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A Multi Component Process Evaluation of Adolescents' Experience of the .b Mindfulness in Schools Programme

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Thesis submitted in fulfilment of requirements for the award of the degree

Doctor of Psychology

City University London

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DECLARATION

I hereby declare that this dissertation:

a) is entirely my own work and the contributions of others are duly acknowledged in the text where appropriate

b) has not been submitted as an exercise for a degree at this or any other University.

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SECTION A

PREFACE

Adolescence is a crucial transitional period in which an individual undergoes considerable changes in physical, behavioural, emotional and cognitive development (Blakemore, Choudry, & Frith, 2007). In addition to these normative development changes, adolescents are often also faced with increased stress levels across multiple domains of their lives (Rew, Johnson, & Young, 2014) e.g., school, peers, sexuality, family issues. Increasing concern about the mental health of adolescents has been met with the development of supports for young people that promote mental wellbeing and develop resilience and coping skills (Sawyer, Afifi, Bearinger, Blakemore, Dick, Ezeh, & Patton, 2012). Supporting adolescents through this developmental stage requires a great deal of understanding of human development, as well as knowledge of family, social and cultural influences that impact an adolescent's world. Clinical psychologists working in both primary care and child and adolescent mental health settings are equipped with the relevant and necessary knowledge, expertise and skills to assess psychological issues pertaining to this population as well as developing and implementing treatment programmes, depending on the needs of the young person. In addition to providing psychological assessment and therapeutic services for adolescents and their families within clinical settings, clinical psychologists have also more recently identified that mental health education and positive mental health promotion are key to assisting adolescents navigate stressors of this developmental period. Enabling schools to provide psychologically healthy environments has been proposed as one of the most effective ways to shape such education in relation to mental health and wellbeing. Due to the multiple domains of stressors and risk factors that many adolescents now face, there is now increasing demand for universal intervention strategies that specifically focus on promoting resilience (Felver, Celis-Dehoyos, Tezanos, & Singh, 2016). Accordingly, schools are now seen as the primary setting where such efforts should be focused, because of their broad reach and central roles in the lives of adolescents (Wilde, Sonley, Crane, Ford, Raja, Robson, Taylor, & Kuyken, 2019). Recent government reports suggest that universal approaches, offered to a whole school community, may have the greatest potential to promote the mental health of young people, and many such programmes now exist in schools (Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert, 2013; Weare & Nind, 2011).

In recent years, there has also been a growing body of empirical studies indicating that mindfulness based interventions (MBIs) may promote positive mental health outcomes

in adolescence (Roeser & Pinela, 2014; Schonert-Reichl & Lawlor, 2010; 2019; Tan & Martin, 2012; Wilde et al., 2017) and within a school context have been described as a generally safe and effective intervention modality (Felver et al., 2016). Training in the area of mindfulness has also become a popular area for continued professional development for clinical psychologists, with many participating in programmes such as Mindfulness Based Stress Reduction (MBSR) (Kabat-Zinn, 1994), as well as mindfulness courses at Master's Degree levels, or Mindfulness Teacher Training Programmes, and establishing personal mindfulness practice. As well as bringing the skills of mindfulness to individual clinical therapeutic work environments and delivering group mindfulness programmes to clients in clinical and community populations, clinical psychologists working in the area of child and adolescent mental health, have also begun to deliver universal mindfulness courses within educational settings, e.g., .b Mindfulness in Schools Programme (MiSP).

This portfolio aims to describe the work of a clinical psychologist in supporting adolescents in relation to mental health in a primary care setting. Positive mental health promotion roles within schools and also direct client assessment and therapeutic intervention in a clinical setting will be described.

SECTION B: A Mixed Method Evaluation of Adolescents' Experience of the .b Mindfulness in Schools Programme

Aims: The main research thesis of this portfolio aimed to evaluate adolescent's experience of the .b Mindfulness in Schools Programme (MiSP).

Objectives: This mixed method, non- randomised controlled study examined the effectiveness of the ten lesson programme with adolescents aged 15-17 years (n = 73), attending Transition Year, at four Irish post-primary schools, compared to students attending school as usual (n = 59). The study explored participation in the programme in relation to measures of depression, anxiety, anger, disruptive behaviour, self-concept, emotional regulation and mindfulness (as measured by the Beck Youth Inventories II, Difficulties in Emotions Regulation Scale (DERS) and the Five Facet Mindfulness Questionnaire (FFMQ) pre and post intervention and at 6 month follow up. Results are considered in relation to mindfulness research in general and the .b Mindfulness in Schools Programme (MiSP), in particular, and directions and recommendations for future research and practice are discussed.

Section C: Are Universal School-Based Mental Health Programmes Effective for Adolescents? A Critical Review of the Literature.

Aims: This essay aims to critically review the literature base in relation to the effectiveness of universal school-based mental health programmes.

While carrying out the literature review in relation to mindfulness- based school programmes as part of the main thesis, it was discovered that a large body of work on the implementation of other forms of mental health programmes, designed to improve the mental health, wellbeing and/or social and emotional competencies of young people (Durlak, 2015) in schools, also exists.

Objectives: In light of the development of the National Wellbeing in Post Primary Schools Programme in Ireland and also in relation to a central role played by clinical psychology in a local school-based youth mental health initiative, it was felt that it would be important to explore whether universal school-based mental health programmes are indeed effective with the adolescent population and establish any evidence base. Therefore the final section of this portfolio describes a critical review of this literature.

SECTION B

THESIS

ABSTRACT

This multi component, non-randomised controlled study examined the effectiveness of the ten lesson .b Mindfulness in Schools Programme (MiSP), with adolescents aged 15-17 years (n = 73), attending Transition Year, at four Irish post primary schools, compared to students attending school as usual (n = 59). The study explored participation in the programme in relation to measures of depression, anxiety, anger, disruptive behaviour, self-concept, emotional regulation and mindfulness, as measured by the Beck Youth Inventories II, Difficulties in Emotions Regulation Scale (DERS) and the Five Facet Mindfulness Questionnaire (FFMQ), pre and post intervention and at 6 month follow up. Repeated measures ANCOVAS revealed no statistically significant quantitative differences between the mindfulness and comparison conditions on any measure, at any time point, except that of anger $F(1, 128) = 3.78$, $p < .05$, $\eta^2 = .02$. Correlational analysis of qualitative questionnaires administered at Time 2 and Time 3, and qualitative analysis of focus group discussions post intervention suggested that students viewed this programme to be acceptable, enjoyable, beneficial and feasible. Results are considered in relation to mindfulness research in general and the .b Mindfulness in Schools Programme (MiSP), in particular, and directions and recommendations for future research and practice are discussed.

CHAPTER ONE

ADOLESCENCE AND SCHOOL-BASED MINDFULNESS BASED INTERVENTIONS:

A critical review of the literature

1.1 LITERATURE SEARCH STRATEGY

A literature search of PsychInfo, Psycharticles, Edco and Pub Med databases was conducted. Combinations of the following search items were used: Mindfulness, Adolescence, Youth, Schools, Emotional Regulation, Mental Health. A search of grey literature was also performed, e.g., contacting other researchers.

Adolescence is a developmental period characterised by both opportunity and risk (Roeser & Pinels, 2014). This time offers profound possibilities for cultivation and flourishing among youth but at the same time, adolescence can be a period of emotional and behavioural problems (Jennings, 2013). Steinberg (2010) reported that the adolescent period is marked by changes, particularly brain changes amongst the most dramatic and important to occur during the human lifespan. The importance of supporting adolescents through this transition as they build physical and mental competencies is central. The role of emotional regulation capacity has been shown to be linked to and predictive of the development of psychological difficulties in adolescence (McLaughlin, Hatzenbueler, Mennin, & Nolen-Hoeksema, 2011) and later in adulthood (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001). This literature review will discuss the role of emotional regulation and the potential role of mindfulness in relation to increasing emotional regulation capacity in adolescence, which in turn may influence improved psychological functioning and mental health. The concept of mindfulness, including definitions, skills, theories and underlying mechanisms of change will be presented. Research studies outlining the potential benefits of mindfulness-based intervention (MBI) programmes, and the possible mediating and moderating effects of same will be highlighted; this will provide an argument for the widespread teaching of mindfulness to adolescents in the school context.

1.2 ADOLESCENCE

During adolescence, extensive biological changes emerge (McClure, 2007) and emotional and psychological development is characterised by the quest for independence and identity formation. It is a time when young adolescents seek their own sense of individuality and uniqueness (Knowles & Brown, 2000). They are searching for an adult identity as well as adult acceptance, while striving to maintain peer approval. Arnett (1999) proposed three key aspects to adolescence: conflict with parents, mood disruption and risk behaviour. As young adolescents' affiliation base expands to include family and peers, feelings of conflict arise because of competing allegiances (Wiles, Crow, & Heath, 2006). Their search for identity and self-discovery may exacerbate feelings of vulnerability as they become increasingly attuned to the differences between self and others (Caskey & Anfara, 2007).

Typically the period of early adolescence is intense and unpredictable. Young adolescents have a tendency to be moody, restless and may exhibit erratic and inconsistent behaviour including anxiety, bravado, and fluctuations between superiority and inferiority (Kellough, 2008). They are also often self-conscious, prone to lack self-esteem and are highly sensitive to criticism of their perceived personal shortcomings (Scales, 2003). Emotionally charged situations may trigger young adolescents to resort to childish behaviour patterns, exaggerate simple occurrences, and display the organisation of naive opinions or one-sided argument. Emotion variability also puts young adolescents at risk to make decisions with negative consequences (Milgram, 1992).

Adolescents face many developmental challenges that can pose threats to their physical and emotional well-being, including disengagement from school, alienation from parents, body image self-consciousness, susceptibility to peer influence, pressure to engage in sexual activity and romantic relationships, participation in social risk behaviours, and heavy exposure to the media and technology that may mould behavioural expectations at odds with the values of their families and communities (Fisher, 2006; Goodman, Ghetti, Quas, & Edelstein, 2003; Rempel, 2012). Adolescents report high levels of school-related stress associated with homework, expectations for achievement and interactions with their teachers (Jacobshagen, Rigotti, Semmer, & Mohr, 2009). To meet these challenges successfully requires a high level of social and emotional competence (Jennings, 2012).

Adolescence is a period also characterised by a number of key cognitive developments, including the capacity to think abstractly (Keating, 2004) and empathise (Larson & Ammussen, 1991), which appear to involve increased executive functioning

(Nelson, Liebenluft, McClure, & Pine, 2005) and emotion regulation (Allen & Sheber, 2008). This increased capacity for abstract thinking and empathy also may engender increased potential for negative affect, rumination (Treynor, Gonzalez, & Noel-Hoeksema, 2003), and dysfunctional attitudes (Lewisohn, Joiner, & Rhode, 2001; Segal, Williams & Teasdale, 2002). When this occurs prior to full maturation of the cognitive capacities required for emotion regulation (Tharaldson, 2012), vulnerable individuals are placed at risk of psychological problems, particularly depression (Davey, Yucel, & Allen, 2008; Silk, Steinberg & Morris, 2003). Maladaptive emotion regulation has been associated with anxiety (Coan & Allen, 2004; Collishaw et al., 2010) dysfunctional attitudes (Segal, 2002), and decreased quality of life (Phillips & Power, 2007).

A recent meta-analysis estimating the global burden of mental health disorders in adolescence showed that in any given year, in the general population, at least one in every 4 or 5 adolescents suffer from a mental disorder (Patel, Flisher, Hetrick, & McGorry, 2007). The number of adolescents diagnosed with mental health disorders such as depression and anxiety is increasing (Hayes & Feldman, 2004). When youth are coping with a mental health concern, it can inhibit their ability to disregard meaningless stimuli, which results in increased distractibility, poor organisational skills, emotional dysregulation and decreased ability to focus on specific tasks (Shapiro, Carlson, Astin, & Freedman, 2006). Anxiety has been found to be the most reported pathology in childhood and adolescence (Costello & Lawlor, 2014; Semple, 2008), with a lifetime estimate of developing any anxiety disorder at between 8% and 32% (Merikangas, He, Burstein, Swanson, Avenole, & Cui, 2010). Depression is also prevalent in children and adolescents with depression rates of 18% overall and 25% in females (Hayes & Feldman, 2004).

Research suggests that adolescents who have actually attended a clinic or a psychological service and have received a diagnosis of a mental health disorder represent only a small percentage of the population of adolescents living with mental health difficulties however (Farrell & Barrett, 2007). Typically, young people only come to the attention of mental health professionals if difficulties manifest deeply and affect day to day living, e.g., not going to school, withdrawal, self-harming, not sleeping, not eating, and low mood. This finding reinforces the need for universal prevention and skills programmes that have shown efficacy in helping young people, to be made available on a wide scale, not just to adolescents highlighted to be in need of same.

As mentioned earlier, a growing number of studies propose an association between emotion regulation and a wide range of mental health outcomes in young people. Phenomena such as non- suicidal self- injury (Klonsky, 2009), depression (Yap, 2007), and

externalising disorders (Mullin, 2007), have been viewed from an emotion regulation standpoint. Adaptive emotion regulation is now assumed to be intrinsic to positive mental health and adaptive functioning generally (Rothbart, 2006). While increased emotional reactivity is a characteristic of adolescence in general, there is a great deal of individual variability in emotional reactivity and emotion regulation in this age group (Hare, Torrenham, Henning, Glover, & Casey, 2008).

1.2.1 Adolescence and Emotional Regulation

Emotional regulation is defined by Morley (2010) as the ability to flexibly activate, monitor, inhibit, persevere and/or adapt one's behaviour, attention, emotions and cognitive strategies in response to direction from internal cues, environmental stimuli and feedback from others, in an attempt to attain personally relevant goals. It is a multifaceted construct that refers to the ways in which individuals respond to and manage emotional distress (Gratz & Roemer, 2004; Gross, 1995). Much evidence indicates that efforts to avoid or control negative emotion can have paradoxical effects by increasing or intensifying these experiences (Hayes et al., 2004; Wenzlaff & Wegner, 2000).

Gratz and Tull (2010) suggest that emotional regulation involves four aspects: (1) awareness and acceptance of emotion, (2) capacity to pursue goal-directed behaviour when distressed, (3) flexible use of emotion regulation strategies to respond to difficult emotions as opposed to avoiding difficult emotions, and (4) willingness to experience difficult emotions. Individuals who experience substantial difficulty in regulating their emotional response to situations are likely therefore to experience greater and more intense psychosocial distress.

An ability to discriminate differences between discrete emotions is also related to effective emotion regulation (Larson, 2008). Greater emotion differentiation is believed to be important because the person is more likely to notice specific information related to that emotion such as an origin, making emotions easier to comprehend, understand and ultimately accept or work with. An inability to regulate one's emotions will often have a negative impact upon one’s well-being. In adult populations, researchers have found that low emotional regulation is associated with higher levels of depression, neuroticism, somatic symptomatology and stress (Dawda & Hart, 2000; Parker, Taylor, & Babgby, 2001). Studies show that emotion regulation plays a central role in the aetiology and maintenance of clinical levels of psychopathology including depression (Gross & Munoz, 1995); generalised anxiety disorder (Mennin, Heimberg, Turk, & Freco, 2002); alcohol/substance misuse (Fox, Hong, & Sinha, 2008); and borderline personality disorder (Linehan, 1993). Emotional regulation is also significantly related to social competence and one’s capacity for empathy,

ability to manage moods around others, and peer reported prosocial and antisocial behaviours (Ciarrochi, Chan, & Caputi, 2000). Aldo, Noel-Hoeksema and Schweizer (2010) conducted a meta-analysis of the relationships between emotion regulation strategies and symptoms of psychological disorders. Results revealed that maladaptive emotional regulation strategies such as rumination and avoidance were strongly associated with symptoms of psychopathology.

As outlined above, adolescence is a period of particular vulnerability to the social and emotional environment. Adolescents have a tendency to become emotionally deregulated and preoccupied with their distress and as a result, adolescent rumination often heightens tension to distress cues, amplifies rather than attenuates distress and reduces the capacity of the working memory in learning or attending effectively (Lyubomirsky & King, 2005). For young people, effective emotion regulation requires strategies to manage distress in order to meet the demands of different situations or achievement of certain goals, such as those involved in learning. Effective emotion regulation is increasingly viewed by contemporary researchers as a foundation for well-being, academic achievement and positive adjustment throughout life (Campos, 2004).

1.2.2 Opportunity in Adolescence

Despite the challenges highlighted above and the developmental and emotion regulation struggles associated with the adolescent period however, researchers also argue that adolescence is a powerful window of opportunity, because young people are intrinsically motivated in the years following puberty to become contributing adult members of an on-going cultural concern (Erickson, 1968). This developmental plasticity means that factors underlying co-construction of a healthy psychosocial identity are rather malleable during adolescence and subject to modification in relation to personal habits, choices and myriads of socio-cultural influences (Blakemore, 2014). Neurological research now also tells us that the brain is inherently adaptive, evolved into change in response to experience and intentional training and education through various forms of neural plasticity (Mind and Life Education Research Network, 2012).

As outlined above, because certain groups of mental disorders that carry significant risk of recurrence and subsequent psychological impairment evolve during adolescence and continue into adulthood (Dunn & Gooyer, 2006; Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001; Pine, Cohen, & Brook, 1999), adolescence is an appropriate point to deliver or offer intervention and skills training or development (Tharaldsen, 2012). Opportunities provided to adolescents in their own environment will promote success and serve protective factors that move that young person onward and upward to a pathway filled with confidence

and success (Schonert-Reichl, 2010). Therefore, the introduction of specialist forms of enrichment training and support for adolescents may help them navigate developmental life tasks successfully, and build lifelong skills and dispositions relating to health, well-being, academic success and social participation (Blakemore & Mills, 2014; Roeser, 2014).

Towards this end, strengthening adolescents' self-regulatory competence to regulate stress and emotional reactivity are important directions in positive youth development work (Romeo, 2010). There is a need to prioritise effective universal prevention programmes that teach effective emotion regulation skills to all adolescents, not just to those at increased risk of problems (Jennings, 2012). A mindfulness-based approach might be suited to this task as it may help adolescents to develop tools for emotional and physical balance. Consequently, there is now an increasing interest in mindfulness applications for young people and researchers have begun to examine mindfulness programmes as potential interventions for helping adolescents to manage the challenges often associated with this developmental stage (Bluth, 2015).

1.3 WHAT IS MINDFULNESS?

Deriving from the Eastern Buddhist contemplative tradition, mindfulness has received much attention in recent decades. Definitions of mindfulness are plentiful and vary widely and across disciplines (Bergomi, 2013). There is not full consensus on an operational definition of mindfulness, however, and a number of authors and commentators describe mindfulness in differing ways and from many perspectives. A consequence of this is that of potential confusion for the reader regarding whether studies are assessing the same constructs and methodological difficulties for researchers in comparing mindfulness practices and outcomes (Van Dam, 2017). The literature is filled with a proliferation of differing terms and descriptions of mindfulness, and it lacks conceptual consensus and clarity. Different schools of thought emphasise certain characteristics of mindfulness more than others, and many scholarly articles use mindfulness terms interchangeably (Brown & Ryan, 2004). Some of this lack of clarity regarding definition may be due to the inherent, elusive quality and nature of the concept of the mindfulness in general. In addition, some of the variation may be due to the inclusion of studies in the literature that describe many different types of mindfulness programmes. Despite the lack of consensus, a common theme across all descriptions however, is that of 'paying attention'. Many definitions in the contemporary psychology literature describe mindfulness as having two elements (Baer, 2015): what one does when practicing (i.e., paying attention to present moment awareness) and how one does that (the nature and qualities of the attention) (See Table 1).

One of the most widely cited and the most comprehensive of definitions is that offered by Kabat-Zinn (1994). He defines mindfulness as paying attention in a particular way, on purpose, in the present moment, and non-judgementally. This particular kind of attention is characterised by intentional present moment focus and non-evaluative observance of experience (Kabat–Zinn, 1994). Mindfulness is the psychological ability to stay wilfully present with one's own experiences, with a non-judgemental accepting attitude, engendering a warm and friendly openness and curiosity (Kabat-Zinn, 2005). For the purposes of this research this is the definition that will be adopted.

Table 1

Contemporary Psychological Descriptions of Mindfulness: What and How (Baer, 2015)

Author	What	How
Kabat-Zinn (1994, 2003)	Paying attention, or the awareness that arises through paying attention	On purpose, in the present moment, and non-judgementally With an affectionate, compassionate quality, a sense of openhearted friendly presence and interest
Marlatt and Kristeller (1999)	Bringing one's complete attention to present experiences	On a moment to moment basis, with an attitude of acceptance and loving kindness
Bishop, Shapiro, Carlson, Anderson, Carmody & Devins (2004)	Self -regulation of attention so that it is maintained on immediate experience	With an orientation characterised by curiosity, openness and acceptance
Germer, Siegal & Fulton (2005)	Awareness of present experience	With acceptance: an extension of non- judgement that adds a measure of kindness or friendliness
Linehan (2015)	The act of focusing the mind in the present moment	Without judgement or attachment, with openness to the fluidity of each moment

1.3.1 Skills Involved in Mindfulness Training

Buddhist teachings suggest that in order to move beyond embedded habits of the mind and to become free of some of the distortions and confusions to which individuals are subjected, one must train themselves to attend very carefully and deliberately to the processes by which one constructs past and future experience, in the present moment (Albrecht, Albrecht, & Cohen, 2012; Dalai Lama, 2005; Hamilton, 2000).

Learning to be mindful includes gradually acquiring the ability to be aware of and pay close attention to inner states and is developed through practise (Weare, 2013). This gradually modifies habitual mental and behavioural patterns that can often be automatic and negative, and makes way for greater mental stability and appreciation of 'what is'. Practice focuses on naturally occurring phenomena to which people have easy and immediate access, including sensations of breathing, eating, movement, sound and daily activities (Hennelly, 2011; Rapagay, Brystritsky, Dafter, & Spearman, 2011). Individuals completing mindfulness courses are introduced to a number of core mindfulness practices, e.g., sitting meditation, body scan, mindful walking and yoga. They are also introduced to the idea of informal mindfulness practice wherein awareness is focused on moment to moment experience of everyday activities such as showering, cooking or eating (Holland, 2012).

Mindfulness practice emphasises observing present events rather than comparing, evaluating or ruminating on prior experiences (Brown & Ryan, 2003) and compares to the development of an artistic talent that one develops over time and is greatly enhanced by regular, daily practice that can be sustained throughout a lifetime (Kabat-Zinn, 2003). So is mindfulness therefore a psychological skill or capacity that must be learned, acquired or developed through training and practice, or are some individuals naturally, innately or inherently more inclined to be mindful?

1.3.2. Dispositional Mindfulness

While mindfulness can be increased and improved upon through specific training (Falkestrom, 2010), individuals with no prior experience or training have been shown to display variability in mindfulness capacity (Baer, Smith, Krietemeyer, & Toney, 2006: McDonald, 2016). Individuals who score highly on measures of mindfulness may therefore possess a trait like disposition to utilise mindfulness strategies and have a greater capacity to be intentionally aware (Brown & Ryan, 2003). This psychological trait, dispositional mindfulness, reflects an individual's capacity and tendency to 'abide in mindful states over time' (Brown, Ryan & Creswell, 2007, p.218). Thus, an individual who is dispositionally higher in mindfulness, experiences mindful states relatively frequently, with greater intensity

and for longer periods of time (Pepping & Halford, 2016). This enhanced capacity to attend to the present moment, provides cognitive and behavioural flexibility, which allows for more adaptive reposes to situations, as opposed to responding in automatic, habitual, impulsive or otherwise unhelpful manners (Baer, 2003; Bishop et al., 2004; Brown et al., 2007; Gratz & Roemer, 2004). Shapiro et al. (2006) showed that compared to controls, participants with higher levels of baseline trait mindfulness demonstrated greater improvements in mindfulness, subjective wellbeing, empathy and hope, and larger decreases in perceived stress, up to one year post mindfulness intervention.

The frequency and ease with which a person enters the state of mindfulness varies between individuals, even those with naturally mindful dispositions. This reflects both naturally occurring trait like characteristics (Baer et al., 2006; Brown & Ryan, 2003), as well as skills (Linehan, 1993), which can be developed through practise (e.g., Carmody & Baer, 2008; Kuyken, Hayes, Barrett, Byng, Dagleish, & Kessler, 2015). Individual differences may also alter the relative importance of the individual components of mindfulness (Uusberg, Uusberg, Talpser, & Paaver, 2016); for instance, once mindful attention and attitude becomes habitual through persistent practice, deliberate intention ceases to be required (Chiesa, 2013; Lutz, Herwig, Opialla, Hittmeger, Jancke, Refur, Holtforth, & Bruhl, 2014).

1.3.3 The Benefits of Mindfulness

There is increasing evidence to suggest that mindfulness training has a positive impact on a range of outcomes (Holland, 2012). This cultivatable skill has now been used quite extensively and been proven to be effective with clinical populations and non-clinical populations of adults, in the treatment of a range of chronic stress and pain-related disorders (Kabat-Zinn, Lipworth & Burney, 1985; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000) and in the cultivation of enhanced emotional well-being and mental health (Fang, Reibel, Longacre, Rosenzweig, Campbell, & Douglas, 2010; Tan & Martin, 2010).

John Kabat- Zinn some 30 years ago was the first to introduce mindfulness as a resource into clinical research and practice through the Mindfulness-Based Stress Reduction Program (MBSR), for the treatment of many disorders, including chronic pain. The MBSR programme became the parent to several variations such as the Mindfulness Based Cognitive Therapy (MBCT) (Segal, Williams, & Teasdale, 2002), which combines MBSR with aspects of Cognitive Behavioural Therapy and is specifically designed for patients with recurrent clinical depression. Segal's collaboration with Safran (Segal & Safron, 1990) regarding interpersonal schemas recognised the usefulness of 'decentring' from cognitions rather than trying to remove or change them. This viewpoint was complimented by Teasdale's interest

in ‘differential activation’, a way of short-circuiting attention given to negative cognitions, in attempts to reduce low mood. Their coming together, with Williams with whom they all shared a theoretical, as well as a practical interest in the factors that make people vulnerable to depression and the prevention of relapse brought together the final elements to the MBCT programme (Mace, 2008). MBCT added training in specific cognitive skills to the framework of the MBSR, and while it is very similar in content, it is usually taught in smaller groups and places marginally less emphasis on bodily movement. Both MBSR and MBCT courses are of eight weeks duration, led by experienced practitioners and are designed to cultivate mindful awareness through psycho education and experiential breathing and meditation opportunities. MBSR and MBCT are experiential learning programs that include weekly group sessions, regular home practice, and include formal mindfulness practices, e.g., body scans, sitting, movement and walking meditations, and informal mindfulness practice whereby participants intentionally bring mindful awareness to activities of daily living.

Mindfulness has also been included in other Cognitive Behavioural Therapies, such as Acceptance and Commitment Therapy (ACT) (Hayes, Stosahl & Wilson, 1999), and Dialectical Behaviour Therapy (DBT), (Linehan, 1993). The emphasis of these mindfulness programmes lies on acceptance as well as on change (Dryden & Still, 2006; Kabat-Zinn, 1990). DBT was the first of other therapies to incorporate mindfulness. The skills learned are divided into acceptance skills (in the form of mindfulness and distress tolerance) and change skills (regulation of emotion and interpersonal skills). Mindfulness is the first of the skills taught and referred back to in the learning of all other skills. ACT also includes mindfulness in the therapeutic strategies they offer to clients. The ACT therapeutic menu offers six main headings, four of which are acknowledged to be Mindfulness functions (e.g., acceptance, contact with the present moment, cognitive diffusion and self as context; Mace, 2008).

The application of mindfulness-based interventions (MBIs) has become increasingly popular in the last ten years, both in research and practice (Cullen, 2010; Zenner, 2014). Mindfulness research evidence demonstrates many positive benefits (Brown & Ryan, 2003), and many new mindfulness programmes with additional and alternate focus are gaining popularity, e.g., Mindfulness and Loving Kindness (Lutz, 2009), Mindfulness and Self -Compassion (Neff, 2012) and Heartfulness (Pollack, 2018). Typically in MBIs, mindfulness is reconceptualised and its Buddhist ethical foundations are not explicitly taught. Some newer second generation MBIs, however, are explicitly teaching the foundations of Buddhism: Spiritual Self -Schema Therapy (Marcotte, Avants, & Margolin, 2011), which is utilised in the addiction fields, and Meditation Awareness Therapy (Shonin, van Gordon, &

Griffiths, 2014), which aims to improve work related wellbeing and performance. There are some recent concerns however about the use of mindfulness programmes in the corporate and work setting, so called "McMindfulness", when practice and training can sometimes be removed from ethical foundations.

In several reviews and meta-analyses, MBIs have proved to be effective for a wide range of stress-related clinical problems and disorders for various disease groups and conditions (Fjorback, Arendt, Ornbol, Fink, & Walach, 2011; Grossman, Niemann, Schmidt, & Walach, 2004; Piet & Hougaard, 2011). Studies show that mindfulness is effective in alleviating symptoms of distress and a range of conditions, including anxiety (Carmody & Reed, 2008); depression (Brown & Ryan, 2003; Chambers, Gullone, & Allen, 2009; Keng, Smozski, & Robbins, 2011); chronic pain (Arius, 2006; Morone, Greco, Tindel, & Weiner, 2008); high blood pressure (Carlson et al., 2007); and eating disorders (Kristeller, 2006).

In addition, an interesting aspect of MBIs is the potential preventative and health promoting capacity it has shown in non-clinical populations; reducing stress, increasing well-being and strengthening immune systems (Chiesa, Serretti, & Berth, 2009; Davidson, Kabat-Zinn, Schumacher, Rosenkanz, Miller, & Santorelli, 2003; Ebert & Sedlemer, 2012); promoting personal developments, self-compassion, empathy and perspective taking (Birnie, 2010; Shapiro, Swartz, & Bonner, 1998, 2007); and increasing attention capacity (Chambers et al, 2008; Feng & Lu, 2007; Jha, Krompinger, & Baime, 2007; Tang, Ma, Wang, & Fan, 2007). MBIs have also been shown to be of benefit in relationship counselling (Carson, 2004); prison interventions (Samuelson, Carmody, Kabat-Zinn, & Bratt, 2007); and sleep clinics (Winbush, Gross, & Kreitzer, 2007).

Mindfulness evaluation has also become aligned with neuro-scientific research whereby brain imaging studies in adults show that even short-term mindfulness meditation can reliably alter the structure and function of the brain, including greater blood flow and increased synapse connections associated with attention and emotional integration, learning, memory and self-awareness (Davidson & Lutz, 2008). Caution must be exerted in interpreting these findings however (Van Dam, 2017); similar changes have been observed following other forms of mental and physical skill acquisition, such as learning to play musical instruments and learning to reason, suggesting that they may not be unique to mindfulness or meditation practice (Draganski & May, 2008).

The potential for mindfulness to be used as a tool to improve emotion regulation was one of the foundational questions asked in early meditation research (Allen et al., 2006). Neuroscience has further investigated this area and suggests that one way in which meditation assists people in developing emotion regulation is through its effect on increased

activity in the Anterior Cortex (ACC) (Chan & Polich, 2006; Lutz, Slagter, Dunne, & Davidson, 2000; Zeidan, Martucci, Kraft, Gordon, MaHaffie, & Coghill, 2011). The ACC is thought to play a role in processing emotion, empathy and conflict. Increased activity in this region may account for the emotional regulation commonly reported as the product of meditation (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Golden & Gross, 2010). In addition to the link between meditation and increased activity in the (ACC), research is showing a link between meditation and the thickness of the (ACC). Grant, Coutemanche, Dueden, Duncan, & Rainville (2010) found increased cortical thickness of the (ACC) of 17 long-term mediators compared to 17 controls. In similar findings, Holzel (2011) observed changes in grey matter density tracked over an eight-week MBSR intervention with adults.

Psychological studies generally focus on measuring whether an intervention works or not using specific self-reported outcome measures. While it is important to know if a psychological intervention such as mindfulness is effective, it is also important to know which parts of the intervention work and for whom they work. So how does mindfulness achieve such benefits and what are the mechanisms at play? With the increasing use of mindfulness in a broad variety of settings, researchers are now interested in exploring further, the possible explanations for its effectiveness.

1.3.4 Theories of Mindfulness

A number of theoretical perspectives have been proposed to explain the concept of mindfulness. As outlined earlier in relation to definitions of mindfulness however, there is often overlap and interchangeable use of terminology in the literature with some authors citing certain elements and descriptions as theories, while others describe similar aspects as processes, models, definitions or mechanisms of change. This limits the potential of studies to inform specific theories and no one theoretical model can describe, explain and predict all of the phenomena stemming from the panoply of facets that mindfulness broadly construed can have (Van Dam, 2017), and new integrated models are needed. What is clear however is that the concept of mindfulness comes from the ancient Buddhist tradition and is most firmly rooted in Buddhist psychology and spiritual teachings. In the West it has been adapted however into a secular discipline (Meiklejohn, Phillips, Freedman, Griffin, Biegal, & Roach, 2012).

Buddhism Theory

The essence of Buddhist teaching, accepted by all schools, is expressed in the Four Noble Truths. These are that life brings suffering, that there are causes of this suffering, that suffering can end, and that there is a path by which it may be ended (Mace, 2008). It is in the

elaboration of the last truth, in descriptions of how liberation might be attained, that mindfulness comes to the fore. There are two branches of Buddhism: Theravada and Mahayana. Vajrayana or Tibetan Buddhism although technically a part of Mahayana, functions as a third branch, with differing practices (Smith &Novak, 2003). Most Western meditation practices are rooted in the Theravada branch. Vipassana or 'seeing clearly' also known as insight, is comprised of meditation practices based on the aatipattana sutta, the four foundations of mindfulness. 'This is the sole way, monks, for the purification of beings, for the overcoming of sorrow and lamentation, for the destroying of pain and grief, for reaching the right path.' (Thera, 1965, p.139).

In Theravadan Abhidhamma (Buddhist Psychology), mindfulness includes the concept of sati, defined as one of the 19 'beautiful' mental factors whose function is the absence of confusion or non-forgetfulness. It is referred to as a 'kind of attentiveness...that is good, skilful and right' (Thera, 1965, p.9). Many contemporary Buddhist teachers now use the term mindfulness in a more comprehensive way than simply having vispanna/insight and seeing clearly or lacking confusion, sati (Cullen, 2011). Many see mindfulness being more broadly construed to include sampajanna (clear comprehension) and appamada (heedfulness). This wider description of mindfulness can also further include the four brahma viharas, often called the immeasurable or sublime states and include: loving kindness, compassion, sympathetic joy and equanimity.

Grabovac, Lau and Willet (2011) proposed a new approach to explain mindfulness based on Buddhist psychological theories, which they have termed the Buddhist Psychological Model (BPM). In summary, the BPM holds that the subjective sense of a continuous stream of consciousness is made up of numerous discrete sense impressions and mental events, most of which occur outside one's awareness. Habitual reactions of attachment and aversion to pleasant, unpleasant and neutral feelings of prior sense impressions and mental events are expressed as proliferation of mental events. All sensory and mental events are seen to share the three characteristics: impermanence, suffering and not self (Nyanaponika, 2010). Moreover, suffering, including clinical symptoms, is a direct result of the habitual attachment layers in reaction to a transient feeling and its concomitant mental proliferation.

Although the BPM does not focus on symptom reduction, since this is not the aim of Buddhist practices, reduction in symptoms resulting from practices such as mindfulness meditation is explainable as a reduction in these habitual reactions and resulting mental proliferation. From the BPM therefore, improvement in wellbeing occurs when sensory and mental events are allowed to naturally arise and fall away, without subsequent cognitive

processing arising from either attachment or aversion. Sense impressions and mental events are still experienced as pleasant, unpleasant or neutral; however, if there is no attachment, aversion and thus no mental proliferation, adventitious suffering is not experienced. The BPM advocates that the inclusion of four key elements in MBIs may result in enhanced efficacy of such interventions. These elements include: development of insight, acceptance, attention regulation and theoretical transparency (helping clients to understand the theory).

The Intention Attention Attitude Model

Shapiro et al.'s (2006) theory of mindfulness identifies clear mental processes and brain mechanisms that might facilitate insight and adaptive personal change, such as psychological distancing and re-perceiving. Their theory covers three core elements: 1. Intention, which involves knowing why one pays attention or a conscious direction and purpose; 2. Attention or the direct moment to moment knowledge of what is happening as it is actually unfolding and 3. Attitude, which describes how one pays attention, referring to the accepting, caring and discerning qualities of mindfulness. This leads to a change in perspective and allows for a re-perceiving and changes or shifts in the following: self-regulation; emotional, cognitive and behavioural flexibility; values clarification and exposure. A later study by Carmody, Reid, Kristeller and Merriam (2009) found some empirical evidence in support of this theory.

The Theory of Reflexive Self-Consciousness

The most extensive treatments of the role of attention in day to day life come from theories of self- awareness (Buss, 1980; Carver & Scheier, 1998; Duval & Wickund, 1972), whereby attention is viewed along three dimensions: Attention Strength, Attention Direction and Attention Quality (Brown, 2007).

Attention Strength, Direction and Quality vary widely from absence (e.g., daydreaming) to acutely active alertness. Theorists generally agree that a high level of attention is needed for effective emotion regulation. Individuals need to be attentive to inner states and outward behaviour to pursue reflectively considered goals. Effective functioning and healthy emotional responses require this attention strength and direction. The effect of such processing is to introduce a mental gap between attention and its objects. This resembles de-coupling, decentring and de-embedding in the mindfulness field whereby aspects of attention and self- regulation in themselves facilitate change (Martin, 1997).

