not blind to condition, not specified if participants or therapists were</p> <p>Power calculation: Small sample size and power could only determine medium effects hence not enough statistical power</p>	<p>Setting community adolescent treatment setting</p> <p>Gender: 57 males, 12 females</p> <p>Age: 14 – 18 (n = 69)</p> <p>Inclusion criteria: Inclusion criteria were: 1) age 12– 18 years; 2) reported use of marijuana during the prior 30 days or a marijuana-positive urine test; 3) living with a parent/guardian who agreed to participate; 4) residing within a 30 minute drive to the clinic.</p> <p>Exclusion criteria: Adolescents were ineligible if they 1) displayed active psychosis or current suicidal behaviour or had a severe medical illness limiting participation; or 2) had alcohol, opiate, or cocaine dependence requiring more intensive treatment.</p>	<p>Person delivering intervention Trained therapists and one post- doctoral fellow</p> <p>Description: The experimental condition consisted of MI, CBT, abstinence based CM and family management. The experimental condition consisted of MI, CBT, attendance CM and parent psycho-education. Both treatment conditions involved one 90-minute, weekly therapy session for 14 consecutive weeks and twice-weekly drug testing. At the end of the 14 weeks, all families were offered an additional 12 weeks of once weekly substance testing to facilitate parental monitoring and were referred, when appropriate, to other community resources.</p> <p>Outcome: EXP youth had more mean weeks of documented continuous marijuana abstinence during treatment than CONTROL youth (EXP: 7.6 (SD=5.6) vs. CONTROL: 5.1 (SD=4.5), $t=-2.1$; $p=.04$, $d=.48$, medium effect). Those in the EXP condition were also more likely to achieve ≥ 8 weeks of continuous abstinence (53% vs. 30%, $X^2(1)=3.6$, $p=.06$) and</p>

			<p>≥10 weeks of continuous abstinence (50% vs. 18%, $X^2(1)=7.7$, $p=.006$), while rates of briefer periods of abstinence were similar across the two treatment conditions (≥4 weeks: EXP 61%, CONTROL 55%; ≥6 weeks: EXP 56%, CONTROL 46%). Marijuana use increased during follow up.</p> <p>Biomarkers: urine toxicology and self report</p> <p>Difference: 32% difference between experimental and control in marijuana abstinence. The outcomes observed in the experimental condition suggest that integrating CM abstinence-based approaches with other empirically-based outpatient interventions provides an alternative and efficacious treatment model for adolescent substance abuse or dependence.</p> <p>Attrition: Participation rates for follow-ups also did not differ between EXP and CONTROL: 92% vs. 91%, 75% vs. 85%, 75% vs. 85%, and 78% vs. 79% for the discharge and 3-, 6-, and 9-month assessments, respectively.</p> <p>Quality Score: 8</p>
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Study Number 77	Methods	Participants	Intervention
<p>Authors Esposito-Smythers, C., Spirito, A., C. W. Kahler, Monti, P., & Hunt, J. (2011). Treatment of Co-Occurring Substance Abuse and Suicidality Among Adolescents: A Randomized Trial Journal of Consulting and Clinical Psychology, 79 (6), 728 – 739.</p> <p>Aim This study tested a cognitive– behavioural treatment protocol for adolescents with a co-occurring alcohol or other drug use disorder (AOD) and suicidality in a randomized clinical trial.</p> <p>Follow-up: 3, 6, 12 & 18 months</p> <p>Treatment: Enhanced treatment as usual (E TAU) vs Cognitive Behaviour Therapy (I CBT) and motivational interviewing</p>	<p>Randomization: Via a computerized urn randomization program</p> <p>Blinding: Research assistants blind to participant treatment assignment, not clear if participants or clinicians were blind to study</p> <p>Power calculation: The small sample size limited power to detect differences and study is limited by the potential of Type 1 error.</p>	<p>Setting: out-patient treatment setting</p> <p>Gender: 68% females (n = 40)</p> <p>Age: 15.72 Mean</p> <p>Inclusion criteria: Participants were eligible for the study if they (a) were 13–17 years of age, (b) had made a suicide attempt within the prior 3 months or reported clinically significant suicidal ideation during the past month (c) had an alcohol or cannabis use disorder, and (d) lived in the home with a parent/guardian willing to participate.</p> <p>Exclusion criteria: They were ineligible if they (a) had a Verbal IQ estimate < 70 (b) were actively psychotic; (c) were homicidal; (d) had bipolar disorder; or (e) were dependent on substances other than alcohol and marijuana.</p>	<p>Person delivering intervention Clinical psychologists, master level clinicians & post-doctoral trainees</p> <p>Description: In the acute (6 months) treatment phase, adolescents attended weekly sessions and parents attended weekly to biweekly sessions. In the continuation (3 months) treatment phase, adolescents attended biweekly sessions and parents attended biweekly to monthly sessions. In the maintenance treatment phase (3 months), adolescents attended monthly sessions and parents attended monthly sessions as needed. The outpatient treatment schedule and therapeutic approach in the E-TAU condition were determined independently by community providers.</p> <p>Outcome: Relative to E-TAU, I-CBT was associated with greater reductions in days of marijuana use, and marijuana-related problems over the course of treatment.</p> <p>Biomarkers: urine tests and self-reports</p> <p>Difference: For days of marijuana use, both the main effect of treatment and the time x treatment interaction were significant, indicating a</p>

