PSYCHIATRIC COMORBIDITY

Differential Characteristics and Outcome amongst Single and Dual Diagnosis Psychiatric Patients

TINA COCLAMI

Thesis submitted in fulfilment of requirements for the degree of Doctor of Philosophy

Department of Psychology
City University, London

2006

List of Tables

List of Figures

Acknowledgements

I am grateful to my patients and their families. They have been my most valuable teachers.

I am deeply thankful to my supervisor Dr Malcolm C Cross. His reviews and comments were extremely helpful and resulted in substantial improvements.

I wish to express my gratitude to City University, Department of Psychology and its staff who helped me bring this PhD into existence. I am looking forward to a continuing association with it.

Finally, I am grateful to my family Dr Nickos Kelessis MD, PhD, my mother Katie Coclami and my father Dr Efstratios Coclamis, MD, PhD for their encouragement, understanding and support.

Declaration

I grant powers of discretion to the City University librarian to allow this thesis to be copied in whole or in part without further reference to me. This permission covers only single copies made for study purposes, subject to the normal conditions of acknowledgement.

Tina Coclami

Abstract

Objective
The present project is a prospective investigation including follow-up designed to (i) compare and to evaluate the differential characteristics of drug-abusing and non-drug-abusing psychiatric patients who were voluntarily or involuntarily admitted in a Greek Psychiatric clinic from 1996 to 1998 in order to explore the roles of demographic and clinical variables in the course of their illness, (ii) identify potential outcome predictors for patients with or without comorbidity.

Method
800 patients participated in this project, classified according whether they were diagnosed with single psychiatric disorder (Group 1, 620 patients, 77.5%) or dual diagnosis (Group 2, 180 patients, 22.5%).

Results
In comparison to psychiatric patients who do not abuse substances, dual diagnosis patients had differential demographic characteristics and poorer outcome. Dual diagnosis patients were younger, more often males with earlier onset of illness than the single diagnosis patients. Long Duration of Untreated Mental Illness and high scores of EE (Expressed Emotion) were common negative predictors of outcome for both groups. The number of psychiatric episodes (Polyepisodic) and poor Premorbid Adjustment were the strongest Group 1 predictors of outcome. Schizophrenic diagnosis and divorced marital status with significant levels of loneliness appeared to be the best Group 2 predictors of outcome. In both Groups, the majority of relapses happened within one year of remission while the combination of pharmacological and psychosocial therapies was associated with a more favourable outcome than medication alone.

Conclusion
These findings provide further confirmatory evidence of the poor outcome in dual diagnosis population and point to important differences in demographic and clinical variables across patients with and without psychiatric comorbidity.

Introduction

Chapter 1

Introduction

1.1 OVERVIEW

Health professionals face significant challenges when working with an under-researched group. Just such a challenge is faced when working with patients with co-existing disorders, as it is dual diagnosis, a relatively new area of psychiatric comorbidity.

Several factors contribute to this challenge. In dual diagnosis, the two disorders inevitably exacerbate one another. The psychiatric disorders may interfere with patients' ability and motivation to participate in addiction treatment, while the confused person becomes more confused, the hostile person more threatening and assaultive and the suicidal person more likely to engage in harmful activities (Evans and Sullivan, 1990).

Therefore, dual diagnosis patients bring dual complications, which increase the risk of relapse. Each relapse brings with it an increased probability of future relapse (WHO, 1990) and as a result, for a mental health professional, the treatment of coexisting

conditions is the control of the uncontrollable. These special challenges posed by dual diagnosis patients are highlighted in this project.

1.2 CONTENTS

Literature Review

Chapter 2 – *The Nature of Psychiatric Comorbidity and the Dually Diagnosed Patient: Concepts and Definitions* — provides description, terminology, the prevalence of psychiatric comorbidity and flags the clinical interest in the phenomena.

Chapter 3 – *The Relationship between Substance Abuse and Psychiatric Disorders* — explores the complicated relationship between psychopathology and drug abuse through phases of initial help seeking, treatment and outcome. The chapter first presents barriers to seeking immediate intervention from a mental health specialist. Then is referred to the treatment phase through the context of psychiatric hospital first, followed by the context of family, which is typically the patient's destination after discharge. Finally, the relapse prevention phase and the factors that serve as predictors of outcome and indicators of relapse are discussed. The discussion is structured as follows:

- Pre-treatment phase:
  - barriers to seek treatment
- Treatment phase:
  - hospital as a context of care
  - family as a context of care
- Relapse prevention phase:
  - indicators of negative clinical outcome
  - predictors of negative clinical outcome as indicators of relapse

Chapter 4 – *Psychiatric Disorders that Coexist with Substance Abuse* - provides an overview of the psychiatric disorders that coexist with substance abuse.

Method

Chapter 5 – presents the design and the procedure of the project.

Results

Chapter 6 – presents the statistical analysis and the results of the project.

Discussion

Chapter 7 – discusses the findings and their contribution to the overall project. First describes the prevalence of Dual Diagnosis in the project and then discusses the outcome and its predictors for Single and Dual Diagnosis patients. A reference list is provided for further study and questionnaires used are presented in Appendices.

Review of the Literature

Chapter 2

The Nature of Psychiatric Comorbidity and the Dually Diagnosed Patient: Concepts and Definitions

2.1 DEFINITION OF DUAL DIAGNOSIS

Comorbidity, the occurrence of more than one disorder in an individual, has high prevalence in psychiatric patients (APS, 1996). The population of patients with concomitant mental illness and chemical abuse are the most frequently cited population of comorbid psychiatric patients in the professional literature (Anderson, 1998).

Comorbidity, sometimes called "dual diagnosis", was defined by the World Health Organization (WHO 1995), as the co-occurrence in the same individual of a psychoactive substance use disorder and another psychiatric disorder. The term dual diagnosis is a broad term that indicates the simultaneous presence of two independent medical disorders. Recently, within the fields of mental health, psychiatry, and addiction medicine, the term has been popularly used to describe the coexistence of a mental health disorder and substance abuse problems (Roberts, 1992; Crawford, 2001; Banerjee, 2002).

It is noteworthy to mention that dual diagnosis is not always the favoured term but is increasingly recognised by many mental health professionals as a reference to the co-occurrence of two recognised and classifiable mental health conditions. Substance Dependence and Mental Health Services Administration (SAMHSA) (2001) express preference in the terms "co-occurring substance abuse and mental health disorders" and "co-morbidity". In order to avoid problems associated with differential diagnosis, dual diagnosis/comorbidity is only applied to patients whose history indicated that the psychiatric symptoms that they manifested began prior to substance abuse and consequently were not the result of withdrawal from drugs (Evans, 1990).

2.2 WHY IS THERE A FOCUS ON DUAL DIAGNOSIS?

Psychiatric comorbidity has received considerable attention in recent psychiatric literature. The prevalence studies that documented the coexistence of major mental illness and comorbid substance abuse stimulated a scientific interest in dual diagnosis (Regier, 1990). Current research and clinical experience suggest that comorbid mental disorder and substance misuse is associated with serious clinical and social problems, increased service utilisation and poor prognosis for treatment (Banerjee, 2002). Diagnosis is often complex

as it takes time to unravel the interacting effects of substance abuse and mental illness (Hartfield, 1993).

The clinical interest in this kind of comorbidity could be due partially to the observation that dually diagnosed persons often exhibit double denial and can be very resistant to treatment (Evans and Sullivan, 1990). It appears that substance abuse complicates almost every aspect of care for the person with mental illness.

2.3 PREVALENCE OF DUAL DISORDERS IN PSYCHIATRIC POPULATION

In the past 20 years, there has been increasing recognition of the high level of dual diagnosis in mental health service populations across the world (Table 1). This may be due to an increase in drug consumption in the general population or increased recognition of the co-existence of mental disorder and substance misuse disorder (Banerjee, 2002). Although the vast majority of the dual diagnosis literature originates from the United States, when writing this report, emphasis, where possible, has been place on studies and literature conducted in Europe. Studies of diagnostic patterns in both treatment samples (Ross, 1988; Wolf et al., 1988) and general population samples (Boyd et al., 1993; Regier et al., 1990; Kessler, 2000) show that there was

substantial comorbidity between mental disorders and substance use disorders.

Table 1. Prevalence of Dual Diagnosis

Authors	Date	Country	Rate of substance use
Drake	1989	USA	32%
Regier	1990	USA	47%
Duke	1994	UK	22%
Menezes	1996	UK	36.6%
Alaja	1997	Finland	28%
Wright	2000	UK	33%
Mueser	2000	USA	50%
Kamail	2000	Ireland	40%
Graham	2001	UK	24%
Weaver	2001	UK	24%

Adapted from Banerjee, 2002

The most compelling evidence supporting this finding was arguably two epidemiologic surveys that have examined the prevalence of

psychiatric disorders and chemical abuse in community samples: the National Institute of Mental Health Epidemiologic Catchment Area (ECA) study (Regier et al., 1990), a landmark survey of over 20,000 respondents and the National Comorbidity Study (NCS) (1991). It was documented for the first time that over one half of patients in psychiatric treatment typically receive more than one diagnosis and three out of four patients in treatment for substance abuse also have a psychiatric diagnosis.

Research has consistently highlighted that individuals with nearly every type of psychiatric disorder were at least twice as likely to have a substance use disorder as compared to with the general population (Carrey, 1991; Perkins, 1999; Kessler et al., 2002). Estimates of the prevalence of substance abuse in psychiatric populations range from 18% to 70% (Carey, 1991; Sloan, 1998) while the rates of psychiatric illness among substance abusing populations approach 80% (Hasin, 1988; Sloan, 1998). Higher psychopathology prevalence was found amongst those with opiate addictions compared to the general population (Miller et al., 1993). In other words, patients with psychiatric disorders have an increased risk of having addiction disorders whilst patients with addiction disorders have an increased risk of psychiatric disorders (Regier, 1990).

Chapter 3

The Relationship between Substance Abuse and Comorbid Psychiatric Disorders

Dual diagnosis may represent a diagnostic and nosologic entity in its own right (Bachmann, 1997). As mental health scientists have become increasingly aware of the existence of patients with dual disorders, various attempts have been made to adapt treatment to the special needs of those patients (Baker, 1991). In this project for the sake of the discussion of the literature review, the complicated relationship between psychopathology and drugs will be explored through phases of initial help seeking, treatment and outcome.

3.1 PRE-TREATMENT PHASE

3.1.1 Treatment Seeking Processes

The phase of initial help seeking comprises the pre-treatment phase. Arguably, the first step in the process of seeking help from mental health services is problem recognition and definition. One important barrier to this initial step is suggested to be denial, motivated by the need for the maintenance of an acceptable social façade (Rolland, 1994). During this struggle to maintain balance, hospitalisation that is

a frequent consequence of mental illness, may catch the patient and family totally unprepared even though the symptoms could have been manifest for a considerable time before the admission to a psychiatric unit. Among the immediate consequences of this situation are the so-called open secrets in families, which are open in the sense that everybody knows about them, and are secrets in that nobody is supposed to know that everybody else knows (Watzlawick et al., 1974). Thus, the decision to seek professional intervention is influenced by the fear of what others would think about the patient.

3.1.2 Barriers to Effective Interventions

One of the hardest aspects for people with mental health problems to cope with is the stigma that arises from cultural and moral values and promotes barriers to seeking professional intervention (Alderton, 1999). The World Health Organisation (WHO) (1998) defines stigma as the mark of shame, disgrace or disapproval, which result in individuals being shunned or rejected by others, and can cause prejudice, discrimination and harassment. Evidence that stigma is a real problem was highlighted in a recent survey by Rethink (2003) (formerly the National Schizophrenia Fellowship) which found that more than twice as many people with mental health problems had experienced harassment than those without.

The term 'illness behaviour' describes the reactions of patients to the experience of being sick. Society describes aspects of 'illness behaviour' as the 'sick role', which is the role that ascribes to the person because of his/her illness (Kaplan, 1994). Some conditions such as major mental disorders and substance abuse are shameful because of cognitive impairment (Rolland, 1994) that leads patients to blame themselves for their thoughts, behaviours and emotions. On the contrary, a diagnosis of medical illness does not create similar problems; it may just imply a person's "bad luck". There is no stigma associated with high blood pressure or diabetes but for psychiatric disorders there is stigma associated with being mentally ill (Arino, 2003).

Both 'illness behaviour' and 'sick role' are influenced by close community and cultural attitudes. According to Weiden (1999) stigma is greatest in people who had good pre-sickness functioning, who come from higher socioeconomic backgrounds, and whose families have trouble accepting the person's diagnosis.

Stigma prevents people from seeking immediate professional intervention and consequently increases the duration of untreated psychosis, which has a negative impact on the course of the chronic disease (Jackson, 1996). The time between the first symptoms of

mental illness and help seeking is referred to as "treatment lag" (Jackson, 1996) and defines the Duration of Untreated Mental Illness (DUMI).

A good reason for focusing on the DUMI is that researchers frequently correlate early treatment with a better outcome. Loebel (1992) found that where the mean length of untreated psychotic episode was one year, the mean length of total illness (prodrome plus psychosis) was three years. Johnstone (1992) argues that long-term treatment lags increase the relapse rates during the first two years following the first illness episode. In such long-term conditions, the context of treatment is usually the hospital (Loebel, 1992; Lieberman, 1997).