Theories of Integrative Awareness

Integrative awareness involves an openly explorative attention and awareness for gathering information and developing insights, thereby facilitating wellbeing and adaption (Brown, 2007). This mirrors some of the processes and skills of mindfulness practice. Gestalt approaches focus on presence, in which 'relaxed' attention , rather than effortful, control oriented attention, permits the creation of a fertile 'void' from which what is salient in the present moment will spontaneously emerge. This Integrative Gestalt process is thought to be the key to healthy self- regulation (Perls, Hefferline, & Goodman, 1958).

The Integrative Awareness Theory is also central to the Self Determination Theory (Deci & Ryan, 1980; Ryan & Deci, 2000). Within the Self Determination Theory view, awareness, defined as a relaxed and interested attention to what is occurring, is critical to integrated function (Deci & Ryan, 2000; Hodgins & Knee, 2002). Chang, Huang and Lin (2015) revealed support for this theory where in two studies, they found that mindfulness was positively related to wellbeing, and that basic psychological needs fulfilment mediated the relationship between mindfulness and wellbeing.

Kuhl and Kazen (1994) offer a further theory of Integrative Awareness, with their Personality Systems Interaction approach. Their theory suggests that healthy self- regulation involves both the capacity for self- representation and a reflective self-compatibility checking. This holistic, open processing bares similarities to mindfulness (Brown, 2007).

While all of the above theoretical models may come from differing backgrounds and perspectives, all share the view that the one basic theoretical premise for the construct of mindfulness is based on the concept of Attention. An open, non-judgemental attention which helps facilitate space for an individual to re-perceive, accept and in turn improve or facilitate healthy emotion regulation, flexibility and integrated functioning. This also concurs with information outlined earlier in Table 1 illustrating descriptions of the mindfulness process and how it is achieved, to also primarily relate to the concept attention. It was not possible to find further empirical support or an evidence base in relation to all theories posited above, in the literature however. This was complicated by the use of varying terminology, as mentioned earlier, and a general lack of clarity regarding whether descriptions offered were mere opinions of authors or based on empirical conclusions. What does appear to be described more clearly in the literature however are the proposed mechanisms of change involved in mindfulness.

1.4 MECHANISMS OF CHANGE IN MINDFULNESS

Several models of change have been proposed to explain the processes by which MBIs exert their physical, psychological and emotional effects. Each model posits one or more possible mechanism of change. Collectively these models further our understanding of specific aspects of mindfulness; however, no one model appears to be sufficiently comprehensive in describing the entire mechanisms of this change process (See Table 2).

Table 2

Theoretical Models and Proposed Mechanisms of Mindfulness and MBIs

Baer (2003)	Brown et al. (2007)	Coffey et al. (2010)	Grabovac et al. (2011)	Hayes and Feldman (2004)	Holzel et al.(2011)	Shapiro et al. (2006)	Teasdale et al. (1995)	Vago and Silbersweig (2012)
Decentring Self - Management Acceptance	Decentring Non attachment Self - Regulation	Emotion regulation Reduced rumination Non attachment	Attention regulation, Non attachment Acceptance	Attention Regulation Emotion regulation Reduced rumination	Decentring Change in perspective on the self. Attention regulation, Emotion regulation Increased body awareness,	Decentring Re-perceiving Self - Regulation Emotional, cognitive and behavioural flexibility	Decentring Reduced rumination	Self - Regulation Increased Self - awareness, Self-transcendence (self; other connection).

The authors in Table 2 propose a number of mechanisms of change as a result of mindfulness training and practice and highlight some possible specific processes that may facilitate benefits and change, either directly or indirectly across the following headings:

Decentring/Insight: Five authors highlight that one process that may be developing through mindfulness training and practice is the skill of insight (Brown et al., 2007). Mindful processing with observant qualities and perceptual flexibility encourages the development of metacognitive insight. This insight comes from enhancing a decentred perspective on the

self and life (Baer, 2003; Holzel, Lazar, Gard, & Schumann-Olivier, 2011; Teasdale et al., 1995), and a re-perceiving or change in perspective (Shapiro, 2006). This re-perceiving may then lead to a change of perspective on life events and the self (Holzel et al, 2011; Vago & Silbersweig, 2012).

Decreased Rumination: Teasdale et al. (1995) suggested that mindfulness training is effective because it reduces maladaptive rumination. People are more likely to ruminate when important goals are blocked (Martin & Tesser, 1989). Teasdale theorised that mindfulness defuses the cognitive interlock that occurs automatically during maladaptive rumination. Hayes and Feldman (2004) and Coffey, Hartman, & Friedrickson (2010) also concluded that mindfulness training and practice reduced general psychopathology by reducing maladaptive rumination and increasing adaptive rumination.

Improved Emotional and Attention Regulation: Mindfulness training was also reported to enhance mind functioning by improving emotion regulation (Coffey et al., 2010; Hayes & Feldman, 2004; Holzel et al., 2011). Mindfulness practice can enhance emotion regulation abilities by decreasing both over-engagement (e.g., rumination and entanglement) and under-engagement (e.g., avoidance) with emotions and facilitating healthy, adaptive engagement that promotes clarity and functional use of emotional responses. In addition, improved attention regulation was also described by authors (Grabovac et al., 2011; Hayes & Feldman, 2004; Holzel et al., 2011), who suggest that honing the skill of attention during mindfulness training may increase overall attention regulation which in turn facilitates exposure, retrieval and reconsolidation during unpleasant emotional and bodily experiences, leading to an overwriting of previously learned stimulus response associations.. Vago and Silbersweig (2012) describe similar mechanisms at play but use the broader term of Self-Regulation.

Non Attachment: Classical Buddhism teachings suggest that a great deal of human suffering is influenced or caused by a perceived need for things to be other than they are (Ekman, Davidson, Ricard, & Wallace, 2005). Attachments are objects or outcomes that people believe they must have to be happy (McIntosh, 1997), e.g., positive experiences or avoidance of negative emotions (Dali Lama & Cutler, 1998; Hanh, 1998). Mindful non-attachment facilitates a letting go of aversion, craving or any mental proliferation associated with such desires (Brown, Ryan, & Creswell, 2007; Coffey et al., 2012; Grabovac et al., 2011). This in turn facilitates an acceptance and willingness to be with whatever is there, in terms of feelings, thoughts and body sensations (Baer et al., 2003; Grabovac et al., 2011). As mentioned under Theories of Mindfulness section, mindfulness brings openness and acceptance. It encourages a disengagement from judgement and self-concern to create a

‘mental gap’ or a ’step outside’. This observant, accepting stance brings integration and choice to behave in more purposeful ways (Baer et al., 2003); bringing increased self - awareness (Vago & Sibersweig, 2012); body awareness (Holzel et al., 2011) and improved coping (Baer et al., 2003) and flexibiltiy; (Shapiro et al., 2006). It has been suggested in later studies that some of the processes and/or outcomes of mindfulness training may be evident on a continuum, suggesting gradual growth with practice over time, and some may emerge only in experienced practitioners (Van Vugt & Slagterr, 2014).

A systematic review and meta-analysis of MBCT and MBSR (Gu, Strauss, Bod, & Cavanaugh, 2015) was the first to identify and evaluate the strength and consistency of evidence for mechanisms underlying the effects of MBIs. This review found strong consistent evidence for cognitive and emotional reactivity, moderate and consistent evidence for mindfulness, rumination and worry and preliminary but insufficient evidence for self-compassion and psychological flexibility, as mechanisms underlying mindfulness. Further analysis demonstrated evidence for mindfulness, rumination and worry as significant mediators of the effects of MBIs on mental health outcomes. While included studies were shown to have some key methodological shortcomings, this review provides valuable insights into the potential causal pathways connecting MBIs and psychological outcomes (Gu et al., 2015).

Vader Velden, Kuyken, Wattar, Crane, Pallesen, Dahlgaard, Fjorback and Piet (2015) conducted another systematic review of the literature to assess the field’s progress in understanding the mechanisms of change in MBCT for recurrent Major Depressive Disorder. Utilising 23 studies, 12 found that changes in mindfulness, rumination, worry, self- compassion, decentring or meta awareness mediated the effect of MBCT on treatment outcome. Two out of three studies found decreased rumination to mediate treatment outcome and two out of two studies found decreased worry to mediate outcome. In addition, preliminary studies indicated that alterations in attention, memory specificity, self - discrepancy, emotional reactivity and momentary positive and negative affect might play a role in how MBCT exerts its clinical effects. This supported an earlier meta-analysis by Piet and Hougaard (2011) who found that MBCT reduced the risk of relapse by 34% compared to Treatment as Usual (TAU) or placebo controls. Results of their study indicated that MBCT may be as effective as prophylactic treatment with maintenance antidepressant medication for patients with recurrent Major Depression Disorder in remission.

Overall, findings of the above systematic review and meta-analysis offers support for aspects of many models presented in Table 2. However, it appears that no one model incorporates all of the factors and elements identified as potential change mechanisms,

although Baer et al. (2003) and Shapiro et al. (2006) include many of these. It is also not clear from the literature as to whether any one model of mindfulness is more prominent, with most studies citing combinations of aspects of many models. In addition, the above processes were identified in studies with adult populations and it is not clear if the same mindfulness mechanisms are present or at play with adolescents.

1.4.1 Mindfulness and Moderators

In addition to identifying possible mechanisms of change brought about through the concept of mindfulness however, there is a need to examine which variables that may influence (moderate) any MBI's effects. Moderators include treatment duration (Hofmann, 2010; Sedlmeier, Eberth, Schwartz, Zimmerman, Haarig, & Jaeger, 2012); homework practice (Carmody & Baer, 2007; Fjorback, Arendt, Ornbol, Fink, & Wallach, 2011); course attendance (deVibe, Bjorndal, Tipton, Hammersterom & Kowlalski, 2012) and the clinical and mindfulness training and practical experience of facilitators of the mindfulness programmes (Carmody, 2009; Crane, Barnhofer, Hargus, Amarisinghe, & Windsor, 2010; Davidson, 2010; Fjorback et al., 2011; Piron, 2001; Pradham, Baumgarten, Langenberg, Handwerger, Gilpin, & Magyari, 2007; Segal et al., 2002).

Carmody and Baer (2007) investigated the relationships between home practices of mindfulness exercises and levels of mindfulness, medical and psychological symptoms, perceived stress and psychological wellbeing. They found that time spent engaging in home practice of formal meditation exercises was significantly related to extent of improvement in most facets of mindfulness and several measures of symptoms and wellbeing. Increases in mindfulness were found to mediate the relationship between formal mindfulness practice and improvements in psychological functioning. A more recent study however of mindfulness interventions (Khoury, Lecomte, Fortin, Masse, Therien, Bouchard, Chapleau, Pacquin, & Hofmann, 2013) outlined that better efficacy predictors may be the attendance and the actual duration of the home meditation practice, as these reflect motivation and may indicate if participants find intervention useful (Carmody & Baer, 2008; deVibe et al., 2012; Toneatto, Vetesse, & Nguyen, 2007).

There is uncertainty in the literature about moderators such as therapist /facilitator training. Khoury et al. (2103) observed that a therapist's experience with mindfulness, but not their general clinical training, moderated clinical outcomes at the end of treatment. This is similar to Pradham et al. (2007), who suggested that therapists' experience of mindfulness might have a direct or indirect effect on the clinical outcomes of participants. In a very recent systematic review of mindfulness studies with adolescents, McKeering and Hwang (2019) reported the importance of training for facilitators of any MBI. They highlighted

however that many studies provided very little detail about facilitator training or experience. Of the 13 studies reviewed, facilitators were either a teacher or an external facilitator. Five reported the instructor had a long-standing personal mindfulness practice. In addition, seven studies reported that the intervention was delivered by more than one instructor making it difficult to ensure consistency or fidelity of the intervention programme.

Experts in the field of mindfulness advise that facilitators should be trained in mindfulness, obtaining at least one MBSR or MBCT experience and undertaking a Teacher Training course for Mindfulness. Requirements for MBSR teachers and good practice guidelines for MBCT teachers include an established and ongoing personal mindfulness meditation practice, professional training, regular supervision, attendance at teacher led silent meditation retreats and ongoing professional development (Centre for Mindfulness 2009; Centre for Mindfulness Research and Practice, 2009). Unlike other conventional psychotherapies, MBCT guidelines strongly recommend that clinicians /trainers develop their own personal meditation practice (Ruths, De Zoysa, Frearson, Hutton, Williams, & Walsh, 2013). Segal et al. (2002) viewed a personal meditation practice as an essential requirement for MBCT and the Centre for Mindfulness at the University of Massachusetts recommended a minimum of three years personal mediation practice prior to receiving MBCT training. The Good Practice guidelines for teaching MBIs developed by the UK Network for Mindfulness share this position (Prowse, 2015). Without the requisite training and experience in mindfulness, treatment fidelity cannot be assured (Burke, 2009). It is suggested that unless the teacher is able to authentically deliver the teachings with his or her own experience and insights, this does not help participants (Crane et al., 2010; Kabat-Zinn, 1990), although the grounds or evidence upon which these recommendations are based are unclear and there is no research to date that has focused on evaluating the impact of MBI training experience on fidelity, adherence or outcomes. What is clear however is the need for any facilitator or trainer to abide by professional codes of ethics and standards of conduct frameworks (Baer, 2015). This may be especially important and potentially problematic when facilitators and trainers are not from health care or mental health professional backgrounds (Crane et al., 2010).

Investigation into treatment fidelity and adherence remains an under researched area (Prowse, 2015). Some studies focusing on MBSR and MBCT have developed adherence scales to assess levels of treatment fidelity and promote further understanding of the intervention effectiveness (Crane et al., 2012; Fjorback et al., 2011). Towards this end, Prowse et al. (2015) investigated the effectiveness of the MBCT assessment scale MBCT – AS tool to measure treatment fidelity in the delivery of the MBCT programme. Results indicated that therapists maintained high treatment fidelity to the MBCT model. In addition,

the level of experience of the facilitator did not appear to influence fidelity, with even low experienced clinicians displaying high adherence.

In order to examine and understand the effectiveness or benefits of the mindfulness construct or training, or the mechanisms or processes through which these benefits and changes are achieved however, it must be possible to measure or quantify such changes.

1.5 MEASURING MINDFULNESS

The measurement of mindfulness skills also reflects a diversity of definitions, with self-report scales ranging in complexity from one factor (Brown & Ryan, 2013) to five (Baer, 2006) and more recently to 8 facets (Bergomi, Tschacher, & Kupper, 2013). In general however these scales relate to the mindfulness skills and processes highlighted in many of the theoretical models described in Table 2.

Over the past sixteen years, at least ten main mindfulness self -report measures have been developed and are employed in psychological research (see Table 3). While the availability of a variety of measures of mindfulness can be beneficial for research, many of these scales differ however with respect to fundamental aspects of mindfulness constructs and this constitutes difficulties for comparing and replication of research findings (Baer, Smith & Allen, 2004; Bergami, Tschacher, & Kupper, 2012; Brown& Ryan, 2003; Brown, Ryan, & Creswell, 2007; Cardaciotti, Herbert, Forman, Moitra, & Farrow, 2008; Malinmowski, 2008).

The eight currently available mindfulness measurement scales incorporate nine subscales including: 1. Observing, attending to experiences; 2. Acting with awareness; 3. Non-judgement, acceptance of experiences; 4. Self- Acceptance; 5. Willingness and readiness to expose oneself to experiences, non-avoidance; 6. Non reactivity to experience; 7. Non identification with own experiences; 8. Insightful understanding and 9. Labelling or describing (Bergami, 2012). No scale includes all of the nine aspects of mindfulness outlined however.

Table 3

Mindfulness Measurement Scales

The Mindful Attention Awareness Scale (MAAS)	Brown & Ryan (2003)
The Mindful Attention Awareness Scale for Adolescents (MAAS-A)	Brown & Loverich (2011)
The Mindful Attention Awareness Scale for Children (MAAS-C)	Lawlor, Schonert-Reichl, Gadderman, & Zumbon (2014)
The Cognitive and Affective Mindfulness Scale R (CAMS-R)	Feldman, Hayes, Kumar, Greeson, & Laurenceau et al (2007); Hayes & Feldman (2004)
The Southampton Mindfulness Questionnaire(SMQ)	Chadwick (2008)
The Freiburg Mindfulness Inventory (FMI)	Buchheld, Grossman and & Walach (2001); Walach, Buchheld, Buttenmuller, Klennect, & Schmidt (2006)
The Kentucky Inventory On Mindfulness Scale (KIMS)	Baer et al. (2004)
The Five Facet Mindfulness Questionnaire (FFMQ)	Baer et al. (2006)
The Philadelphia Mindfulness Scale (PHLMS)	Cardaciotto et al. (2008)
The Toronto Mindfulness Scale (TMS)	Lau & Hue (2006)
The Child and Adolescent Mindfulness Measure (CAMM)	Greco, Baer & Smith (2011)
The Comprehensive Inventory of Mindfulness Experiences (CHIME)	Bergomi et al. (2014)
The Comprehensive Inventory of Mindfulness Experiences –Adolescents (CHIME-A)	Johnson et al. (2016)
The Adolescent and Adult Mindfulness Scale	Droutman, Golub, Oganesyan, & Read (2018)

All scales presented have been shown to have satisfactory to good internal consistency (Baer et al., 2009; Johnson et al., 2007). Evidence for their predictive validity however, is still scarce (Bergomi et al., 2012). Other issues with mindfulness measurement include the fact that scores on mindfulness questionnaires have also been shown to increase in non-mindfulness conditions and control groups. In relation to the FFMQ specifically, Gu et al. (2016) explored a well-documented pattern of findings for the factor structure of the FFMQ. In samples with meditation experience, studies have consistently supported a five-factor hierarchical model, in which all five subscales can be parsimoniously understood as elements of an overarching mindfulness construct. However, in samples without meditation experience, the Observing subscale often shows inconsistent relationships with the other subscales and does not load significantly on the overarching mindfulness construct. This pattern suggests that attention to present-moment experience can be reactive and judgmental (inconsistent with mindfulness) or open, curious, and accepting (consistent with mindfulness). Judgmental, reactive observation tends to be correlated with maladaptive psychological functioning, whereas mindful observation, which appears to develop with meditation experience, shows the opposite pattern (Baer, 2008; Baer et al., 2006). These findings suggest that the factor structure of the FFMQ may change over the course of mindfulness-based treatment, as participants learn to bring more mindful qualities to their present-moment observation.

Research using some self-report measures of mindfulness has pointed out a potential disparity between how mindful individuals believe themselves to be and how mindful they really are (Grossman & Van Dam, 2011). As with all psychological self-report measures, other difficulties include the fact that individual responses to questionnaire items may vary as a function of differential understanding of the questionnaire items (Grossman, 2008), which may depend on the extent of an individual's exposure to the idea or practice of mindfulness (Keng, Smoski, & Robbins, 2011). It appears the field however is becoming closer to the development of more suitable scales, which is essential for research in this area in order to provide a solid theoretical and methodological grounding.

1.6 MINDFULNESS AND EMOTIONAL REGULATION

Given that many studies outlined earlier highlight that the root of a number of psychological difficulties and mental health disorders may lie in the core concept of emotion regulation, is there a role for mindfulness in addressing this area?

Dispositional mindfulness is associated with less neural activity and less reactivity in response to emotional stimuli (Creswell, Eisenberger, & Liebermans, 2007) and greater activity in the systems of the brain associated with cognitive control emotion (Modinos, Orel, & Aleman, 2010). Theoretically mindfulness should therefore facilitate adaptive emotion regulation, which should in turn reduce psychosocial distress and increase interpersonal relationship functioning.

In studies with adults, higher dispositional mindfulness is associated with adaptive emotion regulation ability, greater capacity for acceptance of negative emotion and greater access to emotion regulation strategies (Baer et al., 2004; Brown & Ryan, 2003; Pepping, O'Donovan, & Davis, 2013). Higher levels of mindfulness have been associated with less reactivity to threatening emotional stimuli (Arch & Craske, 2010); stronger affect regulatory tendencies, greater awareness, understanding and acceptance of emotions, and a greater ability to correct or repair unpleasant mood states (Brown, 2007); less repetitive and recurrent depressive thinking following sad mood induction (Kuyken, Byford, Bying, Dagleish, Lewis, & Taylor, 2010) and brain processing associated with reduced reactivity (vanden Hurk, Giommi, Gielen, Speckens, & Barendregt, 2010).

Pepping et al. (2014) found that emotion regulation deficits are implicated in many forms of psychosocial distress. In their two studies, they examined whether non-acceptance of emotions and limited access to emotion regulation strategies were the processes underlying the association between low mindfulness and depression, anxiety, stress, general psychological symptoms, interpersonal distress and social role difficulties in a student sample and clinical sample. Their studies found indirect associations between mindfulness and symptom distress, interpersonal distress, social role difficulties, depression, anxiety and stress through a lack of access to emotion regulation strategies. In brief, they concluded that emotion regulation difficulties are at least part of the process underlying the association between low dispositional mindfulness and psychosocial distress. If mindfulness helps bring more awareness of all the factors involved in creating emotional mental states, mindfulness may also then be helpful by increasing this awareness (Errisman & Roemer, 2010), and more specifically, awareness of subtle differences between emotional experiences in the present moment.

Hill, Belancio and Blask (2015) also concluded that mindfulness was associated with greater emotional differentiation, the ability to define and describe different emotions, and less emotional difficulties in a youth population. Mediation models indicated that the relationship between mindfulness and emotional lability was mediated by emotional differentiation. Furthermore, emotion regulation mediated the relationship between

mindfulness and both negative emotional lability and positive emotion differentiation. This study also indicated that self-reported levels of mindfulness were related to higher levels of differentiation of one's emotional experiences in a manner reflecting effective emotion regulation. This again supports the suggestion that higher levels of mindfulness are associated with more effective emotion regulation.

Roemer, Lee, Salters-Redneault, Orsillo and Mennin (2009) proposed that diminished levels of mindfulness (awareness and acceptance for/non-judgement) and difficulties in emotion regulation both play a role in symptoms of generalised anxiety disorder. Their study investigated these relationships in non-clinical and clinical samples. In their first study with a non-clinical sample, self-reports of both emotion regulation difficulties and aspects of mindfulness, particularly the cultivation of compassionate awareness, accounted for unique variance in general anxiety disorder symptomatology severity. In their second clinical study, the authors reported significantly lower levels of mindfulness and significantly higher levels of difficulties in emotion regulation than individuals in a non-anxious control group. Although this study provided preliminary evidence of the clinical relevance of both mindfulness and difficulties in emotion regulation in general anxiety disorder, the absence of a clinical comparison group prevents the drawing of specific conclusions regarding these relationships. However, overall it seems that mindfulness may have the potential to assist with emotion regulation strategy development, which in turn may have positive implications for mental health.

Given these potential benefits then, should mindfulness training be more widely recommended or are there any side effects of this training and practice?

1.7 CONTRAINDICATIONS OR SIDE EFFECTS OF MINDFULNESS

Meditation related experiences that were serious or distressing enough to warrant additional treatment or medical intervention have been reported in the literature (Van Dam, 2017). Mace (2009) reported that the exploration of the area of side effects in MBI is under-researched. Some possible unintended effects that are exacerbated during intensive mindfulness training include restlessness, anxiety, panic, depression, guilt, self -criticalness and hallucinations (Albertz & Holmes, 2000; Kerr, Littenberg, & Josyula, 2011). It seems widely accepted by practitioners however that retreat settings are most likely to precipitate perceptual disturbance or hallucination experiences, and suggest that retreat access should be limited, for those believed to be vulnerable (Vanderkooi, 1997).

These concerns also again raise the issue of the training requirements for mindfulness teaching and as to whether clinical experience may also be required to assess

and monitor changes in mood in vulnerable participants. This may be particularly relevant when offering mindfulness training to large general populations or school groups, as participant backgrounds and vulnerabilities may not be known to the facilitator and contingency plans should be in place in all situations to manage any adverse effects that mindfulness practice may induce for a participant. Germer (2005) indicates that 'fragile personalities' may benefit from mindfulness but that the duration of meditative practice should be shortened. Didonaa and Gonzalez (2009) stated that some clients and patients suffering from severe difficulties, e.g., PTSD, eating disorders and schizophrenia, should be working with an 'expert therapist,' somebody with a clinical or mental health qualification, since intense reactions can occur.

There are a small number of significant reports of negative effects of mindfulness in the older literature. Yourston (2001) documented a case of mania in apparent response to a brief experience of yoga at a retreat. Shapiro (992) also carried out a prospective study of side effects of long-term meditators. These effects were classified into three main categories:

1. Intrapsychic issues were reported by half of the sample. This effect comprises four kinds: a). Negativity (e.g., being judgemental, negative emotions, mental pain and anxiety), b). Disorientation (e.g., confusion about self, low self -esteem, apathy and feeling incomplete; c). 'addicted to meditation' and d).boredom and pain.
2. Interpersonal issues: these ranged from family members objecting to meditators withdrawing from meditation, being too aware of others' negative qualities to distress at recognising how bad their family situations were.
3. Societal adverse effects: feelings of alienation as well as discomfort in everyday situations, difficulty making practical judgements.

Screening of potential participants, before offering mindfulness training, ensuring support from qualified practitioners where required, explaining the nature of mindfulness, practice and homework to clients beforehand and inviting clients to recognise and know their own limits, will help to avoid or circumvent any possibility of harm to any individuals (Dobkin & Zhao, 2011). In a blog at Oxford Mindfulness Centre, Baer and Kuyken (2016) outlined a number of safeguarding principles for those involved in both facilitating and undergoing mindfulness training. These include informing the participants of the fact that mindfulness is not intended to be blissful, and that people may feel uncomfortable during mindfulness practices. They emphasise that it is the learning to work with these uncomfortable and difficult feelings that is central to mindfulness practice. They also highlight that mindfulness is not a panacea and that there are many other alternative

therapies to reduce stress and increase wellbeing, many with excellent well documented outcomes, e.g., Cognitive Behaviour Therapy.

1.8 ADOLESCENCE AND MINDFULNESS

As outlined previously, adolescence is a time of great change and opportunity but is also a difficult and challenging time both physically and psychologically and research has affirmed the importance of supporting adolescents through this transition period as they build the physical and mental competencies that will contribute to the course of their adulthood (Jenner, 2012). The available empirical evidence suggests that mindfulness is a positive personal resource during adolescence (Pepping, 2016) and can possibly provide coping resources to help adolescents deal with difficult life circumstances and stressors. Mindfulness practice has the potential to support healthy development during adolescence and beyond, by reducing stress, fostering wellness and improving and providing tools for emotion regulation and balance, and has been identified as one way in which to foster self - regulatory control during adolescence (Roeser & Peck, 2009).

Researchers who have been looking for ways to reduce the occurrence of negative psychological symptoms in adolescence have identified mindfulness training as a promising preventative intervention (Brown et al., 2007). It has been proposed that mindfulness facilitates cognitive, affective and behavioural flexibility and allows for more adaptive responses to challenging and threatening situations as opposed to responding in an individual or impulsive manner (Bishop et al., 2004). In the context of emotion regulation, mindfulness may also facilitate a more adaptive non-judgemental and accepting stance towards emotions (Chambers, 2009), as opposed to either engaging in efforts to suppress or avoid these experiences, or becoming overwhelmed or ruminating over these experiences.

Although the literature base for youth populations is not as advanced or extensive as in the area of adult studies, research suggests that mindfulness is enjoyed and accepted by young people and may have an efficacious impact on a range of outcomes including emotional and social well-being and behaviour (Kuyken et al., 2013). A preliminary review of the evidence in children and adolescents was carried out by Burke (2010), who concluded that extant research suggested that teaching mindfulness to children and adolescents is feasible and acceptable. Researchers have reached similar conclusions to studies with adults regarding the effectiveness of mindfulness on distress, behaviour and attention in a wide range of conditions, such as depression (Biegal, Brown, Shapiro, & Schubert, 2009); anxiety, (Semple, Reid & Miller, 2005); ADHD (Zylowska, Ackerman,Yang, Futrell,

Horton, & Hale, 2008) and conduct disorder (Boegels, Hoogstad, Van Dun, De Shutter, & Restifo, 2008). Research with young people also highlights the positive effects of mindfulness training on attention, well-being and behaviour (Lee, Ahn, Lee, Choi, Yook, & Sus, 2005).

For adolescents, encouragement and support to accept all of their behaviours may seem counterintuitive. However, young people have the capacity to understand nuances between accepting their prior dysfunctional behaviours without re-enacting them (Burke, 2010). The teaching and use of mindfulness practices by adolescents offers them an opportunity for present moment awareness and self- soothing. As overstimulation is common for adolescents, breathing, the core element of mindfulness intervention, offers a basic grounding technique, supportive for modulation of stimulation and emotion regulation (Kepner, 2003). There is now also emerging evidence of this relationship between dispositional mindfulness and emotion regulation in adolescents (de Bruin, Topper, Muskens, Bogels, & Kamphuis, 2014).

Further to their study with adults outlined earlier, Pepping et al. (2016) examined the effects of dispositional mindfulness and the role of emotion regulation strategies, namely cognitive reappraisal (e.g., I can control my feelings by changing the way I think about them) and expressive suppression (e.g., I control my feelings by not showing them) and adolescent mental health. Results revealed that low mindfulness was associated with poor functioning across all indices of psychopathology. Further, expressive suppression mediated associations between low mindfulness and depression, anxiety and stress. They concluded that dispositional mindfulness appears to be a protective individual difference characteristic during adolescence and capacity for emotion regulation may be implicated in its effects on specific symptoms of psychopathology.

In a recent study examining emotion regulation and mindfulness in a group of adolescent girls, Hambour, Zimmer-Gembeck, Clear and Rowe (2018) reported that dysregulation of emotions is a risk for the development of social anxiety symptoms. Their study aimed to examine the associations between emotional dysregulation and dispositional mindfulness and found that lacking strategies to regulate emotions is related to more social anxiety symptoms in young people. They also concluded that an ability to describe internal experience is related to less social anxiety symptoms.

Researchers have emphasised a greater need to explore the potential of prevention programmes to strengthen the emotional well-being of adolescents and insulate them from the high rates of mental and emotional health problems that are currently prevalent in our society (Via fora, 2014). As outlined, emotional regulation capacity prospectively predicts

adolescent psychopathology over time (McLaughlin, Hatzenbuehler, Mennin, & Noten-Hoeksema, 2011). If mindfulness provides greater capacity for emotion regulation in adolescents, which in turn influences psychological functioning and mental health, this may provide an argument for the widespread teaching of mindfulness skills to adolescent populations. As taught to youth, mindfulness is portable, can be practiced anywhere and can be applied to an adolescent's daily life, and often where he or she needs it most, be it in the classroom, at the dinner table, before sleep and even on the football field (Saltzman, 2008).

A growing number of schools and youth-based organisations are exploring mindfulness programmes to help youth foster greater self-awareness and self- care, improve impulse control and decrease emotional reactivity to difficult life situations (Burke, 2009). The aims of universal prevention programmes are to broaden and strengthen the protective factors that defend against risk factors in an entire population (Viafora, 2015). Mindfulness may provide a useful protective factor for youth in any population because of its potential to alleviate the many emotional distress areas that all youths face during this developmental stage.

1.8.1. Mindfulness Programmes for Adolescents

MBIs have been adapted and tested for youth, including those widely used with adults (i.e., MBSR and MBCT). These interventions have been modified to be developmentally appropriate for child and adolescent populations by decreasing session length and duration of meditations, using more repetition and video and auditory aids. Adapting programmes for younger participants requires attention to age-related developmental needs, i.e., attention span, cognitive capacities, language and relevant content (Saltzman & Golden, 2008; Semple & Lee, 2008). Mindfulness practices with adolescents emphasises experiential learning and groups of adolescents typically require more explanation and rationale, if they are to fully engage (Thompson & Gauntlet-Gilbert, 2008).

The following is a listing of some of the most utilised MBIs for adolescents:

- The .b Mindfulness in Schools Programme (MiSP), which stands for Stop, Breathe and Be, is an intervention developed as part of the Mindfulness in Schools Project, which consists of a ten lesson course for schools. A second programme (PAWS) has also recently been launched for use with younger primary school aged children. The programmes were developed in the UK by classroom teachers with experience of mindfulness practice (Barnett, Cullen, & O'Neill, 2011). The .b curriculum draws upon a range of mindfulness traditions, including MBSR (Kabat-Zinn, 1990) and MBCT (Segal, Williams, & Teasdale, 2002). Its design includes the explicit

teaching of skills and attitudes, adaption of approaches to meet the needs of young people, use of a range of age-appropriate, interactive and experiential teaching methods, and focused teacher education to support self-efficacy (Kuyken et al., 2013). Additionally, the programme places strong emphasis on implementation fidelity (Durlak & Dupre, 2008). The programme is supported by a manual and indicative script, and the provision of age-appropriate resources including course booklets and audio and video files to support mindfulness practice. Effortful attention is included as part of the .b programme through short practice activities, example, focusing on the experience and sensations of eating a malteeser or noticing one's own breathing. Repeated practice of this mental activity is thought to improve a young person's ability to sustain attention and a desire to focus at the expense of distraction and thus increases capacity for conceptual thinking (Nagel, 2013). The .b MiSP is a complex intervention that includes elements that are applicable to young people who are stressed and experiencing mental health difficulties, are in the normal range of mental health or who were flourishing (Kuyken et al., 2013).

- MBCT- C is an adaption of the MBCT for children. It has been tested on youths aged 8 to 14 years (Semple, Lee, & Miller, 2006; Semple, Lee, Rosa, & Miller, 2010) and has been manualised specifically for anxious children (Semple & Lee, 2011).
- The MBSR-T is an adaptation of MBSR for adolescence and has been tested on youth age 14 to 18 years (Biegal, Brown, Shapiro, & Schubert, 2009). The adaption emphasises the unique challenges of adolescence, particularly interpersonal and performance challenges. Stress is addressed within the context of specific social issues relevant to adolescence and weekly check-ins are used to support group cohesion and allow discussion. Modifications in delivery are similar to MBSR-C and include shorter session length and duration of structured practice and eliminating the day-long retreat.
- The Inner Kids program was developed by Susan Kaisler-Greenland for use from kindergarden to 12th grade. It emphasises paying attention to inner and outer experience in addition to compassion.
- The Learning to Breathe Programme is an intervention for adolescents, aiming to strengthen emotion regulation, reduce tension, and aid stress management (Broderick and Metz, 2009). It is a universal school-based prevention programme for adolescents which integrates principles of social and emotional learning derived from the MBSR, MBCT, ACT and DBT programmes.

- Mindful Education (ME) was developed as a preventative, evidence based, intervention programme for the classroom. Its aims are to increase positive emotions, self-regulation and goal setting (Schonert-Reichl & Lawlor, 2010). This programme has now been developed further and is known as the MindUp Program (The Hawn Foundation, 2003). This mindfulness and mental health programme helps foster social and emotional awareness, enhance psychological wellbeing and promote academic success. The programme is currently being used in some 250 schools in North America
- Meditation on the Soles of the Feet (Singh, Wahler, Adkins & Meyers, 2003) encourages participants to direct their attention from emotionally engaging in thoughts or events to a neutral part of the body, the soles of the feet. This programme has been used specifically to control aggressive behaviour and in individuals with Autism, Conduct Disorders and Asperger Syndrome (Singh et al., 2011).
- Inner Resilience Program (Lantiari, 2008) is a mindfulness based programme that aims to help create healthy environments for teaching and learning for students to hone the skills of self-regulation, attention and caring for others
- Still Quiet Place was developed by Saltzman and Goldin (2008). This programme offers age appropriate mindfulness practices for school children. It focuses on mindful awareness to support participants in responding rather than reacting to difficult situations and in cultivating peace and happiness.
- Stressed Teens (Biegal, 2009) is closely related to the traditional MBSR programme. The formal and informal mindfulness practices include; body scan, sitting meditation, yoga and mindful homework.
- Wellness Works in Schools is a health and wellness programme based on mindful awareness, principles and practice (Kinder, 2001).The programme helps students to develop the needed skills to address important issues including stress, mental health, emotional balance, behaviour and learning readiness.

It appears that many of the above programmes share many similarities and are based on the teachings and model of MBSR. All have been adapted in various ways to support child and adolescent populations utilising and understanding mindfulness. The importance of using breathing as a mindfulness skill technique as well as cultivating choices for young people to respond rather than react to difficult situations are key components of many of the programmes.

1.8.2. Research Investigating Mindfulness with Adolescence

To date, the overwhelming majority of mindfulness research studies with children and adolescents have focused on school-based settings providing mindfulness to increase attention and positive psychological and academic outcomes (Joyce, Etty-Leal, Zazrn, & Hamilton, 2010). Broadly speaking, the field of youth mindfulness is still at an early stage, as described by the National Institutes of Health model (Onken, 2014). Research at this stage mainly consists of feasibility and pilot studies of new interventions or adapting existing interventions to new populations (Semple & Burke, 2019). Critical reviews of existing youth research on the topic have called for more large-scale studies and utilisation of rigorous experimental methodology on normative student populations to bolster the empirical support for mindfulness-based interventions in schools (Garrison Institute, 2005; Meikeljohn et al., 2012). A review of mindfulness-based programmes for education (Meikleljohn et al., 2012) supported the positive potential of mindfulness in this context while acknowledging that the available evidence base is fairly limited. The existing research suggests that MBIs are a feasible and acceptable modality of intervention for use in school settings.

A number of mindfulness intervention studies have examined the evidence supporting the benefits of mindfulness with youth populations within clinical and general educational setting. For the purposes of this research, only studies conducted with the adolescent population, aged 13-19, attending Post Primary School are included. (see Tables 4 and 5).