			<p>more than 60% reduction in the expected number of marijuana use days in I-CBT compared to E-TAU, with the effect significantly stronger at later follow-ups than at earlier follow-ups.</p> <p>Attrition: The follow-up assessment completion rates were as follows: 90% at 3 months, 85% at 6 months, 83% at 12 months, and 80% at 18 months.</p> <p>Quality Score: 8</p>
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Study Number 85	Methods	Participants	Intervention
<p>Authors French, M. T., Zavala, S. McCollister, K. E., Waldron, H. B., Turner, C. W., & Ozechowski, T. J. (2008) Cost-effectiveness analysis of four interventions for adolescents with a substance use disorder. Journal of Substance Abuse Treatment, 34 , 272 – 281.</p> <p>Aim The present study attempted a cost-effectiveness analysis of four interventions, including family-based, individual, and group cognitive behavioural approaches, for adolescents with a substance use disorder.</p> <p>Follow-up: 4 & 7 months</p> <p>Treatment: Cognitive behaviour therapy (CBT) + functional</p>	<p>Randomization: Urn randomization procedure which is computer adjusted</p> <p>Blinding: not clear if participants or researchers were blind to the study</p> <p>Power calculation: Small sample size was not enough power for multivariate analysis</p>	<p>Setting Substance abuse treatment centre</p> <p>Gender: 96 males, 24 females (n = 120)</p> <p>Age: Mean = 15.6</p> <p>Inclusion criteria: Youths between 13 and 17 years of age were eligible for the study if they were living at home with a primary caretaker willing to participate in the study and if they met DSM-IV diagnostic criteria for a primary substance abuse disorder.</p> <p>Exclusion criteria: Youths who reported primarily abusing only alcohol and/or tobacco were excluded. Youths and family members were also excluded if the adolescent needed services other than outpatient treatment (e.g., was dangerous to self or</p>	<p>Person delivering intervention Master graduates in clinical and counselling psychology & clinical psychologists</p> <p>Description: Adolescents were offered 12 hr of therapy in three of the treatment conditions, FFT, CBT, and the group intervention, and 24 hr of therapy in the joint intervention (i.e., 1 hr of FFT and 1 hr of CBT per week). The group intervention was designed to involve eight 90-min sessions. At therapist discretion, an additional 2 hr in each condition were available to resolve crisis situations</p> <p>Outcome: Family therapy showed significantly better substance use outcome compared to group treatment at the 4-</p>

family therapy (FFT) vs FFT alone		others, needed monitored detoxification), if there was evidence of a psychotic or organic state, or if a sibling was participating in the study	<p>month assessment, but group treatment was similar to the other interventions for substance use outcome at the 7-month assessment. It was also the least expensive intervention.</p> <p>Biomarkers: urine screening & collateral reports</p> <p>Difference: At 4 months, individuals in the group condition reported the highest percentage of days of marijuana use (55%), whereas individuals in the FFT condition reported the lowest (25%), a difference of 30%.</p> <p>Attrition: Six of these adolescents did not complete any follow-up assessments and were dropped from the analyses, yielding a final sample of 114.</p> <p>Quality Score: 8</p>
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