3.2 TREATMENT PHASE

3.2.1 Hospital as a Context of Care

Hospitalisation, according to A.P.A. (1997), is indicated for patients who are felt to pose a serious threat of harm to themselves or others, who are unable to care for themselves, or who have general medical or psychiatric problems that are not safely or effectively treated in a less intensive setting. The advantage of treatment in the hospital is the safe, structured and supervised environment that can reduce stress on both patients and family members. Evaluations can be

completed quickly while the patients are protected from the threat of suicide or violence (Wyatt, 1999).

Although efforts to achieve a voluntary hospitalisation are very important, sometimes involuntarily hospitalisation is indicated. This traumatic aspect of treatment, since it involves police intervention, is often associated with delayed treatment. As already mentioned, this reluctance to seek professional help usually originates from the fear of stigmatisation (Andery, 1997).

The major disadvantage of hospitalisation, apart from stigmatisation and cost, is the noise and the repeated intrusions by staff and other patients that may agitate rather than reassure the patient. According to Wyatt (1999) although some confrontation may be helpful when dealing with issues such as the seriousness of the illness or the treatment of substance abuse, hospitals are usually intrusive and noisy, when most first-episode patients require quiet and support.

3.2.1.1 Complications from Co-occurring Disorders in Assessment and Accurate Diagnosis

The first step for effective treatment in dual diagnosis patients is a complete assessment of the presenting addiction and mental illness symptomatology, in order to try to understand the interaction between

these symptoms (Anderson, 1998). The aim of a good assessment is to give the clinician a clear picture about what is going on with that person and what is contributing to their distress (Banerjee, 2002).

It is very important to discriminate between the primary psychiatric disorders and the psychiatric symptoms caused by drug use in order to establish an accurate diagnosis. Lehman (1989) explains that if the psychiatric symptoms clear completely with detoxification and the patient has no prior history of psychiatric disorder, then the patient should not receive dual diagnosis. Conversely, if the psychiatric symptoms do not fully abate with detoxification or if the patient has a prior history of psychiatric illness, then dual diagnosis should be considered. Accurate diagnosis and differentiation between substance-induced states and independent psychiatric disorders can be a major challenge for the clinicians.

3.2.1.2 Dual Diagnosis Treatment Model

The nature of the relationship between substance abuse and psychopathology remains complicated and research has not supported successfully a case for causality in any particular direction. In fact, a very large proportion of substance abusers (50-70%) suffer from concomitant psychological disturbances (Safer, 1987; Anderson, 1998) but no study has been able to clarify whether one type of

disorder precedes the other or whether they are distinct clinical manifestations of the same underlying pathogenetic mechanism (Kokkevi, 1995).

The difficulty in determination of cause and effect complicates the process of diagnosis and consequently the treatment. The increased need for understanding the causes of and treatment of these disorders resulted in a new model known as the Dual-Diagnosis Model. The Dual-Diagnosis Model recognises the presence of two related but separate disorders with similar yet distinctive etiologies, but with a necessity for discrete diagnoses and specific treatment (Beedle, 1998).

In the dual diagnosis model, the two disorders inevitably exacerbate each other. Compared with patients who have a single disorder, dual disorder patients often require longer treatment, have more crises and progress more gradually in treatment (Ross, 1988). Co-occuring disorders complicate patient assessment, make treatment more difficult and lead dual diagnosis patients to have relatively poorer outcomes (Knowlton, 2001). One of the reasons that researchers support this conclusion is the difficulty to evaluate and to diagnose properly both psychiatric illness and substance abuse. The major pitfall during this initial assessment phase is the failure to adequately

consider the possibility of both problems, to either overlook or wrongly attribute the symptoms of one disorder to the other (Lehman, 1989). At this point it is noteworthy to mention the case of 'misdiagnosis'. The risk of attributing the psychotic symptom to drug abuse is equal with the risk of misdiagnosing substance abuse in the presence of past psychotic episodes (Cohen, 1995). Thus, recognition of both disorders is necessary in order to avoid misdiagnosis and the application of inappropriate interventions.

The dual diagnosis patient brings with them dual complications. Paradoxically, however, they are less likely to receive services than people who have a single disorder since the majority of treatment systems have evolved to provide services for persons who have single, discrete disorders (Evans and Sullivan, 1990). The following sector reviews traditional models for single disorders and contrasts these with the dual diagnosis model.

3.2.1.3 Single Diagnosis Treatment Models

The traditional Psychiatric Model identified the patient as suffering from an Axis I or Axis II disorder with the diagnosis of substance use disorder being delayed or being seen as reflective of the primary diagnosis. On the contrary, in traditional Addiction Model the issue of addiction is primarily raised. This affects the timing of

diagnosis and makes problematic the achievement of a reliable, accurate diagnosis (Beedle, 1998).

Until recently clinicians used to deal with two distinct and quite separate populations of people who needed help: substance abusers and persons with mental illness. One logical explanation for the relatively recent acceptance of the dual diagnosis field by psychiatry is given by Pepper (2000) who claims that most seriously mentally ill individuals spend long years in state hospitals so they had little opportunity to become addicts. Therefore, the dual diagnosis model allows the traditional psychiatry and addiction treatment model to collaborate in programs in order to consider the dually ill state of the patient and provide effective treatment for both problems. Given the importance of recognition of dual diagnosis, it is surprising that the majority of psychiatric epidemiologic research continuous to focus on single diagnostic categories rather than on the full range of comorbid conditions.

Based on the Dual Diagnosis Model that recognises the presence of the two disorders, several models have been proposed to explain the frequent comorbidity of mental illness and substance abuse. These models try to explain what comorbidity reflects, the way in which the two disorders can be related, by co-occurring or exacerbating each

other. Thus, in an attempt to summarise the nature of the relationship between substance abuse and psychiatric disorders, researchers examined the approach based on the possibility that psychiatric symptoms and drug-use disorders can independently coexist or that psychiatric symptoms may be developed as a consequence of substance abuse or vice versa (Meyer, 1986; Kidd, 1995).

3.2.1.4 Models that describe the Comorbidty of Mental Illness and Substance Abuse

There are many theories to explain why individuals with severe mental illnesses are vulnerable to the misuse of substances and how the mental illness-substance misuse relationship co-exists. The possible relationship between addiction and psychopathology is perhaps best described by the vulnerability model according to which drug use or withdrawal can cause or exacerbate psychiatric symptoms in an already vulnerable person (Laundry, 1991; Lehman, 1989). It can produce symptoms that mimic those of an independent psychiatric disorder. Drug use can mimic and mask mental disorders (Knowlton, 2001) as in case of depressive symptoms which may be misdiagnosed as schizoaffective disorder or of withdrawal symptoms which may be misinterpreted as psychotic agitation in patients with schizophrenia (Drake, 1995). The intriguing question arises as to whether primary substance abuse can lead to persistent mental illness

in the absence of continued substance abuse. Some literature appears to support this hypothesis. In particular, Lehman (1989) argues that chronic psychotic states are associated with long-term abuse of stimulants and that such patients are likely to be treated in substance abuse programs.

A contrast to the vulnerability model, which implies that drug use precedes the onset of illness, is the self-medication model (Silver, 1994). In this theory drug use is seen as a mechanism for masking psychiatric symptoms since abusers may purposefully use drugs as a self-medication strategy, in order to relieve their dysphoric symptoms (Kidd, 1995).

Substance use as self-medication of coexisting psychiatric symptoms is an interesting hypothesis. It assumes mental illness as the aetiology for chemical abuse. The patient is viewed as a person who actively seeks to alleviate the symptoms of a mental illness through substance use (Anderson, 1998). The "addict's" choice of drug is the result of an interaction between the psychopharmacological properties of the drug and the primary feeling state experienced (Bukstein et al. 1989).

Many studies, as Sanguineti's (1993), found that patients with affective pathology have an increased tendency to self-medicate with

drugs in order to decrease depression. Schizophrenic patients self-medicate specific symptoms; indeed Khantzian (1985) argues that the majority of them self-medicate the negative symptoms of schizophrenia while relatively few try to reduce the uncomfortable neuroleptic induced extrapyramidal symptoms. This probably explains Dixon's (1997) observations that patients with schizophrenia and comorbid substance abuse exhibited fewer negative symptoms than those without substance abuse. The implication of this hypothesis for treatment is that the principal focus will be on alleviating the symptoms of mental illness with the assumption that the improvement of these symptoms will lead to resolution of substance abuse (Lehman, 1989).

Utopia syndrome is based on the self-medication hypothesis. According to Watzlawick (1974), the resulting behaviour of the belief that one has found the ultimate solution, which may lead to extremism in the solving of human problems, is called the utopia syndrome and can take the form of alienation and nihilistic worldviews etc. These possible consequences of the utopia syndrome may involve drug use, in which the person, after a brief euphoria, experiences the return to an even colder reality that inevitably follows. Therefore, if the goal is utopia, the person experiences the painful feeling of personal inadequacy which may lead to drug use as the only easy way for

comfort without being aware of the inevitable return to reality which may be crueler. In contrast, Liappas et al. (1997) wonders if drug abuse is a self-medication or a self- destructive behaviour, since according to their study severe drug involvement was strongly associated with suicidal behaviour, accidents, overdose events and generally risky behaviour.

The attempt to determine whether the substance abuse is developing or altering the course of the psychiatric disorder or vice versa might create confusion. Clinicians must discriminate between acute primary psychiatric disorders and psychiatric symptoms caused by substance abuse (Landry et al., 1991).

The question arises if substances are able to induce specific psychoses (Substance-induced psychoses). Jimeno's et al (1997) data do not verify the existence of a specific psychopathological profile for toxic psychoses. On the other hand, many clinicians support the validity of the concept of substance-induced or toxic psychoses even though it has proven difficult to differentiate it from mentally ill substance abusers (Dixon, 1997).

Cannabis, one of the most studied substances, may be a possible risk factor in the development of psychosis and as a result cannabis-

induced psychosis has gained recognition as a nosological identity (APA, 1994). It is a form of psychosis like schizophrenia with symptoms such as paranoid ideas, delusions etc., but resulting from the use of cannabis (Imade, 1991). According to the literature reviewed, cannabis can be an independent risk factor, especially for schizophrenia (Jimeno, 1997; Andreason, 1987). There is a continuing controversy in the literature as to whether cannabis-induced psychosis exists as a separate entity. Morin et al (1989) accept it as a fact while Simoes (1989) reports that cannabis does not change schizophrenic shift symptoms in the way of a "cannabis psychosis". In addition, Jimeno's (1997) data does not support the concept of substance-induced psychosis in general since they did not find a specific psychopathological profile for these patients.

3.2.1.5 Complications arising from Co-occurring Disorders in the Treatment of Dual Diagnosis

Co-occurring psychiatric problems complicate not only assessment and accurate diagnosis, but treatment too. Comorbidity affects the course of both disorders and the response to treatment, whether these occur simultaneously or sequentially (Gordis, 2001). The most common model of dual disorder treatment is sequential treatment; the patient is first treated by the one system (addiction or psychiatric) and then by the other. The model of parallel treatment involves the

simultaneous involvement of the patient in both treatment settings while in the third model, referred to as integrated treatment, elements from both mental illness and addiction approaches are combined (Beedle, 1998).

Table 2. Treatment Models in Dual Diagnosis

Sequential	The patient participates in one system, then the other.
Parallel	The patient participates in two systems simultaneously.
Integrated	The patient participates in a single unified and comprehensive treatment program for dual disorders

Sequential treatment, as indicated in table 2, is a clinical challenge since in the addiction system the focus is often on the "here and now", while in psychiatric system it is often on past development issues. In addition, addiction treatment focuses on individual responsibility while

mental illness clinicians recognise that many of their patients are unable to participate in treatment without their help. Traditional mental health programs are often poorly equipped to address dependency and the ongoing intensive recovery needs of dual diagnosis patients, while addiction programs generally have difficulty treating dual patients with psychotic symptoms (Anderson, 1998). As a result patients have to choose between clinical settings, often resulting in neglect of one condition (Buddy, 2001).

According to the system of care for dual diagnosis patients developed by Minkoff (1989), both illnesses have parallel phases while the goal of treatment is to stabilise acute symptoms first and then engage the patient to participate in a long term program of maintenance and recovery. He also proposes to consider, regardless of the order of onset, each illness as the primary one. Moreover, this point is very important when patient's attitude and motivation towards each illness is different and as a result the process of recovery proceeds independently for each diagnosis. Thus, a common case that one could meet is the one described by Minkoff (1989) where a patient may be engaged in active treatment for psychosis stabilisation but not for substance abuse. So, progress in recovery for the one diagnosis is affected by progress in recovery for the other.

There is a broad consensus in the literature that this phase of treatment should include concurrent treatment for both disorders. The key to assessment and treatment in this phase is to identify and treat all syndromes present (Lehman, 1989). Therefore, the integrated approach seems to have higher levels of clinical efficacy because as Breakey (1987) argues, it considers the complex treatment needs and interactive symptomatology of dually diagnosed patients. It also assists in the destigmatisation of patients since as Anderson (1998) points out it does not give them the identification of the illness, for instance schizophrenic or alcoholic, as the traditional programs does.