1.8.3. Clinical Studies

Table 4

Mindfulness Research with Adolescents in Clinical Settings

Study	**N**	**Age Mean**	**Student population**	**Intervention Details**	**Intervention Length (Facilitator)**	**Study Design (Control)**	**Measurement Type**	**Sig Outcomes**
Beauchemin et al.(2008)	34	16.6	Learning Disability	Non-specified Mindfulness	5-10 mins, 5 x week for 5 weeks (Teacher)	QE (Pre-post) No control	Student and teacher self-reports	Student reported reduced anxiety and improved social skills Teacher reported improved social skills and reduced problem behaviours
Bogels et al. (2008)	14	nr	Clinic based	Modified MBCT Concurrent Parent and student groups	8 weekly mindfulness classes (Facilitator)	Pre post; waiting list, 8 weeks training and 8 week follow up.	Self-report measures Parent report measures	Improved ratings by students and parents for behaviours, goals, happiness and mindfulness
Biegals et al. (2009)	102	15.5	Psychiatric Outpatient	MBSR	90 minutes weekly for 8 weeks (Facilitator)	Experimental	Clinician rated mental health measures	Reduced anxiety, depression and somatic distress and increased self esteem and sleep quality

Bootzin & Stevens (2005)	55	15.5	Clinic	MBSR based plus Cognitive Behaviour Therapy and Light Therapy	MBSR for 5/6 weeks Other therapies for 6 weeks	Quasi experimental	Sleep data Self- report	Improvement on some sleep indices and mental health scales
Gregorski et al. (2011)	166	15	High Blood pressure	MBSR based Breathing Awareness Meditation	10 mins, five times weekly for 12 weeks (Facilitator)	Experimental (Control)	Physiological and student self -report	Reduced systolic and diastolic blood pressure
Singh et al. (2007)	3	13.3	Conduct Disorder	Soles of the Feet (Singh et al, 2003)	15 mins, 3X/week for 4 weeks (Facilitator)	Multiple baseline Single subject	Student reports Student observation	Reductions in student aggressive behaviour
Wright et al. (2011)	121 (59.5)	15	High Blood pressure	Breathing Awareness Meditation MBSR based	10 mins, 5X/week for 12 weeks (Teacher)	Experimental (Control)	Physiological and student self- report	Decreased hostility and reduced systolic BP
Zylowska et al. (2007)	21 (nr) (Adult 8)	15	ADHD Clinic	MBSR based Concurrent parent and child groups		QE (No Control)	Neurocognitive measures Self- reports	Improvements in reports of ADHD symptoms and changes on neurocogintive measure

Mindfulness evaluations with adolescents within clinical settings as outlined in Table 4 reflect reductions in a range of physiological and psychological measures, as rated by student self-reports. Some studies are strengthened by including additional reports, including objective physiological and neurological measures (Bootzin & Stevens, 2005; Gregorski, Barnes, Tingen, Harshfield, & Trieber, 2011; Zylovska et al., 2007); clinician

ratings (Biegals et al., 2009); parent ratings (Bogels et al., 2008) or teacher ratings (Beauchemin, Hutchins, & Patterson, 2008). Seven of the eight studies utilised an MBSR programme ranging from 5 to 12 weeks intervention periods. However, over half the studies reported very small numbers, none incorporated a randomised design and three studies did not include a control condition; in addition, only one incorporated a follow up assessment, and at that, was only short term. Therefore, the capacity to generalise any of the noted benefits is limited.

1.8.4 School -Based Mindfulness Studies

Table 5

Mindfulness Research with Adolescents in General Education Settings

Study	**N**	**Age Mean**	**Student sample**	**Intervention**	**Intervention Length Facilitator/ Teacher**	**Study Design (Control)**	**Measurement Type**	**Sig Outcomes**
Atkinson & Wade (2015)	347	15.7	General Education	Varied Mindfulness Activities	Facilitator	Experimental (Control)	Student self - report	
Broderick & Metz (2009)	121	17.3	General education	Learning to Breathe	32-43 min 2 X week for 5 weeks (Facilitator)	QE (Pre- Post) (Control)	Student self - report	Reduced negative affect and improved positive affect.
Bennett et al. (2015)	23	17.7	General education	MBSR	120 Mins, 1X week for 8 weeks	Experimental	Student self - report	Improvement on scores of depression and anxiety and academic attainment
Barnes et al. (2003)	45	16.5	General education	Transcendental Meditation (TM)and Health	15mins TM daily, home and schools for/4 months (Teacher)	Ex (Control)	School objective measures	Reduced absenteeism, rule infractions

				Education control				and suspensions
Huppert & Johnson(2010)	155	14.5	General education	MBSR based	40 min, 1 X/week, for 4 weeks (Facilitator)	QE (Control)	Student self - report	Improved psychological wellbeing
Kuyken et al. (2013)	522	14.8	General education	Mindfulness in Schools .b programme	40 mins, 1Xweek for 9 weeks (teacher)	QE (Control)	Student self - report	Reduction in depressive symptoms
Johnson et al. (2016).	308	13.63	General education	Mindfulness in Schools .b Programme	35-60 minutes weekly for 9 weeks (Facilitator)	Cluster randomised design (Control)	Student self - report Teacher feedback Qualitative interview	No sig improvements on any measures Increase in measures of anxiety
Johnson et al.(2017)	555	13.44	General Education	Mindfulness in Schools .b Programme	40-60 minutes weekly for 9 weeks (Facilitator)	Cluster randomised design (Control) With/without parent involvement	Self -report measures	No significant differences on any outcomes
Lau & Hue, (2011)	48	15.83	Low academic achievement	MBSR based	120 mins, 1x week for 6 weeks and a 7 hr retreat (Facilitator)	QE (Control)	Student self - report	Reduction in depressive symptoms
Lechtenberg, (2012)	50	15	General education	MBSR based	Brief mindfulness exercise before each class, for 9 weeks (Teacher)	Mixed method (Control)	Interviews Student journals	Improved quality of life and academic competency
Monshat et al. (2012)	11	19	General education	MBSR based	1.5 hours,	Qualitative	Interviews Focus Groups	Improved feelings of calm, balance and control,

					1x week for 6 weeks (Facilitator)			and greater confidence and competence
Quach et al. (2016)	198	13.18	General education	Working Memory Capacity Mindfulness School Programme Hatha Yoga Wait List Control	45 mins 2 x weekly for 4 weeks	Pre Post Randomised design	Student Self report Cognitive Assessment	Sig improvement in working memory capacity in mindfulness condition No sig difference between group found for stress or anxiety
So & Orme-Johnson (2001)	99	17.8	General education	Meditation	15mins, x 2daily for 6 months (Facilitator)	Experimental (Control)	Student self report	Improved creativity, practical and field dependence and reduced levels of state and trait anxiety
Raes et al. (2013)	408	16.5	General education	MBSR/MBCT components	100 mins, 1 x week for 8 weeks (Facilitator) 6 month follow up	Experimental (Control)	Student self report	Reductions in student aggressive behaviour Lower levels of depression at pre, post and follow up.

Qualitative studies have also been conducted with adolescents in school settings and are included in Table 5 above. Qualitative enquiry offers a way of gaining greater depth and clarity about participants' experiences of mindfulness intervention (Grossman, 2011; Grossman, 2008). Monshat (2012) concluded that young people (n=11) demonstrated a

sophisticated understanding of and engagement with mindfulness principles and practice and that with improved practice, young people gained a greater confidence in managing life stressors. Mindfulness was described as a 'mindset' associated with greater confidence and competence and a lessened risk of future distress. An encouraging finding was that with ongoing mindfulness practice and within a relatively short time, participants were able to move beyond improved emotion regulation and gain greater confidence in their ability to manage life challenges. Further conclusions may be drawn from utilisation of a larger sample.

Lechtenberg (2012) also reported that results of both interviews and a survey of mindfulness practice with fifty adolescents revealed that daily mindfulness activities before each class for a 9 week period, were viewed as a consistently positive experience and that mindfulness was of benefit in terms of personal growth, classroom environment and adaption to other areas of life. Like many other studies, while containing an experimental and a control group, this study was not randomised and the author highlighted the potential bias impact on results of a positive and very well liked facilitator of the programme.

Overall these studies, both qualitative and quantitative, reflect the many benefits reported by young people receiving mindfulness training in schools and that mindfulness programmes delivered in schools are acceptable to students, feasible to deliver and of benefit to healthy adolescents. Many of the general education school-based studies in Tables 4 outlined above used large samples sizes (average, 100+). Such samples allow for reassurance that quantitative analyses are adequately powered to detect intervention effects (Felver, 2015). Studies also used group-based interventions conducted in typical classroom environments during normal schools days, thus encouraging for generalization. In addition, many studies included a control condition. Three studies however failed to find significant results. Interestingly, these were the only three studies to incorporate a randomised design (Johnson et al., 2016, 2017; Quach, Jastrowskil & Alexander, 2016), raising the question as to whether better designed studies may not find evidence supporting MBIs. Two of these studies related to research evaluating the .b Mindfulness in Schools Programme (Johnson et al., 2016, 2017). In tightly controlled experimentally designed studies evaluating the impact of the widely available school-based mindfulness programme, no improvements were demonstrated on any outcome measure either immediately post intervention or at three month follow up. These null findings were contrary to earlier studies evaluating the effectiveness of the .b Mindfulness in Schools Programme (Huppert & Johnson, 2010; Kuyken et al., 2013). Huppert and Johnson (2010) reported on the outcomes of the shorter first version of the .b Mindfulness in Schools Programme in a study of boys, in two private schools, utilising a school as a control group. At post intervention, no significant overall

differences were found between the two groups on measures of mindfulness, but within the mindfulness group, more mindfulness practice was associated with improved psychological wellbeing. While no significant differences were found between the intervention group and the control condition, the authors still concluded that this programme was promising as an intervention for adolescents and suggested that effects may be stronger if training time was increased. In a larger study by Kuyken et al. (2013), the extended nine session .b Mindfulness in Schools Programme was further evaluated. A total of 12 schools participated in this study, with six being the intervention arm and six as controls. This study demonstrated that following adjustment for gender, age and ethnicity, there was evidence of lower depression scores in the mindfulness group, which was maintained at 3 months follow up. The authors acknowledged however that the change scores would prove to be small effects in a larger randomised study.

In a very recent review of mindfulness research with youth populations, Semple and Burke (2019) highlighted that nearly all published research indicated that MBIs with children and adolescents generally showed small but significant changes in a variety of psychological outcomes, and only a handful of studies reported no beneficial outcomes at all. They highlighted this under the broader issue of 'publication bias' which affects all research, including the field of mindfulness. They purported that it is likely that many more mindfulness studies have been conducted, have found no effects, or possibly even adverse effects, and then were never published. Furthermore, Kreplin et al. (2018) wrote about the potential 'expectation bias' for participants in any mindfulness research, due to the media portrayal of meditation and mindfulness as a cure for a range of mental health problems or to improve wellbeing.

Felver, Butzer and Kalsa (2015) highlighted another specific limitation in research studies in schools to date, namely that no account is taken for students being 'nested' within a classroom. Most studies have also solely relied on student self-reports for evaluation and did not incorporate follow up data. This paper made recommendations for future research including: utilisation of experimental research design and active control conditions; statistically accounting for classroom and school effect; reporting more student details; replicating intervention effects using existing mindfulness programmes; conducting treatment component studies; collecting follow up data; and utilising empirical evaluations using more diverse outcome measures. In earlier research regarding school based studies Thompson and Gauntlett-Gilbert (2008) had similar recommendations.

Clearly expansion of the research base in relation to the delivery of mindfulness in the educational setting requires careful attention to the above recommendations to further

explore further and quantify the benefits of mindfulness in the youth population. While the above authors describe progress in this field of research, the current heterogeneity of many interventions, absence of manualised treatment protocols and failure to assess the fidelity of treatment, makes it difficult to compare results across studies or to replicate previous studies. Research will require more randomised controlled trials, conducted by well-trained research clinicians in controlled settings. Use of active controls groups will allow comparison of the efficacy of mindfulness to existing evidence-based treatments. Manuals and methods to assess fidelity and protocol adherence are required, as is development of facilitator competence training (Semple & Burke, 2019). The sharing of manualised protocols, especially in relation to adaption of programmes would prove valuable, as many researchers do not describe modifications or adaptions made.

1.8.5 Strengths in Existing Literature

Despite the many limitations outlined above. There are some strengths identified in the existing literature. A meta-analysis of mindfulness interventions (Zoogman, Goldberg, Hoyt, & Miller, 2015) shows an overall small effect size over a broad range of subsamples and outcomes for treatment employing mindfulness with youth when compared to active alternative treatments. It also may be true that mindfulness interventions for youth have a stronger effect on reducing negative symptoms than on increasing positive function.

In 2014, Zoogman et al. carried out a meta-analysis of mindfulness interventions with youth. They concluded that MBIs with youth overall were found to be helpful and not to carry iatrogenic harm, with the primary effect size in the small to moderate range (0.23), indicating the superiority of mindfulness treatments over active control comparisons. A significantly larger effect size was found on psychological symptoms compared to other outcomes (0.37 vs. 0.21), and for studies drawn from clinical samples compared to non-clinical samples (0.50 vs. 0.20). The effect size for clinical samples was in the moderate range and nearly 3 times the magnitude of that found in non-clinical samples. This suggests that mindfulness may be particularly beneficial for clinical populations, aimed at symptoms of psychopathology. In addition, this research suggests that the adolescent stage of cognitive development, with the strengthening of metacognition and abstract thinking skills (Piaget, 1969; Schneider & Lockl, 2002), may allow adolescents to benefit more from mindfulness interventions than younger children. Intervention dosage was not found to be related to outcomes.

A more recent meta analyses of MBIs with youth (Klingbeil, Renshaw, Willenbrink, Copek, Chan, & Haddock, 2017) synthesised the treatment effects of MBIs with youth from 76 studies involving over 6000 participants. Similar to previous studies, they found that

MBIs were associated with small effect treatment sizes in studies using pre-post (0.305) and controlled designs (0.322). Treatment effects were found to be larger at follow up than post treatment in pre-post (0.462) and controlled designs (0.402). They suggest that the requirement for ongoing practice in mindfulness (Kabat -Zinn, 1994) could explain the larger effects after a follow up period, but stated that this was speculative, without evidence from any studies indicating participants' continued practice. They also found that intervention dosage had a negligible effect on treatment effects.

While mindfulness may be of more benefit to adolescents with clinical issues or difficulties, the overall improvements in emotional regulation and psychological wellbeing reported as a result of MBIs, documented above, still supports a strong argument for the wide scale delivery of training programmes for adolescents. So why might the educational setting be the most suitable for the delivery of any universal MBIs to this population?

1.8.6 Delivering Mindfulness in Schools

The evidence base for school-based programmes, many of which are listed in the previous section, that aim to promote well-being, support emotional and social learning and prevent mental health problems in adult hood, is growing (Burnett, 2009; Cuijipers, van Staten, Smit, Mihalopouls, & Beekman, 2008; Durlak, 1997). The school is an environment in which most young people spend a good deal of time, and have become accustomed to being introduced to new experiences within and the practising of same. Schools are therefore a good potential site for the introduction of mindfulness interventions as they have contact with large numbers of young people on a regular basis and across all developmental stages where lifelong habits may be established (Waters, Barsky, Ridd, & Allen, 2015). Because adolescents spend much of their time engaged in school-related activities, schools can incorporate prevention and intervention programmes to meet the psychosocial, emotional, cognitive and behavioural needs of any or all adolescents (Wisner, 2010).

MBIs conducted in a typical classroom environment during normal school hours make it more accessible for young people. This finding is encouraging for the generalisation of skills, as interventions delivered to students in their normal classroom environment are more likely to generalise and be used (Felver et al., 2015). There is also evidence that teaching in groups generates therapeutic factors (Yalom, 2005). Edwards, Bryning and Crane (2014) suggested examples of the additional potential therapeutic factors generated by offering programmes in an adolescent school setting including; universality, installation of hope, catharsis, family re-enactment, cohesion, altruism, interpersonal learning, acquiring information, modelling, socialising techniques, and existential factors.

Mindfulness interventions are amenable to universal prevention programmes because they focus on universal vulnerabilities in youth rather than specific problems (Bogels, 2008). MBIs are typically strength and skill-based models rather than models focused on pathology and when they involve the whole school result in less stigmatisation and labelling (Rempel, 2012). Coholic, Eys and Lougheed (2009) also suggest that a universal prevention programme is less threatening than a therapy session for young people.

Establishing feasible and sustainable mindfulness programmes in schools can be very challenging, however. It is likely that only structured well-designed curricula will be better received. Conditions which might need to be considered for implementation of mindfulness in the curriculum will include, time of day, amount of time spent in practice, where mindfulness fits in the curriculum and who will teach or facilitate the programmes (Mace, 2008). Many schools face practical challenges that create barriers to the adoption and successful implementation and sustainability of such programmes over time. For example, limited time in school day, curriculum limitations, especially for exam year students, decreasing availability of funds for discretionary programmes and lack of trained staff. One of the many challenges facing all MBIs is that facilitators often are unable to provide on-going support for the deepening and continuation of practices begun in the secular setting of the mindfulness class. Establishing programmes in schools, with the training of teachers and a willingness to shape a school ethos in relation to the concept and benefits of mindfulness would help address this issue. A step by step approach in which mindfulness is introduced to a schools and students in a gradual and ordered way may yield best results for longevity and ethos development in this important area (Broderick, 2014).

To date there have been four reviews conducted exclusively on MBIs within the school environment (Carsley, Khoury, & Health, 2017; Felver et al., 2015; McKeering & Hwang, 2019; Zenner, Herrnleben, Kurz, & Walach, 2014). Zenner et al. (2014) reported significant positive effects such as improvements in cognitive performance and resilience. In this, the first systematic review and meta-analyses to summarise data available on the effects of mindfulness-based training in schools settings, mindfulness interventions were reported overall to hold promise, particularly in relation to improving cognitive performance ($g=0.80$) and resilience to stress ($g=0.39$). However, they highlighted the diversity of study samples, the variety of intervention types, implementations and exercises, and the wide range of mindfulness measurement instruments used, which required careful and differentiated examination of the data, thus making measuring the effects of MBIs in schools challenging (Zenner, 2014).

Similarly, a review by Felver et al. (2015), reported MBI intervention outcomes including a reduction in behavioural problems, anxiety, depression, affective disturbances and suicidal ideation and an increase in executive functioning. They also outlined many notable strengths on reviewing 28 studies including, large sample sizes, with most averaging over 100 subjects. They also noted however that only half the studies used any type of comparison conditions and only one third, randomly assigned students to conditions. They also reported that most studies relied on single informant, mostly student self-report questionnaires and did not include follow up assessment. Carsley et al. (2017) also reported MBIs in schools to be helpful with small to moderate significant effects from pre post MBI compared to control groups ($g = 0.24$). They also described finding that interventions delivered during late adolescence (15-18 years) and consisting of combinations of various mindfulness activities and yoga-based mindfulness activities, had the largest effects on mental health and wellbeing. Existing or previously designed programmes only revealed small effects. The authors highlighted limitations of their review to include a narrow set of search criteria, which may not have included all studies that investigated MBIs in school settings. They also reported that the summarised totality of treatment effects did not allow them to conclude what interventions or elements of mindfulness yield the largest effects. They recommended that a more empirically driven meta-analysis may have yielded more substantive conclusions. Carsley et al. also found that when trained teachers delivered the programme, there were significant effects at follow up. In addition, they found that effects on mental health outcomes post-test were only significant when interventions were delivered by a trained teacher and effects on mindfulness post-test were only significant when interventions were delivered by an outside facilitator, suggesting that the facilitator plays an important role in programme implementation. Students with large changes in mindfulness effects from pre to post interventions significantly moderated changes in mental health and wellbeing outcomes, pre and post intervention. They too outlined many limitations in their literature review including variability in samples (in terms of size and length of intervention) and recommended the need for active control conditions and examination of other moderators that could potentially influence programme effectiveness, e.g., duration of programme, home practice, age and stage, active control conditions and gender impact. Carsley et al. acknowledged limitations of their review to include fact that only studies published in English were included, thus minimising generalisability.

In the most recent review, McKeering and Hwang (2019) reported positive improvements on wellbeing measures across both quantitative and qualitative data, supporting mindfulness as a wellbeing school preventative programme for early adolescents. Overall, they found that MBIs for early adolescents appear to be more effective in

decreasing negative traits (e.g. anxiety), with medium to large effect sizes found, than increasing positive traits (e.g., positive affect), where only small effect sizes were found. This study highlighted that students and teachers reported acceptability and feasibility of MBIs as a suitable wellbeing programme for adolescents. In addition, their review of qualitative analysis further supports this as the majority of students descried the practice of mindfulness to be enjoyable and beneficial for a range of difficulties including anger, stress, anxiety, poor concentration and sleep. This review also indicated that study quality varied significantly with some papers demonstrating stronger research rigour than others. Limitations of this review included the fact that only peer reviewed papers in the English language were included; therefore their review was not exhaustive.

While all the above reviews certainly highlight many significant positive effects of MBIs in schools, all reported methodological and empirical limitations, including diverse age groups and varied programme content (Carsley et al., 2017; Zenner et al., 2014); the need for more robust research studies incorporating randomisation and active control conditions (Carsley et al., 2017; Felver et al., 2015); improved measurement requirements(Felver et al., 2015; Zenner et al., 2014) and further examination of potential moderators (Carsley et al., 2017; McKeering & Hwang, 2019).

The UK Medical Research Council (MRC) has published guidance on developing and evaluating complex interventions, which is very helpful for researchers continuing to evaluate and research the concept of mindfulness. The MRC presents a framework of four phases required: development, feasibility/piloting, evaluation and implementation. The guidance is primarily intended to help researchers choose and implement appropriate methods, given the state of existing knowledge and the nature of their target intervention. O'Cathain, Croot, Duncan, Rousseau, Sworn, Turner, Yardley and Hoddinott (2019) also provide additional guidance for researchers on intervention development and evaluation to help researchers, based on a consensus study, incorporating MRC guidelines. This paper provides information from intervention development and, planning, reviewing research evidence and theories, to the involvement of stakeholders, designing and implementing intervention, and finally paying attention to the future implementation of any intervention in a real world context. Mindfulness research in the area of youth may still be at this stage and mainly consists of feasibility and pilot studies of new interventions or adapting existing interventions to new populations (Semple & Burke, 2019). The area of mindfulness research in general may benefit from more pilot studies in order to elucidate ideas and concepts, and that these could in turn be tested by larger more rigorous studies. Such studies may also help address the many methodological limitations highlighted in the many systematic reviews and meta analyses detailed above. Future researchers in this area may do well to refer to and

study the above guidelines to help facilitate more robust research studies and outcomes from which more substantive conclusions can be made.

1.9 SUMMARY AND CONCLUSION

This literature review has highlighted the tasks of the adolescent period and the many difficulties encompassed therein. It has described the high levels of stress and tension and the many potential mental health difficulties experienced by quite a large percentage of adolescents during this life developmental stage. The association and possible causal roots of the role of emotion regulation difficulties and the onset and prevalence of mental health difficulties including anxiety and depression in the adolescent period has been discussed. Universal structured programmes to help all adolescents navigate the stressors of this phase may be helpful and mindfulness has been argued to be a possible and beneficial route to helping adolescents manage emotional regulation and, in turn, mental health difficulties.

The mindfulness literature requires on-going research and development however. Firstly, consensus and clarity is required in relation to a definition of mindfulness and the skills involved in mindfulness training and development. Much ambiguity also exists in relation to what constitutes a mindfulness theory versus proposed mechanisms of change, and research needs to consider moderators influencing mindfulness practice. Such lack of clarity has contributed to difficulties in the operationalisation of and measurement of mindfulness. The heterogeneity of studies, with many different programmes, of differing duration, dosage and content, many without manualisation or adequate detail regarding adaptions from more robust programmes (e.g. MBSR), and reliance on self-report questionnaires in the main, continues to raise concerns amongst researchers.

While mindfulness research has progressed over the past 10 years in particular, the literature review reflected challenges in relation to the methodological limitations of many published studies, particularly in relation to children and adolescents. As outlined earlier and clearly in four recent reviews of MBIs within the school environment, there is a strong need for more robust research studies, with reference to MRC guidelines, and incorporating randomisation, active control conditions, longer follow up, use of additional measures (e.g., Parent/teacher reports, physiological ratings), high quality training for facilitators, manualisation of programmes, and examination of attrition, fidelity and adverse effects.

While there have been recommendations for general improvement of research quality in this area, some results of good quality studies to date have indicated positive

effects of mindfulness with the adolescent population. Delivery within a school-based system may offer the most accessible avenue to reach the widest possible population of adolescents in a structured, non-stigmatising and non-threatening way. Zoogman (2015) concluded that mindfulness can be used safely with youth; can be integrated into a broad range of settings, e.g. schools; the mass dissemination of mindfulness could allow data collection in order to find which forms of mindfulness help with specific outcomes and exiting evidence suggests that mindfulness shows particular promise particularly for youth who suffer with high levels of symptomology. The effectiveness of the . b Mindfulness in Schools Programme shows mixed results in the published literature. The current study aims to further evaluate and explore any benefits this programme may have for the adolescent school population in an Irish context.

CHAPTER 2

AIMS AND METHODS

2.1 AIM OF THE PRESENT STUDY

This study aims to extend literature in the area of mindfulness with the youth population in a school setting by using a multiple components evaluation with both quantitative and qualitative data to evaluate the effectiveness of the .b Mindfulness in Schools Programme in the development of mindfulness practice and investigating the potential of this intervention in improving a broad range of primary psychological outcomes including: anxiety, depression, self-concept, anger, disruptive behaviour and emotional regulation in a controlled trial with three assessment times: pre-.b Mindfulness in Schools Programme, post- .b Mindfulness in Schools Programme and at 6 month follow-up. This study will also qualitatively assess the adolescent experience of the development of mindfulness in relation to the .b Mindfulness in Schools Programme.

A multiple components evaluation approach to data collection was carried out. Using both quantitative and qualitative data allows for the most robust combination by taking advantage of the strengths of both quantitative and qualitative approaches (Ivankova, Creswell, & Stick, 2006). This study examines a pilot intervention and therefore multiple component evaluation was deemed to be the most appropriate in order to capture the broadest possible data and evaluate the effectiveness of the intervention in a comprehensive manner (O'Cathain, Murphy, & Nicholl, 2007). In line with the sequential approach, the quantitative data was collected first, and the qualitative data was collected thereafter. The sequential approach to methods allowed for the quantitative data findings to inform the development of the qualitative research (Cameron, 2009).

2.2 HYPOTHESES

1. Students attending the .b Mindfulness in Schools Programme will score significantly different on measures of Anxiety, Depression, Anger and Disruptive Behaviours post intervention and at six month follow up as compared to peers in comparison group
2. Students attending the .b Mindfulness in Schools Programme will score significantly different on measures of Difficulties in Emotional Regulation, thus indicating improved emotional regulation post intervention and at six month follow up as compared to peers in comparison group.
3. Students attending the .b Mindfulness in Schools Programme will score significantly different on measures of Mindfulness post intervention and at six month follow up as compared to peers in comparison group.
4. Students attending the .b Mindfulness in Schools Programme will score significantly different on measures of Self Concept post intervention and at six month follow up as compared to peers in comparison group.

2.2.1 Relationships between Variables:

1. Students in the .b Mindfulness group who exhibit higher scores on Dispositional Mindfulness at T1 will show lower scores on measures of Anxious and Depressed Mood, Anger and Disruptive Behaviour post intervention and at six month follow up.
2. Students in the .b Mindfulness group who exhibit higher scores on Dispositional Mindfulness at T1 will show lower scores on Difficulties in Emotional Regulation Scale, post intervention and at six month follow up.
3. Students in the .b Mindfulness group who exhibit higher scores on Dispositional Mindfulness at T1 will show higher scores on measures of Self Concept, post intervention and at six month follow up.
4. Students in the .b Mindfulness group who exhibit lower scores on Difficulties in Emotional regulation Scale at T1 will have lower scores on measures of Depression, Anxiety, Anger and Disruptive Behaviours , post intervention and at six month follow up.

2.2.2 Related Outcomes:

1. Students in the .b Mindfulness group who attended more sessions of the programme will show better outcomes on all measures.
2. Students in the .b Mindfulness group who complete more homework on a regular basis will show better outcomes on all measures.
3. Students in the .b Mindfulness group who report higher use of .b mindfulness techniques will show better outcomes on all measures.
4. Students in the .b Mindfulness group who show increased mindfulness will show better outcomes on all measures.

2.3 QUALITATIVE RESEARCH QUESTIONS

In order to better understand any reported intervention effects, along with the acceptability and feasibility of the programme, qualitative research questions were also included in this study at post intervention. Focus group discussions utilising standard questions, were also conducted post intervention (See Appendices G and H) and are further discussed below.

2.4 METHOD

2.4.1 Design

This study was a non-randomised controlled study, which utilised a multiple components design to examine the treatment effectiveness and benefits of the .b Mindfulness in Schools Programme with Transition Year students attending four post primary schools, compared to a school as usual comparison group at each of the four schools (C). The between subjects factor was the mindfulness condition. The within subject factor was time: pre and post intervention group and at six month follow up. Creswell (2007) argues that an approach involving both quantitative and qualitative data is particularly useful for conducting 'real world' research in which the researchers aim to provide meaningful and rigorous data from a complex and unpredictable environment (such as a school setting).

2.4.2 Participants

A total of 132 students, aged 15-17 years from the Transition Year Programmes, at four secondary schools in a town in south east Ireland participated in this study. This age group represents an important developmental point, as escalating pressures of mid-

adolescence arise, and a key time for the emergence of common mental health disorders (Zisook et al., 2007). Transition Year is an optional one year programme, which is currently available within a large proportion of Irish schools that can be taken in the year after the Junior Certificate and is intended to make the Senior Cycle a three year programme. It is designed to bridge between the Junior Certificate and Leaving Certificate programmes and offers an alternative broader curriculum to include; sampling new subjects, engaging in work experience, field trips and many more options designed by each individual school, within set guidelines. There was more than one Transition Year class at each of the four schools. One class group at each school was assigned by each school Principal to the .b Mindfulness in Schools Programme (n=73 students), while a further group was recruited for inclusion in the comparison group condition (n=59). The comparison students would attend classes as usual within the regular school timetable. The comparison group's involvement in the study was limited to completing questionnaires at the various measurement time points. A total of 35 male students (48%) and 38 female students (52%) were included in Mindfulness group while 34 males (56%) and 26 females (43%) formed the Comparison group condition (see Figure 1). It was only possible to recruit a very small comparison group sample at group 1 (n=6), due to fact that most students failed to return signed parent consent forms on the week of commencement of the study.

The schools comprised one all-girls school, one all boys school and two co-educational mixed gender schools. Three schools were located in a medium sized town in the east of Ireland with a population of approximately 12000 people. The all-girls school was a long established Catholic Mercy Convent school, with strong academic and musical background with 650 students in attendance. The all-boys school was a long established Christian Brothers Catholic School, now under secular management, with 360 students. The co-educational school was relatively new, only established within past ten years and this school was a Gaelcholáiste, whereby all education and communication within the school, was through the medium of the Irish language. The school had very small numbers 180 and was of a high academic standard. The second co-educational school was located in a village some 20 miles away from the town. This was a large community school comprising 700 students in a village with a population of approximately 3,000.

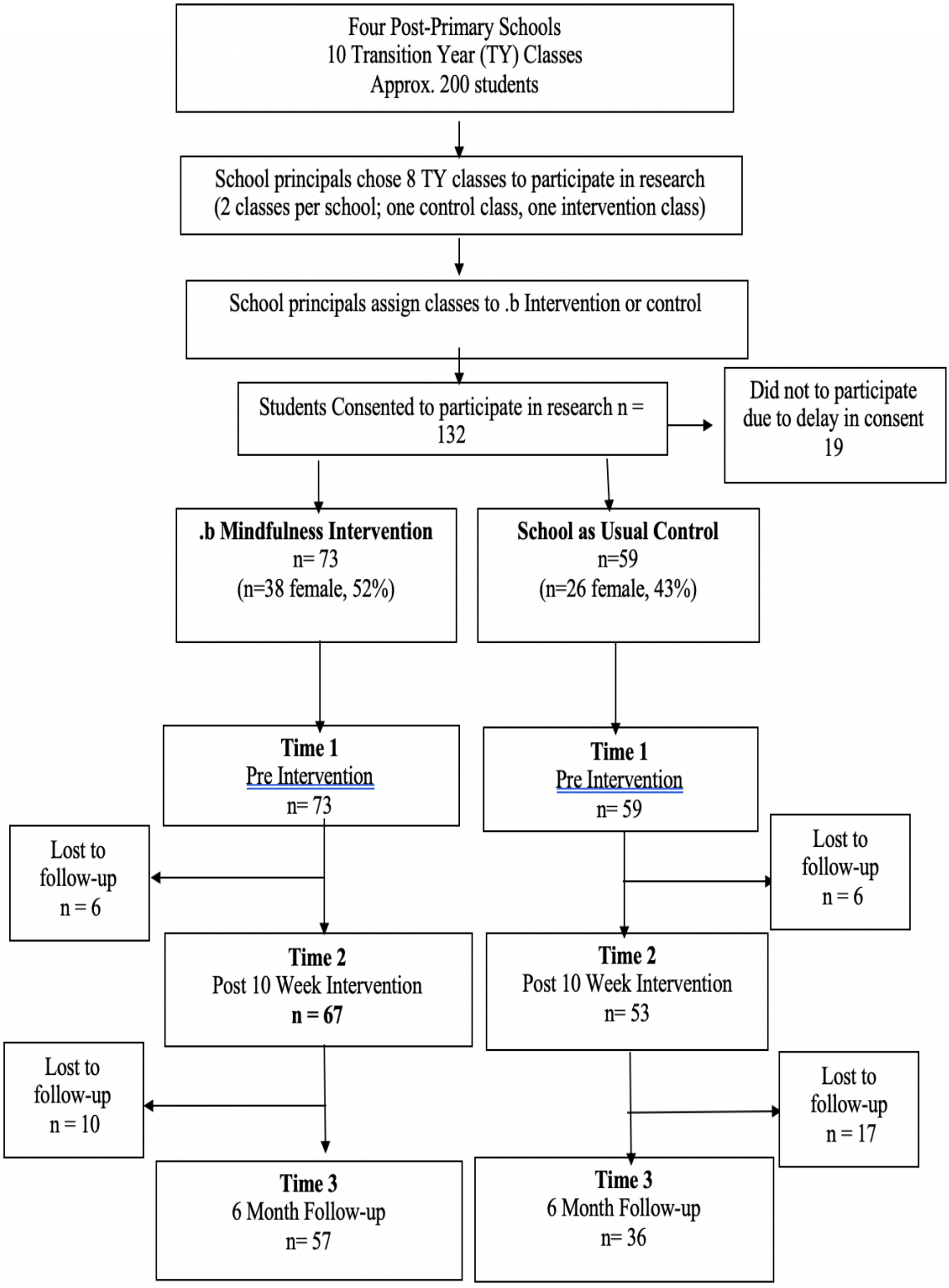

Figure 1. Study Flow Chart

2.5 MEASURES

2.5. 1 Quantitative Measures

The following quantitative measures were administered at three time points, pre and post intervention and at six month follow up, to both groups of participants at all schools. It took approximately 30-40 minutes for students to complete all questionnaires, at each sitting. Testing was performed in a classroom setting with students requested to work individually and silently, with the researcher and a teacher present to answer any questions.

The Beck Youth Inventories II (BYI-II; Beck, Beck, Jolly, & Steer, 2005).

The Beck Youth Inventories are five self-report scales that may be used separately or in combination to assess a child's or adolescent's experience of Depression (BDIY), Anxiety (BAIY), Anger (BANIY), Disruptive Behaviour (BDBIY) and Self Concept (BSCIY). The inventories are intended for use with children and adolescents between the ages of 7 and 18. The BYI –II provides easy to administer and brief (five to ten minutes each) assessments of distress in children and adolescents. Each inventory contains 20 statements about thoughts, feelings and behaviours associated with emotional and social impairment in children and adolescents. For each scale, children and adolescents describe how frequently each statement is true for them. High scores reflect higher symptomology. National norms based on stratified standardisation samples are provided (Beck et al., 2005). High levels of internal consistency (range .92-.96) for adolescents between the ages of 15 and 18 years across all scales have been reported, and test –retest reliability ranges from .83-.93. (Beck et al., 2005). Among the inventories, correlations between BDI-Y, BAI-Y, and BANI-Y are consistently high, particularly for youth aged 15-18.

The Difficulties in Emotional Regulation Scale (DERS; Gratz & Roemer, 2004)

The DERS is a brief 36 item self-report questionnaire designed to assess aspects of emotion dysregulation. Items are scores on a five point Likert scale ranging from (1= almost never, 0-10%) to (5= almost always, 91-100%). Higher scores indicate greater emotional dysregulation. The measure yields a Total Score as well as scores on six scales derived through factor analysis: Nonacceptance of emotional responses (Nonacceptance); Difficulties engaging in goal directed behaviours (Goals); Impulse control difficulties (Impulse); Lack of emotional awareness (Awareness); Limited access to emotional regulation strategies (Strategies) and Lack of emotional clarity (Clarity). While initially developed as a measure for adults, further studies (Newmann et al., 2010; Weinberg & Klonsky, 2009) displayed similarly sound reliability and validity properties of DERS in studies with adolescent populations. Internal consistencies for the subscales were good to

excellent and alphas ranged from (0.76 to 0.89). In support of the measure's construct validity, the DERS exhibited robust correlations with psychological problems reflecting emotion dysregulation, specifically, depression, anxiety suicidal ideation, eating disorders and alcohol and drug use (Weinberg & Klonsky, 2009).