These were the advantages and disadvantages in sequential, parallel, and integrated treatment approaches. Differences in dual disorder combinations, symptom severity, and degree of impairment greatly affect the appropriateness of a treatment model for a particular individual. For example, sequential and parallel treatment may be most appropriate for patients who have a very severe problem with one disorder, but a mild problem with the other. However, patients with dual disorders who obtain treatment from two separate systems frequently receive conflicting therapeutic messages.

After admission in a psychiatric institution, the required compliance coexists with the "be spontaneous" paradox since the hospitalised

patient is considered unable to make the right decisions by himself and they have to be made for him and for his own good. If the patient fails to see this, his failure is further proof of his incapacity. Therefore, the patient must yield to the norms spontaneously and not because they are imposed; otherwise he is not ready for discharge (Watzlawick, 1974). The discharge decision is influenced by Kaplan's (1994, p.18) notion that "behaviour is assumed to be within normal limits when no manifest psychopathology is present".

The release from the protected environment that follows, often transits the patient from the psychiatric hospital context to the family context [nuclear (biological origins, parents) or affiliation family]. After the discharge from the hospital, patients typically go back to family. Therefore it is critical to develop an understanding of this context.

3.2.2 Family as a Context of Care

When the patient returns home the context is the family, which plays an important role not only in the treatment-seeking but also in the treatment-receiving process of dually diagnosed patients (Vaglum, 1996). Psychiatric comorbidity has serious negative effects on the identified patient and his family members since they invariably experience more problems than a family member with one disorder

(Evan, 1990). They do not only experience the disruptions evoked by addictive disorders but also the stressors of coping with a serious mental illness (Sciacca, 1995). Hence clinical attention on family is crucial.

3.2.2.1 Initial Response to the Stressor Event

The dual diagnosis of a family member will also affect the rest of the family whose response in turn will affect the behaviour of that individual. As Glick et al. (1974) point out, it is not only the expectant phases (marriage, birth of a child, etc.) through which the family develops but also the unexpected ones that can be traumatic such as a chronic disease, as is a mental illness. Of course families are unique and respond in different ways to life events but there is always a response.

Reiss (1981) approaches the "family's construction of reality" by developing a theory of family process, centered on the concept of paradigm, which focuses on the transaction of the family with its social world. Paradigms are the constructions of the stressor event, the family's initial response to it, and the solution required. As Kuhn (1977) argues, a group clings to a particular mode of explaining its world because the essential elements of that mode of explanation

were dramatically successful attempts to deal with a severe crisis. A stressor event can lead to serious family crisis, since it disrupts usual family routines.

According to Swan (1986) after the onset of the chronic illness the patients' partners developed anxiety and depressive symptoms which one could say are probably increased by the change in their routine behaviour or by the isolation due to avoidance of social activities. This emotional distress burdens the patient's psychological condition. At this point it should be mentioned that family members of patients, who lack insight about their illness, will pass through the first reaction, the "shock", by themselves since the patient does not recognise his/her mental illness. Parents are disposed to wonder "why us?" and "what we have done wrong?", when they start to realise that they have to abandon many of their hopes for the patient's future. On the other hand no one could predict the degree of recovery in order to diminish his or her shock as they become physically, emotionally and financially exhausted.

Through this critical life event, a family may become more loving as the members come closer or enter in a chronic state of rigidity and misery, as family's disorganisation increases. Friedman et al. (1997) examined the adaptive functioning in the families of patients with a

wide range of psychiatric disorders. They support the hypothesis that having a family member in an acute phase, regardless of the specific type of a psychiatric illness, is a general stressor for the family that experiences higher levels of dysfunction compared to the other families. This stressor appears to be a risk factor for poor family functioning in many areas, including problem solving, communication and reorganisation of roles.

3.2.2.2 Mental Health and the consequent readjustment in Family roles

Mental health or substance abuse diagnosis has serious effects on family whether it is defined as nuclear (biological origins, parents) or affiliation family. The family is a system in dynamic equilibrium; whatever happens in relation to the family's existence inevitably affects each family member (Glick and Kessler, 1974). Difficulties in part of the family system can lead to dysfunction in another part (Hoffman, 1981). The need for differentiation between family members is meshed with the need for cohesiveness, which in turn conserves the identity of the family. More specifically a mental illness in one member of the family perturbs the expectations of the others (Rolland, 1987). It results in the readjustment of family roles, which causes problems as it contradicts routine behaviours.

Bahnson (1987) argues that the homeostatic family process can be interrupted by the realisation that because of a mental illness, an expected future may not evolve or family stability may be destroyed. The patient's illness serves as a homeostatic mechanism that keeps the disturbed system in a delicate balance. The family will endeavour to maintain a constant state, even if it is maladaptive or dysfunctional (Jackson, 1985).

3.2.2.3 Family Dysfunction

Evans and Sullivan (1990) point out that the key theme in the dysfunctional family with a dual diagnosis member is the attempt to control the uncontrollable since the cycle of each disorder through stages may range from stable to acute. The unpredictable nature of these cycles may cause severe stress in families.

Any family can become dysfunctional when an illness is diagnosed. If the diagnosis is substance abuse, DuPont (1997) suggests that addiction should be regarded as a familial problem rather than the exclusive failure and responsibility of the young patient. Addiction may reflect difficulties in the family since it frequently develops from and is maintained and exacerbated by family interactive progress (Heath,

1998). If there is a dual diagnosis, families experience at least twice the problems of those with a family member with one disorder.

Families can be considered 'healthy' if they are able to respond flexibly to the changing circumstances of the new condition (Bennun, 1988). Thus, the skills that a family should have in order to face this situation are continual adaptation and flexibility in the reorganisation of roles (Rolland, 1987). One could say that the family's primary need is to obtain a balance of obligations between family members since each family member influences and is influenced by all other family members (Anderson, 1980).

Since ill individuals' life cycle takes place within the family's cycle, one could relate the individual's development to the family's development. Systems theory focuses on this reciprocity in relationships and the context in which they occur. It emphasises that the family represents a functioning operational system or unit comprising a set of collected interrelated parts, all of which combine to influence its total functioning (Bennun, 1988). Hence it is important to know the phase of the family cycle and the stage of individual development of all family members that will affect their developmental goals and their ability to adapt to the new situation.

Evans (1990) and his colleagues' model compares the members of enmeshed families who have poor boundaries and cannot distinguish between the patient and the other family members, with chaotic/disengaged families who have abandoned each other, rigid/enmeshed families who have a 'pseudo normal' appearance and rigid/disengaged family which is no longer family. Rolland (1994), as many other clinicians, strongly emphasises family factors in chronic illness because they consider that the best way to produce individual change is by changing the context of behaviour. Based on family systems theory (Rolland, 1994) according to which individual behaviour is viewed within the context in which it occurs, function and dysfunction are defined relative to the fit among the individual and the family, their social context and the psychosocial demands of the situation.

3.2.2.4 Aitia-Families Beliefs in Relation to the Aetiology of Illness

An important issue brought by family members who seek professional help is aetiology of the illness. 'Aitia', the Greek root of this word, which means not only cause but also responsibility and blame, is an effort to reduce the stress of the unknown and ambiguity (Wynne, 1992). Usually family members express a lineal concept of causality

instead of a systemic, circular one that emphasises mutual causality. The family or the individual does not cause the problem. The genesis and maintenance of problems must be viewed in a circular way since each part of the system influences all the other parts (Bennun, 1988).

The family's beliefs about the causes, duration and consequences of illness give a good indication of their medical knowledge, personal responsibility and family dysfunction. The meaning of the chronic illness influences and is influenced by the person's social world since it involves the patient's subjective interpersonal and social experience (Atwood, 1996). It also determines the people's reactions to health concerns as is explained by the "Locus of control theory". Individuals with "powerful internal" locus of control believe that their actions determine their health status while those with an external "powerful other" locus of control believe that others (e.g. professionals) determine the outcome of their illness (Atwood, 1996). Siblings, especially in families characterised by patterns of blaming during stressful situations as a disabling disorder, may believe that they are responsible for their sibling's condition. Since this new critical life event leads family members to shift the focus of their attention to the patient, the forgotten siblings' anger may cause "feelings of guilt and a need to be punished that can be expressed as withdrawal, depression, suicidal ideation ... and aggressive behaviour" (Rolland,

1994, p.18). On the other hand, family's beliefs about normality give a good indication about their adaptation to chronic illness.

Rolland (1994) points out that families with strong beliefs in high achievement and perfectionism tend to define normality or successful family functioning in terms of ideal or problem-free circumstances. A comparison group could help families increase their sense of control by providing a normalising context especially in schizophrenia and substance abuse, which are shameful conditions because of the cognitive impairment. As Paul Elyard (1996, p.2) mentions: "We cannot go on one by one. We have to be two of us. And if we will start to meet each other we will finally meet all". Psychiatric disorder changes people's lives but is no reason to destroy them. Therefore, clinicians use psychoeducational family interventions, teach them how to communicate better and instruct them about the illness, in order to improve family's well being.

3.2.2.5 Expressed Emotion

The importance, particularly the prognostic significance, of family environment in psychiatric disorders has been cited in a large number of studies in terms of the psychosocial measure of "expressed emotion" or EE. The "expressed emotion" concept was developed by

Brown and his colleagues in the Institute of Psychiatry in London in the 1950's. Their studies focused on the relation between family variables and the likelihood of relapse on the part of a patient who has recently been released from the hospital with the diagnosis of schizophrenia (Brown, 1989). The rating of EE consists of three subscales: criticism, hostility and emotional over-involvement. Favre et al. (1989) points out that high EE family members maintain a high rate of conflict comments and emotional over-involvement overtime while low EE relatives are less critical and involved to a lesser extent.

The reasonable involvement of the relatives can be seen as positive. Many clinicians argue that close relationships are of a great benefit for an individual. According to Frude (1991), married people have better physical and psychological health and better recovery from illnesses than those who are divorced, widowed or never married. More specifically, in early psychosis those with low social contacts tend to relapse early (Johnstone, 1992). On the other hand, the health and well being of a person may be placed in jeopardy by those who are close to him if they increase stress and provoke anxiety. The attempts that they make in order to cope with the problem may make things worse and indeed create chaos. Chaotic families are unpredictable in their behaviour, in contrast to rigid families who respond in inflexible ways. So what matters is the quality of key relationships.

It would be very important to know if a good quality, close relationship may protect to a certain degree people from mental illness or substance abuse. The majority of studies find a positive association between health, well-being and an individual's involvement in close relationships (Frude, 1991). An explanation is that intimate relationships encourage compliance with certain rules monitored by people who care about their health and well-being (Rook, 1985). According to the "increased well-being hypothesis", good personal relationships enhance an individual's personal strength thus they are able to cope better with stressful life events (Willis, 1984). Stricker (1997) concludes that even dysfunctional, over-involved efforts seem to be better than resigned withdrawal. Dixon et al. (1995) reviewed the existing literature on EE. They found out that there is an impressive body of evidence suggesting that persons with schizophrenia who have significant family contact - high EE or low EE - might benefit from family intervention by delaying if not preventing their relapse.

Even though the vast majority of studies investigate the association between EE and the course of schizophrenic illness, EE is not restricted to schizophrenia. High levels of EE have also been associated with poor outcome in mood disorder and other psychiatric conditions. More specifically for depression the EE is the variable with the greater predictive validity (Hooley, 1997). Independent of the

nature of a mental illness, its course in moderately ill patients is more dependent on psychosocial variables (EE) while according to Kavanagh (1992) the biological factors influence more the course of illness in the extreme groups. Contrary to EE research, Barrowclough et al. (1996) focused on attributional theory which refers to the distress experienced by relatives as they thought they were responsible for patient's symptoms.

In summary, the construct of EE is significant in the development of family interventions as long as the families do not interpret it as blame for the patient's condition and as a result the feelings of guilt and anger create obstacles to treatment. The notion of EE and the studies based on it give rise to the recognition that the problem is not in the exchange of feelings, or in the communication but in the way that people express their emotions.

3.3 CLINICAL OUTCOME

Dual diagnosis has been associated with negative clinical outcome and increased number of relapses (Ross, 1998; Toner, 1992; Knowlton, 2001).

3.3.1 Relapse Prevention as a Positive Influence on the Course of the Disorder

Relapse is a normal part of the change process for any health behaviour (Banerjee, 2002). Relapse impinges on inter-personal, social and occupational spheres of the patient's activity. Each relapse brings with it an increased probability of future relapse, residual positive and negative symptoms and psychosocial disability (WHO, 1979). There are no generally accepted criteria for relapse, since it is a relative term. Lader (1995) takes into account the following factors: the patient's condition before the original onset of illness; his level of functioning before the present episode; the severity of the relapse in terms of symptom severity, duration and interference with personal functioning and the type of treatment given prior to relapse.

A large number of clinicians emphasise the distinction between the concepts of relapse and recurrence. Relapse is the return of symptoms before a complete recovery, in other words the continuation of a current illness whose symptoms were only temporarily suppressed. Recurrence, on the other hand, is the return of symptoms after a full recovery; it is actually a new episode of illness (Kupfer and Frank, 1989). In order to prevent relapse and recurrence, a long-term

phase of treatment through continued medication and psychotherapeutic interventions, is often needed (Lehman, 1989).

3.3.2 Relapse Prevention Strategies

The importance of prevention was recognised in ancient times and reflected in the Ancient Greeks' worship of Hygeia, the goddess of preventive medicine, more than Panacea, the goddess of healing medicine (Christodoulou, 1999). The concepts of prevention and therapy should not be seen as contradictory rather prevention should be complementary to therapy since effective therapy is considered a remedial and prospective curative factor.

The section of preventive psychiatry of the World Psychiatric Association (1999) agreed on the following aims for the four grades of prevention. The ultimate aim of primary prevention is reduction in the incidence of mental disorders. Secondary prevention, i.e. early recognition and effective management of mental disorders, aims at the reduction of prevalence of mental disorders. The reduction of disability produced by mental illnesses is the aim of tertiary prevention while the quadratic prevention aims at the reduction of stigma attached to mental illness by giving to the patients' equal opportunities in society for their development and well-being (WPA, 1999). This

project focuses on aspects of secondary prevention, which is likely to be of greatest relevance amongst clinicians.

The fact that single, as dual, diagnosis disorders, are chronic with exacerbations and remissions (Herz, 1984), raises two important questions regarding treatment: whether early treatment intervention shortens the length of the episode and whether a previous successful treatment will be associated with a more rapid response when administered during subsequent episodes.

An indicator of the success of previous treatment and hospitalisation is the readmission to a psychiatric hospital. The vast majority of schizophrenic patients suffer from more than one psychotic episode (relapse) that may lead to more than one hospitalisation. Two-thirds of patients diagnosed with schizophrenia, half of those with major depression and fifty to ninety per cent of treated substance abusers, relapse (Leff, 1985). For the dual-diagnosis patients, once again the whole problem is double since coexisting disorders tend to exacerbate each other. Lyons (1997) points out that coexisting substance abuse disorders are the best predictors for readmission. Contrary to the hypothesis that readmission results from premature hospital discharge (earlier than predicted by their clinicians), Lyons et al. (1997) did not find such evidence even in dual diagnosis cases where substance

abuse complications were related to a shorter length of inpatient stays. Studies undertaken in relapsed patients (Herz, 1984) or based on a comparison of the relapsing group with the non-relapses (Rajkumar, 1989), revealed a prodromal period before relapse.

3.3.3 The components of Relapse Prevention

The pre-psychotic period before the onset of psychosis is called the 'prodromal phase'. Recognition of prodromal symptoms of mental illness (such as social withdrawal, inability to sleep, hearing voices etc.) offers the potential of early intervention in order to avoid the recurrence of symptomatology. The prodromal signs and symptoms of each patient before relapse, referred as 'relapse signature' by Birchwood et al. (1989), and are frequently recognised by both the patient and those who are close by. After the recovery from a psychotic episode, patients and family members can retrospectively report this relapse signature.

A very optimistic view is proposed by Barrowclough (1992). He argues that insight is retained through the prodromal period and in many cases up until the day of relapse, indicating that full relapse and the consequent hospitalisation could be avoided, with patient's cooperation in early pharmacological and psychological management.

In other words, mental health professionals should not only react in response to crisis. It would be helpful and less problematic for patients and clinicians to prevent crisis through response to manifest prodromal symptoms.

The component of insight is very important in relapse since it is based on the following complementary components: awareness of illness, awareness of symptoms and perceived need for treatment (Steegen, 1998). Beck-Sander (1998) points out that individuals whose explanation of their mental illness does not accord with professional opinion are often considered to 'lack insight' into their condition. She also considers that it may be preferable to treat an individual who is assessed as lacking insight in hospital because lack of insight may lead to non-compliance outside the hospital and consequently to relapse. Patients diagnosed with schizophrenia are often unwilling to admit that they are ill and need treatment; this happens so often that it is a key marker of psychotic disorders.

WHO (1973) has reported that "lack of insight" was described as the most frequent symptom in acute schizophrenia. Depressives had good insight on admission to the psychiatric hospital, schizophrenics the poorest, followed closely by those with bipolar disorder (Barrowclough, 1996). According to McEvoy (1989), half of patients

who are voluntarily admitted to psychiatric hospitals continue to deny their need for treatment. Insight was not correlated, either before or after treatment, with the number of years a patient had been ill or the number of prior hospitalisations. Thus, it would appear that treatment strategies should focus on compliance and insight, given that they have an important prognostic value in terms of relapses.

In order to have a favourable course of illness after the first episode and the acute treatment, which alleviates present complaints, long-term prophylaxis is needed. At this phase continuation treatment prevents relapse into the same episode of the illness while maintenance treatment prevents recurrence of the illness (Greil, 1996). For the decrease in probability of subsequent episodes, a psychosocial adjustment process should also be considered, since biological treatments alone are not enough (Jackson, 1996). According to Falloon (1981), who reviewed the literature of the psychosocial treatments for schizophrenia, the addition of psychological strategies to routine case management and long-term drug prophylaxis halves the rate of major clinical exacerbations in people suffering from schizophrenia. Similar is the prophylactic treatment of depression, whether with antidepressant medication or with psychotherapy, was reported to cut the rate of recurrence by half, although this will not guarantee that illness will not recur (Keller,

1982). Therefore, early intervention (medication and psychosocial treatment) in the 'critical period' of time following onset is crucial for the improvement of the course of mental illness and consequently minimises severity.

The first two or three years following a first episode of mental illness are a crucial period for high-quality psychosocial and biological interventions. Deterioration occurs early (during the first two years) in the course of treated and untreated psychosis (Jackson, 1996). Robinson et al. (1999) found a high rate of relapse within 5 years of recovery from a first episode of schizophrenia and schizoaffective disorder. According to these authors, patients with poor premorbid adaptation to school and premorbid social withdrawal relapsed earlier. Discontinuing antipsychotic drug therapy increased the risk.

Gender, diagnosis, obstetric complications, duration of psychotic illness before treatment, baseline symptoms, neuroendocrine measures, time to response of the initial episode, adverse effects during treatment and presence of residual symptoms after the initial episode were not significantly related to time of relapse. Independently of the time of relapse, Heinrings (1985) points out that the symptoms in the drug-free patients were similar to those that occurred in the medicated patients.

Vaglum (1996) suggests focusing efforts on improving secondary prevention because there is no effective primary prevention. Secondary prevention through early intervention in psychosis may have significant benefits for the future course of psychosis (Jackson, 1996). According to Kapfer et al (1989), as far as depression is concerned early intervention in the second treatment episode significantly shortened the overall length of the depressive episode by approximately 4 to 5 months.

When mentally ill patients are discharged from the hospital into the care of their family, they confront the often high expressed emotion and personal distress of family members. Patient's non-compliance and lack of insight may create panic and as a result it increases family's exposure to conflicting theories and contradictory advice. The relatives' need for information is an important component of the therapeutic process.

Psychoeducational interventions combine educational and therapeutic objectives in order to reduce the patient's rate of relapse and improve family members' quality of life by enhancing their communication and coping skills (Solomon, 1996).

Lorenz (1989, p. 86) summarises the challenge to be met by clinicians for better education and follow-up of patients with chronic diseases, as if it is a mental illness:

"Said but not heard

Heard but not understood

Understood but not accepted

Accepted but not put into practice

Put into practice but for how long?"

The importance of psychoeducation with the relatives of mentally ill patients has been emphasised to a greater extent than the education of the patient, as research has shown that providing support and information to families is of value in reducing relapse rate (McGorry, 1995). Combining family therapy with psychoeducation is likely to be an effective strategy (Strang, 1981; Faloon, 1981).

Peruzzi et al. (1996) at the World Congress of Psychiatry in Madrid present a very interesting systemic psychoeducation model for schizophrenia and dual diagnosis. The main feature of this model is that the therapeutic relationship is established by the therapist's explicit acknowledgement, at the onset of therapy, that the causes of schizophrenia are as yet unknown. In addition, instead of emphasising and trying to get in touch with the family's pain, the therapist tries to

get them to approach the problem in a matter-of-fact fashion. One could easily confuse personality characteristics with symptoms of the illness. Therefore in psychoeducation, therapists must help the families to distinguish between the patient's personality and disorder. In this case they must be aware of individual differences among patients. Stereotyping jeopardises quality patient education, which requires interventions that are personally tailored to patients' unique needs (Blalock, 1986).

Compliance has been defined as the extent to which a person's behavior coincides with medical or health advice (Haynes, 1979). Health Belief Model (HBM) explains and predicts behaviour, such as compliance, in health contexts (Becker, 1984). Non-compliance for patients with bipolar disorder (Weiden, 1999), or schizophrenia (Perkins, 1999) can be reviewed within the framework of the Health Belief Model (HBM) according to which the clinician first must try to understand the patient's treatment goals and then to weigh with the patient the benefits against the costs of treatment. There has been a relatively recent tendency in mental health field literature to use the term adherence rather than compliance. This indicates that clinicians no longer expect from their patients passive compliance to the healthful behaviours that they assigned, but rather active participation. This shift in perspective encourages collaboration, in order for patients

to make informed decisions, take action and as a result feel more empowered.

The greatest factor influencing adherence appears to be family and social support (Battaglia, 2001). A large number of studies argue that relatives exposed to psychoeducational interventions showed increased optimism about prognosis of illness and a significant improvement of knowledge (Economou, 1996) but their attitude towards medication did not change (Classen, 1996). Therefore, an important issue of psychoeducation is the medication since it not only treats the symptoms but also prevents their recurrence. For this reason it is important for the patient and family members to understand why medication needs to be taken even when the patient feels well (Barrowclough, 1992). On the other hand, non-compliance may also result from the unwanted side effects that can also be responsible for the process of switching to a new drug from the current medication. Patients need to be educated regarding the new possible risks, as well as benefits such as relief of persistent positive or negative symptoms or prevention of relapse and rehospitalisation (Weiden, 1997).

Psychoeducation can also help to augment the effects of the new generation of antipsychotic medication, providing information on the

reduction of side effects thus leading to enhanced adherence (Kane, 1998). There is a belief that people with mental disorders comply poorly with treatment. Buchanan's (1996) study showed that one third can be expected to non-adhere to treatment regimes within two years of leaving a general adult psychiatry ward. Miklowitz (1996) recently summarised some of the reasons for poor compliance: besides the side effects of medications (such as tardive dyskinesia, which is perhaps the most severe), patients do not believe that they really have a mental disorder, so they cannot accept the idea of their moods being controlled by medication. This may be particularly so if they are manic or hypomanic as they may miss their high periods. Mood swings themselves can distort thought processes in a manner that leads to non-adherence (e.g. the overconfidence of the hypomanic patient). Substance abuse is strongly associated with medication non-compliance among patients with mental disorders. This observation by Owen (1996) identifies the dual-diagnosed as a particularly high-risk group.

Non-compliance is different in people suffering from mental disorders than in those with other chronic disorders, such as diabetes mellitus, because one of the symptoms of their illness is they do not know they are sick (Weiden, 1999). It has been shown, as Weiden (1999) mentions, that individuals with schizophrenia have the type of brain

disorder that makes it difficult for them to learn from experience while the diabetics for instance will typically grow to understand the need for compliance. Mantonakis (1989), gives the profile of the non-compliant schizophrenic patient who discontinuese his/her medication: young age, single status, a single psychiatric hospitalisation, complaints about side-effects of medication, living with parental family, low academic level of family members and inadequate insight. Insight is related to adherence and is frequently used to predict treatment compliance (Kingdon, 1994).

The main approach for the treatment of psychiatric and dual diagnosis disorders, consistent with concepts of mind-body psychopathology, is the combined treatment of psychopharmacology and psychotherapy (Fahrer, 1997). Despite the plasticity of the human brain that enables patients to respond to interventions that address chemistry (medication) and meaning (psychoeducation), major limitations still exist. Medications, for example, do not alter the biological vulnerability and usually fail to remove negative symptoms while both psychosocial and biological interventions appear to be effective only as long as they are actively used (McGlashan, 1996). One of the studies that demonstrated the efficacy of psychotherapeutic treatments combined with psycho drugs, by contributing towards a better quality of life, was Fahrer's (1997) who viewed in his study the patient as a

'biopsychosocial being'. This interactive relationship between psychological and medical issues based on the biopsychosocial model (Rolland, 1994) leads to a better understanding of a person as a whole. Since psychiatric treatment remains symptomatic, it is necessary to individualise clinical entities.

3.3.4 Relapse Prevention by Indicators of Negative Clinical Outcome

Negative Life events (e.g. interpersonal loss), are the best predictors of relapse since they precipitate recurrence, or exacerbation of symptoms (Lublin, 1998). Many studies (e.g. Day, 1989; Johnson, 1997) have well documented the influence of negative life events on a number of psychiatric disorders such as depression and schizophrenia. Linszen et al. (1994) considered cannabis as a stressor eliciting relapse. They found that psychotic relapses occurred more frequently and with earlier onset in the cannabis-abusing group. Also higher frequency of life events appears to be common to substance abusers of both sexes (Felix, 1989).