The Five Facet Mindfulness Questionnaire (FFMQ; Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J., & Toney, L., 2006).

The FFMQ is a 39 item self-report measure of mindfulness. This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness. The five facets are: Observing, Describing, Acting with Awareness, Non Judging of Inner Experiences and Non Reactivity to Inner Experiences. Each of the 39 items is measured using a five point Likert scale (1=never or very rarely true to 5= very often or always true). The five facet scores can be combined to yield a total score, which reflects a global measure of mindfulness. The FFMQ has been shown by Royuela-Colomer (2016) to demonstrate adequate reliability, test re-test reliability and validity with an adolescent population.

2.5.2 Qualitative Measures:

Qualitative feedback forms (See Appendices E and F) were completed by all students within the .b Mindfulness groups at Time 2 and Time 3. These forms asked about students' enjoyment of the course, their experience of learning, their use of specific mindfulness techniques post course, homework practice.

In order to amplify the information obtained in self-report measures and to elicit themes regarding the process of mindfulness development and how this is experienced, understood and integrated by adolescents, focus group discussions were facilitated by the researcher and audio recorded with .b Mindfulness groups, at each school, one week following intervention. Each focus group (n=6) was recruited at the final group session where students were requested to volunteer to participate. If more than six students volunteered to attend, participants were selected by lottery. At the two mixed schools, three male volunteers and three female volunteers were included at each school.

Prior to commencing and on closing each focus group, the issue of confidentiality was emphasised and all students were asked to be respectful of the content of the focus group discussions and that comments and discussions would be confidential. It was also made explicit at the beginning of each focus group that although the researcher had facilitated all Mindfulness group sessions, she was not the author of the programme and that honest or constructive feedback would be valued.

Questions and themes explored in the focus group included; the adolescence experience of present moment awareness; the adolescent experience of the .b programme; the development of mindfulness over the nine week period; the effects of mindfulness in their world; whether their perspective about themselves and the world, particularly when distressed has changed since practising mindfulness; if they notice changes in their responses to distress; if they notice reduction in stress and distress symptoms and if their acceptance or view of the self has changed. (Appendix G). All focus group recordings were transcribed for thematic analysis (See Appendix H).

2.6 PROCEDURE

Following receipt of ethical approval (Appendix A), in November 2014 the Principals of four secondary schools in South East Ireland were approached by the researcher and invited to participate in the study. All Principals agreed to be included in the study. All schools had more than one Transition Year class. School Principals randomly nominated a class to participate in the mindfulness group while an additional class was selected as a comparison group. Consent forms and participant information sheets were sent to the parents of all students assigned to both groups, explaining the nature of the study (See Appendices B and C)

On receipt of signed consent forms, first data collection took place across all four school locations, with both mindfulness and comparison groups in February 2015. Following this, dates were arranged with School Principals to deliver the .b Mindfulness in Schools Programme, over a 10 week period, during the period February - April 2015, simultaneously across all four schools.

This programme was delivered weekly during 40 minute class allocations, as part of the Transition Year curriculum timetable at each school. The comparison group undertook normal curricular lessons. All mindfulness lessons were conducted by the researcher, an experienced clinical psychologist and mindfulness practitioner who has completed MBSR training and .b Mindfulness in Schools Teacher Training and was assisted by a post primary teacher also trained in the delivery of this programme.

The .b Mindfulness in Schools Programme:

.b (pronounced “dot-be”) stands for ‘Stop, Breathe, Be.’ This simple act of mindfulness provides the kernel of a ten lesson course for schools. Based on the adult MBCT and MBSR programmes but modified for adolescents, it is designed to be delivered during a class period of forty minutes, it aims to deliver the skills of mindfulness in a variety of ways utilising

power points, videos and experiential learning. Throughout the course, a range of mindfulness practices are taught: short guided practices (breath counting, .b technique, mindfulness of routine daily activities including walking and watching though traffic) and two 9 minute guided audio files (FOFBOC: Feet On Floor, Bum on Chair, a seated body scan and breath awareness meditation, and Beditation, a lying down body scan and relaxation practice). Guided by a homework workbook, students were encouraged to practice these at home in a structured way outside of formal lessons. The ten lessons include an introductory lesson and nine subsequent weekly class lessons:

1. An Introduction to Mindfulness
2. Puppy Training: Playing with attention
3. Taming the Animal Mind: Turning towards calm
4. Recognising Worry: Noticing how your mind plays tricks on you
5. Being Here Now: From reacting to responding
6. Moving Mindfully
7. Stepping Back: Watching the thought traffic of your mind
8. Befriending the Difficult
9. Taking in the Good
10. Pulling it all Together

For a more detailed lesson structure see http://mindfulnessinschools.org/what-is-b/nine-lessons/

Following completion of the ten week programme, Time 2 post measures were collected at all schools. Students were again asked to complete all psychological measures given at Time 1 with an additional brief qualitative sheet with questions regarding their use of mindfulness strategies and learning as part of the course. (See Appendix E). Focus group discussions were also facilitated at Time 2, with six volunteer students who attended the Mindfulness groups at each of the four schools.

Further appointments were made with all schools to meet with students in November 2014, six months later, to collect Time 3 data. A large number of students were missing from schools for Time 3 data collection (n=27). Many students were absent due to illness but a number of students had also changed to different schools after Transition Year to complete their Senior School cycle. Students completed psychological measures for the third time as well as a qualitative form designed for follow up data collection, which asked questions about students' use of mindfulness skills since completion of the course and their plans to continue to use same into the future (see Appendix F).

2.7 ETHICAL APPROVAL AND CONSIDERATIONS

Ethical approval was sought and granted for this study by the Psychology Research Ethics Committee, School of Social Sciences, City University London (See Appendix A). This study was conducted in accordance with the Code of Conduct and ethical guidelines of the Psychology Society of Ireland (PSI) (PSI, 2003), Children First Guidelines and in line with the Data Protection Commissioners policy on 'Data Protection Guidelines on research in the Health Care Sector'.

Signed parental consent was required for inclusion in the study and all students were informed of their right to withdraw from the study at any time, without giving a reason. The study utilised a de-identified data process and all student information was treated confidentially, coded, encrypted and stored safely in locked filing cabinets.

As outlined before the study in participant information sheets for parents and students, on reviewing psychological measures at each point of collection, if any students were found to be scoring within the clinical range, or rated high scores on critical items, e.g., 'I have thought about killing myself', meetings were arranged at the school for such students with the researcher, who is a Senior Clinical Psychologist. For any students found to be distressed, contact was made with either the Guidance Counsellor at the school or a parent and recommendations were made regarding possible follow up and referral to psychological services where required and appropriate. Over the course of three data collection points some 23 students were viewed to be distressed and met with the researcher for further discussion regarding difficulties.

2.8 ANALYSES

2.8.1 Quantitative Data:

Data were analysed using IBM SPSS 23. Data were screened for normality and outliers. Continuous data was described in terms of means (M) and standard deviations (SD), where appropriate. Changes over time were assessed using Intention to Treat (ITT) Analysis of Covariance (ANOCA). ANCOVA is a statistical technique commonly implemented in the analysis of data, because it can be adjusted for the effects of covariates that may otherwise obscure the intervention effect (Van Breukelen, 2006). As the trial was not fully randomised, use of ANCOVA with the Time 1 score as a covariate means that the two groups are statistically equated at time 1. Repeated measures ANCOVAs were

conducted to investigate changes in measures in all participants who attended the .b Mindfulness in Schools Programme and whether these changes were maintained over time to six month follow up. Group was the between groups factor and time was the within participants factor. Pearson correlations examined relationships between variables. Statistical significance was set at .05 level and appropriate effect sizes are reported.

2.8.2 Missing Data

As all participants had at least two time points of complete data, missing data were dealt with using 'Last Observation Carried Forward' (LOCF), whereby if data is missing, participants last available score is substituted in the analysis. Although there are some criticisms of this method in statistics (Shao & Zhong, 2003), it has been deemed the most simple and straight forward method of dealing with missing data, and the approach recommended by the Consort Guidelines (Consolidated Standards of Reporting Trials, 2010).

Within the Intervention Group, Post Treatment data were missing for 9.5% of participants at Time 2(n=7/73) and 13.6% of participants at Time 3 (n=10/73). In the Comparison Group, 10% of participants (n=6/60) were missing post treatment data at Time 2, and 28.3% (n=17/60) participants at Time 3. There were no statistically significant differences across treatment conditions between participants with complete data and participants with missing post treatment data on any of the clinical variables (see Table 1, Appendix F).

2.8.3 Qualitative Data

The qualitative questions were constructed as part of the multiple components methods design with the quantitative data in mind, with a view to drawing out as much information about the experience of the group that could not be captured in the quantitative data. The aim was to explore their experience of attending the group, rather than testing any prior hypotheses. Qualitative data obtained from focus groups were analysed using Thematic Analysis (Braun & Clarke, 2006; Hayes, 1997). Unlike other methods of qualitative analysis such as Grounded theory (Glaser & Strauss, 1967) or Interpretative Phenomenological Analysis (Smith, 1996), Thematic Analysis is not tied to any pre-existing theoretical framework. Thematic analysis produces a relatively systematic and comprehensive summary or overview of the data set as a whole. In essence, it involves examining the date recurring or common instants (e.g. Student comments). These are fundamental units of analysis, which provide the basis for developing a coding system. Codes are grouped together to form common, overarching themes (Braun and Clarke, 2006). (See Table 6 below).

Table 6

Phases of Thematic Analysis (Braun & Clarke, 2006)

Phase
1. Familiarisation with the data
2. Generating initial codes
3. Search for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

For this study, all focus groups were audiotaped and transcribed. The researcher and an independent rater read and re read the transcripts independently (Phase 1) then jointly developed a coding system which was systematically applied across transcripts from the four focus groups (Phase 2). Both raters were then involved in grouping the codes together into Overarching Themes (Phase 3), which were named, refined and reviewed with reference to the overall data set (Phases 4, 5). The final phase (Phase 6) of producing a report relating back to the original research questions was prepared by the researcher only.

Content analysis is a method used to analyse qualitative, non-numerical data and to transform it into quantitative numerical data (Hsiu-Fang & Shannon, 2005). This technique was also used in this study to code and count the number of times certain responses were made and to calculate percentages of similar response types from students in relation to three specific questions in focus group discussions. Questions included Q.4: What was your favourite lesson and why? Q.5: What was the most useful lesson and why? And Q.15: Discuss and ideas/suggestions for how the course could be improved in the future. This followed a similar format to the Phases of Thematic Analysis highlighted above, but included a counting of themes at Phase 5.

CHAPTER 3

RESULTS

3.1 STRUCTURE OF RESULTS

Analyses examining differences between participants in the Mindfulness and Comparison groups are reported first. Results for each study hypothesis are then presented. The means (*M*) and standard deviations (*SD*) for all measures at pre, post and follow up for both groups are outlined. Results from a series of correlations examining the changes in the Mindfulness group and related outcomes are reported. An analysis of relationships between variables will then be presented, including results from responses on qualitative sheets completed by participants in the Mindfulness group post intervention and at six months follow up. Finally, a qualitative thematic analysis of results from the four focus groups, one at each school, will then be presented.

3.2 COMPARISON OF MINDFULNESS AND COMPARISON GROUPS AT BASELINE

All students were aged 15-17 years. There were 35 males (47.9%) and 38 females (52.1%) in the Mindfulness group (n=73). In the Comparison group (n= 59) there were 34 males (56.6%) and 25 Females (43.3%). There were no statistically significant differences between Comparison and Mindfulness groups with regards to gender distribution [χ^2 (1, 128) = 0.361, p > .05].

*M*s and *SD*s were calculated for the Mindfulness and Comparison Groups at each time point: Pre, Post and at 6 months follow up (see Table 7). There were no statistically significant differences between the groups at baseline (See Table 16, Appendix I).

Table 7

M and SD of Measures at Each Time Point

	Mindfulness (n =73)						**Comparison (n=59)**					
Measure	**Pre**		**Post**		**Follow-up**		**Pre**		**Post**		**Follow-up**	
	M (*SD*)		*M* (*SD*)		*M* (*SD*)		*M* (*SD*)		*M* (*SD*)		*M* (*SD*)	
BSCIY	46.65	(8.04)	48.72	(8.64)	50.49	(7.94)	49.93	(8.75)	48.61	(10.11)	48.71	(8.86)
BAI Y	16.20	(10.17)	14.79	(10.66)	14.78	(9.41)	17.49	(11.09)	15.79	(10.44)	14.33	(9.96)
BDIY	10.69	(8.19)	11.19	(9.93)	10.69	(8.45)	12.27	(10.88)	12.76	(10.97)	11.68	(10.12)
BANIY	14.36	(9.42)	12.93	(9.17)	16.35	(14.27)	14.98	(8.88)	14.32	(9.64)	23.05	(20.07)
BDBIY	6.34	(5.44)	6.00	(4.98)	6.43	(6.05)	5.84	(4.30)	7.22	(6.09)	6.27	(4.80)
DERST	83.76	(25.84)	84.43	(28.73)	81.80	(27.36)	88.20	(25.74)	87.06	(24.62)	88.59	(25.06)

NA	12.84	(6.08)	12.58	(6.25)	11.27	(4.67)	12.93	(5.98)	13.42	(6.29)	13.05	(6.47)
Goals	15.05	(5.79)	15.15	(5.39)	15.49	(5.19)	15.38	(6.80)	14.55	(5.23)	15.08	(5.28)
Impul	11.50	(5.67)	11.75	(5.92)	11.28	(5.53)	11.83	(5.35)	12.08	(5.13)	12.08	(5.36)
Aware	16.97	(5.78)	12.38	(6.27)	15.21	(5.58)	17.54	(5.03)	12.84	(5.82)	17.15	(5.62)
Clarity	11.45	(4.88)	16.16	(8.70)	12.00	(5.30)	12.66	(4.70)	17.15	(7.30)	14.25	(5.93)
FFMQT	78.16	(13.00)	78.65	(14.30)	80.28	(13.29)	74.59	(10.58)	76.96	(10.85)	77.13	(11.51)
NR	15.63	(3.87)	15.75	(4.33)	16.05	(3.96)	14.03	(4.21)	14.71	(3.55)	15.22	(3.81)
OB	13.36	(4.20)	12.94	(4.19)	13.08	(4.00)	13.13	(3.32)	13.28	(3.64)	13.03	(3.68)
AA	16.84	(3.94)	16.97	(4.04)	16.82	(3.92)	16.18	(3.42)	16.96	(3.85)	16.57	(4.16)
DS	15.68	(4.72)	16.19	(4.60)	16.98	(4.46)	15.11	(4.32)	15.57	(4.10)	15.28	(4.07)
NJ	16.31	(4.00)	16.80	(3.89)	17.35	(3.86)	16.11	(4.12)	16.52	(4.84)	16.55	(4.36)

Note. BSCIY=Beck Self Concept Inventory Youth; BAIY= Beck Anxiety Inventory Youth; BDIY= Beck Depression Inventory Youth, BANIY: Beck Anger Inventory Youth; BDBIY= Beck Disruptive Behaviour Inventory Youth: DERST= Difficulties in Emotional Regulation Scale Total; NA= Non Acceptance; Impuls= Impulse control; FFMQT= Five Facet Mindfulness Questionnaire Total; NR= Non React; OB= Observing; AA+=Acting with Awareness; DS+ Describing; NJ=Non Judging.

Mean scores for participants on scores for all psychological measures were found to be in the average range and not in a clinical range. Across both groups however, 23 students (17.29%) obtained at least one score in the clinical range (T score >70), as measured by the BYI II. This included 12 students in the Mindfulness Group (16.4%) and 11 students in the Comparison Group (18.33%).

3.3 EVALUATION OF EFFECTS OF .B MINDFULNESS IN SCHOOLS PROGRAMME

Hypotheses

1) Anxiety, Depression, and Anger and Disruptive Behaviours

Repeated-measures ANCOVAs examined the effects of group on the Beck Anxiety Inventory (BAIY), the Beck Depression Inventory (BDIY), the Beck Disruptive Behaviour Inventory (BDBIY), and the Beck Anger Inventory (BANIY) (see Table 1, Appendix I). After controlling for the effect of pre-group scores, there was no significant interaction effect over time of group on anxiety ($F(1,128) = 1.23$, $p \geq .05$, $\eta^2 = .01$), depression ($F(1,129) = 0.14$, $p \geq .05$, $\eta^2 = .002$), or disruptive behaviour ($F(1,129) = 2.43$, $p \geq .05$, $\eta^2 = .02$). However, there was a statistically significant interaction effect for anger, $F(1, 128) = 3.78$, $p < .05$ $\eta^2 = .02$ (see Figure 1 below). Post-hoc tests using Bonferroni pairwise comparisons showed statistically significant differences ($p < .05$.) between both groups at both time points. Although both groups showed statistically significant increases in anger from post-group to 6 month follow up, the Mindfulness group had significantly lower levels of anger both at post-group assessment and 6 month follow up.

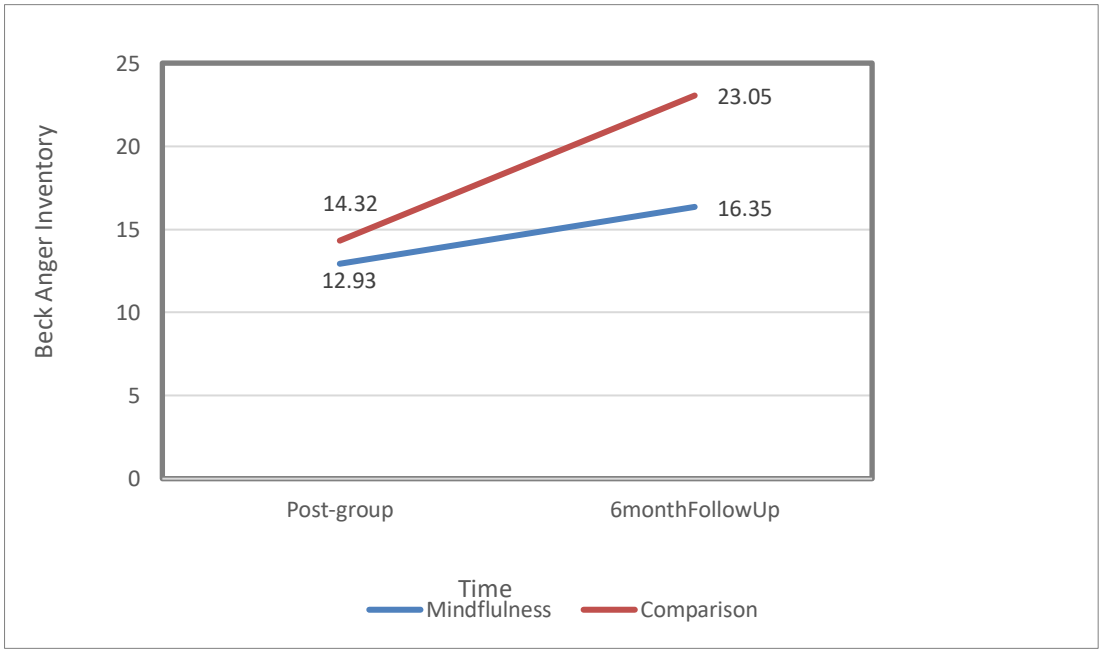

Figure 2. BANI II scores by group at Post- Intervention and 6 Month Follow-Up

2) Difficulties in Emotional Regulation

A repeated-measures ANCOVA examined the effects of group over time on the Difficulty in Emotion Regulation Scale (DERS) total score and subscales. After controlling for the effect of pre-group scores, there were no significant interaction effects over time of group on total DERST scores ($F(1,128) = 2.28$, $p \geq .05$, $\eta^2 = .01$), or the subscales: Goals, $F(1,128) = 0.14$, $p \geq .05$, $\eta^2 < .01$; Impulsivity, $F(1,128) = 0.30$, $p \geq .05$, $\eta^2 < .01$; Limited Access to Emotional Regulation Strategies, $F(1,128) = 0.12$, $p \geq .05$, $\eta^2 = .01$; Lack of Emotional Clarity, $F(1,28) = 1.57$, $p \geq .05$, $\eta^2 < .01$; and Non Acceptance of Emotional Responses, $F(1,128) = 1.42$, $p \geq .05$, $\eta^2 = .01$.

3) Mindfulness

A repeated-measures ANCOVA examined the effects over time, of group on the Five Facet Mindfulness Questionnaire (FFMQ) total scores and subscales. After controlling for the effect of pre-group scores, there was no significant interaction effect over time of group on total FFMQ scores ($F(1,128) = 1.61$, $p \geq .05$, $\eta^2 = .01$) or the subscales: Non React, $F(1,128) = 0.11$, $p \geq .05$, $\eta^2 = .01$; Observe, $F(1,128) = 0.62$, $p \geq .05$, $\eta^2 = .00$; Accept, $F(1,128) = 0.261$, $p \geq .05$, $\eta^2 = .00$; and Non Judge, $F(1,128) = 0.91$, $p \geq .05$, $\eta^2 = .00$.

There was a statistically significant interaction effect on the Describe subscale, $F(1, 128) = 3.67$, $p < .05$, $\eta^2 = .02$ (see Fig 4 below). *Post-hoc* tests using Bonferroni pairwise comparisons showed statistically significant differences ($p < .05$) between the mean scores between the Mindfulness ($M = 16.98$) and the comparison group ($M = 15.28$) at 6 month follow-up.

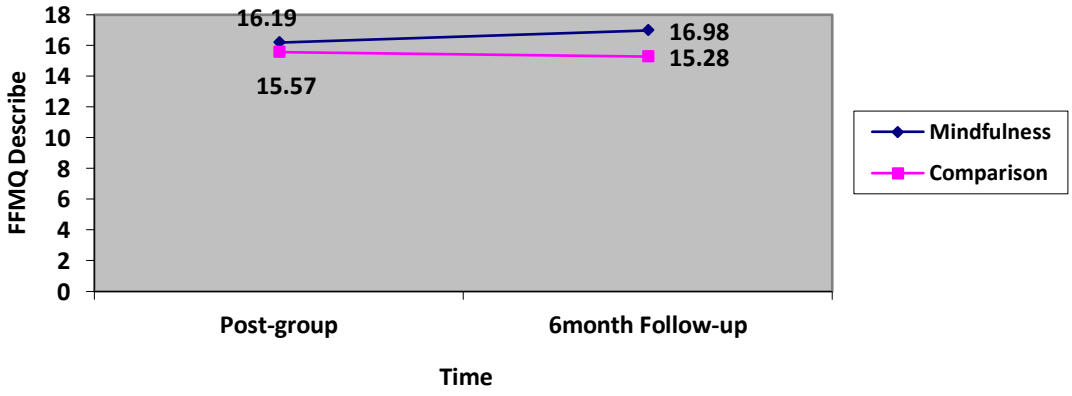

Figure 3. FFMQ Describe Subscale Scores at Post- Intervention and 6 Month Follow-Up for the Mindfulness and Comparison groups

4) Self Concept

A repeated- measures ANCOVA examine the effects of group on the Beck Self Concept Inventory (CSIY) (see Table 2, Appendix I). There was no significant interaction effect over time of group on self-concept, $F(1,128) = 1.77$, $p \geq .05$, $\eta^2 = .01$.

3.4 RELATIONSHIPS BETWEEN VARIABLES

Hypotheses

1) Students in the .b Mindfulness Group who exhibit higher scores on Dispositional Mindfulness at Time 1(T1) will show lower scores on measures of Anxious and Depressed Mood, Anger and Disruptive Behaviour post intervention (T2) and at six month follow up (T3).

There was a statistically significant negative correlation between T1 FFMQ scores (Dispositional Mindfulness) and:

(i) depression scores post-intervention ($r = -.48$., $p < .01$) and at six-month follow-up ($r = -.33$, $p < .01$)

(ii) anxiety scores post-intervention ($r = -.47$., $p < .01$) and at six-month follow-up ($r = -.34$, $p < .01$)

(iii) anger scores post-intervention ($r = -.28$., $p < .01$) and at six-month follow-up ($r = -.51$, $p < .01$)

(iv) disruptive behaviour scores post-intervention ($r = -.29$., $p < .01$) and at six-month follow-up ($r = -.26$, $p < .01$)

2) Students in the .b Mindfulness Group who exhibit higher scores on Dispositional Mindfulness at T1 will show lower scores on Difficulties in Emotional Regulation Scale, post intervention and at six month follow up

There was a statistically significant negative correlation between Dispositional Mindfulness and Difficulties in Emotional Regulation scores post-intervention ($r = -.63$, $p < .01$) and at six-month follow-up ($r = -.50$, $p < .01$).

3) Students in the .b Mindfulness Group who exhibit higher scores on Dispositional Mindfulness at T1 will show higher scores on measures of Self Concept, post intervention and at six month follow up.

There was a statistically significant positive correlation between Dispositional Mindfulness and self-concept post-intervention ($r = .40$, $p < .01$) and at six-month follow-up ($r = -.28$, $p < .01$).

4) Students in the .b Mindfulness Group who exhibit lower scores on Difficulties in Emotional Regulation Scale at T1 will have lower scores on measures of Depression, Anxiety, and Anger and Disruptive behaviour, post intervention and at six month follow up.

There was a statistically significant positive correlation between pre-group DERST scores and

(i) depression scores post-intervention (r =.58., p<.01) and at six-month follow-up (r = .49, p< .01)

(ii) anxiety scores post-intervention (r =.62., p< .01) and at six-month follow-up (r = .52, p<.01)

(iii) anger scores post-intervention (r =.63., p< .01) and at six-month follow-up (r = .52, p< 01)

(iv) disruptive behaviour post-intervention (r =.29., p<.01) and at six-month follow-up (r = .49, p< .01)

5) Students in the .b Mindfulness Group who exhibit lower scores on measures of Difficulties in Emotional Regulation Scale at T1 will show higher scores on measures of Self Concept, post intervention and at six month follow up and as compared to peers in Comparison Group.

There was a statistically significant negative correlation between pre-group DERST scores and self-concept post-intervention (r =-.43, p< .01) and at six-month follow-up (r = -.62, p<.01).

3.5 CHANGES IN INTERVENTION GROUP AND RELATED OUTCOMES

3.5.1 Participant Evaluation

Attendance records were completed by the facilitator at each lesson at each of the four schools for the duration of the intervention. The mean number of sessions attended was 7.19 (*SD* = 1.18), range 0-9.

Table 8

Participant Evaluation

	N	***M***	***SD***
Number sessions attended	73	7.19	1.18
Home Work completion	64	3.54	2.88
Time 2			
Enjoyable	63	7.14	2.34
Learning obtained	63	6.73	2.52
Likely to use skills in future	63	6.63	2.76
Time 3			
Use of Mindfulness skills	65	4.52	2.25
Likely to use skills in future	66	6.00	2.49

At Time 2 and Time 3, in addition to completing the clinical measures, students in the Intervention Group were asked to complete brief evaluation forms (see Appendix E and F). Students were requested to rate questions using a 10 point Likert type scale.

At Time 2, the mean rating for completion of homework tasks was 3.54 out of maximum value of 10. This reflected a relatively low score for homework practice. Students rated a mean score of 7.14 out of a possible 10 for Enjoyment of the programme, 6.73 for the learning obtained and 6.63 for the likelihood that they would use skills learned into the future.

At Time 3, while students rated a relatively low mean score of 4.52 regarding current use of skills, they outlined higher ratings of 6.63 for the likelihood that they would continue to use .b Mindfulness skills into the future, may have indicated a desire, a reminder or intention to utilise skills in the future, if required.

There was a significant positive correlation between scores on ratings of likelihood to Use Skills in the Future at Time 2 and self-reported Use of Skills at Time 3 ($r = .59$, $p < .01$) (See Table 8). Those who had higher intentions at the end of the programme to use the skills were more likely to report using the skills at follow-up.

3.5.2 Technique Use

The most utilised mindfulness skills reported by students at Time 2 included the .b Stop, Breathe Be Technique (53%) and the 7/11 Breathing Technique (51%). At Time 3, students still rated the .b Stop Breathe Be Technique to be the most commonly utilised skill (64%), followed by Mindful Breathing (48%) and the 7/11 Breathing Technique (45.%). (See Figure 3).

On being asked to rank their top three most frequently used skills at Time 3, 46% of students rated the 7/11 Breathing Technique as their number 1 skill, 11% rated .b Stop Breathe Be Technique as their number 2 skill and 32% of students rated Mindful Breathing as their third most frequently utilised skill, from the .b Mindfulness in Schools Programme (See Table 3, Appendix I).

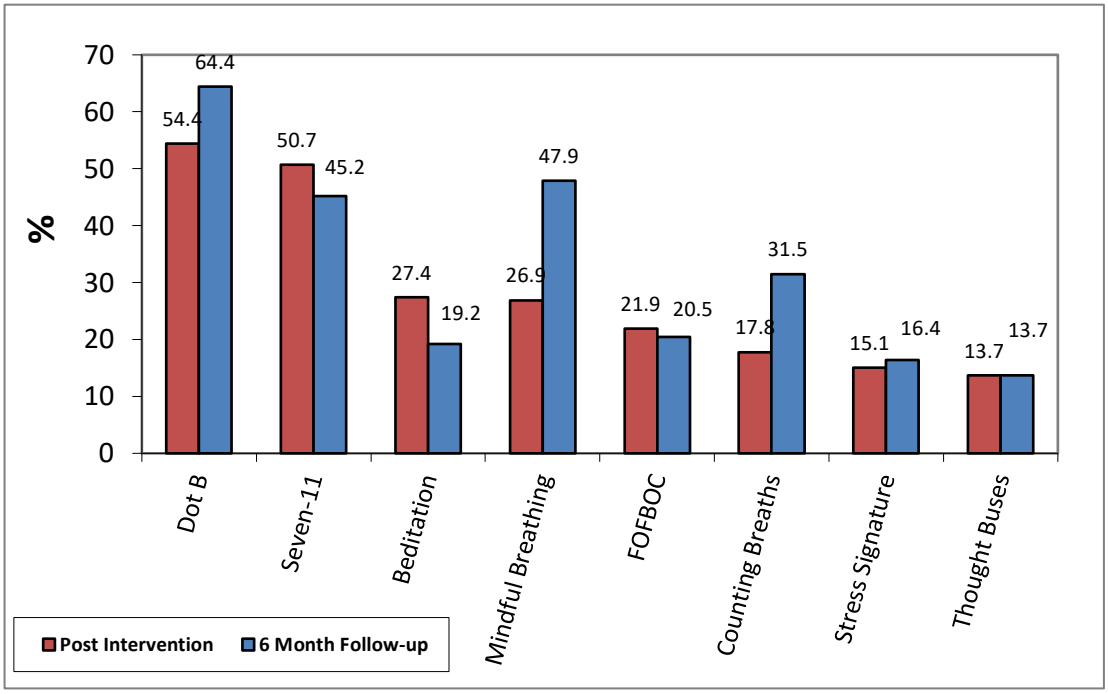

Figure 4. % Participants Reporting Use of .b Mindfulness Techniques at Post Intervention and 6 Month Follow-Up

3.6 CHANGES IN THE INTERVENTION GROUP AND RELATED OUTCOMES

Hypotheses

1) Students in the .b Mindfulness group who attended more sessions of the .b Mindfulness Programme will show better outcomes on all measures.

There were no statistically significant correlations between attendance and any clinical scale (see Table 9). However, there was a statistically significant positive correlation between the number of sessions attended and the amount of homework done ($r = .27$, $p < .05$).

2) Students in the .b Mindfulness group who complete homework on a regular basis will show better outcomes measures.

There were statistically significant positive correlations between the amount of homework done and:

i. students' levels of enjoyment of the programme ($r = .38$, $p < .01$);
ii. the amount of learning students felt they gained from the programme ($r = .53$, $p < .01$);

iii. the likelihood of students using programme techniques again post-intervention (r = .49, p< .01) and at 6month follow-up (r = .45, p<.01);
iv. FFMQ scores at 6 month follow up (r = .26, p< .05).

In addition, there was a statistically significant negative correlation between the amount of homework done and the BDBI at post group (r =-.30., p<.05) reflecting that more homework completed by students resulted in lower scores for disruptive behaviour.

3) Students in the .b Mindfulness group who report use of .b Mindfulness techniques will show better outcomes measures.

There was a statistically significant positive correlation between students' reported use of .b Mindfulness techniques at post group (T2) and Mindfulness scores (FFMQ) at follow-up (r =-.33., p< .01).

There was a statistically significant negative correlation between students' reported use of .b Mindfulness techniques at follow up (T3) and:

i. Depression scores at 6 month follow-up (r = -.24., p< .05).
ii. Difficulties in Emotional Regulation scores (DERST) at 6 month follow up (r = -.29., p< .05).

4) Mindfulness at Time 2 (as measured by FFMQ) in the .b Mindfulness group will be related to better outcomes measures.

There were statistically significant correlations between post- .b Mindfulness group (T2) mindfulness scores and all outcomes at post-group (T2) and also all outcomes at follow-up (T3).

There were statistically significant positive correlations between T2 FFMQ scores and:

i. Self-concept (BCIY) at T2 (r = .48, p< .01) and T3 (r =.40, p< .01).

There were statistically significant negative correlations between T2 FFMQ scores and

i. Depression scores (BDI) at T2 (r = -.56, p < .01) and T3 (r =-.46, p< .01).
ii. Anxiety scores (BAI) at T2 (r = -.58, p< .01) and T3 (r =-.45., p< .01).
iii. Anger scores (BANI) at T2 (r = -.54, p< .01) and T3 (r =-.45, p< .01)
iv. Disruptive behaviour (BDBI) at T2 (r =-.26, p<.01) and T3 (r =-.41, p< .01)
v. Difficulties with emotional regulation (DERST) at T2 (r =-.78, p< .01) and T3 (r =-.62, p< .01)

Table 9

Correlations (r) between Participant Evaluation Variables and Outcome Measures

	Atted	**HWok**	**EnjoyT2**	**LearntT2**	**UseT2**	**UseT3**	**LikelyT3**	**BSCIY2**	**FBSCIY3**	**BAI2**	**BAI3**	**BDI2**	**BDI3**	**BANI2**	**BANI3**	**BDBI2**	**BDBI3**	**DERST2**	**DERST3**	**FFMQT2**	**FFMQ3**
Attend	1																				
HWork	**.27***	1																			
EnjoyT2	.16	**.38****	1																		
LearntT2	.21	**.53****	**.80****	1																	
Likely To UseT2	.17	.49**	.56**	.81**	1																
UseT3	.08	.45**	.42**	.61**	**.59****	1															
Likely T3	.12	.38**	.33*	.58**	**.63****	**.78****	1														
BSCIY2	-.02	.12	.18	.16	.21	**.36****	.21	1													
BSCIY3	-.20	.09	-.00	.00	.11	.21	.06	.74**	1												
BAI2	.10	.11	-.03	.01	.05	-.03	.11	-.61**	-.57**	1											
BAI3	.10	.10	.02	-.03	-.01	-.08	.02	-.50**	-.55**	.83**	1										
BDI2	.13	-.07	-.13	-.15	-.15	-.20	-.05	-.60**	-.58**	.74**	.67**	1									

BDI3	.15	.02	-.11	-.15	-.13	**-.24***	-.08	-.51**	-.59**	.65**	.72**	.81**	1								
BANI2	.06	.02	-.13	-.01	.09	-.05	.07	-.48**	-.46**	.72**	.61**	.74**	.59**	1							
BANI3	.19	.04	-.10	-.16	-.13	-.18	-.06	-.36**	-.47**	.64**	.72**	.58**	.70**	.71**	1						
BDBI2	.06	-.30*	-.25*	-.11	-.13	-.06	.07	-.11	-.10	.21*	.13	.36**	.15	.47**	.27**	1					
BDBI3	.15	-.13	-.05	.00	-.02	-.22	-.04	-.27**	-.31**	.37**	.35**	.38**	.41**	.43**	.58**	.53**	1				
DERST2	.14	-.18	-.19	-.15	-.08	**-.29***	-.08	-.55**	-.53**	.72**	.58**	.69**	.58**	.73**	.61**	.34**	.50**	1			
DERST3	.17	-.13	-.14	-.15	-.13	**-.28***	-.11	-.40**	-.44**	.56**	.50**	.51**	.57**	.57**	.64**	.21*	.50**	.77**	1		
FFMQ2	.08	.20	.20	.16	.19	.21	.05	.48**	.40**	-.58**	-.45**	-.56**	-.46**	-.54**	-.45**	-.26**	-.41**	-.78**	-.62**	1	
FFFMQ3	.03	.26*	.27*	.30*	**.33****	.24	.15	.43**	.44**	-.49**	-.42**	-.48**	-.50**	-.45**	-.49**	-.23**	-.38**	-.67**	-.75**	.77**	1

*Correlation is significant at the .05 level (2-tailed). **Correlation is significant at the .01 level (2-tailed

3.7 FOCUS GROUPS

One focus group was convened at each of the four schools on completion of the Mindfulness programme. Six students attended each of the focus groups. In the two mixed/ coeducational schools three male students and three female students were included in each group. Thematic analysis (Braun & Clarke, 2006) was employed to analyse transcribed data, for the majority of questions asked of students in focus groups, to discover common themes expressed amongst accounts at all four schools. A Content Analysis Framework was also utilised for three question areas. Thematic analysis is a foundational method of qualitative analysis and provides a framework within which to analyse data and identify and report patterns and themes within it. It minimally organises and describes data set detail but also goes further than this and interprets various aspects of the research topic (Boyatzis, 1998). Advantages of Thematic analysis as outlined by Braun and Clarke (2006) include its flexibility and its usefulness for working within a participatory paradigm with participants as collaborators. It can summarise key features of a large body of data and can generate unanticipated insights. Braun and Clarke (2006) also proposed phases of Thematic Analysis to be completed by researchers (See Table 10). This model was utilised to analyse the focus group data generated for this study.