According to the theory of social rhythm disruption events (SRD), disturbances in social rhythms may promote disruptions in circadian rhythms, which in turn promote the pathogenesis of affective episodes

of both depression and mania (Goodwin, 1990). The Malkoff-Schwartz (1998) study examining the role of SRD events and severely threatening events in the onset of affective episodes, revealed an extremely interesting finding, that these events were strongly associated with the onset of manic, but not depressed-bipolar episodes.

The majority of studies with bipolar patients focus on the relationship between life events and relapse. There is broad consensus among researchers that bipolar patients were more likely to relapse following a negative life event than during a period without a life event (Hunt, 1992). Johnson (1997) is also interested in the impact of negative life events at the time of recovery from episodes. He found that bipolar patients, who experienced negative life events, after onset of an episode, took longer to recover than those without such event (Johnson, 1997).

Another indicator of negative clinical outcome is the symptom of aggressive behaviour which can be directed towards another person or the patient themselves. In the first case, incidents of violence may take place when physical damage results from an aggressive episode. Research suggests a significant link between mental disorders, substance abuse and violence. Lindkvist et al. (1989) and Bartels

(1991) found that of the violent psychiatric patients, 50-70% were substance abusers. This finding is generally supported by the literature. It appears that substance abuse rates are much higher in violent groups when compared to non-violent groups. An increased propensity for aggression appears to occur in patients who are substance abusers and patients suffering from schizophrenia or mania (Wistedt, 1991).

Gunby (1991) differentiated the potentially violent patient into three types: the abuser, the personality disturbed and the psychotic patient. He points out that abusers could expose clinicians to threats of acting out if they do not prescribe the desired medication. In the second type he places emphasis on the character traits of the patient, such as the lack of impulse control, while in schizophrenics violence may be triggered by hallucinations. Noble et al. (1989) suggest that violence tends to be repetitive while the violent patients were usually identifiable from previous aggressive and disturbed behaviour. They also argue that the violent patients were more likely to be young, experiencing schizophrenia, deluded, hallucinating and to have been repeatedly admitted. In these psychiatric patients, if they were dually diagnosed, violence can be exacerbated as a result of substance abuse. In order to deal with a dual diagnosis patient's aggressive behaviour it is necessary first to address the primary diagnosis.

Widstedt (1991) evaluates milieu factors in relation to the increased number of violent episodes in psychiatric institutions. He considers the importance of both the staff milieu, which consists of education, experience and attitude, and the ward milieu since the rooms' decoration may equally contribute to the prevention or creation of violence. Apart from the fact that personnel in psychiatric units must be trained to identify and avoid, when it is possible, situations that provoke aggression it is important for each patient to have sufficient 'personal space' in the ward. According to WHO (1998), the milieu is the most important single factor influencing the outcome of treatment in psychiatric patients (Friis, 1991).

When it comes to aggression directed inwards, the most devastating outcome of a mental illness, suicide, may take place. According to Charlton (1992) suicide is the most frequent cause of death in 15 to 34 years old while it accounts for 2 per cent of male and 1 per cent of female deaths. The history of a previous suicide attempt is the factor most strongly related to suicide and particularly among females (Allebeck, 1993). Many scientists prefer the term 'parasuicide' rather than 'suicide attempt' because it does not necessarily imply a wish to die. The suicide attempt is often construed as a cry for help. The term parasuicide is used for non-fatal acts in which a person deliberately causes self-injury or ingests a substance in excess of any prescribed

or generally recognised therapeutic dosage (Kreitman, 1977). Parasuicide is more frequent in females than males. It is widely reported that women attempt to commit suicide about 3 times more often than men, however men succeed in killing them selves more often than women (Atkinson, 1993).

As far as the social risk factors in suicide are concerned, the 'Status Integration Theory' (Gibbs, 1964) predicts an increased risk amongst the unmarried, the divorced and people living alone. This is in concordance with 'increased well-being hypothesis' (Willis, 1984). Many studies found a positive association between good personal relationships and strength to cope with stressful life events. Gunnen et al. (1995) point out that the groups at increased risk are the patients with a history of past parasuicide, the substance users and the psychiatric patients who make up 50 per cent of all suicides, especially at the time of greatest risk, which is during the four weeks after hospital discharge. The data of Copas (1975) and Appleby (1992) confirms that the periods of highest risk are at the beginning and at the end of an episode of illness. Thus the evaluation of the potential for suicide, especially those belonging to a high-risk group such as substance users, is essential.

There is evidence to suggest that most health care workers correlate suicidal behaviour only to depressive symptomatology and this is reflected in the finding that the majority of studies investigate suicide in relation to depression. Depression is the highest risk factor for suicide and is implicated in 40 to 60 percent of all suicide deaths in the general population (Wolfersdorf, 1996). On the other hand Miles (1977) points out that 10 per cent of persons suffering from schizophrenia attempt suicide while Falloon (1981) draws particular attention to auditory hallucinations that may underlie suicidal behaviour.

According to Fawcett et al. (1993), suicide is associated with hopelessness, hallucinations, panic attacks and anedhonea. In the study of Taiminen et al. (1994) the group of schizophrenics who completed suicide had more often previous suicide attempts, lower neuroleptic doses, more depressive symptoms and less positive schizophrenic symptoms compared to their matched control subjects. The presence of depressive symptoms in patients recovering from an acute psychotic episode is common. According to Jackson (1996), the depressive symptomatology that may follow a psychotic episode appears to be a good prognostic factor. Caldwell (1990) points out that the depressive symptom of hopelessness is linked not only to

early relapse but is also a strong predictor of suicide in the early course of psychiatric illness.

Increased rate of suicidal behaviour has also been identified among substance abusers. According to Roy (2001) who examined the characteristics of patients who had attempted suicide, dual diagnosis appears to be an important determinant of suicidal behaviour. Hussain (1998) studied the suicidal tendency among 133 heroin addicts. Of the 50 patients who reported tendencies to commit suicide, 20 had a history of attempted suicide. The most common reason expressed for attempting suicide was difficulties related to drug usage, including poor relations with family members and withdrawal symptoms. As far as the dual diagnosis suicide patients are concerned, the problem is compounded as the disorders inevitably exacerbate each other (Evans, 1990). Therefore, the treatment of the major disorder is important, especially in the case of depression, which has been recognised as a predictor of suicide (Wolfersdorf, 1996).

Duration of Untreated Mental Illness (DUMI) appears to be the best predictor of long-term outcome in psychiatric disorders (Johnstone, 1986; Altamura, 2001). Loebel (1992) and McGorry (1996) examined the relationship between the DUMI and outcome. More specifically, they focused on clinical factors, such as poor premorbid adjustment,

age at onset of illness, gender, educational functioning etc., which may influence the outcome of patients with schizophrenia. Their findings suggest that duration of illness prior to initial treatment should be included, as a potentially important predictive variable, in studies concerned with the outcome of schizophrenia (Loebel, 1992). They provide evidence for the presence of a prepsychotic prodromal period and they characterise its symptoms as prodromal symptoms. McGorry (1996) also revealed significant differences between the DUMI of schizophrenic and psychotic mood disorders. In addition Larsen's (1996) study has shown that women have a significantly lower DUMI than men (39 weeks vs. 154 weeks).

In patients' minds, the most frightening consequence of relapse must be rehospitalisation. Appropriate application of early intervention strategies tends to reduce the number of admissions and the length of hospital stay (Edwards, 1998). Given what is known about the 'critical period' and the risks of delayed treatment, DUMI is a core issue for the clinical management of psychiatric disorders.

Chapter 4

Psychiatric Disorders That Coexist with Substance Abuse

4.1 PREVALENCE OF DUAL AND SINGLE DISORDERS IN PSYCHIATRIC POPULATION

Amongst the leading causes of worldwide disability are psychiatric disorders. Among the top ten are unipolar depression, substance abuse, bipolar affective disorder (manic depression) and schizophrenia (WHO, 1990). About 33% of all patients have mental health and/or substance abuse problems (Greden, 1998). Mental illness is a common affliction: Approximately 1 out of 100 people will be affected by schizophrenia in their lifetime. Bipolar disorder also strikes approximately 1 out of 100 people while 5 to 7% of the population is at risk from depressive illnesses (Alderton, 1999).

Over one-third of psychiatric hospital admissions reported co-occurring substance abuse (Fisher, 1975; Lehman, 1989). The increased risk of substance abuse among patients with severe mental illness is confirmed by the analysis of Epidemiologic Catchment Area (1990) according to which those with schizophrenia report 7.6 times greater rate of drug abuse. The life time rates of substance abuse in

schizophrenics is 47%, in bipolar patients is as high as 60% while among depressives is 32% (Epidemiologic Catchment Area Study, 1990).

4.2 THE DIAGNOSTIC PROCESS

The various classification systems used in psychiatry date back to Hippocrates in the fifth century B.C. (Kaplan and Sadock, 1994). Since then, specific diagnostic criteria have been introduced for discernable mental disorders. These are offered as guidelines for making diagnoses, because it has been demonstrated that the use of such criteria enhances agreement among clinicians and investigators (APA, 1994). The international diagnostic system - DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) (American Psychiatric Association, 1994) uses a system of axes to record information. The DSM-IV employs a system of five axes that reflect the complexity of describing the health of individuals: Axis I describes the major mental disorders, including substance use disorders. Axis II is referred to the personality disorders and mental retardation, Axis III to the general medical condition, Axis IV to the psychosocial and environmental problems and Axis V to the global assessment functioning.

Diagnostic process is not only the empirical psychiatry based on the categorical approaches of the psychiatric books, as it is the Diagnostic and Statistical Manual (DSM-IV) (APA, 1994), but the story and the actual observation of the patient, too. Tucker (1998) argues that clinicians are between Scylla and Charybdis since they no longer want to say that each patient is a unique individual, nor can they honestly say that every case clearly fits diagnostic criteria.

The determination of the presence or absence of the cardinal symptoms in each disorder identifies the psychiatric diagnosis. For example, the cardinal symptom in mood disorders is pronounced alterations in mood from depressive to manic. On the other hand, in schizophrenia which is a heterogeneous disorder, patients present a range of symptoms that may change over time (Casper, 1999). According to Harrow (1997) consistent psychopathology may distinguish schizophrenia from the other mental disorders more than psychopathology does at any single point in time. Andreasen (1992) points out that schizophrenia does not have a single pathognomic feature as do many other disorders in medicine. Depression is defined by dysphoric mood, mania by euphoric mood, and diabetes mellitus by the inability to regulate blood glucose while schizophrenia by the presence of a constellation of symptoms. Many illnesses that were once considered to be part of schizophrenia are now placed in other

diagnostic categories. This is especially true for affective disorders accompanied by psychosis (for example, schizoaffective disorder). Present exclusion of these disorders would give the impression that the incidence of schizophrenia has declined when, in reality, it is the diagnostic criteria (DSM-IV) that have changed.

4.3 SCHIZOPHRENIA AND OTHER INPATIENT PSYCHIATRIC DISORDERS THAT USUALLY COEXIST WITH SUBSTANCE ABUSE

The most common psychiatric disorder that coexists with substance abuse is schizophrenia. Schizophrenia, a Greek word that means split mind, is a group of mental disorders characterised by major disturbances in thought, perception, emotion and behaviour. It occurs in all cultures and affects about 1 in 100 people throughout the world. The disorder affects all aspects of a person's life and usually appears in late adolescence or early adulthood (Atkinson et al, 1993).

Mood or affective disorders is a group of clinical conditions, whose common feature is the patient's disturbed mood, either depression or elation (Weissman, 1992). The major distinction in mood disorders is between bipolar and depressive disorders. The presence of mania defines bipolar disorder. The lifetime prevalence of mood disorders is 20% (WHO, 1990). Depression is considerably more prevalent than

bipolar disorder and affects twice as many women as men. Depression can be a serious condition, associated with dysfunction in work and family roles, substance abuse and increased risk of suicide (Clarkin, 1996).

In reviewing literature Lapierre (1995) suggests that there is no compelling evidence to indicate a common pathophysiology for schizophrenia and bipolar disorder. Patients at the boundary between mood disorders and schizophrenia are diagnosed as schizoaffective. Even though mood disorders are nosologically distinct from schizophrenia, depressive symptoms could be evident during the course of schizophrenia (Tollesfon, 1998).

The diversity and complexity of schizophrenic symptoms leads to their classification in categories. Based upon the affected function they can be divided into positive and negative symptoms. Later reports by Andreasen et al. (1994) suggest that the symptoms of schizophrenia cluster into three dimensions: the positive symptoms subdivided into psychotic (delusions, hallucinations, distorted perceptions) and disorganised dimensions (confused thinking, disorganised speech and behaviour), while a third negative dimension (flat emotions) also emerges (The Expert Consensus Guidelines for Schizophrenia, 1999). McGlashan (1996) referred to the frequency of positive and negative

symptoms through the phases of the disorder. In the early course of schizophrenia positive symptoms are frequent but unstable. In sub-chronic stages positive symptoms are as common as negative symptoms while in later phases negative symptoms are stable and usually dominate the clinical picture. Ho et al (1998) investigated whether these three symptom dimensions could predict subsequent quality of life. They found that negative symptoms are associated with poor outcome while the psychotic and the disorganised symptom dimensions did not appear to predict subsequent quality of life.

The three psychopathological domains labeled positive, negative, and disorganized should not be limited to the diagnosis of schizophrenia since similar domains can be seen in other disorders too (Ratakonda, 1998). A review of recent international studies suggests that specifically "negative symptoms" (such as psychosocial withdrawal, autism, abulia, monotony, paucity of speech and thought) define a syndromic cluster relevant not only in schizophrenia but also in other psychiatric and substance abuse disorders such as is observed in major depression and dual diagnosis patients after detoxification treatment (Conte, 1996). Lower premorbid functioning suggests more enduring negative symptoms according to Renning (1995).

Although the symptoms of schizophrenia are not the same for every person, and may vary even within the same individual at different stages of the disorder (Atkinson, 1993), the most recent version of the Diagnostic and Statistical Manual (DSM-IV) describes not only these key diagnostic symptoms but also explicitly classifies the phase (e.g. active phase) and the course of the illness (e.g. chronic) (APA, 1997). The early course of schizophrenia has the premorbid phase, the prodromal period and the acute psychosis (Beiser, 1993). During this early course, the onset of illness is defined when the patient first experiences prodromal symptoms while the onset of episode when he/she experiences psychotic symptoms. Through this definition, Keshavan (1992) distinguishes prodromal from psychotic symptoms. The "premorbid phase" indicates the individual's psychosocial functioning before the first signs of illness, before the illness onset. The time interval from onset of bizarre behaviour to onset of psychotic symptoms is called "prodromal phase" (Falloon, 1981). In other words, "prodromal phase" is the pre-psychotic period before the onset of psychosis. Then follows the active disease process in the "psychotic phase" (Table 2). Residual are negative or low level symptoms, characterised by role impairment (Loebel, 1992). So, the illness duration begins with the illness onset, includes the psychotic episode duration and continues with the relapse to a new episode.

Table 3. The Stages of Illness in relation to the Phases of Treatment.

Stages of Illness	Phases of Treatment
Birth	
	Premorbid Phase
First Signs of Illness.....	
	Prodromal Phase
Onset of psych.Illness.....	
Duration of untreated Mental Illness (DUMI) _____	Active Untreated Phase
FirstTreatment	
Active Treated Phase < >	Residual phase
Remission	
First Signs of Relapse.....	
	Relapse Prodromal Phase
Psychotic Symptoms.....	
	Relapse Phase

(Adapted from Keshavan, 1992)

4.4 PSYCHOPATHOLOGY AND SUBSTANCE ABUSE

It is clear from the current literature that the relationship between substance abuse and psychopathology remains complicated. Meyer (1986) believed that psychopathology and substance abuse arise from a common vulnerability. In an attempt to clarify this complex

relationship Meyer (1986) assumed that psychiatric disorders are the result of a substance abuse and they are altering the course of the abuse and vice versa. Based on this hypothesis by Meyer (1986), one could say that psychopathology is a risk factor for substance abuse development.

A person with a low vulnerability to mental illness will require a higher level of stress to experience an episode of illness, while low level stress will produce an acute episode in a very vulnerable person (Neuechterlein, 1994). Mental illness can be seen as a consequence of genotype-environment interaction, the so-called stress/vulnerability model (Os, 1998). In other words in order for a person to develop a disorder, both vulnerability and stress are necessary. The mental disorder with the stronger biological vulnerability is schizophrenia (Atkinson, 1993).

A small number of studies have been carried out in order to explore the relationship between substance abuse and schizophrenic symptoms. Green (1999) addresses the frequent comorbid problem of substance use disorder, which occurs in nearly 50% of patients with schizophrenia. The recognition of this "dual problem" is essential for recovery.

In order to determine the impact of substance abuse on the psychopathology of schizophrenia, Cleghorn et al. (1991) compared schizophrenic patients who reported prior substance abuse with those inpatients who reported no such abuse. They concluded that hallucination scores were significantly higher in the patients who reported prior substance abuse. Also, substance abuse preceded the onset of positive symptoms. Baigent et al (1995) examined the interactions between substance abuse and the psychopathological domains of schizophrenia. According to those researchers cannabis increased positive symptoms of schizophrenia and only amphetamines reduced negative ones.

Schizophrenic patients with substance abuse are usually male, significantly younger patients when first admitted to hospital and suffer from a severe symptomatology. These are indicators of an unfavourable prognosis (Jimeno et al, 1997). In addition, cannabis may produce an acute worsening or relapse in schizophrenic patients. As Martinez (1994) points out, continuing cannabis consumption and previous cannabis intake have been described as factors influencing the course of the illness, as well as non-adherence to treatment. According to Brady et al. (1990), cocaine abuse may influence both the psychopathologic presentation of schizophrenic patients and the intensity of care that they require. In their study, the cocaine-abusing

subjects had been hospitalised more frequently, were more likely to be of the paranoid subtype, and were more likely to be depressed at the time of interview.

There is a consensus amongst researchers about the high prevalence of depression in substance abusers (Bukstein, 1989). Darke (1994) found that in methadone users the prevalence of depression was high while the majority of patients in this depressive group suffered from 'extremely severe depression'. Mueller (1994) supports the view that substance abuse patients with depression recover from the depressive relapses more slowly even though they have the same number of depressive relapses with the single diagnosis depressive patients. Comorbidity influences the development and course of both substance abuse and depression (Kidd, 1995). Substance abuse has been associated with both exacerbation of all mental illnesses and poor outcome (Toner, 1992). Patients should understand that they have two complex chronic disorders that together lead to a poorer prognosis than each one separately (APA, 1997).

OVERVIEW

The present project first presented a review of the dual diagnosis literature and highlighted a number of key issues that contribute to what we currently know about this area.

The literature suggests that substance abuse in psychiatric patients is associated with an array of negative outcomes including increased relapses, rehospitalisations and family burden.

In the next section the sample, the methods, the statistical analysis and the results of the project will be presented.

AIM OF THE INVESTIGATION

The purpose of the present project was to:

- identify potential outcome predictors for the patients with or without comorbidity.

- compare and evaluate the differential characteristics of drug-abusing and non-drug-abusing psychiatric patients who voluntarily or involuntarily were admitted to a Greek Psychiatric clinic from 1996 to 1998 in order to explore the relative roles these demographic and clinical variables may play in the course of their illness.

HYPOTHESIS

The literature overwhelmingly suggests that a strong predictor for poor outcome in a chronic disorder was the existence of another chronic disorder. In particular, substance abuse has been associated with exacerbation of psychiatric disorder (Toner, 1992). As a result, outcome for psychiatric patients who abuse substances is poorer than for those who do not (Drake et al., 1995). Dual diagnosis patients bring dual complications, which increase the risk for relapse (Evans and Sullivan, 1990). Based on these observations, in this project, it was hypothesised that dual diagnosis patients will have poorer outcome and different predictors of outcome than psychiatric patients who do not abuse substances. Most specifically, when compared with psychiatric patients without substance abuse, it has been hypothesised that dual diagnosis patients will have:

- differential demographic characteristics
- poorer outcome
- different predictors of outcome

Method

Chapter 5

5.1 DESIGN

The present project was conducted in a central psychiatric hospital in Athens, Greece (APPENDIX C) with inpatient treatment services for patients with psychiatric and substance abuse disorders with voluntary or involuntary hospitalisations. Patients were referred to the hospital on the basis of the severity of their acute psychopathology and/or drug abuse with respect to dangerousness and because of the exacerbation of a long-standing disorder.

The project was designed to prospectively (i) evaluate the incidence of dual diagnosis in a Greek psychiatric population and of that sample, (ii) determine if differences in clinical course, outcome and psychosocial factors were present in those with or without psychiatric comorbidity.

The basic design of the data acquisition for criteria for psychiatric comorbidity with drug abuse was a prospective, longitudinal analysis of seven years (patients' admissions at the psychiatric hospital during study period 1995-2001 plus two years follow – up) in which the stability of actual disorders can be observed over time (Miller, 1993).

Most psychiatric clinical research studies are, if not strictly cross-sectional (observation of a subject at only one point of time), then, at most, very short term (Kraemer, 2000). Thus, the attempt of this study to present longitudinal perspectives provides more accurate answers to research questions related to prevalence and outcome.

The setting and size of the samples, inclusion/exclusion criteria and diagnostic measurements differed significantly in the studies reviewed, which could profoundly affect estimates of prevalence. In this study, the setting of the sample was a psychiatric clinic with inpatients; the size was large (800 patients) and as in the majority of the studies, this project used the diagnostic criteria of the DSM - IV diagnostic system (APA, 1994). Articles that did not use the DSM system in their diagnostic assessment were not included in the literature review of this project (Kraemer, 2000)

According to the dual diagnosis diagnostic principles (Evans, 1990), this project considers as dual diagnosis only those patients whose history indicates that their psychiatric disorder began prior to the substance abuse. They experienced psychiatric symptoms that manifest prior to substance abuse and were not associated with intoxication or withdrawal. The subjects suffer from two initially unrelated disorders that interact and exacerbate each other.

5.2 SAMPLE AND PROCEDURE

From all consecutive admissions (3124 patients) in the psychiatric unit, during the study period 1995-2001, only the 800 patients who fitted the subjects' selection criteria were considered suitable for this project.

Subjects' inclusion criteria included:

a. age ≥18 years, in order to facilitate the taxonomy of the psychiatric diagnoses,
b. no drop out of treatment before the completion of inpatient treatment phase,
c. absence of a moderate or severe mental retardation
d. absence of a diagnosis of alcoholism and
e. absence of a neurological illness

Thus, the final analysis sample comprised eight hundred patients that fitted patients' selection criteria and were divided into two groups:

Group 1: Patients diagnosed as having a **single psychiatric disorder**

Group 2: Patients diagnosed as having a **concomitant substance abuse disorder**

Those with a concomitant substance abuse comprised the dual diagnosis group that compared to the rest of the patients (single diagnosis group).

The goal of the sampling procedure of this study was to yield a sample as representative of the psychiatric population in Athens as possible. According to Kraemer (2000), sample sizes necessary to detect what is going on must be large, because one result of low reliability is of low power. Therefore, this project was conducted in a central Psychiatric hospital in Athens, with a large sample of patients (800 patients) who received a main psychiatric diagnosis. Even though the two groups have different sizes, they are large enough to permit comparisons according to the psychiatric diagnosis as well as the nature and frequency of substances abused (Kraemer, 2000). Group 1 was larger than Group 2 but patients were matched in terms of psychiatric diagnosis because the rates of diagnosis distribution between Group 1 and Group 2 were not significantly different (x^2= 3.63, df= 2, p= .16). Since, the diagnostic classifications were equally represented among single and dual diagnosis patients, as in previous studies (e.g. Sanguineti, 1993) patients in this project were symptomatically comparable.

Group 1 patients who received a diagnosis from the schizophrenia spectrum were compared with patients of the same psychiatric diagnosis but with concomitant substance abuse (Group 2). Thus, single diagnosis patients were compared with a matched group in terms of the psychiatric diagnosis of dual diagnosis patients.

Variables

Previous studies determined which variables may correlate with the outcome and have the strongest prognostic influence. This project included the data which have identified by the literature review in psychiatric comorbidity as variables which ought theoretically to be associated with the psychiatric disorder's outcome. For example, one of the variables included was the duration of untreated mental illness (DUMI) since the majority of clinical and theoretical reports suggested a strong relationship between DUMI and eventual outcome (Johnstone, 1986; Johnstone, 1992; Loebel, 1992; Larsen, 1996; McGorry et al., 1996; Lieberman, 1997; Waddington, 1998; Lines, 2000). In the previous studies, as a test of the utility of these variables, a set of these variables was tested for their ability to predict the outcome in psychiatric populations with available data. Then, multiple regression analysis examined which variables predicted the outcome. The same procedure followed in this study where all

patients from both groups were compared in the same variables. Therefore, the variables chosen in this study to predict outcome, together with their theoretical source (e.g. Johnson, 1997) as have traditionally been shown in the majority of studies, were:

Premorbid factors

Diagnosis

Age at onset of psychiatric illness

Demographic characteristics (gender, marital status, etc.)

Prevalence of psychiatric diagnoses

The Duration of Untreated Mental Illness (DUMI)

The severity of the relapse in terms of symptom severity (psychopathological changes were assessed using the Positive and Negative Syndrome Scale (PANSS) for schizophrenia)

Inpatient treatment, which is delivered via two main models: Medication alone and Model of combination therapies where psychoeducation (WHO, 1998) is an adjunct topsychopharmacological therapy.

The number of psychiatric episodes as a good indicator of relapse rate

Critical Life Events

Family environment, which was revealed by the large number of studies in the psychosocial measure of "expressed emotion" or EE.