Table 10

Phases of Thematic Analysis and Description of Process

1. Familiarisation with the data	Transcribing data, reading and re reading the data and noting initial ideas
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each code
4. Reviewing themes	Checking that the themes work in relation to the coded extracts and the entire data set, generating a thematic map of the analysis
5. Defining and naming themes	On-going analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme

6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling quotes and examples, relating back of the analysis to the research question, literature and producing a report.

In this study, a theme was identified as something important that represented some level of patterned responses within the data set. Keyness of a theme and prevalence was counted at the level of the data item, whereby any comment that appeared anywhere in the focus group transcripts was included. All themes highlighted in the study were articulated by at least three comments from different students across the entire data set (Reissman, 1993). On studying the transcripts of each focus group, a number of themes were identified. All comments made by students at each focus group were included under a theme code system. All codes were then allocated into broad theme categories.

Content analysis is a method used to analyse qualitative, non-numerical data and to transform it into quantitative numerical data (Hsiu-Fang & Shannon, 2005). This technique was also used in this study to code and count the number of times certain responses were made and to calculate percentages of similar response types from students in relation to three specific questions in Focus Group discussions. Questions included Q.4: *What was your favourite lesson and why?* Q.5: *What was the most useful lesson and why?* And Q.15: *Discuss and ideas/suggestions for how the course could be improved in the future*.

Table 11

Phases of Content Analysis

Data is collected
Researcher reads through or examines the data, making themselves familiar with it.
Researcher identifies coding units for responses
Data is analyses by applying the coding units
A tally is made of the number of times that a code response unit appears.

For this study, all focus groups were audiotaped and transcribed. The researcher and an independent rater read and re-read the transcripts independently, then jointly developed a coding system, which was systematically applied across transcripts from the four focus groups. Both raters were then involved in grouping the codes together into Overarching

Themes, which were named, refined, reviewed and counted (Content Analysis) with reference to the overall data set. The final phase of producing a report relating back to the original research questions was prepared by the researcher only, but was viewed by the independent rater.

Questions asked in the Focus Groups built upon responses from qualitative questionnaires completed by students as part of data collection and enquired further about students' views of the programme, favourite aspects of the programme, most useful skills learned and their experiences of the development of mindfulness, its benefits and impacts on their worlds (See Appendix E).

The main themes identified were included under four headings: 1. A Sense of Improved Wellbeing; 2. A Skill Building Resource; 3. A Personal Growth Opportunity; and 4. A Different Class Experience.

3.7.1 Main Themes

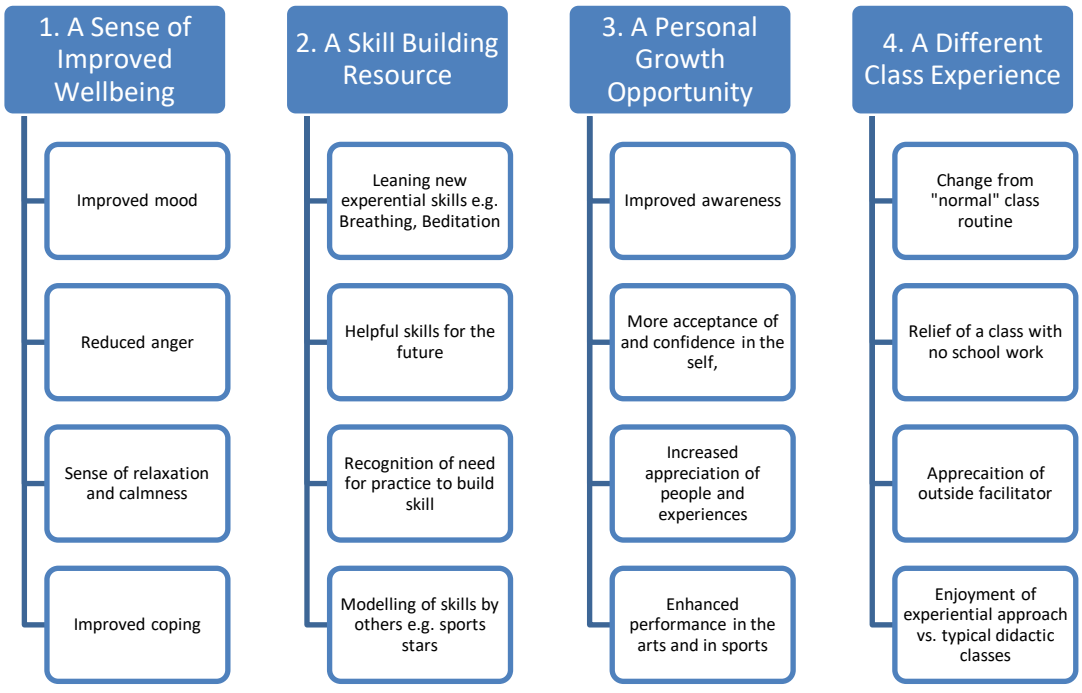

Figure 5. Participants' Experience of .b Mindfulness: Themes Emerging from Focus Groups

1. A Sense of Improved Wellbeing

The majority of feedback given by students in relation to their views on any perceived benefits of the programme was in relation to a general sense of improved wellbeing overall. This improved wellbeing was described under four main sub headings:

Improved Mood, Reduced Anger, a Sense of Relaxation and Calmness, and Improved Coping. They also commented that improved mindfulness practice acted as coping strategies. Breathing exercises for example helped them to feel calm and relaxed, which in turn reduced stress, worry and anger and helped improve overall mood levels.

a. Improved mood

Across focus group discussions many students reported feeling that their mood had improved '*I've noticed mood a bit better' ((FG3; Q11); 'I'm happier' (FG4; Q8).* They described that in addition to feeling an improvement in their subjective ratings of mood, they noticed a developing sense of awareness about mood and mood levels, particularly an increased noticing of negative affect and insight into the benefits of using mindful awareness and mindfulness skills, e.g., breathing, to try to alter and change mood states *'I think I am more aware of my mood now. If I am in a bad mood I am noticing it and trying to get out of it' (FG4; Q12).*

Students also reported that this increased awareness was bringing more attention to positive mood states and experiences in their worlds, as well as the benefits of healthy sleep and the role of mindfulness in improving disturbed sleep patterns; *'It seems I worry less, my mood is better '(FG1; Q11); 'Using Beditation and my sleep is great now and I am in much better form' (FG1; Q7).*

b. Reduced Anger

Many students commented on the fact that they noticed changes in their experience of anger in their lives since commencing the course; *'I haven't been angry since I started... just thinking of that now...That is a record. I just get annoyed or annoying now but not angry' (FG3; Q12); 'The anger doesn't pop out as much' (FG4; Q13).*

Students also commented on the fact that in utilising mindful awareness and practices in relation to anger, they became aware of signs of anger, and felt a weakening of anger feelings on engaging in some of the techniques, e.g., mindful breathing. They described being able at times to create a space to choose or make different responses to anger*; 'If someone is annoying you, just know when to walk away' (FG4; Q13). 'Don't feel as mad with people like I used to if they were annoying me' (FG1; Q11); 'Leaves you a lot calmer. I have noticed it in situations where I used to usually get very angry; you just sort of let it go. Managing this by breathing mostly' (FG4; Q7).*

In addition, students reported noticing a reduction in feelings of overall irritability; *'Big reduction in irritability' (FG1; Q1),* as well as a greater understanding of the possible presence and normality of an anger feeling and how they can notice, manage and respond appropriately to anger in their daily lives; '*Obviously anger is still going to come or be there but recognising it helps me to calm down' (FG2:Q10).*

c. Calmness and Relaxation

Across all focus groups, a number of students described the programme bringing a sense of calmness and relaxation *'relaxing class in a stressful school environment' (FG1; Q2).* Students described feeling the benefits of calmness and relaxation subjectively in their lives within themselves '*I thought it was really relaxing' (FG2; Q1); 'Breathing helps me to manage... better. Calmness comes in' (FG2; Q10).* Students also commented on the experience of calmness transferring to other academic classes; *'I have noticed myself in class to be less restless and jittery'. (FG1; Q12).*

Students also objectively noted a sense of 'group calm' and seeing this sense of calm in other students attending the Mindfulness class, particularly immediately following a lesson. Some students noted that this calmness lasted amongst the class group after the lessons were over, into break time, allowing for a different and more relaxing break time experience also '*Going to break after the lesson was really different; everyone was very light and relaxed' (FG1; Q8).* Some students also noted observable differences at a broader level in other classes throughout the week whereby those attending the Mindfulness programme were observed by fellow Mindfulness group students to be more calm and less restless and to settle more quickly on changing and moving classes *'I can notice those in class that have done .b; they are calmer in the class' (FG1; Q12); 'Those that are in the mindfulness class settle quicker when we come into class, the others are still messing around' (FG1; Q12).*

Students described the sense of relaxation and calmness to be a welcome feeling in itself, but that this feeling also served to create space around other emotions and moods, e.g., anger and stress. Students related the experiential breathing exercises learned as part of the programme to be one of the main ways in which this sense of calmness could be brought about in any situation on a regular basis '*Leaves you a lot calmer. I have noticed it in situations where I used to usually get very angry; you just sort of let it go. Managing this by breathing mostly' (FG4; Q7); 'Made me calmer'. Every time when I go home if my family annoy me, I use the techniques to stay calm and it works'. ((FG4; Q8).*

d. Improved Coping

Students in the Mindfulness groups also reported a sense of improved and increased coping skills. Not only did they describe increased coping skills in relation to mood and anger as outlined above, but also in relation to managing stress and negative emotions; '*Many more ways and new ways to deal with situations and things that cause stress' (FG3; Q7); 'Kind of can stop it before you get stressed. So you won't get more stressed. I used to get stressed about small things but now I don't as much' (FG2; Q10).* Students commented on the benefits of mindfulness techniques in reducing rumination in stressful situations*; 'I don't really over think stuff now. Not as much anyway' (FG4; Q15).*

Students reported that many of the practical experiences learned as part of the programme were very helpful as coping aids, by bringing calmness and awareness; '*Just the exercises help gain better control so distress doesn't develop. It doesn't rise into distress' (FG3; Q13); 'I actually know now that if I am really worried about something, it doesn't matter really. Whatever state you are in, a mindfulness practice will work for me' (FG2; Q7).*

Students added that in turn this awareness and ease allows space for them to make choices regarding responses, take a step back, rather than having automatic reactions for stressful events or situations; *'I can shake things off more. Life is short, why worry. 'Life in every breath! Samurai!' (FG1; Q10); 'When I am going around getting stressed out, looking for stuff to go training, I am taking a breath and calming down and slowing down and taking a step back. It really helps' (FG1; Q10).* Students also commented on the effectiveness of mindfulness techniques in helping them to face tasks they are trying to avoid, by providing a space, which then reduces stress and avoidance. '*When you have an essay, instead of avoiding it and putting it off, I instead have been doing a FOFBOC (see footnote) and then just getting stuck in! Don't get in a bad mood about it then because I stop putting it off' (FG1; Q1).*

2. Skill Building Resource

Students described the programme as a resource for the learning of new skills and experiences. They reported many elements and experiential skills learned, to be helpful and beneficial to them; *'Some of the stuff like the 7/11 was actually pretty useful' (FG3; Q2); 'The Beditation I liked that. Breathing has been good for me in helping pain control. I get cramps sometimes and the breathing really worked' (FG2; Q5).* Students commented on being impressed and encouraged by the fact that other people use mindfulness, particularly

well-known professional sports stars; '*Good to know people do mindfulness' (FG2; Q9); 'The coaches and the footballers who use it ... like Johnny Wilkinson, that's impressive' (FG2Q9).*

Students also reported that these skills, practices and increased levels of understanding gained as part of their participation in the course would be helpful in the future in times when stress was a very real or likely possibility; *'I will use the breath for stress but also to concentrate for study and exams (FG2; Q16); 'Probably will continue to use it for sport and for taking tests, It is very good for stress, the 7/11 works' (FG1; Q16).*

Many students stated that merely knowing and having the skills would be of benefit; *'Just knowing you have the skills is useful (FG4; Q11),* but also acknowledging that it takes time to learn mindfulness skills and apply them to your world; *'Just give mindfulness your time, it works' (FG2; Q7).* Students also commented that these skills need to be practise regularly in order to be helpful at times of difficulty, stress or pressure; *'If I keep practising and remembering it will be helpful for when I need it' (FG1; Q16).*

3. Personal Growth Opportunities

The development of self and individual personal growth was cited by many students as a positive effect of their participation in the intervention. Qualities including improved awareness, more acceptance of and confidence in the self, increased appreciation of people and experiences and enhanced performance in the arts and in sports were highlighted as particular growth and development areas.

a. Improved self-awareness

Students described the development of awareness of self and the environments around them during the course. This was described in terms of noticing things more; *'It's just really awareness of yourself and that is good. Teaches you to think of yourself first' (FG4; Q8); 'Sometimes if you are doing nothing, you just become aware of what you are doing' (FG2; Q8).* In addition, becoming more aware of and tuning in to the present moment; '*It did cross my mind to notice and pay attention to the present moment much more often than I ever did' (FG2; Q8).* Awareness grew as they noticed mental and physical events they previous had not paid attention to.

'I find myself tuning in more' (FG2; Q8);awareness of everyday things 'I am more aware of everyday things' (FG2; 8) and understanding and perspective in relation to their own mood states; '*I think I am more aware of my mood now' (FG4, Q12); 'If I wake up and feel it is going to be a bad day, I am noticing this thought more and then able to think that*

everyone else is probably feeling this too. I can just keep worries in perspective' (FG1; Q10).

b. More acceptance of and confidence in the self

Learning to accept aspects of the self, especially the normality of negative responses and emotions, was described by many students to be improved as a result of mindfulness practice*; 'It's kind of like giving yourself more leeway to your emotions' (FG4; Q15); 'you're allowed to have emotions but it's a better way to handle them' (FG4; q15).* Students commented on gaining insight into their shortcomings or negative responses; *'If I'm angry there is probably a reason and the feeling is ok.' (FG4; Q15).*

They described feeling more happy and content in themselves as a result; *'I feel a lot better about myself' (FG2; Q14); 'More positive and less hard on myself' (FG2; Q14)* and in addition, an increase in their sense of confidence and motivation to try new things; *'A lot happier about stuff and more active about doing stuff now' (FG4:9). 'I used to always put myself down and say 'oh no I'll never be able to do that' now I step back and think, yeah I can give it a go' (FG2; Q9).*

c. Enhanced performance

Many students involved in sports and the arts, e.g., music and performance, spoke of using mindfulness techniques learned as part of the course, in their chosen field to help cope with anxiety or stress regarding performance but also to help focus the mind and concentrate to enhance performance and 'get in the 'zone'. They commented on utilising mindfulness techniques before a game or a performance; *'I do a lot of sport. This exercise is brilliant. Before a match I use it. I do it in the dressing room. I don't mind if anybody sees me doing it!'(FG1; Q16); 'For singing and performing it really helps, dropping your attention to the feet and the breath is really good in avoiding stress build up. Have been able to do it' (FG3; Q5). Students* also described using mindfulness techniques to focus particular attention during a game;' *I do the breathing thing before I go to take a free, I'm doing a Johnny Wilkinson, it has enhanced my performance' (FG1; Q7).* Some students even equated improved and enhanced performance with the development of mindfulness techniques; *'I have noticed that my sporting performance has improved when using FOFBOC so I hope it continues' (FG1; Q16); 'I have scored more in hurling' (FG2; Q8).*

d. Increased appreciation

In addition to the development of awareness, students also described feeling an increased sense of appreciation in their lives; '*Appreciate stuff a lot more' (FG4; Q9),* especially in relation to Lesson 4 on Mindful Eating whereby students experienced a different relationship and savouring of food when eating mindfully;'. *It has changed how I eat. It did overflow to eating at other times. White chocolate, roast and mashed potatoes. I savoured them' (FG3; Q4); 'While eating I was savouring, tasted more flavours. Never really thought about that before when eating, I just shoved it all in' (FG2; Q8).*

Students also reported having an increased appreciation and gratitude in other areas of their lives from awareness of their environment; *'I find myself tuning into sounds and the tastes of things' (FG2; Q8); 'Everything I have been doing I am actually stopping and appreciating things, everything' (FG1; Q9),* to the actions of others; *'Appreciate when someone does something nice for you and that. Little bit more aware of this than before' (FG4; Q9),* and a sense of improvement in their overall general quality of life; '*Try not to take things as granted as before' FG1; Q9); 'This course has added quality to my life' (FG1; Q9).*

4. A Different Class Experience

Students made many comments regarding the fact that this class was unlike any other classes in their school curriculum. *'It was different' (Fg1; Q2); 'Different from all other classes ever' (FG2; Q1).* They described it as a relief to get away from normal class work, structure and homework: '*When you are coming in to the class it is good. We know we don't have to do work or homework in the class' (FG2; Q1); 'Like a relief, don't have to do loads of work' (FG2; Q1); 'really welcomed in compared to all the other stressful classes' (FG1; Q2),*

They also valued the chance to work with an outside facilitator: *'Had a feeling you were there for us' (FG1; Q2); 'A psychologist coming in to us is very good'....'you know what you are doing' (FG1; Q2).* Students commented on the fact that there were no discipline issues within the classes and that all students appeared interested, open minded and respectful of the visiting psychologist; '*There was huge respect for you' (FG1:Q17).* The fact that the programme was a generic subject not requiring any specific skill set meant that it was appealing and doable for all '*The fact that it's been different. Not like a subject where some people like it and some people don't like it. It is liked by everyone' (FG4; Q1).*

Students reported enjoying the fact that delivery of the programme deviated from a typical didactic teaching approach to include novel elements, e.g., video clips, mindful

eating and experiential practical exercises; '*The practical stuff was lovely' (FG2, Q2); 'It was nothing like I had ever done before' (FG2; Q2).* This student feedback overall reflected the attractiveness and accessibility of this programme for this age group and the appeal and welcome acceptance of a different classroom lesson experience ; *'A nice way to spend a class' (FG1:Q2).*

As outlined above, a Content Analysis model was used in order to glean patterns in the additional questions asked at focus group discussion in relation to the programme content, favourite lessons and the most useful practices or skills learned as part of the .b Mindfulness in Schools programme.

3.7.2 Favourite Lessons

A large number of students (55.6%) described Lesson 4, Mindful eating, 'Being Here Now' as their favourite lesson. Other students who responded also reported enjoying Lesson 1, Puppy Training, Lesson 2, Taming the Animal Mind, which introduced the FOFBOC meditation, Lesson 7, Mindful Movement and Lesson 8, 'Taking in the Good', in equal measure, (11.1%).

Table 12

Favourite .b Mindfulness Lessons

Lesson 4 ***Mindful eating: 'Being here Now'***	*'Tasting the food and savouring it!' 'I loved the chocolate lesson. Really helps appreciate what you are eating'. 'I thought about it after when eating, I'm going to savour this' (FG3; Q4).*
	'Trying to enjoy and savour food more, especially chocolate instead of wolfing handfuls of food down' (FG1; Q4).
	'I enjoyed the Sunday roast last week. I was scoffing roast potatoes, but remembered to slow down and taste them mindfully! They were even more delicious' (FG1; 4).
Lesson 1 ***Puppy Training***	*'I liked the one about the puppy. You manage your puppy mind; you don't give out to it, try to keep it focused and try to have some kind of kindness' (FG2; 4).*
	'this metaphor was very good for what we are trying to do'...it made it a bit easier' (FG2; Q4).
	'Enjoyed bringing the puppy back' (FG2; Q4).

Lesson 2 ***Taming the Animal Mind***	*'I liked to FOFBOC one'*
Lesson 7 ***Mindful Movement***	*'The Last Samurai and Mindful Movement. That was good' (FG3; Q4).*
	'It was good at understanding your environment and comprehend being more natural, relaxed' (FG3; Q4).
Lesson 8 ***Taking in the Good***	*'The gratitude lesson and the grapes'FG1; 4).* *'Apart from the food, it made me more open minded to show gratitude towards other people and not to take them for granted' ((FG1; Q4).*

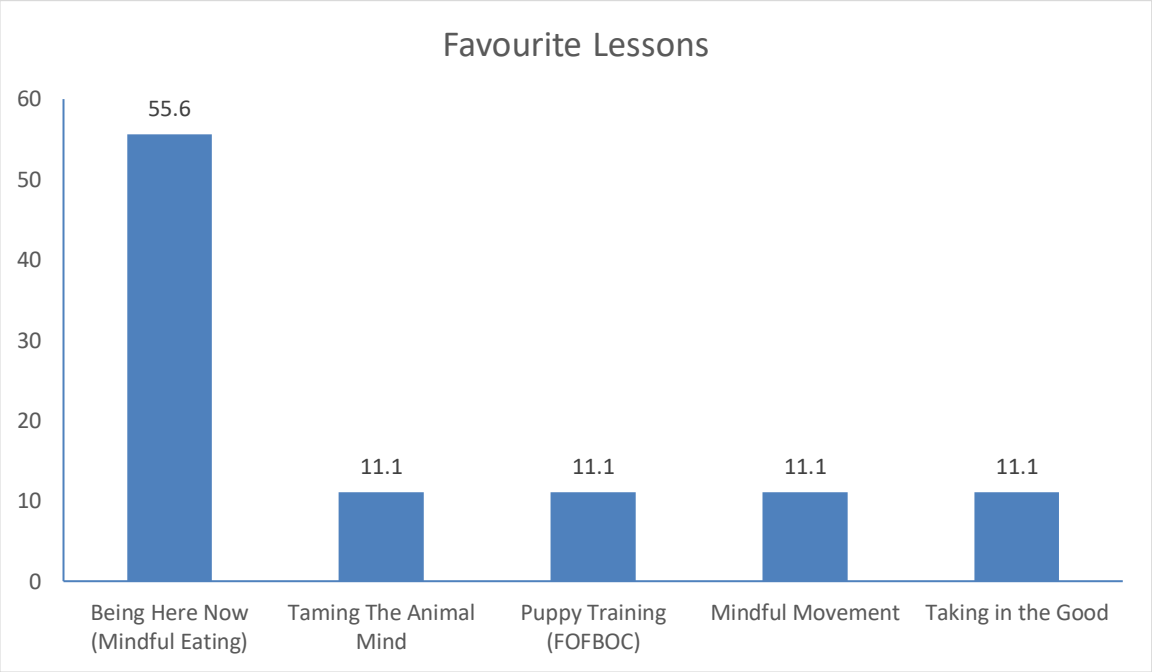

Figure 6. Percentage of Students Reporting their Favourite Lessons

3.7.3 Most Utilised Mindfulness Practices

Three main mindfulness practices were highlighted by students in the focus groups to be the most useful aspects of lessons (Table 13). The popularity of the 7/11 technique (60%) concurred with qualitative self-report data obtained from students at Time 2 and Time 3, endorsing its ease and flexibility of use in any situation (See Figure 3). However, while the popularity of the FOFBOC meditation or Beditation were not reflected by all students in qualitative self-report data at T2 and T3 (See Figure 3) these practices were broadly evident

in focus group comments and ranked amongst the top 3 skills utilised by respondents, with 20% of students rating each of these practices (See Table 13).

Table 13

Most Utilised .b Mindfulness Practices

7/11	*'the 7/11 one definitely'...'the 7/11 was very useful. It sticks with you. One to remember and it is easy to do. It is a great distraction.*
	'Finding the 7/11 very helpful' 'loved the 7/11. It was short and very easy. It was the easiest one'
	'7/11 could be done anywhere. Could stop and do it any time.'
The sitting meditation exercise FOFBOC	*'I do a lot of sport. This exercise is brilliant. Before a match I use it. I do it in the dressing room. I don't mind if anybody sees me doing it!'*
	'For singing and performing it really helps, dropping your attention to the feet and to the breath is really good in avoiding stress build up...been able to do it'.
The Lying down Beditation	*'Liked the Beditation. Don't need it to sleep but love the exercise'.*
	'The Beditation I liked that. The breathing has been very good for me in helping pain control. I get cramps sometimes and the breathing really worked'

3.7.4 Recommendations for Improvements to the .b Mindfulness in Schools Programme

Overall, as outlined above, students' comments were very positive in relation to their experience of the .b Mindfulness in Schools programme. On being asked if there were any aspects of the programme and its overall content and delivery that they did not like or enjoy, students made many comments regarding the structure and design of the programme. While students agreed that it was obvious and noticeable that its creators had made large efforts to design this programme in a way that would be appealing and relevant to teenagers; *'You could tell someone was trying to appeal to teenagers but it could have been a bit better' (FG1; Q3), they also highlighted some constructive criticisms:*

Power point slides

Many students made comments in relation to the content of the PowerPoint presentations and that they contained too much theory and information; *'Tacky power points'(FG1;Q3); ' Some power points were a bit naff and overdone'...'too much information on the power points'(FG2;Q3); 'Too many captions and too many animations....you know they tried really hard to make it relatable, but went too far and got a bit lost and some were a bit cheesy'(FG2;15).*

Transitioning between power points and mindfulness practice

Students also spoke of difficulties transitioning from a practical mindfulness exercise, and having to go back to looking at Power Point on a screen and attending to the didactic aspect of the lesson *'you know the way we done that breathing and you close your eyes and you are all calm and sleepy and then you have to wake up and listen and read the screen. Tired' (FG2; Q3).*

Different topics each week

Students commented on the fact that every week covered a different topic, resulting in a lot of information being presented; *'It might be easier if there wasn't something different every time...every lesson being different, a lot of information to take in' (FG2; Q3).* It was also highlighted that topics were not always related or alluded to in subsequent lessons; *'I know it is based out in weekly lessons but sometimes if you forget to do the homework or you miss a lesson, there is no link (FG4;Q3).* Therefore if a lesson were missed due to absence, ideas were not always linked, even though mindfulness practices were continued and repeated; *The lessons are not really attached and linked...I missed the FOFBOC lesson and thought I missed something big!'(FG4; Q3).*

Based on many of the above critique and comments, students across all focus groups generated some ideas for improving the programme into the future both in term of content, structure and delivery. They recommended improving power points, focusing on fewer concepts as well as including more videos, more interaction and more practical exercises. They requested input on the areas of self-compassion and self-acceptance and to have classes more frequently (See Table 14 below).

Table 14

Student Recommendations for Improvements to the .b Mindfulness in Schools Programme

Improve Power Points (38.9%)
'not so many and not so much theory', 'just one or two really strong points' (FG2; Q15). *'Maybe less theory on the Power Points' (FG2; Q15).*
Focus on fewer concepts (5.5%)
' If programme focused on fewer things it would make it more memorable'...'Less information would be more beneficial' (FG2;Q15).
More videos (22.2%)
'especially the meaningful ones like the 106 year old lady from Nazi Germany, I really liked her and believed her' (FG1; 15). *'one or two more examples in videos would be great' (FG3; Q15).*
More interaction (5.5%)
'I would like this course to be more interactive; I liked the eating lesson and the shock ball. I would like more bits like that' (FG2; Q15).
More practical exercises and less theory (5.5%)
'I would like more breathing exercises' (FG2; Q15).
Include input on self-acceptance and self-compassion (5.5%)
'More stuff about accepting yourself so you can understand and help yourself more' (FG1; Q15).
Do more frequently (5.5%)
'kind of forget it over a week. It is a big gap. Maybe twice a week and a teacher could do the practice on one of those days' (FG4; Q16).
Not as much repetition of Practices (11%)
'Not as much repetition of FOFBOC'(FG2; Q.15).

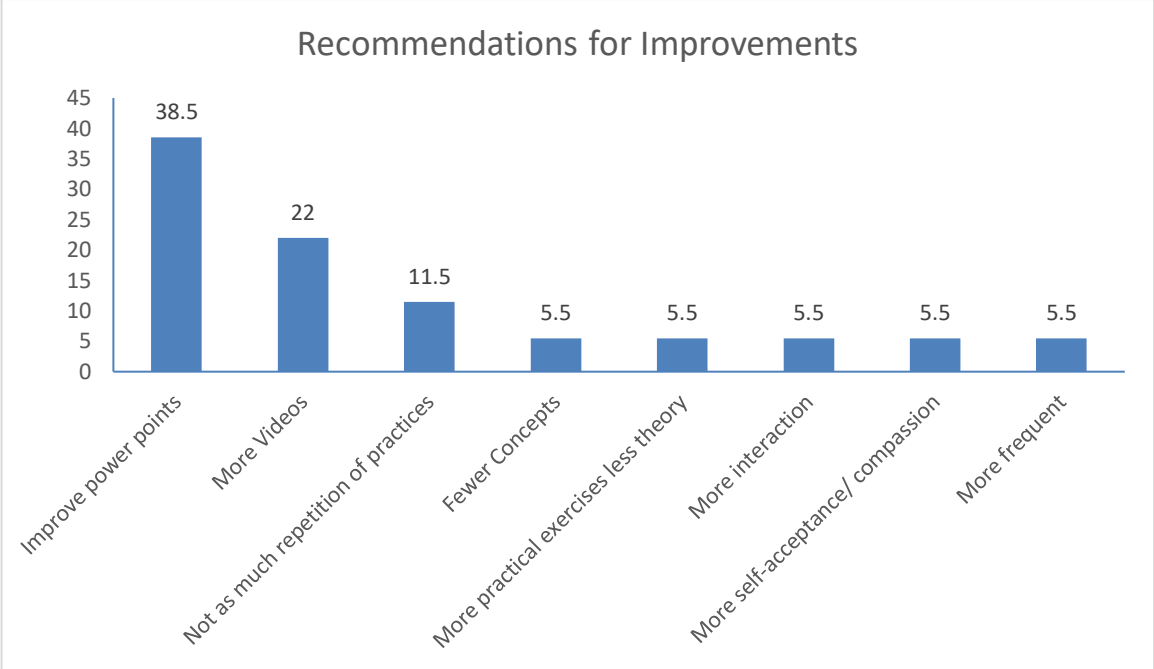

Figure 7. Percentage of Participants Endorsing Recommendations for Improvements

3.7.5 General Discussion and Practical Considerations regarding Delivery of the .b Mindfulness in Schools Programme

Students were of the opinion that this programme would be of great benefit in an exam year. They stated that to learn these skills at a time of stress would be very beneficial. They acknowledged however that they have time in Transition Year, but don't really need mindfulness as much and that they will have no time in 6th year when they do need it; *'An exam year would have more benefits'* as students may be more likely to be stressed and required skills to manage the pressure of study and exams, *'but in TY we could enjoy the classes' (FG3;Q15).* They stated that they were able to enjoy the programme a lot however as part of TY as they had the time and space to do it; *'Good to do in TY, because you don't have to be as focused on study and work in classes.' 'Don't do as much work as other years so have time to learn mindfulness' (FG4:Q17).*

Students felt that a' top up' of the course would be useful when they were in 6th year, before exam time; *'6th year is probably when you need it, but would not have time to learn it.' 'another class in 6th year would remind us again! (FG4; Q17).*

Students also pointed out that they valued the fact that an outside facilitator came in to do the programme and that respect and good behaviour was shown*; .. 'You are coming in and most of us don't want a 'bad rep' so we have more respect and discipline for you' (FG4; Q16); 'There was huge respect for you' (FG1; Q17).* On it being explained that the

ethos of the programme is to train teachers working within the schools, so that the programme could then be rolled out more consistently to all classes in a school, adopting a 'mindful school' approach, students stated that they felt that this would make a difference to their acceptance of the programme and their 'buy in' to the teachings of mindfulness, as they were of the opinion that views or relationships already formed with or about their teachers may interfere with same; *' that would make it different'... 'Lots of people have grudges with certain teachers; they wouldn't pay attention to them doing mindfulness', and 'they would not get the respect that you got, so they would not be as good or effective' (FG1; Q15).* Students also commented that authenticity would be questionable if teachers were to also take on the role of mindfulness facilitator; *'People already have an opinion on the teachers and if they started telling you what your mind is like, you would not take it in' (FG2; Q15); 'Nobody would listen to the teachers; they would not be notable in the field' (FG3; Q15).* Students did suggest however that a good compromise may be for an outside facilitator to teach the initial course but that teachers could maintain the practice thereafter and incorporate it into the school curriculum; *'If teachers did the top ups it would be great. Get someone like you to do the course and a teacher could continue it and do the top ups!'(FG3; Q15).*

CHAPTER 4

DISCUSSION

This study investigated the effectiveness of the 10 lesson, .b Mindfulness in Schools programme with a mid-adolescent population (aged15-17 years) within a multiple components method non-randomised controlled design in relation to a number of psychological measures: anxiety, depression, anger, disruptive behaviour, self-concept, emotion regulation and mindfulness. Study findings are summarised and considered in more detail below, including their contribution to the existing literature, the clinical implications of the results, a critique of the study's strengths and limitations, and suggestions for future research. A multiple component methods design was chosen based on the complexity of the research questions.

In the present study, only one quantitative statistically significant effect of mindfulness was found: the mindfulness group reported lower scores on anger post intervention and at follow up, as compared to the comparison group. While scores on measures of anger increased in both mindfulness and comparison groups at Time 3 follow up, the increases in anger scores were found to be significantly less within the mindfulness group. Higher anger scores in both groups at follow up time point may have been related to the fact that students had moved on to Senior Cycle and were in first term of 5th Year, which required them to re-engage in a strict academic schedule, a change from the more relaxed and varied curriculum they experienced the previous year as Transition Year students. This return to normal curriculum may have caused additional pressure to conform with school rules and to attend and perform well academically. Results of correlational analysis also showed significant results in relation to anger. Students who showed higher scores on Mindfulness at Time 2, post group intervention, showed lower anger scores at Time 2 and Time 3 follow up.

In addition, reduced anger was also highlighted as a main theme of qualitative focus group feedback, with many students commenting on the fact that they had noticed changes in their experience of and response to anger in their lives, following completion of the .b Mindfulness in Schools programme. They reported that utilising mindfulness skills such as increased awareness and the utilisation of mindfulness practices such as breathing, helped to create space in anger situations and allow students to choose or make different responses to anger situations. They also commented of gaining a greater understanding of anger and its presence as a normal human emotion and how this understanding has helped them to view

their anger responses differently and seeing anger to be made up of many levels for example, irritability, annoyance. This supports findings from other studies of mindfulness with young people who reported that emotional and behaviour regulation occurred as students became aware of the signs of anger, felt the weakening of anger by focusing on breathing and therefore stopped these signs from feeding into acting out (Bernay, Graham, Devcich, Grant, & Rubie-Davies, 2016; Costello & Lawlor, 2014; Viafora, Mathiesen, & Unsworth, 2015). Students also commented that with increases in levels of calmness and relaxation noted since commencing the programme, they had noticed a reduction in the amount of times they actually felt angry emotions.

Mindfulness meditation techniques are increasingly being used to treat problematic anger and aggressive behaviour, although the research base to support the effectiveness of this treatment method in this area remains somewhat limited (Wongtongkam, Ward, Day, & Winefield, 2013). Anger arousal is often an adaptive response to emotional distress and has positive qualities, such as mobilising psychological resources, energising corrective behaviour, facilitating perseverance, protecting self-esteem and communicating negative sentiment (Taylor & Novaco, 2005;Wright, 2009). It is also a common antecedent to both aggressive and violent behaviours and has therefore been regarded as one of the most destructive of the human emotions because of its potential to lead a person to harm themselves or others (Conger, Neppl, Kim, & Scarmella, 2003; Fesbach, 1983).

One of the ways in which mindfulness interventions are thought to bring benefits in the area of anger management is in relation to the well documented aspect of rumination and its association with chronic anger issues (Rusting & Nolen-Hoeksema, 1998). Rumination has been linked to lower levels of neuropsychological flexibility, and is believed to maintain emotional disturbance by triggering negative self-beliefs and heightening self-focused attention (Simpson & Papageorgiou, 2003). It has been further suggested that memories of past anger may trigger new episodes of anger and can lead to amplification of its intensity and duration (Sukhodolsky & Scahill, 2012). As outlined earlier, mindfulness is thought to help reduce and break the grip of rumination by re-directing people's attention to the present, to step back from automatic emotional reactions (Baer, 2003; Bishop et al., 2004; Shapiro, 2006; Teasdale, 1999) and respond to present situations in creative balanced ways (Miller, Duncan, Brown, Sparks, & Claud, 2003; Philippot & Brutoux, 2007, Wright, 2009). This is thought to assist in the regulation of anger (Galantino,Baime, & Maguire, 2005), facilitating a more accepting state of mind, thus reducing the likelihood of taking offence when life does not match one's desires or expectations (Arch & Craske, 2006; Hayes et al., 1999; Teasdale, 2003). Thus mindfulness may improve an individual's ability to tolerate

anger states (Baer, 2003) and lead to the extinction of responses and behaviours previously elicited in anger (Wongtongkam et al., 2014; Wright et al., 2009).

A review by Fix and Fix (2013) identified 11 relevant studies examining the effects of mindfulness based treatments on aggressive behaviour. While the outcomes reported in these studies were generally favourable, it was highlighted that many required the adoption of methodologically stronger evaluation designs. Shonin et al. (2013a, b) also identified the need for more rigorous evaluation in their review of mindfulness interventions with incarcerated populations, but also concluded that they may offer a feasible and effective rehabilitative intervention. More recent reviews (Weare, 2019) also reported promising evidence of the effectiveness of MBI in managing anger and aggression, with small to medium impacts. The statistically significant result, showing improvement in anger skills, following completion the .b Mindfulness in Schools Programme may also possibly hold promise for the future regarding this being a feasible and effective programme to assist in the field of anger management, understanding and control with young people. Additional research is required to further test this possibility.

Contrary to all other hypotheses however, no further quantitative statistically significant differences were found between groups on any further psychological measures at any time point: Anxiety, Depression, Disruptive Behaviour, Self-Concept, Emotion Regulation or Mindfulness with the exception of the FFMQ subscale Describe. This subscale measures the extent to which an individual can label internal experiences with words and contains items such as 'I am good at finding words to describe my feelings'. This suggests that students in the mindfulness group condition developed the skills to be able to describe and name emotions and feelings. This skill may be linked to the development of emotional literacy. The ability to describe emotions has been identified in recent years to have significant impact on positive mental health outcomes (Byrne, Swords, & Nixon, 2015).The role of the facet Describing, however, in mindfulness has been debated amongst researchers, raising the question as to whether this subscale should or should not be considered a feature of mindfulness, as in many studies it has not been shown to be related to or predictive of any specific outcomes (Ciaraciotto et al., 2008; Cebolla, Demarzo, & Martins, 2017; Soler, Cebolla, & Feliu-Soler, 2014).

Given that the .b Mindfulness in Schools Programme is predominantly promoting the understanding, development and practice of mindfulness skills, it is somewhat surprising that only one subscale of the mindfulness scale showed significantly improved overall results within the intervention group. These results however concur with the earliest evaluations of the first and shorter four session version of the .b Mindfulness in Schools

Programme, which also reported that scores on mindfulness did not show any significant differences between the intervention and control conditions (Huppert & Johnson, 2010). The mindfulness scale used for the Huppert and Johnston study was the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al., 2007). A later study evaluating the extended 8 session Mindfulness in Schools Programme (Henley, 2011), using the CAMS-R, reported significant differences between intervention and control groups on measures of mindfulness immediately post intervention. However, findings of this study did not reveal statistically significant differences between intervention and control groups on measures of mindfulness at 6 months follow-up. Unfortunately, a further more comprehensive study of the effectiveness of the .b Mindfulness in Schools Programme (Kuyken et al., 2013), did not incorporate a formal measure of mindfulness in their study and instead assessed mindfulness using five questions about sustained use of mindfulness practices in the 3 months following completion of the programme, so has no quantitative results to compare. Using a different mindfulness measures, Holland (2012) in her unpublished doctoral research thesis evaluating the .b Mindfulness in Schools Programme, also reported no significant increases in measured mindfulness in the intervention group as measured by the Child and Adolescent Mindfulness Measure (CAMM; Greco et al., 2011), nor did Johnson et al. (2016; 2017) using the FFMQ.

Given that the proposed mechanism in any MBI is a primary change in mindfulness followed by secondary changes in other factors, which can lead to improved mental health (Coffey and Hartman, 2008; Coffey et al.,(2010), Hozel et al., 2011; Shapiro et al., 2006) it is maybe not surprising therefore, that in the absence of any real change on measures of mindfulness in this study, students also did not record any quantitatively statistically significant changes in any other psychological outcomes (Bailey, Chambers, & Wootten, 2018), with the exception of anger.

Johnson et al. (2016; 2017) in their evaluation of the .b Mindfulness in Schools Programme also found no improvements on any psychological outcome variables either immediately post intervention or at three month follow up. In fact, self-rated anxiety was found to be higher in their Mindfulness group at follow up (Johnson et al., 2016). These results were in contrast to Kuyken et al. (2013) who had previous shown promising results in a controlled study of the .b Mindfulness in Schools Programme, demonstrating reductions for depressive symptoms within the intervention arm of their comprehensive study, post intervention and at three month follow up, and reductions in stress and improved wellbeing at follow up, with a mid-adolescent group (See Table 5, pg. 48). Johnson's second study in 2017 conducted a replication of the programme and included parents as part of the

intervention. However, again, no differences were found between any groups at any time point.

The current study, using correlational analysis on feedback from students in the mindfulness intervention group, revealed significant correlations between students' reported intention to utilise techniques at Time 2 and use of .b mindfulness techniques at follow up. There were also significant correlations found between reported use of mindfulness techniques at Time 2 and improved mindfulness scores at Time 2 and Time 3. Statistically significant correlations were also found between higher mindfulness scores post group and improvements on all psychological measures at Time 2 and Time 3, suggesting that students were using mindfulness techniques at Time 2 and were rating improved mindfulness scores as a result, within the mindfulness condition. Qualitative analysis also reflected the building of mindfulness skills and practice over time whereby students reported the learning of new skills such as breathing exercises, which they found to be helpful, calming and beneficial to them in stressful situations. Students also commented on the development of mindfulness skills including increased awareness of self and their environments, slowing down and deepening the skills of noticing and tuning in to the present moment they also described higher levels of acceptance of self and emotions and increased appreciation and gratitude towards others in their lives. These findings concur with a number of other studies exploring the use of mindfulness with adolescents and adolescents' experiences of the development of mindfulness practice (Bernay et al., 2016; Costello & Lawlor, 2014; McKeering & Hwang, 2019; Viafora et al., 2015), who also reported that for the majority of students, the practice of mindfulness was enjoyable, acceptable and facilitated a range of benefits. Other studies have also explored qualitative outcomes of school-based mindfulness and have described benefits in relation to classroom factors (e.g. school climate and classroom engagement; Case-Smith, Shupe Sines, & Klatt, 2010); individual behaviours (e.g. breathing, self-distraction and sleep, Conboy, Noggle, Frey, Kudesia, & Kharsa, 2013; Metz, Frank, Reibel, Cantrell, & Broderick, 2013); and cognitive (e.g. awareness and attention, Tharaldsen, 2012); emotional (e.g. calmness Wisner, 2013) and social outcomes (e.g. improved peer relationships; Metz, 2013)

Monshat et al. (2013) in a study of 11 participants used qualitative data to describe three phases (distress and reactivity, stability, and insight and application) through which participants progressed as they became more mindful during a 6-week mindfulness programme. While the current study attempted to focus on and gain an understanding of the process components, such as students' experience of learning skills as well as programme outcomes, it did not identify data in line with all three phases identified by Monshat et al.,

many responses could be included under the third phase identified by namely insight and application.

So what do these findings mean? While correlational data and focus group feedback suggest that participation in the .b Mindfulness in Schools Programme was associated with psychological benefits, why then did quantitative analysis not reveal any significant differences? There may have been measurement limitations regarding sensitivity and validity of measures and whether the concepts of mindfulness and understanding of the processes of mindfulness were difficult to describe generally using standardised measures as opposed to completing qualitative feedback forms designed specifically for the study or by openly speaking about experiences in a focus group setting. In addition, other broader possible reasons for the lack of quantitative statistically significant results in this study, may be related to the dosage and design of the .b mindfulness in Schools Programme; issues pertaining to an external facilitator type; the amount of home practice engaged in; age and stage of students; duration of follow up; student attitudes to the programme; or use of a non-clinical population. Finally the sample size may have been insufficient to detect the intervention effects. The possible impact and influence of each of these areas will be discussed below.

4.1 MEASUREMENT LIMITATIONS

The lack of more statistically significant quantitative results may be associated with the limitations of the questionnaires used. The BYI, DERS and the FFMQ all use a five point Likert Scale, which may allow for little opportunity to rate small changes (Yao-Ting & Jeng-Shin, 2018). In addition, it has been suggested that self-report measures in general, but particularly in relation to mindfulness may be vulnerable to limitations of introspection, because participants may not know exactly which aspects of mental states should be taken into account when making personal assessments (Van dam, 2017). One possible reason for this has to do with interpretation and also the fact that it is not known how well self-reports of mindfulness correspond with actual experiences in daily life and highlighted that the development of performance based measures of mindfulness would be of benefit to explore same (Garland & Garland, 2009).

Keng et al. (2011) highlighted several issues pertaining to the measurement of mindfulness including the fact that individual responses to questionnaire items may vary depending on understanding of the questionnaire items and an individual's exposure to and practice of mindfulness (Grossman, 2008). One who has practised mindfulness meditation or attended a course may understand and value items differently than someone who has not

practised or learned about mindfulness. Several studies have exhibited different response properties on self-report measures between meditators and non-meditators (Christopher, Christopher, & Charsenuk et al., 2009; Van Dam et al., 2009), as well as before and after mindfulness training (Gu et al., 2016). It has also been suggested that many mindfulness measures were not originally designed to capture changes in mindfulness practice but are now used for many pre and post studies (Grossman & Van Dam, 2011). Regarding use of the FFMQ measure specifically, while earlier studies showed significant relationships between the FFMQ and primary psychological outcome variables in non-clinical samples (Leigh, Bowen, & Marlatt, 2005), as the field progresses and these relationships undergo more nuanced analyses, the picture may not be so clear and the FFMQ may not be generalizable to all samples (Manuel, 2017). Another possible issue is the validity of the subscales. The FFMQ subscale Observe has shown inconsistent patterns in external validation analyses in a number of studies (Baer et al., 2008; de Bruin et al., 2012; Williams, Barnhofer, Brennan, Duggan, & Fennell, 2014) and some authors have even suggested not including scores on this subscale in calculating total scores for mindfulness utilising this scale. As outlined earlier, Gu et al. (2016) found that the factor structures for the FMQ were not stable after MBCT and recommend that researchers consider excluding the Observing facet score from comparisons of Total scale scores before and after mindfulness interventions.

The use of an alternative, adolescent specific mindfulness measurement tool, for this study, may have reflected more sensitivity to subtle changes and may therefore have possibly yielded significant results in this study, e.g., The Comprehensive Inventory of Mindfulness Experiences-Adolescents (CHIME-A) (Johnston et al., 2016) or the new Adolescent and Adult Mindfulness Scale (Droutman et al., 2018).

As outlined earlier, many researchers (e.g. Felver et al., 2015) have also highlighted general concerns in relation to use of self-report measures and the requirement for additional measures to capture changes on any psychological measures including, e.g., parent/teacher reports and physiological measures.

4.2 HOME PRACTICE

The association between increases in mindfulness scores and the amount of home practice that participants report doing has also been highlighted as an important factor in the literature (Carmody & Baer, 2008). Correlational analysis in the present study found a number of benefits of mindfulness within the intervention mindfulness groups. There was a significant relationship between the amount of homework done as part of the .b Mindfulness

in Schools Programme and overall Mindfulness scores at Time 3. This was despite a relatively low rating by students in this study for completion of homework tasks at Time 2 (3.54 out of a possible 10; averaged 35%). This rate is higher than the average of 24.4% of homework practice engaged in research by Johnson et al. (2016; 2017) but lower than the 70% reported by Huppert and Johnson (2010) in their evaluation of the earlier .b mindfulness curriculum. Their high rates may be attributable to the fact that their mindfulness programmes were delivered by classroom room teachers with the potential for regular homework reminders. McKeering and Hwang (2019) in their systematic review of mindfulness based school interventions noted that mindfulness homework was found to be an important element of mindfulness training, and was an exercise offered in seven out of thirteen studies in their review. Despite the lower homework rates observed in the current study, correlations were noted in relation to increased mindfulness score at follow up. Statistically significant correlations were also found between amount of homework done and students' levels of enjoyment in the programme, the amount of learning they gained from the programme and the likelihood that they would use techniques again post intervention. Students rated a mean score of 7.14 out of 10 for enjoyment of the programme, 6.73 for the learning obtained and 6.63 for the likelihood that they would use skills learned into the future. These scores were slightly higher than similar rating as part of Johnson et al.'s (2017) evaluation of the .b mindfulness in schools programme who reported mean ratings of 6.92; 6.84 and 6.1 respectively. In addition, there was a statistically significant correlation between the amount of homework done and scores on the Beck Disruptive Behaviour Inventory (BDBI) at post group, indicating the engaging in more homework was associated with lower levels of disruptive behaviour.

Sustained home practice (measures of the extent of engagement in the programme) are part of the course requirements of MBSR and therapeutic effects are thought to derive largely from participating in actively continued mindfulness practice, with increased periods spent engaging in meditation practices (Kabat-Zinn, 1990). However, the literature has been inconsistent regarding the role of homework on outcomes and assigned home practices have varied greatly among studies (range 80-420 minutes weekly). There are methodological difficulties also in the documentation and particularly with regard to adherence to prescribed homework and actual time spent meditating as part of any MBI (Davidson & Kaszniak, 2015). This may reflect practical barriers potentially related to participants of MBIs adhering to home practices prescribed including the intensive time commitment required in MBSR, e.g., 45 minutes per day (Gerghoff, 2017). Home practice rates are rarely reported or empirically validated (Carmody & Baer, 2009) and of those studies which do examine homework practice, only half have reported any links to improved psychological symptoms

and wellbeing (Nyklicek & Kuijpers, 2008; Vetesse, Toneatto, Stea, Nguyen, & Wang, 2009). The need to record and report homework practice where possible would provide a broader understanding of its particular contribution, if any, to the development of mindfulness practice and any associated benefits; it would also be helpful in terms of consistency (Parsons, Parsons, & Crane, 2017) and quality (Del Re, Fluckiger, Goldberg, & Hoyt, 2013, and whether home practice is actually even necessary (Parsons et al., 2013).

Many MBSR and MBCT studies have assumed that a large amount of meditating time (e.g., 45 minutes daily) is required to show increased positive outcomes. Schenstram, (2006) however reported an alternative viewpoint and reported that participants who engaged in a minimum of three days mediation practice per week during a modified MBSR programme demonstrated significant increases in trait mindfulness scores compared to those who meditated for two days per week or less. Perich (2013) found significant differences between those who meditated for 3 days per week or more and those who meditated less often on trait anxiety post treatment and clinician rated depression at 12 months follow up. Arch and Craske (2006) even reported that one short single session of mindfulness practice in the laboratory appeared to confer benefits. Other more recent research also suggests that brief and infrequently practices of mindfulness meditations produces symptom improvement (Call, Mirron, & Orchutt, 2014).

In addition, evidence suggests that quality rather than quantity of home practice affects outcomes (Dobkin & Ahao, 2011). Similarly, informal mindfulness of daily living, rather than formal mindfulness practice may bring benefits (Shapiro, 2000; Tamagara, 2015). In summary, practicing long mindfulness medication exercises may not produce markedly different outcomes and has the potential to negatively affect adherence to the prescribed home practice requirements, relative to short exercise practice (Berghoff, 2012). It may be that the homework practice, as part of this study however, even if engaged in by students on a frequent basis, may be too short to elicit or sustain long term changes in mindfulness. The longest mindfulness practices as part of the .b Mindfulness in Schools Programme are of 10 minutes duration, e.g., FOFBOC and Beditation.

Dobkin et al. (2014) outlined that there was no consensus in the literature about the ideal length of time for home meditation practices. Bailey et al. (2018) suggest that it is unlikely that students who are already struggling for time in their day will pursue the optional extra homework that mindfulness practice represents. It may be that both the teaching of mindfulness and the time to practice it, as part of a Whole School approach, may lead to the more benefits and would be worth investigation (Kielty, Gilligan, & Staton, 2017). Future studies are therefore needed to evaluate any benefits to participants of home

practice exercises or conversely, to remove this added demand from MBI if results do not support an effect (Johnson et al., 2016).

4.3 DOSAGE

The .b Mindfulness in Schools Programme is typically delivered weekly, in 40 minute class periods as part of the school timetable, across a 10 week period, although Johnson et al. (2016) reported varying some lesson lengths up to 60 minutes. This may seem short compared to the "gold standard" model of MBI, the MBSR, an 8 week adult mindfulness programmes, involving 20-26 hours of formal meditation training during 8 classes of 2.5 hours duration, one all day (6 hours) class and supplemental 45 minutes of daily home practice. The .b Mindfulness in Schools programme duration is similar to many other MBIs that have been altered dramatically to conform to brief training regimes that may involve from 100 minutes per week (Raes, Griffith, Van der Gucht, & Williams, 2014) to as few as four twenty minute sessions (Zeidan, Emmerson, & Coghill, 2015). Some newer MBIs have even implemented web based or mobile applications for treatment delivery (Cavanaugh, Strauss, & Forder, 2012; Dimidijian, Beck, Felder, Bogg, Gallop, & Segal, 2014; Lim, Condon & Desleno, 2015). Caution must therefore be exercised when considering mainstream introduction of minimally tested adaptions to more traditional mindfulness programmes (Dimijian & Segal, 2015). Questions remain as to how best dilute youth programmes so they digestible and safe while still achieving an effect (Johnson et al., 2016). Future studies need to formally investigate lesson length, or whether alternative strategies to increase the dose of mindfulness (e.g., short daily classroom practices, extending curriculum length or teaching additional lessons or modules over subsequent year levels) achieve more robust replication of positive effects in young people.

4.4 FACILITATOR TYPE

This current study used an external facilitator and similar to Johnson et al. (2016; 2017), the same facilitator conducted all .b Mindfulness in Schools programmes across all four schools and was trained in the delivery of the programme. Weare (2018) stated that advice given by the .b Mindfulness in Schools training programme is 'to use classroom teachers teaching their regular classes to ensure good classroom management skills and a pre-existing relationship with the pupils' (pg.13). The fact that other studies evaluating the .b Mindfulness in Schools Programme that found significant differences, (Hennelly, 2014; Huppert & Johnson, 2010; Kuyken et al., 2013) and used existing classroom teachers may well support this view. However it is interesting therefore that the Mindfulness in Schools

training body actively encourages mindfulness practitioners from all professions and disciplines to train in this curriculum and to deliver it is schools.

The benefits of class teacher delivery may extend beyond the core weekly lessons to include more regular contact with the class for embodiment of mindful behaviours, continued prompting of mindfulness ideas across the curriculum, regular reminders of daily home practice and the opportunity to conduct extra mindfulness practices between the formal weekly lessons Johnson et al. (2016) reported that in their seven interviews conducted as part of their study, three of the seven participants preferred an external facilitator, citing increased student engagement with a novel presenter and the need for extensive teacher training to deliver such a specialised topic. Four respondents nominated a co-teaching role as ideal, benefiting from the combination of an expert in mindfulness working with the teacher, taking care of classroom behaviour. Two stated that both approaches had merit, with external facilitators lacking detailed knowledge of student background but embedded teachers needing to be engaged and well trained to deliver the programme adequately.

In a very recent systematic review of mindfulness school based interventions, McKeering and Hwang (2019) stated that the importance of the facilitators of any MBI programme cannot be overemphasised and reiterated Segal's (2102) recommendation that extensive on-going practice in mindfulness is required of any facilitator in order to best support delivery of such programmes. In 13 papers they reviewed , six described facilitators as teachers at the school(Barnes, Bauza, & Trieber, 2003; Costello & Lawlor, 2014; Joyce, Etty- Leal, Zazrn, & Hamilton, 2010; Schonert-Reichl & Lawlor, 2010) and six had an external facilitator (Bernay et al., 2016; Johnson et al., 2016,2017; Quach et al., 2016; Sibinga et al., 2013; Viafora et al., 2015), revealing mixture but also balance with regard to facilitation of programmes within the up to date literature. In Carsley et al.'s (2017) review, they reported significant effects of mindfulness post intervention only in studies with an external facilitator, and significant effects in mental health outcomes post intervention in studies only with an external facilitator. Within this current study, the external facilitator was an experienced senior clinical psychologist, with experience in teaching and training and group facilitation. In addition, also had more than five years mindfulness practice experience and training in MBSR and teacher training in .b Mindfulness in Schools Programme. While no issues arose in relation to classroom management or discipline, the presence or co-facilitation of the programme with a classroom teacher, who could have possibly reinforced concepts between sessions, may have revealed more statistically significant results. However, different facilitators will bring their own nuances and personalities to the delivery

of any programme, as well as knowledge, experience and training (McKeering & Hwang, 2019), regardless of whether they are classroom teachers or external facilitators.

Of the 13 studies reviewed by McKeering and Hwang (2019) they reported that five instructors had a long standing mindfulness practice. Interestingly they outlined that the external facilitator in Johnson et al.'s 2016 and 2017 studies had more experience than all other facilitators included in their study and they suggested that it was worth noting that these studies did not find positive intervention results. Some of the earlier studies evaluating the .b Mindfulness in Schools programme, and reporting positive benefits (Hennelly, 2011; Huppert & Johnson, 2010) had links to the development of the programme and may contain a certain bias. There may be a need to reduce bias by clearly separating developers of programmes from those who evaluate them (Weare, 2018).

Feedback from focus groups in the current study highlighted their preference for an external facilitator of this programme outlining that students held a more respectful attitude and were more open to learning from a 'novel' facilitator and outlined many disadvantages of having class teachers deliver the programme, including preconceived possibly negative attitudes and non-prioritisation of lessons within a busy curriculum. Students outlined the positive benefits however of school teachers possibly being involved in a maintenance aspect of on-going mindfulness practice with initial implementation and top up sessions being provided by external facilitators.

Whether classroom teachers or external professionals are best facilitators requires more research. The use of the same facilitator for all lessons in this current study may well be considered a strength due to consistency of delivery across groups.

4.5 AGE AND STAGE

The present study utilised an older age group (15-17 years) and did not find any significant differences between groups on any psychological outcome measures, apart from Anger. This leads to questions regarding the ideal age of adolescents, in order to benefit from this programme. These results were in contrast to Kuyken et al. (2013) who had previously shown promising results in a controlled study of the .b Mindfulness in Schools programme, demonstrating reductions for depressive symptoms within the intervention arm of their comprehensive study, post intervention and at 3 month follow up, and reductions in stress and improved wellbeing at follow up, with a slightly younger mid-adolescent group (mean age 14.8 years). Only recently have studies suggested that MBIs may be more effective in some developmental stages than in others (Atkinson & Wade, 2015). Carsley et al. (2017) conducted a meta-analysis which found that Mindfulness interventions conducted

in late adolescence (15-18 years) had higher pre-post effects on mental health and wellbeing outcomes compared to studies with middle childhood (6-10 years). Their review also found no significant pre-post effects reported on mental health and wellbeing outcomes in early adolescents (ages 11-14).

Possible reasons for null findings in this study may also be related to findings reported by Shonert-Reichl and Lawlor (2010). They stated that early adolescence is a time in the life cycle in which there is a heightened self-consciousness due to increased competence in cognitive and social cognitive abilities and information processing. Such developmental changes coupled with an intervention like Mindfulness, that fosters self-awareness may lead to increased attention and reflection on the self, which may then direct early adolescents to adopt a more critical view of the self and lower self-concept as a result (Eccles & Roeser, 2009). While adolescents in the current study were slightly older, the same may provide a rationale for the non-significant results for the intervention group on many psychological measures. While, Carsley et al. (2017) in their systematic review, as outlined earlier, described finding that interventions delivered during late adolescence (15-18 years) and consisting of combinations of various mindfulness activities and yoga-based mindfulness activities, had the largest effects on mental health and wellbeing, it is possible that the .b Mindfulness in Schools Programme specifically, is more suited to slightly younger adolescents.

4.6 FOLLOW UP DURATION

Length of follow up time may also be a factor in the measurement of the effects of mindfulness training, particularly in the adolescent age group. Brooker and Waugh (2013) hypothesised that as mindfulness skills continue to develop, one might then start to see a decrease in negative affect. However, at 6 month follow up in the present study, no such decrease was observed. MacKenzie and Williams (2018) argued that even one year's follow up is not sufficient to truly detect change or prevention using any universal school based interventions in the older, secondary school population They suggest that as adolescents are required to manage many demands including academic, social and developmental, and it could be that such stressors contribute to the failure to detect significant results in this secondary school population, or that it takes time for strategies and skills learnt during the course, to be applied and practised. This would require more investigation however.

4.7 STUDENT ATTITUDES

Student attitudes towards mindfulness may also have led to an affect. Disappointment in the comparison group for not receiving mindfulness, the "Frustrebo"

response (Power & Hopayian, 2011), may have been present. This may have led to participants in the comparison groups starting mindfulness on their own, or listening in on conversations amongst the Intervention group students, at school or during sporting activities and hearing about strategies, thus possibly underestimating the effect size (Gotink, 2015). While the threat of contamination within schools could be considered low due to the class based training and student practice activities being conducted at home (Johnson et al., 2016), this cannot be ruled out due to the novelty factor created within schools and this may have been a possibility at the four schools involved in this study, whereby an outside person was coming in to facilitate a course to one class, receiving attention, awareness and novelty (Osterman, 2000). The data pattern in this study could support this argument, with increases in mindfulness observed in the comparison group at all three time points, thus possibly accounting for lack of statistically significant differences between the two groups. Randomising schools to intervention vs. control groups may overcome such issues.

4.8 NON CLINICAL POPULATION

Other authors have suggested that reasons for null findings on psychological measures, following mindfulness training, may be related to the fact that adolescents who are generally mentally well and healthy, and not experiencing psychological problems within a clinical range level, will not have the same scope or potential for change found in clinical populations and hence larger changes should not be expected (Tharaldson, 2012). This may be relevant to the findings of this study as only 23 students overall scored in the clinical range on any psychological measure (17%).

Stallard (2013) also outlined that demonstrating improvements in high risk or clinical groups is somewhat easier as baseline scores often provide more scope for reduction. Indeed Boniwell, Osin and Martinez (2016) questioned whether researchers should consider it is sufficient that the absence of a mental health condition equates to greater well-being or resilience, without further changes being necessary. This is an interesting view and more consideration of this concept may be beneficial in terms of determining policy and best practice for the role out of any mental health programmes, including mindfulness, with adolescent populations.

4.9 LIMITATIONS OF THE STUDY

Randomly assigning individual participants to treatment conditions would have been the preferred method of creating groups for comparison. However this was not possible within the constraints of the school curricula and class layouts. To address this limitation,

the groups were shown to be equivalent on clinical variables pre-treatment. However it cannot be determined with certainty that there was no systematic difference between the groups that may have biased the results. Randomising schools to intervention vs. control groups may have been more beneficial for objectivity and validity overall.

Secondly, whilst the comparison group in this study was classes as usual, it has been recommended that when evaluating psychological interventions those studies should compare with an active control group, such as relaxation, CBT mental health classes or yoga.

Thirdly, within the Intervention Group, Post Treatment data were missing for 9.5% of participants at Time 2(n=7/73) and 13.6% of participants at Time 3 (n=10/73). In the Comparison Group, 10% of participants (n=6/59) were missing post treatment data at Time 2, and 28.3% (n=17/59) participants at Time 3. There were no statistically significant differences across treatment conditions between participants with complete data and participants with missing post treatment data on any of the clinical variables. Missing data at Time 2 and Time 3 may have reduced the power of the study overall. Overall, the low sample size may have lacked adequate statistical power to find statically significant differences between the groups. Of note, the significant finding in relation to Anger may be a consequence of Type 1 error arising from multiple statistical testing. Independent replication of this pattern is required.

Finally, qualitative findings, obtained from the focus groups, could of course reflect an effort by students to please the interviewer. Particularly, as the facilitator of the interventions also conducted the focus groups discussions. As volunteers were sought to participate in focus groups, those most enthusiastic or those who found the programme to be most beneficial may have put themselves forward. It was made explicit at the beginning of each focus group, however, that although the researcher had facilitated all mindfulness group sessions, she was not the author of the programme and that honest or constructive feedback would be valued.

4.10 STRENGTHS OF THE STUDY

Despite the limitations, the current study has several notable strengths. This study attempted to evaluate a relatively new mindfulness intervention programme with the youth population, in Ireland, where there is a general dearth of robust research available.

Whilst randomised controlled trials are the gold standard method of evaluation, controlled trials with comparison groups are the preferred method when randomisation is not

possible (Schultz, Altman, & Moher, 2010). The study also incorporated multi sites and differing school types with a comparison group at each school. This study attempted to assess change over time by conducting measurements at multiple time points using established psychometrically validated measures. A six month follow up time point was included in the design to examine if treatment gains were maintained in the longer term. Finally, the study utilised the same mindfulness facilitator for each of the group programmes and all groups were conducted during the same time period, representing strength of consistency and fidelity in delivery of the programme to all students.

4.11 CLINICAL IMPLICATIONS

There is a growing scientific base regarding the use of MBIs with adolescents and many papers highlighted in this research have suggested this approach to be a safe and useful intervention for school based delivery, in relation to reducing a range of student difficulties as well as promoting positive mental wellbeing, as indicated by evidence of statistically small positive effects across a variety of youth outcome domains (Zoogman, Goldberg, Hoyt, & Miller, 2014).

While more research is carried out, use of MBIs may need to be implemented with caution in the adolescent age group (Klingbeil et al., 2017) as effect sizes, even from those studies reporting beneficial outcomes, are smaller than those obtained in adult studies (Khoury et al., 2016). Care needs to be taken in relation to facilitator type, age and stage and dosage. As leading mindfulness researchers generally suggest that personal practice of mindfulness is necessary to effectively implement MBIs (Kabat-Zinn, 2003; Singh et al., 2007; Klingbeil et al., 2017), care needs to be taken in relation to novice practitioners. The field may best be served by taking stock of the existing empirical evidence and carefully and robustly designing applied research projects that address the many limitations noted in this study. Further data could be collected in relation to intervention programmes that are already being implemented in schools in order to draw more substantive conclusions (Zoogman et al., 2014). Mass dissemination of mindfulness programmes in schools could facilitate this broader empirical data collection in order to find out which approaches, processes and mindfulness activities help bring about specific outcomes or benefits. In the meantime, in the absence of these empirically derived guidelines, facilitators should carefully consider the evidence for any specific programme when selecting from the numerous MBIs available (Klingbeil et al., 2017). MBIs may best be used as universal or population based approaches, and the model offered by the .b Mindfulness in Schools

Programme, has been promoted as a means of facilitating a broad learning of mindfulness skillsets that may be applicable to a wide range of valued youth outcomes. Without statistically significant outcomes or findings in this research and others however (Johnson et al., 2016; 2017), further roll out, and training of teaching staff or utilisation of external clinical personnel should be carefully considered. While this programme may be interesting, feasible and enjoyable for students, particularly in Transition Year, the lack of statistically significant benefits raises serious questions regarding use of clinical resources in particular, to deliver such programmes or allocation of limited curriculum hours to facilitate this programme for students.

4.12 FUTURE RESEARCH IMPLICATIONS

Overall, research on mindfulness in schools is still in its infancy and can best be described a 'promising' and 'worth trying' (Weare, 2019). The field still lacks consensus, however, regarding the definition, description and conceptualisation of mindfulness as a distinct construct (Davidson, 2010; Van Dam, 2017). Furthermore, given the variety of practices that fall under the umbrella of MBI, the adoption of mindfulness as a prescriptive clinical treatment or as a school universal programme requires a more consistent, standardised and uniform type of intervention. Larger sample sizes with more robust research incorporating RCTs with longer term follow up, active comparison conditions, assessment of treatment fidelity, consensus regarding definitions of mindfulness and the key components to be incorporated into any MBI are required. Duration, dosage and frequency of MBI lessons, best age and stage and population for delivery, and optimal facilitator type also require more exploration and clarity. The requirement for greater standardisation of mindfulness measures also remains an issue and while having major cost implications, greater use of a wider range of measures in addition to self-reports, such as performance and physiological measures and multi-informant measures, i.e., parents or teacher reports (Johnson et al., 2017; Weare, 2019) may be beneficial. Greater separation between developers/ facilitators and evaluators/researchers into the possible effectiveness of MBI may reduce bias and introduce more objectivity into this new and developing field (Weare, 2019).

4.14 CONCLUSION

This evaluation of the effectiveness of the widely available .b Mindfulness in Schools Programme revealed no statistically significant quantitative differences between the mindfulness condition and comparison groups on any measure, except that of anger. Correlational and qualitative analysis of focus group discussions however, suggested that

students viewed this programme to be acceptable, enjoyable, beneficial and feasible. Data gathered indicated which mindfulness practices were regarded by participants as most useful and provided recommendations for consideration in relation to future versions of the programme. While many possible explanations and reasons for null findings have been highlighted above, it must be considered however that findings may be related to the specific design and delivery of the .b Mindfulness in Schools Programme. The fact that two other well designed research papers (Johnson et al., 2016; 2017) reported similar null findings supports this view. While students qualitatively describe the programme as enjoyable and feasible, it may just be that design adaption from the MBSR programme may not include the necessary balance of instruction, information, time or practice to develop and instil real developments in mindfulness.

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SECTION C

ARE UNIVERSAL SCHOOL-BASED MENTAL HEALTH PROGRAMMES EFFECTIVE FOR ADOLESCENTS?

A Critical Review of the Literature

Aims: To critically review the literature base in relation to the effectiveness of universal school-based mental health programmes.

Rationale: While carrying out the literature review in relation to mindfulness- based school programmes as part of the main thesis, it was discovered that a large body of work on the implementation of other forms of mental health programmes, designed to improve the mental health, wellbeing and/or social and emotional competencies of young people (Durlak, 2015) in schools, also exists.

Objectives: In light of the development of the National Wellbeing in Post Primary Schools Programme in Ireland and also in relation to a central role played by clinical psychology in a local school-based youth mental health initiative, it was felt that it would be important to explore whether universal school -based mental health programmes are indeed effective with the adolescent population and establish any evidence base. The present literature review will explore the effectiveness of Universal school based mental health programmes that promote mental health, emotional wellbeing and psychological resilience, published during a ten year period, 2008 to 2018. For the purposes of this paper adolescence will be defined as aged 12-19 years attending post primary school

Introduction

Adolescence can be the healthiest and most optimal period of life for many (Sawyer, 2002). It is a time of extensive physical and social development during which capabilities vital for successful progression to adulthood are established (Blakemore & Mills, 2014). Normal teenage development has been described however as an emotional roller coaster (Garmy, 2015) and mental health difficulties have been reported to affect up to 20% of adolescents worldwide (Kieling et al., 2011). A large proportion of mental disorders experienced by adults will have emerged by the age of 14 years (Merikangas et al., 2010),

rendering adolescence as the riskiest period for development of mental health problems (Jones, 2013). For example, the overall prevalence of depression in adolescence is around 6% and it is one of the leading causes of disability, morbidity and mortality in this age group (Das et al., 2016). Mental health problems in adolescence have been shown to contribute to lower achievement in education and increased rates of engagement in health risk behaviours, self-harm and suicide (Dray, 2017), with the impact of such difficulties often persisting into adulthood(Kim-Cohen et al., 2003). Furthermore, young people with psychological problems often fail to find support and as many as 50-70% do not receive adequate help or treatment (Volkaert et al., 2018). The threat of stigma may serve as a barrier to seeking help, but also a general lack of knowledge about mental health and poor access to mental health services play a role (Brelan, 2014; Gulliver et al., 2010); consequently , many therefore do not receive treatment until adulthood, when symptoms are often more severe and harder to treat (Gladstone & Beardslee, 2009).

The World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' and has identified prevention of mental disorders and promotion of positive mental health as one of its priority projects under the mental health global action programme. Strategies for positive mental health promotion are related to improving quality of life and potential for health and wellbeing. One way in which to address the heightened risk of the development of psychological problems and the long term burden of mental health issues is through prevention and positive mental health promotion (Volkaert et al., 2018: Werner-Seidler et al., 2017). There has been an increasing interest in developing preventative programmes, in recent years, to reduce the risk of mental health problems (Guv & Hylander, 2012; Kraage et al., 2007). Many countries are currently investing in structures to promote positive mental health and prevent of mental health problems both with at risk groups and in the general population (Boyle, 2007; Campos, 2018). One of the priority areas addressed by the EU's Joint Action for Mental Health and Wellbeing (2013) was the promotion of mental health in schools.

The UK National Health Schools Programme aims to increase emotional health and wellbeing of students in schools (Chisholm, 2012). Funding has been provided recently to ensure that all UK schools have a 'mental health champion' by 2020 (Public Health England, 2017). The Welsh government is also piloting specialist CAHMS workers to act as a link between schools (Welsh Government, 2017). In Ireland, in 2013, the Irish Government launched a national programme, Wellbeing in Post Primary School: Guidelines for Mental Health Promotion and Suicide Prevention. This programme supports the whole–school implementation of mental health and wellbeing education as part of the Social,

Personal and Health Education (SPHE) curriculum in each school. This programme follows a modular structure and is facilitated by a dedicated support unit, which provides regular in-service training for teachers, supplies supports and resources, and ensures quality control. SPHE became mandatory in the Junior Cycle (age 12-15years) curriculum in 2002 and Senior Cycle (ages 15-19) in 2004 (Power et al., 2008).

While some (Dogra, 2010) may argue that schools in themselves can present as considerable sources of stress, worry or unhappiness for young people (e.g., bullying, exam pressure, poor relationships with teachers), schools are also naturally positioned at the forefront for promoting positive mental health and possibly therefore mitigating some of the negative impacts of other social factors (O'Reilly, 2018). Schools provide access to adolescents for many hours daily and promote student development and wellbeing, as well as learning (Seligman et al., 2009), and are arguably the only universal setting for adolescents (Onnela, 2013). Schools therefore represent an opportune setting for any interventions targeting the adolescent population (Dray et al., 2017) as they offer a natural, accessible way to reach young people (O'Mara & Lind, 2003; Werner-Scheidler et al., 2017) and programmes integrated into the timetable can help alleviate many typical barriers to interventions such as stigma, time, location and cost (Barret & Pahl, 2006). The psycho-educational nature of many mental health programmes also addresses issues regarding confidentiality, as young people need only give personal feedback where they chose to. NICE Guidelines (2009) identify that education establishments can and should provide a safe environment, which nurtures self-worth and efficacy. Established relationships between students and one or more teachers alongside regular contact with these, suggests trust and accessibility.