Assessment Procedures

On admission to the psychiatric unit, the hospital staff (psychiatrists and clinical psychologists including the author of this project) performed all patients' assessments. The author knew patients since he was part of the team that had supervised their treatment process and had therefore a thorough knowledge of their clinical status and social adaptation. This involvement of the researcher in treatment process of all patients minimised the risk of partiality. In addition, external and internal reliability between the assessments of staff established by using standardised measures since differences between the patients confidently attributed to the clinical condition of the patient, as revealed by the standardised measures, and not due to some alternate explanation.

The supervising team (including the author) were blind to the data analysis since it was made through a computerised data base (SPSS). Thus, when the typical evaluation of patients in the psychiatric hospital completed by the staff (including the author of this project), the author established a computerised data base, on the basis of these hospital records, which was monitored throughout the study for all patients. Before the statistical procedure for this project, the author replaced patients' names by unique identifying numbers.

The evaluation included a DSM – IV diagnostic clinical interview designed to gather data about relevant clinical history, current symptoms and sociodemographic characteristics, as well as observation and the use of standard assessment instruments in order to compare findings across studies. These data were supplemented by information obtained from clinical records, referring and treating psychiatrists, and interviews with family members (APPENDIX J) and are representative of the diagnostic information typically available in the context of an initial evaluation of patients in a psychiatric unit.

It is noteworthy to mention that many patients appeared resistant at the beginning of the interview and did not want to answer questions. If that seemed to be the case, the clinician encouraged the patient to use nonverbal cues, such as a pen and a pencil, in order to express his or her feelings and thoughts, which could not express verbally. As Machover (1949) points out, drawing tells us something about its creator.

Figures 1 and 2, exhibit two characteristic drawings of psychotic patients whose perceptions are distorted. In figure 1, a 24-year old female patient drew a female figure who holded her head in her hand. In figure 2, a 20-year old male patient drew himself and a man named NIKOS, which is the name of his alcoholic father.

Figure 1. Drawing by a 24-year old female patient.

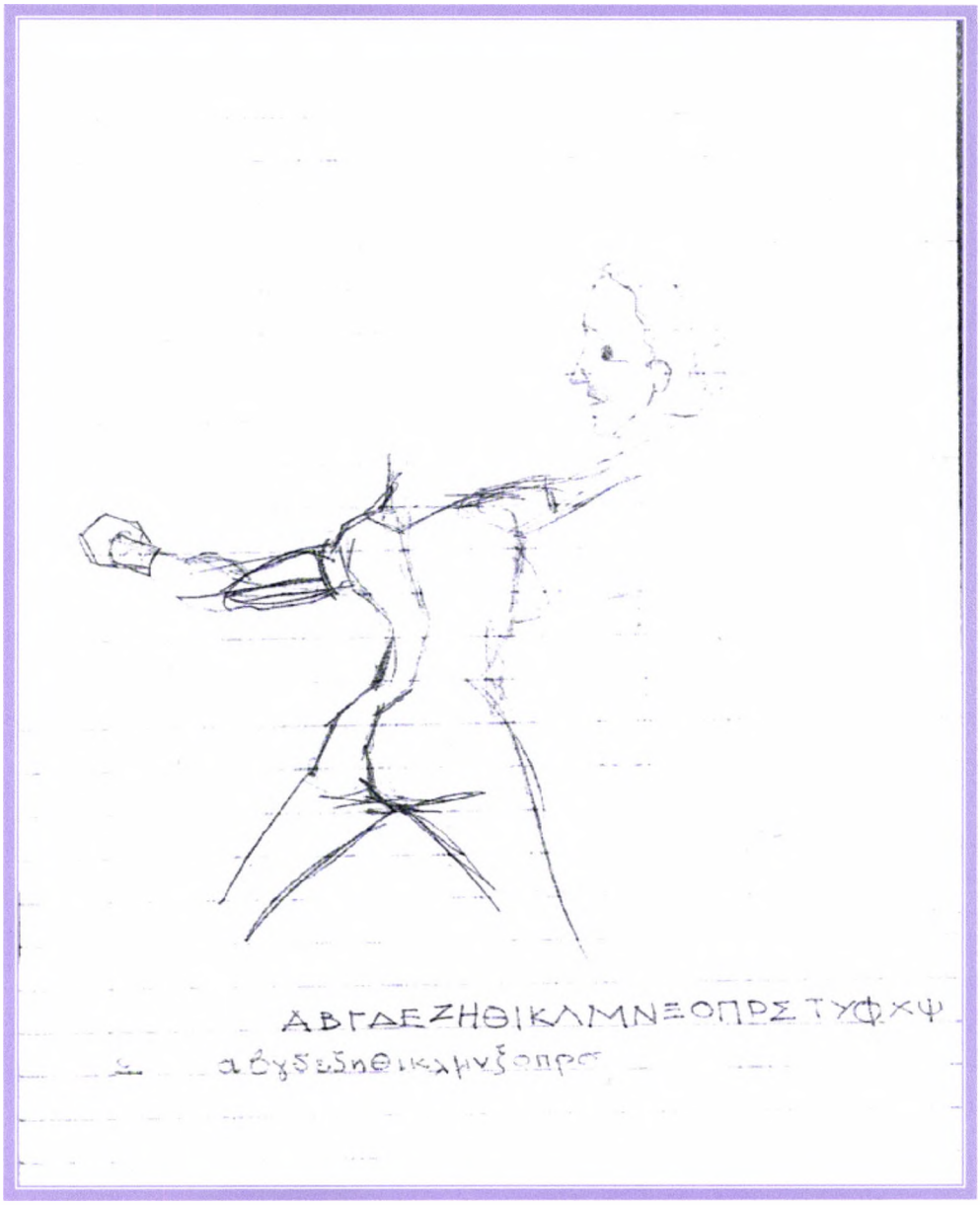
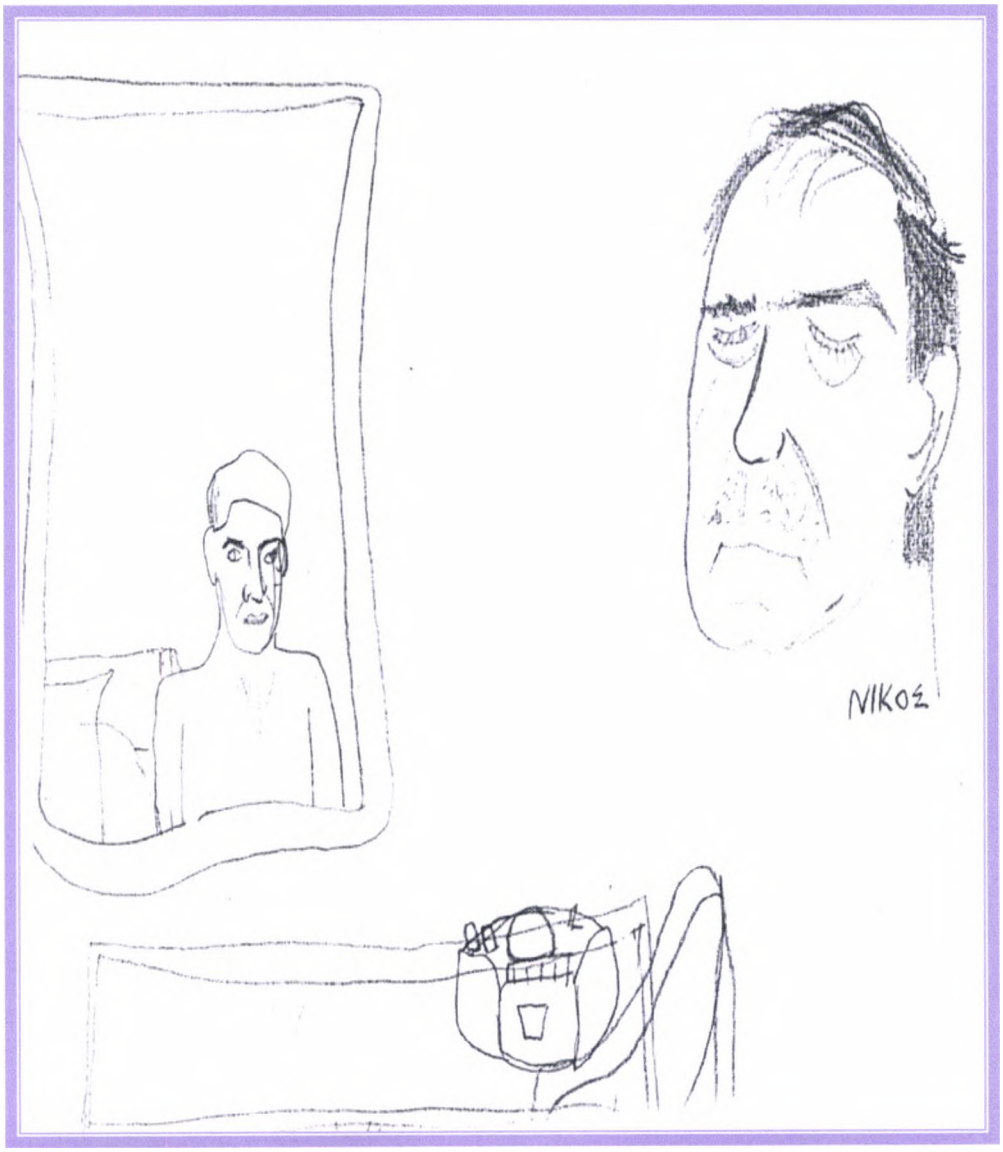


Figure 2. Drawing by a 20-year old male patient.



Following the interview, lifetime and current psychiatric diagnosis were made according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria (APPENDIX G). Clinicians completed a separate file for each patient (a hospital inpatient data base) with the information collected by him /her and his'/her's family members (e.g. demographic) while on the last page they recorded the patient's DSM-IV multiaxial diagnosis. The diagnostic evaluations were made not only at the time of admission that is associated with increased symptom reports (Rounsaville, 1982) but at also several weeks after admission. The second evaluation is important because drug induced symptoms most typically abate within ten days of withdrawal from the drug (Turner, 1990) and cease to mask the psychiatric disorder. In addition, patients underwent a full physical examination and routine clinical investigation. Urine toxicology screens for opiates, cocaine and cannabis were part of the required preadmission protocol since it was the most direct way of determining drug use. Respondents were also asked to identify their primary drug of choice and their secondary drug of choice.

5.3 MEASURES

According to Kraemer (2000) studies should evaluate the effects of the treatments using measures that have clinical meaning. Measures and

standardised instruments were used to improve the validity and reliability of findings and were selected from the most appropriate commonly utilised in similar studies in the literature. According to the standard procedures of the psychiatric unit, all measures (e.g. PAS, PANSS, EE etc.) were used routinely in the hospital and all patients were tested using the following measures, which are accepted outcome measures in clinical trials (APA, 1994). The rating of each measure was entered on the established computerised data base for each patient which was monitored through the study by the author.

- The **outcome** was measured in terms of presence of relapse leading to a new episode or rehospitalisation over a 2-year follow-up period as well as degree of symptom remission [(follow-up was made by the author of this project using the appropriate measures for each diagnosis (e.g. PANSS for schizophrenia)]. This period was chosen as the majority of new episodes occur within two years of remission (Lee and Muray, 1988). In addition, according to the Prien (1973) the criterion of improvement is no symptomatic relapse for two years. Therefore, this project considered as a **poor outcome** the presence of relapse to a new episode or rehospitalisation over a 2-year follow-up period. A **more favourable outcome** was defined as no relapse within the 2-year follow-up period.

- The measure of **Premorbid Adjustment** Scale (PAS) (Cannon-Spoor et al., 1982) (APPENDIX E) was developed to assess patients' psychosocial functioning before the onset of the psychiatric illness. The Greek version of the PAS scale and rating manual translated and standardised in Greek by Lykouras et al. (1997) in the Greek Medical School. The PAS included 36 items, describing levels of functioning in four major areas in different periods of subject's life before the onset of the mental illness. The four areas were social accessibility – isolation, peer relationships, ability to function outside the nuclear family, and capacity to establish sociosexual relationships (Larsen, 1996). In particular it measures the extent to which the individual was able to meet age- and sex- appropriate expectations before becoming ill, i.e. the premorbid period (Phillips, 1953). The premorbid period indicates the period just before the psychiatric illness' onset which is defined as the first appearance of any signs and psychiatric symptoms (Rabiner, 1986). According to the literature review these prominent psychotic symptoms can be identified only by the patient or by people observed the patient during this premorbid period (Larsen, 1996). Thus, the **onset of the psychiatric disorder** is defined retrospectively by mental health professionals, through PAS, prodromal signs

questionnaire (APPENDIX A) and interview with family members.

- Consistent with previous studies (e.g. Craig, 2000) **Duration of Untreated Mental Illness** was operationalised as the time from the onset of psychiatric illness (as defined from the time period in which the patient first experienced the signs and symptoms of the diagnosed disorder) to the time when the patient received treatment.