Positive mental health promotion and prevention programmes can be divided into different types: Targeted, Selected and Universal. Targeted interventions are designed to be delivered to specific groups or individuals who have been identified to need specific support due to an existing and diagnosed mental health issue or emerging symptoms (O'Connor et al., 2017). Selected interventions focus on groups of individuals who may have an increased risk of developing mental health problems. Universal approaches target all young people regardless of whether or not they are displaying behavioural or emotional symptoms and it has been argued that such approaches provide a more effective intervention, particularly for working with students, even when they already experience mental health problems (Diekstra, 2006). Universal approaches usually take a positive view of mental health which focuses on building skills and competencies needed to experience wellbeing and prevent future mental health problems from occurring (Higgins & O'Sullivan, 2015). Universal programmes have also been advocated because they have a greater reach than Selected or

Targeted programmes (Garmy, 2015) and may have several advantages including removal of the need for screening; minimisation of stigma (Horrowitz, 2007) because no student is singled out; capturing youth who may not be at risk yet, but will go on to develop symptoms in the future; and ease of scheduling into the school curriculum (Manassis, 2014; Stallard, 2010; Werner-Seidler, 2017). Researchers from several countries have created Universal programmes for the promotion of positive mental health in young people for delivery within the school context. A wide range of Universal school based programmes have been implemented with various therapists and therapeutic modalities (Fazel, 2014; Fenwick-Smith et al., 2018). Many of these Universal programmes attempt to directly address some of the more common and protective factors for positive mental health promotion, primarily through resiliency building (Tomyn et al., 2016) and skills development (Bastounis et al., 2016). Such programmes vary in their approaches and implementation; for example some are some class based and delivered by teachers, whereas others use a more Whole School based approach to change an entire school environment to be supportive of positive mental health approaches (Adi et al., 2007).

Whole School Universal programmes can improve the school environment by educating staff on mental health issues and providing skills programmes to assist them in identifying, intervening and coping with differing emotional and behaviour needs of students and promoting feelings of belonging, togetherness and trust. A Whole School approach, recognises the importance of working collaboratively with all parts of the school community and adopting this approach advocates that schools should tackle mental health and wellbeing through their behaviour policy, curriculum design, care and support of young people, as well as staff, engagement of parents (O'Mara & Lind, 2013; O'Reilly, 2018); and school climate and culture changes if required (Waters, 2011; Weare & Nind, 2011). Whole School implementation of Universal Social and Emotional Learning (SEL) programmes have been carried out in many countries (O'Reilly, 2018), including in the USA (Collaborative for Academic, Social, Emotional Learning); Australia (Kids Matter); the UK (Social and Emotional Aspects of Learning (SEAL, DCSF); and Ireland (Working Things Out, as part of the SPHE programme).

SEL programmes are defined as the process of acquiring core competencies to recognise and manage emotions, set and achieve positive goals, appreciate the perspective of others, establish and maintain positive relationships, make responsible decisions and handle interpersonal situations constructively (Elias, 1997; Werner-Seidler, 2017). Common SEL skills taught in schools include: self-esteem and self-confidence; empathy; emotional literacy; conflict resolution; problem solving; self-awareness; emotional regulation; mindfulness; and more commonly, coping and resilience (Dray et al., 2017). Resilience

theory states that all young people regardless of risk or current mental health status can benefit from help and support in the development of effective, mentally healthy strategies and resilience skills (Catalano, 2004). Since all young people will experience adversity at some point in their lives, teaching resilience and coping strategies at a young age means they can be effectively learned and applied in advance of adverse effects (Fenwick-Smith, 2017), and allow strengthening of mental health and enhancement of abilities to self-protect and cope with life events (Dante, 2013). Resilience and coping are differing concepts with natural overlaps. Coping is an immediate short term resource and is an individual's initial response to harmful stimuli and involves strategies that include perception of a situation, observing alternate actions, demonstrating self-control, obtaining personal comfort and seeking help (Cohen, 2011). Resilience on the other hand is more long term and involves the development of a set of processes that regulate how one copes over time (Folkman & Moskowitz, 2004). By teaching young people the concepts of good coping and resiliency, it may help them to grasp the idea that they have power over the way they feel and think, and this understanding may help them to deal better with everyday stressors (McRae, 2013).

There is also a number of Cognitive Behaviour Therapy (CBT) based Universal mental health interventions delivered within schools. These interventions are designed to reflect CBT concepts, which examine the associations among thoughts, feelings and behaviours. While CBT based Universal programmes are also focused on building resilience and coping skills and can be included within the overall category of SEL, they have tended to be utilised with a particular focus on prevention of anxiety (Neil, 2009) and depression (Calear, 2010).

Regardless of the intervention type, certain programme components have been highlighted by researchers to lead to more successful outcomes. Durlak et al. (2011), Sklad et al. (2012) and Sancassiani et al.(2015) outlined that programmes that incorporated the following components (SAFE) lead to more significant outcomes and effect sizes than those who did not: Sequenced (activities in the programme are connected and coordinated); Active (active forms of learning are used to help students to learn skills); Focused (at least one component of the programme is dedicated to developing skills) and Explicit (programme targets specific skills). Other authors have also suggested some evidence that involvement of parents (O'Mara & Lind, 2013) and interactive teaching methods (Clarke et al., 2015) have also been shown to produce more effective outcomes than programmes that do not include these components.

So are universal school based mental health programmes effective in improving the mental health and wellbeing of adolescent students?

A number of systematic reviews of the literature have been conducted to examine the evidence for any efficacy associated with the implementation of school based Universal mental health programmes (See Table1). Findings of many of these reviews have outlined positive effects of Universal school based mental health programmes (O'Connor et al., 2012; O'Reilly et al., 2018; Sancassiani et al., 2015). CBT based programmes have shown particularly positive effects including reductions in symptoms of depression and anxiety (Corrieri et al., 2013; Dray et al., 2017; Werner-Seidler, 2017). Studies have shown such improvements to be maintained in the short term, for up to three months (Kavanagh et al., 2008) and longer term, after 12 months (Werner-Seidler, 2017). Reviews also reported studies that have found increased levels of student knowledge regarding suicide and suicide prevention (Das et al., 2016), and improvements in internalising problems (Franklin et al., 2017; Dray et al., 2017), externalising problems and general psychological distress (Dray et al., 2017). Universal school based mental health programmes have also shown effectiveness in improving social and emotional learning, problem behaviour and academic performance; the use of the SAFE practice formula, as outlined earlier, moderated better outcomes (Durlak et al., 2011).

Not all programme evaluations reported positive findings however. In an attempt to isolate and evaluate a specific programme, Bastounis et al. (2016) assessed the effectiveness of the Universal school based resilience focused programme, The Penn Resiliency Programme and its derivatives, as it was a programme proposed for large scale roll out in Australia. Nine studies (n=4744 participants) from Australia, the Netherlands and the USA were meta- analysed and effect sizes calculated. Their authors concluded that there was no evidence that this programme reduced depression, anxiety or improved explanatory style post intervention.

Even where positive effects were reported in reviews above, many authors highlighted limitations and shortcomings within existing research evaluating the effectiveness of Universal school based mental health programmes. A number of reviews reported that Universal programmes were less effective than Selected or Targeted programmes in reducing depressed mood (Calear et al., 2010; Werner-Seidler, 2017) and interventions with students at clinical risk or with existing symptoms were more effective and had longer lasting benefits (Kavanagh et al.,2008). The heterogeneity of programmes and variability of terminology was raised by many authors to be a significant difficulty in term of trying to compare interventions, carry out meta analyses or make conclusions as to

whether any particular programmes are more effective or beneficial than another (Corrieri et al., 2013; Das et al., 2017; Dray et al., 2017; O'Connor et al., 2017; O'Reilly et al., 2018; Sancassiani et al; 2015; Sklad et al., 2012; Werner –Seidler, 2017).

Poor study quality and methodology was also reported by a number of authors reviewing Universal school based mental health programmes. The need for randomised controlled trials with long term follow up, utilising larger samples, and standardised interventions and measures was recommended (Das et al., 2016;Dray et al., 2017; MacKenzie & Williams, 2018; O'Reilly, 2018; Sancassiani et al., 2015;Werner-Seidler, 2017). The need to address intervention implementation fidelity (Corrieri et al., 2013; O'Connor et al., 2017), attrition levels and the training and supervision requirements of teachers facilitating programmes was also highlighted (Franklin et al., 2017; O'Connor et al., 2017; O'Reilly et al., 2018).

Table 1

Description of Review Studies

Review	**Intervention Details**	**No. of studies included**	**Outcomes reported**	**Effectiveness reported**	**Conclusions**
Bastounis et al. (2017)	Universal school based application of *Penn Resiliency Programme (PRP)*	9 RCTs	Depression Anxiety Exploratory style	No evidence of PRP programme reducing anxiety or depression or improving explanatory style reported.	Large scale roll out of programme not recommended and a review of content and structure highlighted.
Calear and Christensen (2010)	School based prevention and early intervention programmes for depression	42 RCTs 20 Universal	Depression	Universal interventions are less effective than both Selected and targeted programmes in reducing depressed mood	Questions whether Universal programmes should be more widely disseminated without more evidence being gathered
Corrieri et al. (2013)	School based prevention interventions for depression and anxiety	28 RCTs (16 Universal)	Depression Anxiety	65% of interventions reported to be effective for depression and 73% for anxiety. Mean effect sizes on most utilised questionnaires Depression(CDI:-0.12); Anxiety (RCMAS: -0.29)	Research needed regarding programme implementation variations Heterogeneity of studies makes them difficult to compare

Das et al. (2016)	Review of Mental health interventions for adolescents	38 reviews 12 School Based	Depression Suicide knowledge and prevention	Cognitive Behaviour Therapy groups are effective in reducing depression symptoms. Classroom based Suicide prevention programmes increase short term knowledge of suicide and suicide prevention but no effect on suicide related attitudes or behaviours.	Studies very heterogeneous Meta analyses could not be conducted in most included reviews Requirement for standardised interventions and outcomes
Dray et al. (2017)	Universal school based interventions that included strategies to strengthen resilience protective factors	57 RCTs	7 Mental health outcomes: anxiety, depression, hyperactivity, conduct problems, internalising problems, externalising problems and general	All trials reported resilience focused interventions to be effective relative to controls in reducing 4 out of 7 outcomes: depression symptoms, internalising problems, externalising problems and general psychological distress. In adolescent trials specifically, interventions were effective for internalising	Reduction in depression and anxiety symptoms for adolescents using universal resilience focused interventions, particularly if CBT approach used. Poor overall study quality, wide variability of interventions

			psychological distress	problems. For short term follow up interventions were effective for depressive and anxiety symptoms. For long term follow up, interventions were effective for internalising problems.	
Durlak et al. (2012)	Universal school based Social and emotional learning programmes(SEL)	213 studies	Social and emotional skills Problem behaviours Academic performance	Significantly improved social and emotional, behaviour and academic performance as reflected in an 11 percentile point gain in achievement	SAFE practices moderated more positive student outcomes
Franklin et al. (2017).	School based psychosocial interventions	24 RCTs	Internalising and Externalising symptoms	Statistically significant reductions in students' internalising outcomes (d=.133, 95% CI {.002, .263}). More effective with female students. No statistical significant effect for externalising outcomes (d=.15, 95% CI {-.37, .066}).	Recommends more research regarding training and supervision needs of teachers delivering programmes

Goldberg et al. (2018).	School Based Universal Whole School Interventions	45 studies 8 Post Primary 22 Combined Primary and Secondary RCT/ Quasi Design	Social and Emotional Learning and Development Behaviour Internalising Symptoms Academic Performance	Post intervention significant improvements in student social and emotional adjustment (d=0.220), behaviour (d=0.134),and internalising symptoms (d+0.109). No impact found on academic achievement	The inclusion of a community component as part of a whole school approach was found to be a significant moderator for social and emotional outcomes (d=0.447 v's d=0.152). US studies had a significantly higher effect size than non US studies (d=0.450 v's d= 0.120).
Kavanagh et al.(2008)	School based mental health promotion interventions based on cognitive behaviour therapy	17 RCTs (9 Universal)	Depression Anxiety Suicidality	Reduction in symptoms of depression, generally short term (No longer than 4 weeks). SMD= -0.15(CI=-0.25, -0.05)	Lack of long term follow up data Interventions for students with clinical risk factors or existing symptoms were more effective with benefits lasing up to 6 months.
Mackenzie & Williams (2018)	School based mental health and wellbeing programmes that promote resilience	12 RCTs and Non controlled pre-post studies (7 Post primary school based)	Psychological outcomes	Effectiveness of school based universal programmes found to be neutral or small with more positive effects found in poorer quality studies and those based in Primary Schools. Higher quality	Most positive results tended to be found in the older Primary school aged students aged 9-12 years. Need for robust, randomised, long term methodologies utilising validated measures

				studies reported less positive effects.	
O'Connor et al.(2017)	School based mental health and emotional wellbeing programmes	25 studies (RCTs. Quasi-experimental and qualitative) 13 studies with post primary students	Help seeking and coping Social and emotional wellbeing Psychoed effectiveness	Most studies noted positive effects however 3 studies reported either a negative effect or no effect at all. No effect sizes reported.	Much heterogeneity in papers. Limitations of studies described in terms of varying research methods, small sample sizes, high levels of attrition, social desirability bias and intervention fidelity.
O'Reilly et al.(2018)	School based mental health interventions	10 Studies 7 Post primary	Mental health outcomes Research recommendations	All but two studies reported a positive impact Effect sizes not reported	Need for broader evidence base, Terminology remains variable, lack of long term follow up, and inconsistency regarding facilitators and training
Sancassiani et al.(2015)	School based interventions for social and emotional skills to promote wellbeing	22 RCTs 14 Post primary	Health Behaviours Social and Emotional skills	Effectiveness of Whole School approach utilising various SEL programmes in the enhancement of youth social and emotional skills,	Studies very heterogeneous Few studies using standardized measures or collecting follow up data for longer than 6 months

			Psychological wellbeing	positive mental health and wellbeing. No effect sizes reported.	
Sklad et al.(2012)	Universal School based Socio-Emotional Learning programmes	75 Studies 48 Post Primary	Social –Emotional Skills: Positive body image Behaviour adjustment Antisocial behaviour Pro social behaviour Substance abuse Mental health symptoms Academic achievement	Sig beneficial short term effects on: positive body image 0.69; antisocial beh -0.48; pro social beh 0.59; substance abuse -0.11; mental health symptoms –0.16; and academic achievement 0.50. Long term effects were significant for pro social beh 0.13; anti social beh -0.17; substance abuse -0.20; academic achievement 0.25; and the largest benefit effect was on mental health symptoms – 0.37. Effect was larger than the immediate effect size 'sleeper effect'. Positive body image was only outcome parameter that	Heterogeneity of effect sizes Considerable differences between programmes in composition and the majority had no training manual. Programmes placed at primary schools had significantly larger reported effects than secondary schools on anti- social behaviour Programmes of short duration (less than 1 year) showed a higher immediate effect on social skill and antisocial behaviour than longer programmes Need for more research to be carried out on multi- purpose programmes No differences in relation to facilitator type

				showed no statistically sig effect at follow up.	
Werner-Seidler et al.(2017)	School based depression and anxiety prevention programmes	81 RCTs (16 Universal programmes for adolescents)	Anxiety Depression	Small effect sizes for both depression (g=0.23) and anxiety (g= 0.20) prevention programmes immediately post intervention. Small effects also after 12 months for both depression(g=0.11) and anxiety (g=0.13)	Quality of studies poor and heterogeneity moderate. Universal programmes had smaller effect sizes at post intervention relative to targeted programmes for depression. For anxiety, effect sizes were comparable. Externally delivered interventions superior to those delivered by school staff for depression but not for anxiety.

The National Institute for Health and Care Excellence (NICE) indicated in an earlier review in 2008, that while international based research studies are helpful, the generalizability to the UK education system is questionable, as funding, curriculum pressures, education structures and political educational planning etc. are different across jurisdictions. This opinion is supported in a systematic review and meta- analyses of school based programmes utilising a Whole School Approach (Goldberg et al., 2018) that reported that studies from the United States (US) had a significantly higher effect size than non US studies. They offered some possible reasons for this finding including that US based interventions are generally more prescriptive in their training, programme manual and requirements for programme fidelity, and that district and national supports from educational stakeholders provided sustainability for interventions in schools.

MacKenzie and Williams (2018) outlined the first systematic review of Universal school based mental health intervention programmes in the UK. As the Irish education system is most similar to the UK, this review was of interest. Twelve studies including RCTs and non-controlled pre-post designs were conducted in the UK; seven of the studies described were post primary school based. As the focus of this literature review relates to adolescents aged 12 to 19 years, only post primary school studies included in this study , will be discussed further. Of these studies, the authors reported that all varied widely in their use of measures and follow- up time ranged from 4 weeks (Chisholm, 2016) to two years (Stallard, 2013). Due to this heterogeneity of studies, the authors divided interventions into three subgroups: studies trialling bespoke mental health education programmes (Boniwell et al., 2016; Chisholm et al., 2016; Naylor et al., 2009); studies trialling CBT based interventions (Challen et al., 2014; Rice et al., 2015; Stallard et al., 2013); and studies using mindfulness based interventions (Kuyken et al., 2013; Rice et al., 2015).

Table 2

Research Evaluating Universal School Based Mental Health Interventions in Secondary Schools UK and Ireland

Study	**Study design**	**Sample**	**Intervention**	**Measures**	**Follow Up**	**Effectiveness /Outcomes**
Mental Health Interventions						
Boniwell et al.(2015)	Non randomised control group Pre post design	(n=164) Control (n=68) Ages 11-12 years	Personal Wellbeing Group 18 Bi-Weekly lessons of 50 minutes duration	SLSS MSLSS PNASC Qual. interview	Baseline Post Intervention Ten Month follow up	No sig Improvement on SLSS or MSLSS. Decrease in 'satisfaction with school' (d=0.4) and friends (d=0.17) scores for both groups. Decrease in positive affect for both groups (d=0.24; 0.79); increase in negative affect (d=0.54) for control group. High attrition (n=100).
Chisholm et al.(2016)	Pragmatic cluster randomised controlled trial.	Intervention (n=354) Education only Control (n=303) 12-13 years	SchoolSpace Mental health contact and education One day intensive intervention	SLSS MSLSS PNASC RIBS MAKS SDQ	Baseline 2 weeks post intervention	Statistically sig. improvements on many measures post intervention for both groups. Attitudinal based stigma (d=0.23, d=0.25), knowledge based stigma (d=0.54; d=0.25), mental health literacy (d=0.05; d=0.13) emotional wellbeing (d=0.16; d=0.14) and resilience 9d+0.07; d=0.22).

				Resilience Scale Help seeking questionnaire Focus Groups Qual. interview		
Fitzpatrick et al. (2013)	Non randomised pre post control group	(n=1072) Working Things Out Enhanced Programme Standard Working Things Out Programme Control 12-15 years	Working Things Out: Life skills training programme plus mental health promotion component 8 weekly lessons	SDQ CCSC Help seeking Questionnaire What is your School Like Questionnaire (Not standardised).	Baseline Post intervention 6 months follow up	Effectiveness in the intervention group for peer problems, at risk boys for emotional and behavioural difficulties, hyperactivity and total difficulties as compared to standard controls.
Naylor et al. (2009)	Non randomised pre	Intervention Group (n=175)		Mental Health questionnaire	Baseline	Improvements in MH questionnaire:

	post control group study	Control Group (n=242) 14-15 years	6 X 50 minute mental health lessons	SDQ	6 months post Intervention	Awareness of depression causes (d=0.21) and bullying (d=0.31). Changes in SDQ conduct (d=0.22), and pro social (d=0.11) subscales.
CBT Interventions						
Challen et al. (2014)	Non randomised pragmatic controlled trial.	(n=1016) Control (n=1894) 11-12 years	UK Resilience Programme(RP). 18 Hours Varied breakdown of session duration across schools within school timetable	CDI RCMAS SDQ	Baseline Post intervention 1 year follow Up 2 year follow up	Small significant impact on CDI post intervention (d=0.093); not maintained at 1 year or 2 year follow up.
Rice et al. (2015)	Non randomised longitudinal design with three intervention conditions	TRY Intervention (n=50) CBT Group (n=53) MBCT group (n=54) and	TRY Intervention CBT Group MBCT Group 8 weekly sessions X 50 minutes	SMFQ CGT DASC SCEPT	Baseline 9 week follow up	Statistically sig changes in reward seeking in TRY intervention (d=0.12). TRY showed statistical reduction in SMFQ when compared with MBCT and CBT (d=0.8), reward seeking moderated reductions in SMFQ scores (d=1.62).

		PHSE controls (n=99). 13-14 years				
Stallard et al. (2013)	Cluster randomised controlled trial	RAP UK Intervention (n=1753) Attention Controls (n=1673) PHSE Controls (n=1604) 12-16 years	RAP UK: Resourceful Adolescent Programme. 9X 60 minute lessons plus two booster sessions at 6 month follow up	SMFQ CATS RSES RCADS School connectedness Attachment questionnaire European Quality of Life-5 dimensions	Screening SMFQ Baseline 6 month follow up 12 month follow up	Some effect of intervention on bullying status at 12 months and cannabis use at 6 month and 12 month follow up. Intervention less useful than usual PHSE or attention controls for panic, and less useful than usual PHSE on Cats personal failure subscale and general anxiety. No effect sizes reported.
Mindfulness						
Kuyken et al. (2013)	Non randomised	Mindfulness in Schools	Mindfulness In Schools Programme(MiSP)	WEMWBS PSS	Baseline Post Intervention	Lower depression scores post intervention (d=0.29). Improvement on all measures at 3 month follow up (WEMWBS; d=0.15; PSS: d=0.09;

	controlled feasibility study	programme (n=256) Control (n=266) 12-16 years	9 X 40 minute weekly sessions	CES-D Mindfulness Practice	3 month follow up	CED-D: d=0.24). Mindfulness practice significantly associated with greater gains across all measures.
SEL Programme						
Wigelsworth, Humphrey, Lendrum et al. (2013)	Non randomised quasi-experimental , pre-post control group	22 school interventions 19 control schools 12-17 years	Social and Emotional Aspects of Learning programme (SEAL) Whole School Pack. Five Mental Health Areas, Seven themes for delivery at four levels from Foundation to Senior students. Set of lessons and booklets for each school year.	SDQ	Baseline Post intervention	No statistically significant impact found on any SEL skills, mental health difficulties or behavioural problems.

In the first category, studies examining bespoke mental health education programmes, two of the three studies found small (d = 0.11 - 9.22) but significant improvements, as measured by the Strengths and Difficulties Questionnaire (Goodman et al., 1998), for those receiving intervention. However, Chisholm et al. (2016) did not employ a non-intervention condition. Boniwell et al. (2016) in their trial of a positive psychology programme found a decrease in outcomes of life satisfaction and an increase in negative affect for both groups; however, this was less so for the intervention group (d = 0.24 compared with d =0.79), which was interpreted as intervention having a supportive or buffering effect for students at a stressful time.

For trials in UK based on CBT interventions, small (d = 0.093) but short lived positive effects were found on measures of depression as measured by the Children's Depression Inventory, for those using the UK RP intervention (Challen et al., 2014), but the effect did not persist to 1 year and 2 year follow up. The authors found no significant impact on anxiety symptoms. Mixed results were found for those in the Rap-UK intervention (Stallard, 2013), with results indicating some beneficial effects (e.g., on bullying and cannabis use) and some also potentially negative outcomes in relation to panic and anxiety. Rice et al. (2015) evaluated three classroom based prevention programmes for adolescent depression: Thinking about Reward in Young People (TRY); CBT and Mindfulness Based Cognitive Therapy (MBCT). TRY was the only intervention associated with a reduction in depressive symptoms at 9 weeks follow up. Increased reward seeking behaviour (d = 0.08) was associated with a reduction in depression symptoms among the TRY recipients.

Finally, MacKenzie and William's (2018) evaluation of studies utilising a mindfulness based intervention found that Kuyken et al. (2014) yielded statistically significant, modest effects on both depression (d = 0.24) and wellbeing (d = 0.15). Due to small sample size, it was suggested by the authors that this study was likely underpowered; however, outcomes were sustained at three month follow up and were associated with greater mindfulness practice.

In addition to the above studies, it appears that only one study evaluating the effectiveness of a Universal school based mental health programme has been published to date in an Irish context. Fitzpatrick et al. (2013), in a quantitative evaluation of an Enhanced Social Personal and Health Universal Programme as compared to the existing standard 'Working Things Out' Whole School programme, as part of the national SPHE programme, with 1072 students aged 12-16 years, found one statistically significant difference between the two groups: in terms of help seeking with the enhanced programme showing more benefits. The enhanced programme was also found to be effective for peer problems and for

'at risk' boys in relation to emotional and behavioural difficulties, hyperactivity and total difficulties, as compared to the standard programme control.

Other studies have also failed to find significant benefits for Universal school based mental health programmes. A further study, carried out in the UK and not included in the MacKenzie and Williams' review, has also been included in Table 2. Wigelsworth, Humphrey and Lendrum (2010; 2014) carried out national evaluations of the Social and Emotional Aspects of Learning (SEAL) programme being rolled out across a large number of schools in the UK. They compared use of the programme in 22 schools utilising the programme and 19 comparison schools. Data showed however that the programme failed to have any statistically significant impact on SEL skills, mental health difficulties or behavioural problems of pupils. This null finding was significant as at the time of their first study in 2010, as it was estimated that the SEAL was already being implemented in up to 70% of schools in England at that time.

Similar to studies reported earlier in many international review studies, studies in this UK based review also described the effectiveness of Universal school based mental health interventions as mixed and at best, modest. Where there were several positive outcomes reported, effect sizes were often small and methodological issues including lack of randomisation, small sample sizes and heterogeneity of studies, render the effectiveness of each intervention approach hard to compare against another, but overall results suggested a trend whereby higher quality studies reported less positive effects.

Conclusion

Globally there is continued development and implementation of various Universal interventions in schools, designed to promote positive mental health and prevent the development of mental health problems. Universal school based mental health interventions have been proposed to have great potential to target large populations of young people to promote wellbeing even at a general level. Overall, the literature has indicated mixed results however regarding efficacy of Universal school based mental health programmes (MacKenzie & Williams, 2018). This review outlined that generally, where benefits have been shown, effect sizes have been small. Effectiveness of CBT for depression was generally greater but short term and more effective for young people with clinical risk factors or existing symptoms. Indeed many authors recommended that Targeted interventions, or a mixture of Targeted and Universal interventions may be of more benefit for such students.

The field has been hampered by poor research methods including: small sample size and inadequately powered trials (Werner-Scheidler, 2017); the lack of active intervention or no controls (Stallard, 2013); insufficient use of standardised measures and long term follow up (Sancassiani, 2015). A large number of programmes exist but lack in terms of standardisation, consistent terminology (Werner-Scheidler, 2017) and vary in terms of curricula, length, the use of different tools and activities to convey key themes and topics, and delivery (Fenwick & Smith, 2018), making them difficult to compare.

Further research with robust methodology is needed to evaluate whether Universal school based mental health promotion programmes are indeed effective and if so what specific programmes may be seen to be most beneficial and worthy of a more standardised wide spread roll out across schools. Also, more detailed studies investigating the best age and stage in which to intervene and who may best facilitate Universal school based mental health interventions are required. Furthermore, alternative modes of delivery in relation to Universal school based interventions may also deserve consideration. In a digital age, with digital tools forming a central part of the daily life of all adolescents, there is possible potential to integrate digital interventions, targeting mental health issues, to this vulnerable cohort (O'Reilly et al., 2018).

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APPENDICES

APPENDIX A

CITY UNIVERSITY LONDON

Psychology Research Ethics Committee
School of Social Sciences
City University London
London EC1R 0JD

5 January 2015

Dear Barbara Duffy,

Reference: PSYCH(P/F) 14/15 89
Project title: A Mixed Method Evaluation of Adolescents' Experience of the '.b Mindfulness in Schools' Programme.

I am writing to confirm that the research proposal detailed above has been granted approval by the City University London Psychology Department Research Ethics Committee.

Period of approval
Approval is valid for a period of three years from the date of this letter. If data collection runs beyond this period you will need to apply for an extension using the Amendments Form.

Project amendments
You will also need to submit an Amendments Form if you want to make any of the following changes to your research:

(a) Recruit a new category of participants
(b) Change, or add to, the research method employed
(c) Collect additional types of data
(d) Change the researchers involved in the project

Adverse events
You will need to submit an Adverse Events Form, copied to the Secretary of the Senate Research Ethics Committee ([redacted]), in the event of any of the following:

(a) Adverse events
(b) Breaches of confidentiality
(c) Safeguarding issues relating to children and vulnerable adults
(d) Incidents that affect the personal safety of a participant or researcher

Issues (a) and (b) should be reported as soon as possible and no later than 5 days after the event. Issues (c) and (d) should be reported immediately. Where appropriate the researcher should also report adverse events to other relevant institutions such as the police or social services.

Should you have any further queries then please do not hesitate to get in touch.

Kind regards

[redacted]
Departmental Administrator
Email: [redacted]

[redacted]
Chair
Email: [redacted]

APPENDIX B

Participant Information Sheet

A Mixed- Method Evaluation of Adolescents' Experience of the

'.b Mindfulness in Schools Programme'.

We would like to invite you to participate in a research 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. Ask us if there is anything that is not clear or if you would like more information.

Who is carrying out this study?

Ms. Barbara Duffy, Senior Clinical Psychologist, ….Primary Care Team,……will be the Lead Researcher for this study.

What is the purpose of the study?

Your school Principal has agreed to your school participating in a Doctoral Research study which will evaluate any benefits of the '.b Mindfulness in Schools Programme' for students attending Transition Year.

What is the '.b Mindfulness in Schools Programme'?

.b (pronounced, dot-be) stands for 'Stop, Breathe, Be'. This simple act of mindfulness provides the kernel of a ten lesson course for schools. Written and crafted by experienced classroom teachers and mindfulness practitioners, to engage students, it is taught with striking visuals, film clips and activities that bring mindfulness to life.

What are the ten lessons of the '.b Mindfulness in Schools Programme'?

1. An Introduction to Mindfulness
2. Puppy Training: Playing with Attention
3. Taming the Animal Mind: Turning towards Calm
4. Recognising Worry: Noticing how your mind plays trick on you
5. Being Here Now: From reacting to responding
6. Moving Mindfully
7. Stepping Back: Watching the thought-traffic of your mind
8. Befriending the Difficult
9. Taking in the Good
10. Pulling it all Together

Why have I been invited?

All transition year students at all Post Primary Schools in …..and …….

….. in …….will be invited to take part in this study.

Some classes at your school will be selected to participate in the ten week

'.b Mindfulness in Schools Programme'.

This will be called the Intervention Group.

In order for us to investigate whether this programme is useful or helpful for students however, we will also need the help of other Transition Year Classes. These students will not be offered the ten week programme but will be very important for our study as they will help us compare any changes or improvements.

This will be called the Control Group.

Your class has been selected to participate in the '.b Mindfulness in Schools Programme' Intervention Group.

Do I have to take part?

It is up to you to decide whether or not you wish to take part. If you do decide to participate, your parents will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. Any students who choose not to participate will be supervised by a teacher during this class period.

What will happen if I take part?

You will be asked to attend the '.b Mindfulness in Schools Programme', once a week, over a ten week period, as part of your timetable at your school.

Each group session will be of forty minutes duration.

Before starting the programme you will be asked to complete three questionnaires. This will take approximately 40 minutes. These questionnaires will ask you questions about Mindfulness and how you manage emotions and mood. You will be asked to complete these questionnaires again at the end of the ten week programme and six months following this group.

In addition, some class members will also be asked to volunteer to meet with the researcher in a small group (focus group) one week following completion of the group, to discuss in

more detail, their experience of attending the '.b Mindfulness in Schools Programme. This meeting will also last forty minutes and will take place during a class period.

What do I have to do?

If you decide to participate, you will be asked to attend and participate in the ten weekly lessons and complete three questionnaires at three separate times. You may also wish to volunteer to participate in the focus group at your school.

What are the possible disadvantages and risks of taking part?

Sometimes attending mindfulness programmes can raise emotional issues for some people.

What will happen if I express concerns or worries either in my responses to questionnaires or as part of any Mindfulness lesson?

You will first be invited to meet with the researcher, who is a Senior Clinical Psychologist for a brief chat at the end of the lesson. The psychologist will listen to you and discuss any worries or difficulties. If required, supports and help that may be available to you will be outlined. Sometimes if problems or worries are more serious and the psychologist is concerned about your wellbeing, health and/or safety, it may be necessary to speak also with a teacher or your parents. If you require more on-going support, it will also be possible to make a referral to another psychologist working in the community.

What are the possible benefits of taking part?

It is hoped that the delivery of the '.b Mindfulness in Schools Programme' will help bring positive benefits to all students by helping you to learn to cope with and manage stress, and improve your mood and self- esteem

What will happen when the research study stops?

On completion of the study, you will return to your regular Transition Year Curriculum.

Will my taking part in the study be kept confidential?

Only the researcher will have access to your questionnaire date and your name.

All questionnaires will be stored in locked filing cabinets at …..Health Centre.

All questionnaires will be confidential. If the researcher is worried about any answers you give on any questionnaires however and is concerned that you may need some help or support, she will contact you to offer assistance.

What will happen to results of the research study?

This study will be written up as a Doctoral Research Thesis and a research paper. Your name will not appear in any write up of this study.

A presentation will be arranged at each school on completion of this study to give general feedback on results. We will not be giving any individual feedback however.

What will happen if I don't want to carry on with the study?

Participation in this study is voluntary and you are free to withdraw at any time without giving an explanation.

What if there is a problem?

If you have any problems, concerns or questions about this study, please contact the main researcher:

Ms. Barbara Duffy, Senior Clinical Psychologist,…….. Telephone: ……..

You may also contact:

Dr. …….

If you remain unhappy and wish to complain formally, you can do this through City University London complaints procedure. To complain about the study, you need to phone 020 7040 3040.

You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the project is: A Mixed Method Evaluation of Adolescents' Experience of the 'b. Mindfulness in Schools' Programme.

You can also write to the Secretary at:

[redacted], Secretary to Senate Research Ethics Committee, Research Office, E214, City University London, Northampton Square, London EC1VOHB.

Email: [redacted]

City University London holds insurance policies which apply to this study. If you feel you have been harmed or injured by taking part in this study you may be eligible to claim compensation. This does not affect your legal rights to seek compensation. If you are harmed due to someone's negligence, then you may have grounds for legal action.

Who has reviewed this study?

This study has been approved by City University London Psychology Department Research Ethics Committee.

Thank you for taking the time to read this information sheet.

Consent Form: Parent

A Mixed Method Evaluation of Adolescents' Experience of the '.b Mindfulness in Schools Programme

1. I agree to my child taking 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:

   - My child participating in the ten module '.b Mindfulness in Schools' programme
   - My child possibly being interviewed by the researcher in a Focus Group
   - Allowing the focus group to be audiotaped
   - My child completing questionnaires asking about Mindfulness, Emotional Regulation and Mood

2. This information will be held and processed for the following purpose(s):

   I understand that any information I provide 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 organisations.

   If the researcher is concerned regarding the welfare of my child either during group sessions or in their responses to questionnaires, I may be contacted in relation to offering help or support.

3. I understand that my child's participation is voluntary, that he/she can choose not to participate in part or all of the project and that he/she 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 information about my child. 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.

5. I agree to my child to taking part in the above study.

_____
Name of Participant

_____ _____
_____
Name of Parent Signature Date

APPENDIX C

Participant Information Sheet

(Control Group)

A **Mixed- Evaluation of Adolescents' Experience of the '.b Mindfulness in Schools Programme'.**

We would like to invite you to participate in a research 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. Ask us if there is anything that is not clear or if you would like more information.

Who is carrying out this study?
Ms. Barbara Duffy, Senior Clinical Psychologist, ……. will be the Lead Researcher for this study.

What is the purpose of the study?
Your school Principal has agreed to your school participating in a Doctoral Research study which will evaluate any benefits of the '**.b Mindfulness in Schools Programme'** for students attending Transition Year.

What is the '.b Mindfulness in Schools Programme'?
.b (pronounced, dot-be) stands for 'Stop, Breathe, Be'. This simple act of mindfulness provides the kernel of a ten lesson course for schools. Written and crafted by experienced classroom teachers and mindfulness practitioners, to engage students, it is taught with striking visuals, film clips and activities that bring mindfulness to life.

Why Have I been invited?
All transition year students at all Post Primary Schools in …..and …..will be invited to take part in this study.

Some classes at your school will be selected to participate in the ten week
'.b Mindfulness in Schools Programme'.
This will be called the ***Intervention Group.***

In order for us to investigate whether this programme is useful or helpful for students however, we will also need the help of other Transition Year Classes. These students will not be offered the ten week programme but will be very important for our study as they will help us compare any changes or improvements.
This will be called the ***Control Group.***

Your class has been selected to participate in the Control Group.

Do I have to take part?

It is up to you to decide whether or not you wish to take part. If you do decide to participate, your parents will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. Any students who chose not to participate will be supervised by a teacher during this class period.

What will happen if I take part?
You will be asked to complete three questionnaires. This will take approximately 40 minutes. These questionnaires will ask you questions about Mindfulness, how you manage your emotions and mood. You will be asked to complete these questionnaires again at the end of the ten week programme and six months following this group programme.

What are the possible disadvantages and risks of taking part?
There are no risks to participating in the Control Group. Some students may view participation in the Control Group rather than the Intervention 'b. Mindfulness in Schools Programme' as a disadvantage. If results of this study find that there are benefits to attending the 'b. Mindfulness in Schools Programme', the Control Group will be prioritized to be offered any subsequent groups offered at your school. Following the study, you will be provided with information regarding an online Mindfulness Programme.

What will happen if I express concerns or worries either in my responses to questionnaires or as part of any Mindfulness lesson?
You will first be invited to meet with the researcher, who is a Senior Clinical Psychologist for a brief chat at the end of the lesson. The psychologist will listen to you and discuss any worries or difficulties. If requires, supports and help that may be available to you will be outlined. Sometimes if problems or worries are more serious and the psychologist is concerned about your wellbeing, health and/or safety, it may be necessary to speak also with a teacher or your parents. If you require more on-going support, it will also be possible to make a referral to another psychologist working in the community.

What are the possible benefits of taking part?
You will be assisting in a doctoral study and there may be a possibility of being offered a place to attend subsequent 'b. Mindfulness in Schools Programme' interventions at your school. You will also receive information following the study about an online Mindfulness website.

Will my taking part in the study be kept confidential?
Only the researcher will have access to your questionnaire date and your name.
All questionnaires will be stored in locked filing cabinets at ……. Health Centre.
All questionnaires will be confidential. If the researcher is worried about any answers you give on any questionnaires however and is concerned that you may need some help or support, she will contact you to offer assistance.

What will happen to results of the research study?

This study will be written up as a Doctoral Research Thesis and a research paper. Your name will not appear in any write up of this study.
A presentation will be arranged at each school on completion of this study to give general feedback on results. We will not be giving any individual feedback however.

What will happen if I don't want to carry on with the study?
Participation in this study is voluntary and you are free to withdraw at any time without giving an explanation.

What if there is a problem?
If you have any problems, concerns or questions about this study, please contact the main researcher:
Ms. Barbara Duffy, Senior Clinical Psychologist…….Telephone: …….
You may also contact:
Dr. ……

If you remain unhappy and wish to complain formally, you can do this through City University London complaints procedure. To complain about the study, you need to phone 020 7040 3040.
You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the project is: **A Mixed Method of Evaluation of Adolescents' Experience of the 'b. Mindfulness in Schools' Programme.**
You can also write to the Secretary at:
[redacted], Secretary to Senate Research Ethics Committee, Research Office, E214, City University London, Northampton Square, London EC1VOHB.
Email: [redacted]

City University London holds insurance policies which apply to this study. If you feel you have been harmed or injured by taking part in this study you may be eligible to claim compensation. This does not affect your legal rights to seek compensation. If you are harmed due to someone's negligence, then you may have grounds for legal action.

Who has reviewed this study?
This study has been approved by City University London Psychology Department Research Ethics Committee and The Psychology Research Ethics Committee Trinity College Dublin.

Thank you for taking the time to read this information sheet.

Consent Form: Parent (Control Group)
A Mixed Method Evaluation of Adolescents' Experience of the '.b Mindfulness in Schools Programme'.

1. I agree to my child taking 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:

   My child completing questionnaires asking about Mindfulness, Emotional Regulation and Mood

2. This information will be held and processed for the following purpose(s):

   I understand that any information I provide 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 organisations.

   If the researcher is concerned regarding the welfare of my child either during group sessions or in their responses to questionnaires, I may be contacted in relation to offering help or support.

3. I understand that my child's participation is voluntary, that he/she can choose not to participate in part or all of the project and that he/she 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 information about my child. 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.

5. I agree to my child to taking part in the above study.

Name of Parent Signature Date

APPENDIX D

I. **Beck Youth Inventories II**

II. **Five Facet Mindfulness Questionnaire (FFMQ)**

III. **Difficulties in Emotion Regulation Scale (DERS)**

Redacted

APPENDIX E

Qualitative Questionnaire Post Intervention

1) What would you give the .b mindfulness course out of 10 in terms of being enjoyable and interesting? Circle your score:

Very dull					Okay					Excellent
0	1	2	3	4	5	6	7	8	9	10

2) On a scale of 1 - 10 How much do you think you have learned during the course? Circle your score:

Very little					Some					A great deal
0	1	2	3	4	5	6	7	8	9	10

3) In the future, how likely are you to use any of the techniques you have learned? Circle your score:

Never					I might do					Very likely
0	1	2	3	4	5	6	7	8	9	10

4) Which of the following techniques do you think you might use most in the future. Please circle:

.b (pausing and breathing)

Noticing your stress signature

Beditation

7-11

FOFBOC (seated body-scan)

Mindful breathing (paying attention to sensations of breath)

Seeing thoughts as ‘traffic’, or ‘thought buses’ passing through the mind

Counting breaths in one minute

5) The .b Mindfulness Programme recommends homework tasks following each lesson. Overall, how would you rate your commitment to the homework tasks? Circle the score:

Never did it				Sometimes						Always did it
0	1	2	3	4	5	6	7	8	9	10

APPENDIX F

Qualitative Questionnaire Follow Up

1). Since completing the .b Mindfulness Programme, on average how often have you used any Mindfulness techniques in your day to day life? Circle the score:

Never				Sometimes						Always
0	1	2	3	4	5	6	7	8	9	10

2). Please tick which techniques you have used.

☐.b (pausing and breathing)

☐Noticing your stress signature

☐Beditation

☐7-11

☐FOFBOC (seated body-scan)

☐Mindful breathing (paying attention to sensations of breath)

☐Seeing thoughts as ‘traffic’, or ‘thought buses’ passing through the mind

☐Counting breaths in one minute

3) Which one(s) do you use most frequently? Please rank from 1-3

1)

2)

3)

4) In the future, how likely are you to use any of the techniques you have learned? Circle your score:

Very unlikely				I might do						Very likely
0	1	2	3	4	5	6	7	8	9	10

4). Any further comments or suggestions about the .b Mindfulness Programme?

_____

_____

_____

Thank you for taking the time to answer these questions

APPENDIX G

Focus Group Questions

1. What has been your experience of the .b Mindfulness Programme?
2. Looking at the course as a whole, what did you like about it?
3. Looking at the course as a whole, what did you least like about it?
4. What was your favourite lesson and why?
5. What was the most useful lesson and why?
6. Which was your least favourite lesson and why?
7. What has been your experience of the development of mindfulness over the 9 week period?
8. What, if any effects, has the development of mindfulness had on your world.
9. Has your view of yourself or your view of the world changed since developing mindfulness skills?
10. Have you noticed any changes in your response to distress or stress since developing mindfulness?
11. Have you noticed any changes in mood since commencing this programme?
12. Have you noticed any changes in feelings of anger or disruptive behaviour?
13. Have you noticed any reduction in levels of stress or distress since doing this programme?
14. Has your acceptance of yourself changed in any way since doing the .b programme?
15. Any ideas/suggestions for how the course might be improved in the future?
16. How do you think mindfulness will help you in the future, if at all?

APPENDIX H

Focus Group

7/5/2015 FG1

VN 55 0034

1. What has been your experience of the .b Programme?

FOFBOC

Learning how to relax your mind

Beditation

Positive thoughts

Grapes!

2. **Looking at the course as a whole, what did you like about it?**

It was different.

Relaxing class in a stress school environment.

A nice way to spend a class.

Really welcomed in compared to all the other stressful classes.

Had a feeling you were there for us. You were on our side. Really working for us.

You were not a teacher. A psychologist coming into us is very good. You know what you are doing. It was really nice.

3. Looking at the course as a whole, what did you least like about it?

Tacky power points.

Some didn't hit the mark.

You could tell someone was trying to appeal to teenagers but it could be a bit better.

Some were a bit naff and overdone.

4. Which was your favourite lesson and why?

The Gratitude lesson and the grapes.

The Malteesers one!

Apart from the food, it made me more open-minded to show gratitude towards other people and not to take them for granted.

Trying to enjoy and savour things more and take all things into consideration.

I appreciate food more, especially chocolate, instead of wolfing handfuls of food down!

I enjoyed my Sunday roast last week. Was scoffing roast potatoes, but remembered to slow down and taste them mindfully. They were even more delicious! Still ate loads! But enjoyed them more.

5. What was the most useful lesson and why?

FOFBOC Lesson.

I do a lot of sport. This exercise is brilliant. Before a match I use it. I do it in the dressing room. I don't mind if anybody sees me doing it.

I loved FOFBOC too. Feeling grounded with feet on the floor is really good to calm you down.

6. Which was your least favourite lesson and why?

They were all very good.

They were all ok.

They were all good lessons.

I liked them all.

7. What has been your experience of the development of mindfulness over the 9 week period?

Very interested in the psychology of it.

Very good to rest and calm down.

Very helpful.

Usually panicking for tests like or anything and taking a few deep breaths and calming down is really good.

Much easier to go to sleep.

Using beditation. My sleep is great now and I am in better form.

Beditation calms me down and aids sleep.

8. What if any effects has the development of mindfulness had on your world?

Better sleep and better humour

Focusing more on the positive things rather than the negative or the worries

After every lesson, everyone was in very good mood and at break time on Thursdays

Going to break after the lesson was really different; everyone was very light and relaxed.

9. Has your view of yourself or your view of the world changed since developing mindfulness skills.

Tricky question.

Try not to take things for granted as much like before.

Everything I have been doing I am actually stopping and appreciating things, everything.

The course has added quality to my life.

10. Have you noticed any changes in your response to distress or stress since developing mindfulness?

Yes+++

If talking to someone, if you are have an argument back, I'm staying calm, say ok and get on with it, I am taking stock more.

If I am fighting with anyone or with my Mum, I step back, go my room and calm down and come back and apologise. Helping me a lot.

If I wake up and feel it is going to be a bad day, I am noticing this thought more and then able to think that everyone else is probably feeling this too. I can just keep worries more in perspective.

Either way you notice others have problems too and you are not alone and if you sort of fail a test or anything it is not the end of the world.

I can shake things off more. Life is short, why worry. 'Life is every Breath'!

Samuri!

When I am going around getting stressed out, like looking for stuff to go training, I am taking a breath and calming down and slowing down and taking a step back. It really helps.

11. Have you noticed any changes in mood since commencing this programme?

Been happier!

Less things to be worrying about.

It seems I worry less, my mood is better.

Not as prone to argue with people so my mood stays more balanced.

Don't feel as mad with people like I used to if they are annoying me.

I am more relaxed when I come home from school in the evening time.

? Put all down to .b……?? yes yes yes yes.

12. Have you noticed any changes in feelings of anger or disruptive behaviour?

Don't feel as angry.

Big reduction in irritability.

I can notice those in class that have done .b, they are calmer in the class.

Those that are in the mindfulness class settle quicker when we come into class.

The others are still messing around.

I have noticed myself in class to be less restless and jittery.

13. Have you noticed any reduction in levels of stress or distress since doing this programme?

Yes Yes Yes yes

Small things that usually get me annoyed, I can say breathe, just let it go, it is not worth it.

Smaller things still annoy me but don't affect me, see the thought bus, know it won't affect me tomorrow so I let it go.

When you have an essay, instead of avoiding it and putting it off, I instead have been doing a FOFBOC and then just getting stuck in! Don't get in a bad mood about it then because I stop putting it off.

If I breathe or do a .b stress goes.

14. Has your acceptance of yourself changed in any way since doing the .b programme?

No answers…… silence

15. Any ideas/suggestions for how the course might be improved in the future?

Few better power points

Choose videos about real life like the one of the 106 lady from Nazi Germany. I really liked and believed her.

More stuff about accepting yourself so you can understand and help yourself more

The delivery overall is good, use of video and Power Point and especially food is excellent

16. How do you think mindfulness will help you in the future, it at all?

I think it will be very good for 5th and 6th year, I will use it.

If I keep practicing and remembering it will be very helpful for when I need it.

Probably will continue to use it for sport and for tasking tests.

It is very good for stress/ the 7/11 works.

I have noticed that my sporting performance has improved when using FOFBOC so I hope it continues.

I will continue to use it for sleep.

They are great skills to keep.

17. General Chat

I'm feeling generally more confident with mindfulness and less uncomfortable.

Nice feeling during and after classes.

The shared experience was good.

The class seemed to mature together and relax into the programme.

There was huge respect for you!

Overall really positive, useful programme and you can see the changes.

Q. .b is designed to be delivered by teachers within the school environment?

That would make it different

Lots of people have grudges with certain teachers; they wouldn't pay attention to them doing Mindfulness

A psychologist like you was given great respect. If it were a teacher, you would be there under their supervision, wouldn't be as good or as effective.

Overall very worthwhile, enjoyable beneficial and usable!

If you could do it when you are a little younger it might be good. My brother is 2nd year and he is stressing out about Junior Cert already. If he did something like this it would be very good.

Doing this in 6th year would also be great for exam stress.

It would be good to get this training early. You would still be able to take it on well. Maybe you could do in first year and do it again or top it up for exam years of senior cycle.

It is very good to have in TY though too because we are more mature, in 3rd year we would have been all laughing and messing and looking at each other.

I would like to repeat the programme as I was a bit uncomfortable at the start!

Barbara Duffy

8/5/2015

Focus Group

FG2 May 18th 2015

1. What has been your experience of the .b Programme?

Relaxing

Yes enjoyable and relaxing

When you are coming into the class, it is good. We know we don't have to do work or homework

in this class

I thought it was really relaxing

Like a relief, don't have to do loads of work

Different from all other classes ever!

2. Looking at the course as a whole, what did you like about it?

Liked the actual breathing exercises themselves definitely rather than the power points

The practical stuff was lovely

I liked the involvement of that

I liked that part

It was nothing like I have ever done before

Breathing has been good to help me get to sleep.

3. Looking at the course as a whole, what did you least like about it?

The when you had to feel your feet lesson

I didn't like doing that either

I didn't mind that one

I didn't mind it as first but it was repeated a lot I didn't like that

Listening to your feet, didn't like that bit. It's just weird.

I thought it was relaxing but I didn't like having to do it so many times

I didn't actually mind it at all

Sometimes I found the power points that there was too much information on them. Different topic every single time in them.

Like it might be easier if there wasn't something different every time.

Every lesson being different, a lot of information to take in. A lot of info.

The videos were good though, especially the last week and the old woman and the sunscreen.

Some power points were overloading.

You know the way we done that breathing and you close your eyes and you are all calm and sleepy and then you have to wake them up and listen and read the screen. Tired.

Hard to wake back up and listen after a practice.

4. Which was your favourite lesson and why?

I liked the one where we had to eat the malteeser. You got to eat!

Food yes. That lesson really involves us. Very enjoyable.

I liked that one and I liked the malteeser.

I liked the one about the puppy. You manage your puppy mind; you don't give out to it, try to keep it focused and try to have some kind of kindness.

This metaphor was very good for what we were trying to do. It made it a bit easier.

Enjoyed 'bringing the puppy back'.

5. What was the most useful lesson and why?

Learning the breathing exercises, the 7/11/

The one where it helps you to go to sleep. The Bediations I liked that.

Breathing has been very good for me in helping pain control. I get cramps sometimes and breathing really worked.

Finding the 7/11 very helpful.

I liked the beditation one. Don't need it to go to sleep but love the exercise.

Loved the 7/11. It was very short and very easy. It was the easiest one.

6. Which was you least favourite lesson and why?

The one when you have to keep your mind on your breath. Don't let it run off keep it focused on counting.

The traffic one. I couldn't do that one kept getting taken away by the buses.

I just kept wandering off in that lesson.

It was good but it was hard because I thought of lots of buses.

I liked it. It was a very exercise for me!

7. What has been your experience of the development of mindfulness over the 9 week period?

Very different. I feel really relaxed after the lesson and the course.

I don't stress about things really any more.

I feel more positive not really stressed anymore

I thought it was helpful like for stress and stuff

It has been a relaxing experience

I actually know now that if I am really worried about something it doesn't matter

really. Whatever state you are in a mindfulness practice will work for me.

Just give mindfulness your time it works

I loved coming to the class

No matter what I was thinking about, I came out of the class feeling really good! So you know it works if you give it a try

I have done the breathing exercises at home a lot they are positive and new for me.

8. What effect has the development of mindfulness had on your world?

I don't worry as much as I used to

I have less worries

I think because it is coming to the end of TY you're less stressed and .b helped that

Like when you start TY you are like'o my god I don't understand what TY is, but .b at the end, this really helped. Quieter time in TY so had time to do and take on Mindfulness. Had the space!

Sometimes if you are doing nothing, you just become aware of what you are doing

It did cross my mind to notice and pay attention to the present much more often than I

ever had.

I find myself tuning in more

I am more aware of everyday things

I found myself tuning into sounds and the taste of things

While eating, I was savouring. Tasted more flavours

I had never really thought about that before when eating. I just shoved it all in!

9 Has your view of yourself or your view of the world changed since developing mindfulness skills?

Good to know people do mindfulness

The coaches and the footballers who use it

Like Johnny Wilkinson that's impressive

Wasn't aware other people/cool famous people use mindfulness

View of them as changed

Look at that basketball coach differently

Can't believe he has got a whole team doing mindfulness.

I feel better about myself like I feel 'I can do this'

I used always put myself down and say 'Oh No I'll never be able to do that'

Now I am choosing to do more!

10. Have you noticed any changes in your response to distress or stress since developing mindfulness?

I remember from the questionnaires at the beginning like how you feel about certain feelings and if you understand what you are feeling. Now I can!

I can decipher why I am angry, just recognising it. Working out the cause this helps.

Obviously anger is still going to come or be there but recognising it helps me to calm down.

I deal better with distress and stress now.

Breathing helps me manage it better. Calmness comes in.

Wouldn't say I am as stressed anymore.

Me too

Kind of can stop it before you get stressed. So you won't get more stressed.

I used to get stressed about small things but now I don't as much.

I think it would be different if we were in 5th year. You might be getting different answers because we would be so much more stressed than we are this year.

Different situation of stress though can apply with all exercises.

11.Have you noticed any changes in mood since commencing this programme?

No

12. Have you noticed any changes in feelings of anger or disruptive behaviour?

Not really a problem for me anyway

Yeah me too.

13. Have you noticed any reduction in levels of stress or distress since doing this programme?

Yes

I think when we were doing the portfolio for TY I wasn't as stressed because of .b

Once I got it in stress stopped and mindfulness really helped with the deadline

Sigh of relief though when portfolio went in.

14. Has your acceptance of yourself changed in any way since doing the .b Mindfulness Programme?

Yes I feel a lot better about myself

I feel just in general like I feel good

I've started doing new hobbies and stuff and some of my family are like that's weird and I say well I want to do it! I have found a new confidence to face the fear and try new things

Yes I just feel good in myself like

More positive

Less hard on yourself

15. Any Ideas/suggestions for how the .b Mindfulness in Schools Programme could be Improved in the Future?

Maybe a little less theory on the Power points

Just one or two really strong points

Power points are a bit overdone too many things and captions e.g. too many animals!

Too much theory and not enough practical

I would like more breathing exercises

Less of the repeated things

Liked the FOFBOC but then we did it number of times and I kind of got sick of it

More variety of breathing would be good

Liked the videos

Power points didn't really hit the spot

Maybe too many animations and stuff and they were just overdone

Too many captions

You would know they tried very hard to make it relatable but went too far and got a bit lost

Some power points were cheesey

Less information would be more beneficial

If the programme focused on fewer things it would make it more memorable

Videos were good and not too long and really demonstrated the key messages

How do you think mindfulness will help you in the future, if at all?

For exams definitely

I will use the breath for stress but also to concentrate for study and exams

For anything I can see it working

The breathing is brilliant

I will use mindful breathing and mindful mouthful

I will continue to use breathing for pain

General Chat

It might work with a different year group

It was good because we are going into 5th year

Would be very good in 3rd year doing exams

In TY we enjoyed the classes though

Exam years would find it very beneficial

I's say we would be released from class in 6th year, if that could be done it would be great

TY was good because we had the space to do it

Query teachers doing .b?

Don't think teachers would be good

People already have an opinion on the teachers and if they started telling you what your mind is like, you would not take it in.

It would be ok with some teachers and with other teachers it would not be as good.

They wouldn’t care what is going on

They would want to get work done so wouldn’t bother doing mindfulness

Could end up like PE in Primary School, ‘you were not good today so no PE’

Some teachers don’t bother to do some things

They do work instead

They wouldn’t take it seriously

Different people coming in like you. You know I’s going to happen. You come in and the class goes ahead and is given priority.

Not wishy washy when outsiders come in

Better to have an outsider

If you didn’t like the teacher you wouldn’t take it seriously

Would not be as believable with a teacher.

A psychologist knows about this kind of stuff.

Barbara Duffy

Focus Group

F.G.3

19/5/2015

550041

1. What has been your experience of the .b Programme?

I'd take it or leave it

Missing careers class

It has made me feel better

I found it good

I was not sure about it

I'm neutral about it

2. Looking at the course as a whole, what did you like about it?

Eating malteesers

Savouring the whole thing

Missing careers

Some of the stuff like 7/11 was actually pretty useful

I have used that a good few times

3. Looking at the course as a whole, what did you least like about it?

Some people messing in the class

Just his existence, joking

That disturbed me a bit

We are used to him it didn't mess it up

I didn't like FOFBOC

It was a bit weird and stupid

It wasn't helpful but was not overly stupid

I thought it was good and kind of helpful

4. Which was your favourite lesson and why?

The Last Samurai: Mindful movement.

That was good.

It was good at understanding your environment and comprehend being more natural and relaxed in your environment. And good outcome comes.

Sports people use mindfulness

I like the mindful eating one

It has changed how I eat. It did overflow to eating at others times.

White chocolate, roast and mashed potatoes. I savoured them.

The odd time I thought of doing that the food tastes very good.

5. What was the most useful lesson and why?

The beditation was good.

So did I

I liked that too and 7/11

The 7/11/ is good because you can use it anywhere.

Whenever you're stressed or about to get stressed it really helps to deal with stress and nerves.

For singing and performing it really helps, dropping your attention to the feet and to the breath is really good in avoiding stress build up.

I've been able to do it.

I have used beditation for going to sleep once or twice

6. Which was your least favourite lesson and why?

The FOFBOC one!

7. What has been your experience of the development of mindfulness over the 10 week period?

It's handy

Something you can do

If you are going into a competition it helps you to calm down

I have never noticed this before and now I do

More ways and new ways to deal with situations and things that cause stress

Managing stress better than before

8. What if any effects has the development of mindfulness had on your world?

I do

It helps to step back a bit and look at situations

That helps not get engulfed or getting in a huff

I have scored more in hurling

I do the breathing thing before I go to take a free

I'm doing a Johnny Wilkinson

It has enhanced my performance

It might help over time with the six pack

Helps my performance

9. Has your view of yourself or your view of the world changed since developing mindfulness skills?

Yes lots of sports people do it!

10. Have you noticed any changes in your response to distress or stress since developing mindfulness?

Just when you're in the situation you can look back on your emotions and it helps you to understand and work better in those circumstances. This helps

11. Have you noticed any changes in mood since commencing this programme?

Slightly better

I've noticed it a bit better

More positive

12. Have you noticed any changes in feelings of anger or disruptive behaviour?

I haven't been angry since I started. Just thinking of that now.

That is a record I just get annoyed or annoying now but now angry.

I don’t notice any change.

13. Have you noticed any reduction in levels of stress or distress since doing this programme?

I have.

Just the exercises help gain better control so distress doesn’t develop. It doesn’t rise into distress.

We are in TY so might be different in 6th year, not really stressed at the moment.

We were more stressed this time last year.

14. Has your acceptance of yourself changed in any way since doing the .b programme?

No.

Love myself just as much

15. Any ideas/suggestions for how we might improve the course in the future?

Some things are repetitive

I thought it was good

It was really good as it was

The power points were great

They were fine

They were not boring

The puppy was cute

Plenty of pictures and colours very helpful

One or two more examples in video would be good

Videos demonstrated good examples

16. How do you think mindfulness will help you in the future, it at all?

For performing

Stress in general stress is the leaving cert

The 7/11 is the piece to use

It is easy to use you can do it anywhere

A quiet one nobody knows you are doing it

General Chat

Do it at a different point.

An exam year would be more benefits. Any year has exams TY is the only year we don't have exams.

Benefit for TY will be that we can use it next year for better results

It's worth keeping it going

It would be worth negotiating getting exam classes involved.

A top up class in 6th year would be good.

Q Teachers doing it?

Different with someone like you coming in

Nobody would listen to the teachers

They would not be notable in the field

You carry more weight you know about these things

Teachers probably wouldn't do it even if it was planned

Vs. sees the benefit a teacher in school doing it for all classes and all year round?

If teachers did the top ups it would be great. Get someone in like you to do the course and a teacher could continue it and do the top ups

FG4

19/5/2015

1. What has been your experience of the .b Programme?

I think it is quite, probably, informative regarding the way you are supposed to think. It will probably prepare us for stressful things and stressful times ahead when we might need it like 6th year coming up.

I thought it was a good experience.

Kind of more in tune with how you are feeling and your emotions and what to do in order to cope with your emotions and how to breathe and relax and cope with everyday life. Very positive.

The fact that it's been different. Not like a subject where some people like it and some people don't like it. It is liked by everybody.

2. Looking at the course as a whole, what did you like about it?

I think I liked the breathing and the relaxation and noticing how your body feels and relaxes and reacts and how you feel at that moment.

The buses, the thought buses. It really helped me. If you thought of something you could just make it move away by using that visualization.

I liked the 7/11. Really actually helps you. I've tried it. When your heart starts pumping, do a 7/11 and you are fine again. It calms the heart, it calms the worry.

3. Looking at the course as a whole, what did you least like about it?

Eating chillies! Not pleasant but I tried it!

Based out in weekly classes.

Sometimes you forgot to do the homework or you miss a lesson and then there is no link. The lessons are not really very well attached and linked. I get that each lesson is a stand

alone lesson but some overlap might be good. I missed the FOFBOC one and thought I missed something big!

Shock ball made me nervous!

4. Which was your favourite lesson and why?

The FOFBOC one! Relaxing in that seat and not have to worry about anything. I have not done it since but I would do it again if I remember to do it.

Tasting the food and savouring it! Loved that chocolate lesson. Really helps you appreciate what you are eating.

Thought about after when eating, and I'd say "I'll savour this".

5. What was the most useful lesson and why?

The one with the 7/11 definitely

I agree the 7/11 is very useful. It sticks out with you. One to remember and it is easy to do. It's a great distraction.

7/11 could be done anywhere. Could stop and do it anytime. Not like Beditation where you need a bed or be lying down!

6. Which was your least favourite lesson and why?

They were all ok

No all lessons were good

7. What has been your experience of the development of mindfulness over the 9 week period?

Appreciating how to feel and to be positive

Appreciating how to breathe and calm down if you want to control your emotions. Think

.b course has started this process. 9 weeks not long enough to do it completely but definitely a great start.

Leaves you a lot calmer.

I have noticed it in situations where I used to usually get very angry; you just sort of let it go. Managing this by breathing mostly!

8. What if any affects has the development of mindfulness had on your world?

I'm happier.

It's just really awareness of yourself and that is good. Teaches you to think of yourself first.

Take a minute to stop, think about your feelings and think about your thoughts and look at them.

Pause and breathe!

Made me calmer. Every time when I go home if my family annoy me, I use the techniques to stay calm and it works. I use the 7/11/, thought buses and the .b. My little sisters have said they notice a difference in me! They are the cause of the rows but now I'm different and don't react and not many rows now!

9. Has your view of yourself or your view of the world changed since developing mindfulness skills?

Appreciate stuff a lot more

A lot happier about stuff and more active about doing stuff now

A lot calmer.

Little things that used to annoy me, I have learned now not to get so annoyed about them.

Appreciate when someone does something nice for you and that little bit more aware of this than before.

10. Have you noticed any changes in your responses to distress or stress since developing mindfulness?

It is not as bad as it used to be because you just learn to deal with it more.

Still there but doesn't feel as bad.

Thinks it is just a way to control it so you know what to do if you are in distress. So it's just if you're ever stressed or worried you know what to do to calm yourself down or get help.

Just knowing that you have the skills is useful.

11. Have you noticed any changes in mood since commencing this programme?

I think I feel aware of my mood more now. It I am in a bad mood I am noticing it and trying to get out of it.

Not as likely to 'get into' the mood. Notice myself going into a mood and realising it and trying to ignore the negative and move on!

12. Have you noticed any changes in feelings of anger or disruptive behaviour?

Not as bad, I am more calm and less angry I think.

I'm under more control.

The anger doesn't pop out as much.

If something is annoying you, just know now when to walk away. If someone is talking to you and it is annoying you, just leave!

I know now not to react automatically. If they are doing something or saying something and waiting for you to react to it, just try to ignore it now. Breathing helps this happen.

I think I can take stock now and not react as much.

13. Have you noticed any reduction in levels of stress or distress since doing this programme?

This is a less stressful year anyway so it probably hasn't come into full effect of using it yet.

It will be interesting to see in 6th year if I'll use it when I'm really stressed.

14. Has your acceptance of yourself changed in any way since doing the .b programme?

It's kind of like giving yourself more lea-way to your emotions.

You're allowed to feel emotions but its better way to handle them.

If I'm angry there is probably a reason and the feeling is ok. I just need not to over react and think about it rather then automatically acting out.

I don't really over think stuff now. Not as much anyway.

15. Any ideas/suggestions for how we might improve the course in the future?

Do it more frequently during the week if that would be possible. Kind of forget it over a week. It is a big gap. Maybe twice a week and a teacher could do the practice on one of those days, the second time.

Don't think it would work with a teacher. Think it's better for someone outside the school to do it because we know all the teachers.

It's like we would have no respect for one of our teachers doing it because they are in and out to us every day and we know them. You are coming in and most of us don't want a 'bad rep' so we have more respect and discipline for you.

It wouldn't work with teachers from the school because these classes are usually seen as a doss class where you do nothing so I don't think it would work because we would get into that mind frame and we would say 'that's useless' and we wouldn't get anything out of it, we would just go to sleep!

Yes yes. A teacher would not have street cred to do this course.

I wouldn't want to talk about feelings with a teacher would prefer someone like yourself.

I would like this course to be a bit more interactive. I liked the eating lesson and the shock ball. I would like more bits like that.

I liked all the power points and the videos.

Yes they were very good. How you depicted things you were saying with an image or an example was really good like the rumination and the cow chewing, so you can say 'okay I get that now'.

Linking new learning to something else we know was done very well.

16. How do you think mindfulness will help you in the future, if it all?

Basically this is about controlling and then knowing your emotions so you know how to deal with them so if you are ever not under control you know how to get under control yourself so you didn't over react. Yes I will use that.

I think 7/11 really affects me. It's not where you need to sit in a chair or lie down. You can do it anywhere, in the middle of a field or standing up in another room or just pausing and doing a 7/11/. I'll keep using that.

I'd say I'll probably use mindfulness. I think the 7/11 is quite accessible and I can do it whenever I like.

I'll continue to use thought buses and .b

Q. Good year to teach .b?

Yes good to do in TY.

A calming thing, take it in more.

Maybe another class in 6th year would remind us again.

This is a good year to put it into practice.

4th year is the best year because you don't have to be as focused on study and work and classes. Don't do as much as other years so have time to learn mindfulness.

6th year is probably when you need it but would not have time to learn it!

Barbara Duffy

APPENDIX I

Table 15 Analysis of Covariance Summary: Outcome Measures

Measure	Source	Sum of Squares	df	Mean Square	F	Sig.
BCSIY	Intercept	1967.87	1	1967.87	30.06	.00
	BSCIY1	9177.51	1	9177.51	140.18	.00
	Group	115.86	1	115.86	1.77	.18
	Error	8379.59	128	65.46		
BAI	Intercept	2350.99	1	2350.99	28.26	.00
	BaI1	13988.95	1	13988.95	168.15	.00
	Group	11.91	1	11.91	.14	.70
	Error	10731.42	129	83.18		
RawBAI	Intercept	702.23	1	702.23	9.09	.00
	RawBAI1	14422.72	1	14422.72	186.75	.00
	Group	25.30	1	25.30	.32	.56
	Error	9962.65	129	77.23		
BDI	Intercept	2253.32	1	2253.32	37.61	.00
	BDI1	9247.77	1	9247.77	154.36	.00
	Group	10.11	1	10.11	.16	.68
	Error	7728.14	129	59.90		
RawBDI	Intercept	1476.57	1	1476.57	16.04	.00
	RawBDI1	10795.72	1	10795.72	117.31	.00
	Group	2.72	1	2.72	.03	.86
	Error	11779.53	128	92.02		
BANI	Intercept	1883.97	1	1883.97	29.60	.00
	BANI1	9282.09	1	9282.09	145.85	.00
	Group	1.42	1	1.42	.02	.88
	Error	8209.69	129	63.64		
RawBANI	Intercept	2769.95	1	2769.95	16.52	.00
	RawBANI1	11273.84	1	11273.84	67.26	.00
	Group	846.28	1	846.28	5.04	**.026***
	Error	21622.53	129	167.61		
BDBI	Intercept	768.41	1	768.41	21.34	.00
	BDBI1	7073.72	1	7073.72	196.53	.00
	Group	104.70	1	104.70	2.90	.09

	Error	4643.00	129	35.99		
RawBDBI	Intercept	483.57	1	483.57	21.72	.00
	RawBDBI1	3231.54	1	3231.54	145.15	.00
	Group	50.16	1	50.16	2.25	.13
Error	2871.81	129	22.26			

Table 1
Baseline
Comparison
of Control
and
Intervention
Groups

Table 16. Comparison of Control and Intervention Groups

Variable	Control or Intervention	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
BSCIY1	Intervention	73	46.6575	8.04539	-.186	129	.853
	Control	58	46.9310	8.75968	-.184	117.297	.854
BaI1	Intervention	73	53.1370	10.18211	-.806	130	.421
	Control	59	54.6610	11.51103	-.796	116.894	.428
RawBAI1	Intervention	73	16.2055	10.17753	-.693	130	.489
	Control	59	17.4915	11.09422	-.687	119.280	.493
BDI1	Intervention	73	50.3425	7.84612	-.973	130	.332
	Control	59	51.8814	10.32587	-.945	106.142	.347
RawBDI1	Intervention	73	10.6986	8.19838	-.946	130	.346
	Control	59	12.2712	10.88946	-.919	105.481	.360
BANI1	Intervention	73	50.7123	9.21725	-.389	130	.698
	Control	59	51.3220	8.63122	-.391	127.165	.696
RawBANI1	Intervention	73	14.3699	9.42884	-.381	130	.704
	Control	59	14.9831	8.88139	-.384	126.942	.702
BDBI1	Intervention	73	48.7260	7.74823	.654	130	.514
	Control	59	47.9322	5.76812	.674	129.189	.501
RawBDBI1	Intervention	73	6.3425	5.44217	.569	130	.570
	Control	59	5.8475	4.30642	.583	129.951	.561
DERST1	Intervention	73	83.7671	25.84705	-.982	130	.328
	Control	59	88.2034	25.74663	-.983	124.452	.328
NA1	Intervention	73	12.8493	6.08886	-.078	130	.938
	Control	59	12.9322	5.98522	-.078	125.100	.938
Goals1	Intervention	73	15.0548	5.79725	-.305	130	.760
	Control	59	15.3898	6.80014	-.300	114.364	.764
Impul1	Intervention	73	11.5068	5.67676	-.334	130	.739
	Control	59	11.8305	5.35676	-.336	126.872	.737
Aware1	Intervention	73	16.9726	5.78545	-.596	130	.552
	Control	59	17.5424	5.03204	-.605	129.271	.546
Strat1	Intervention	73	16.2329	7.49355	-1.257	130	.211
	Control	59	17.9661	8.33142	-1.243	118.003	.216
Clarity1	Intervention	73	11.4521	4.88206	-1.437	130	.153
	Control	59	12.6610	4.70733	-1.443	125.980	.152
FFMQT1	Intervention	73	78.1644	13.00108	1.702	130	.091
	Control	59	74.5932	10.58320	1.740	129.990	.084
NR1	Intervention	73	15.6301	3.87121	2.263	130	.025
	Control	59	14.0339	4.21805	2.242	119.308	.027
OB1	Intervention	73	13.3699	4.20815	.349	130	.728

	Control	**59**	**13.1356**	**3.32419**	**.357**	**129.942**	**.721**
AA1	**Intervention**	**73**	**16.8493**	**3.94642**	**1.017**	**130**	**.311**
	Control	**59**	**16.1864**	**3.42141**	**1.033**	**129.333**	**.304**
DS1	**Intervention**	**73**	**15.6849**	**4.72839**	**.711**	**130**	**.479**
	Control	**59**	**15.1186**	**4.32349**	**.717**	**127.989**	**.474**
NJ1	**Intervention**	**73**	**16.3151**	**4.00651**	**.276**	**130**	**.783**
	Control	**59**	**16.1186**	**4.12346**	**.276**	**122.722**	**.783**

Table 17 Ranking of Top Three Most Frequently Used .b Mindfulness Techniques at Time 3

Question	**N**	
		% who ranked it 1st 2nd or 3rd
First most frequently used technique		
1. 7-11	26	46.2
2. .b	22	36.1
3. Beditation	4	6.6
4. FOFBOC	3	4.9
5. Mindful Breathing	4	6.6
6. Thought Buses	1	1.6
7. Counting Breaths	1	1.6
8. Stress Signature	0	0
Second Most Frequently used Technique		
1. .b	15	11.4
2. Mindful Breathing	13	9.8
3. Counting breaths	8	6.1
4. Thought Buses	5	3.8
5. Beditation	4	3.0
6. 7-11	4	3.0
7. FOFBOC	3	2.3
8. Stress Sig	2	1.5
Third Most Frequently Used Technique		
1. Mindful Breathing	14	31.8

2. .b	8	18.2
3. Counting breaths	6	13.6
4. Beditation	4	9.1
5. 7-11	4	9.1
6. FOFBOC	4	9.1
7. Stress Sig	2	4.5
8. Thought Buses	2	4.5