- Psychopathological changes in the patients diagnosed with schizophrenia were assessed using the Positive and Negative Syndrome Scale (PANSS) for **schizophrenia** developed by Kay et al., (1987). The PANSS was developed as a more rigorously and objective method for evaluating positive, negative and other symptom dimensions in schizophrenia. The Greek version of the PANSS scale and rating manual translated and standardised in Greek by Lykouras et al. (1997) in the Greek Medical School. The PANSS assessment was derived from behavioural information collected from a number of sources including: observations during the interview; a clinical interview; and reports by the hospital staff or family members. The ratings provide summary scores on a 7-item

positive scale, a 7-item negative scale and a 16-item general psychopathology scale. For example, the Postive scale (P) items evaluated in the PANSS are the following: P1-Delusions, P2-Conceptual disorganisation, P3-Hallucinatory behaviour, P4-Excitement,P5-Grandiosity, P6-Suspiciousness/persecution and P7-Hostility. The Neative scale (P) items evaluated in the PANSS include: avolition, apathy, self-neglect, alogia, poverty of speech, anhedonia, lack of pleasure. The PANSS ratings should be based on all the information relating to a specified period, normally identified as the previous week. If the item is absent it is scored as one while increased levels of psychopathology are assigned scores from two (minimal) to seven (extreme).

- Patients with past or current depressive symptoms were assessed with the Hamilton **Depression** Rating Scale (HAM-D) (Hamilton, 1960) (APPENDIX F). The HAMD was one of the first rating scales developed to quantify the severity of depressive symptomatology. First introduced by Max Hamilton in 1960, it has since become the most widely used and accepted outcome measure for evaluating depression severity. It was included in the National Institute of Mental Health's Early

Clinical Drug Evaluation Program Assessment Manual, designed to provide a uniform battery of assessments for use in evaluating pharmacologic drug treatment of depression. The HAMD has since become the standard depression outcome measure used in clinical trials presented to the Food and Drug Administration by pharmaceutical companies for approval of New Drug Applications (Glaxo Wellcome, 1997). It was also the primary outcome measure in the National Institute of Mental Health collaborative studies comparing pharmacotherapy with psychotherapy for the treatment of depression. The Hamilton Depression Rating Scale is a 17-item scale that evaluates depressed mood, vegetative and cognitive symptoms of depression, and comorbid anxiety symptoms. The 17-items are rated on either a 5-point (0-4) or a 3-point (0-2) scale. In general, the 5-point scale items use a rating of 0 = absent; 1 = doubtful to mild; 2 = mild to moderate; 3 = moderate to severe; 4 = very severe. A rating of 4 is usually reserved for extreme symptoms. The 3-point scale items used a rating of 0 = absent; 1 = probable or mild; 2 = definite. The Greek version of the Hamilton scale and rating manual translated and standardised in Greek by Lykouras et al. (1997) in the Greek Medical School. It is filled in at the end of an interview and is intended to reflect the severity of symptoms of a patient over the preceding few

days. Additional information may also be gathered from family members and this is particularly useful if there is doubt about the accuracy of the patient's answers.

- **Substance Misuse** was defined as a maladaptive pattern of substance misuse that did not necessarily meet the criteria for physiological dependence, but involved using substances at least 3 times per week (Hipwell, 2000). For collecting information on the profiles of patients who used drugs EMCDA (European Monitoring Centre for Drug Addiction) - Questionnaire was administered (APPENDIX D). The EMCDA operates within the framework of the Council of Europe. The aim of the EMCDA is defined as to study drug use and trafficking problems from a multidisciplinary perspective (epidemiology, prevention, treatment, rehabilitation, criminal justice issues, etc.) (EMCDA, 1997).

- The impact of the family on the course of the chronic disorder assessed by the psychosocial measure of **Expressed Emotion** (EE) (Leff and Vaughn, 1985). The relationship between the three major expressed emotion variables [criticism, hostility and emotional over involvement (EOI)], was investigated using the Camberwell Family Interview (APPENDIX I) and measured on

1-5 point scale on which 1=good and 5=poor. The "expressed emotion" concept was developed by Brown and his colleagues in the Institute of Psychiatry in London in the 1950's. Their studies focused on the relation between family variables and the likelihood of relapse on the part of a patient who has recently been released from the hospital with the diagnosis of schizophrenia (Brown, 1989). The Greek version of the EE scale and rating manual translated and standardised in Greek by Oikonomoy (1992) in the Greek Medical School. This is a semistructured interview, which is conducted in the absence of the patient, asks the relative about events in the home in the three months preceding a psychiatric hospitalisation. Relatives with rating of 3 or more in an EE variable were rated as high in this specific EE variable (Hooley, 1997).

- Psychiatric diagnoses were made according to the international diagnostic system - **DSM-IV** (Diagnostic and Statistical Manual of Mental Disorders) (American Psychiatric Association, 1994) (APPENDIX G). In agreement with Winokur and Kadrmas' criteria (1989), the sample was subdivided into oligoepisodic (OE) patients with two episodes as maximum, and poliepisodic (PE) patients with three or more episodes.

- As **critical life events** considered the life events which were easily to be seen objectively, such as divorce, illness etc. in the six months before the onset of the psychiatric disorder since individuals accurately remember severe events for about one year (Brown et al.,1989). APPENDIX B lists these critical life events as identified by Holmes and Rache (1967) "life events scale". Patients and their family members were asked to list and date the major events that occurred over this six months period.

5.4 ETHICS

All patients were informed about the nature of the research within the hospital and willingly gave their consent to participate. Information sheets and preliminary interviews made it clear that the choice to consent or otherwise would have no bearing on the treatment offered. APPENDIX K includes an example of consent form and the information that was given to patients about this study.

The project ensured the anonymity of the subjects by replacing patient's names with unique identifying numbers before the statistical procedures began.

5.5 STATISTICAL ANALYSIS

To prepare for the statistical analysis, two preliminary steps were necessary. First, using categorisation criteria based on DSM – IV (1994), the variable caseness was created to determine which of the patients presented with comorbidity, and which did not. Patients with a concomitant substance abuse comprised the dual diagnosis group (Group 2) which compared to the rest of the patients with single diagnosis (Group 1). Secondly, a computerised database was established by the author for this project and updated monthly; demographic and clinical variables were obtained by systematic interviews and regular perusal of clinical records. In this way the therapeutic process of each patient could be monitored prospectively throughout the study.

Statistical analyses of the data were performed using the Statistical package for Social Sciences (SPSS) for Windows. Comparisons between the two groups regarding continuous variables such as age etc. were performed using t-test. Comparisons regarding categorical variables such as gender etc. were analysed using Pearson's chi-square (χ^2) test. Only effects statistically significant were reported and discussed in the project.

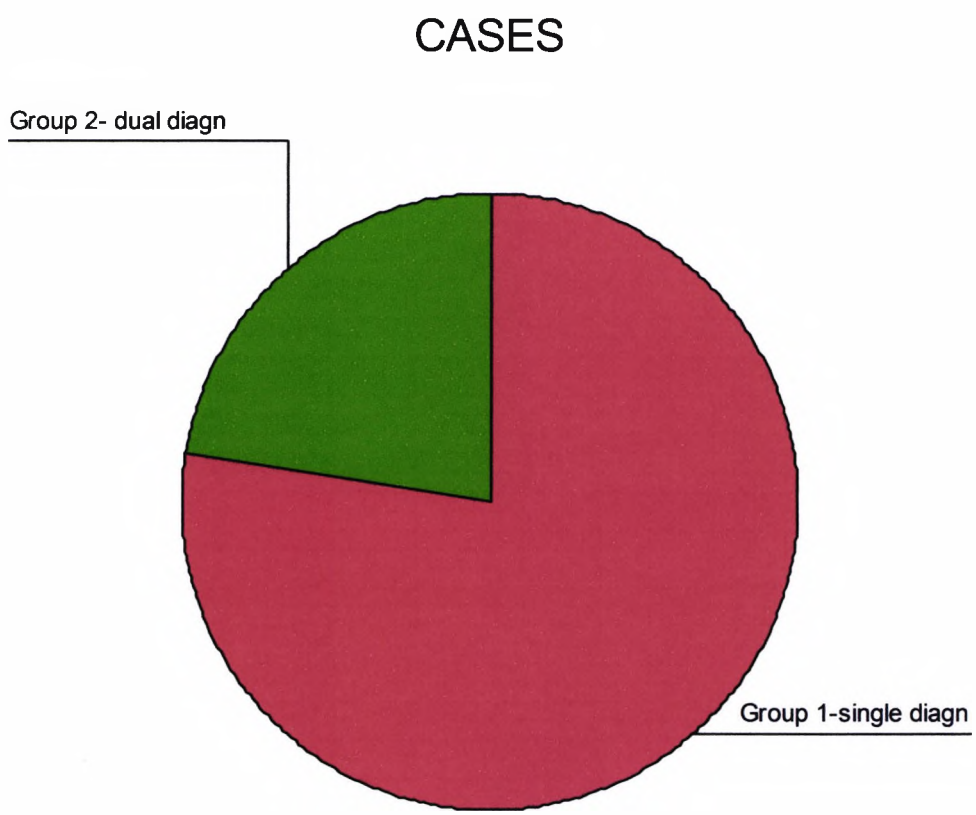
Correlation analyses were conducted to determine the positive or negative association between the characteristics of the two samples and outcome. Tables and curves were used to contrast outcome and its predictors in the two groups. Repeated measures analysis of variance, one-way ANOVA, was performed on the dependent variable for the variables with more than two categories. Comparisons of efficacy measures between the two groups concerning changes from baseline to endpoint were done using a two-way mixed design ANOVA. Finally, potential outcome predictors were identified by means of multivariate analyses, in particular multiple regression analysis, which is presented in tables 6 and 7. For each variable the beta coefficient and standard error were provided. From among all candidate variables that were entered into the multiple regression analysis (tables 6 and 7 provide the list of these variables), the best predictor of comorbidity emerged for both groups, discussed in results and discussion section.

Results

Chapter 6

The 800 patients who participated in this project, were classified as to whether they were diagnosed with single psychiatric disorder (**Group 1**, 620 patients, 77.5%) or dual diagnosis (**Group 2**, 180 patients, 22.5%) (Figure 1) in order to compare and evaluate the differential characteristics of drug-abusing and non-drug-abusing psychiatric patients.

Figure 3. Proportion of Dual Diagnosis Patients in Sample



6.1 DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

As hypothesised, when compared to psychiatric patients who do not abuse substances, dual diagnosis patients have

differential demographic characteristics.

They were compared in mean age, age at onset, number of admissions, premorbid adjustment, duration of untreated mental illness, gender, educational level, marital status, employment status, socioeconomic level and parent's marital status. The sociodemographic characteristics of the two groups are shown in Table 4.

The mean **age** of the 800 patients who participated in this project was 34.29 years (SD= 10.54), with a range of 18 to 58 years. The mean age for Group 1 was 35.92 years (SD= 10.5) and for Group 2 was 28.7 years (SD= 8.20). Group 2 comprised of significantly younger patients than Group 1 (t= 8.4, df= 798, p<. 001). More specifically, Group 2 was found to be on average almost 8 years younger than Group 1 (Table 4).

Table 4. Sociodemographic Characteristics for Patients with and without Psychiatric Comorbidity

Characteristic	Group 1 (N=620)		Group 2 (N=180)		
	Mean	**SD**	**Mean**	**SD**	**Analysis**
Age *(years)*	35.92	10.5	28.7	8.20	*t=8.4, df=798, p<.001*
Age at onset *(years)*	28.7	9.5	24.7	6.4	*t=5.2, df=798, p<.001*
Number of Admissions	2	1.48	1.8	1.44	*t=1, df=798, n.s*
PAS	.34	.20	.37	.20	*t=-2, df=798, p<.05*
DUMI *(years)*	2.70	3.2	2.76	4.36	*t=-0.19, df=798, n.s*
	N	**%**	**N**	**%**	**Analysis**
• **Gender**					χ^2*=55.9, df=1, p<.001*
Male	316	51%	148	82.2%	
Female	304	49%	32	17.8%	
• **Education**					χ^2*=51.8, df=6, p<.001*
No education	3	0.5%	1	0.6%	
Primary school	83	13.4%	15	8.3%	
Middle school	86	13.9%	54	30%	
High school	248	40%	88	48.9%	
Some University	68	23.4%	15	8.3%	
University	132	2.1%	7	3.9%	
• **Marital status**					χ^2*=29.8, df=3, p<.001*
Single	262	55.3%	104	90.5%	
Married	145	18.1%	12	1.5%	
Divorced	29	3.6%	4	0.5%	
Living with parents	184	23%	60	7.5%	
• **Employment status**					χ^2*=44.4, df=4, p<.001*
Full-time Employm.	213	34.4%	59	32.8%	
Unemployed	225	36.3%	104	57.8%	
Domestic	98	15.8%	3	1.7%	
Intermittent	36	5.8%	10	5.6%	
Early retirement due to psych. illness	48	7.7%	4	2.2%	
• **Socieconomic level**					χ^2*= 8.3, df=1, p<.004*
High	289	36.1%	62	7.8%	
Low	331	41.4%	118	14.8%	
• **Parents' Marital status**					χ^2*= 62.8, df=1, p<. 001*
Divorced parents	118	14.8%	87	10.9%	
Not Divorced parents	502	62.8%	93	11.6%	

Age of onset of the psychiatric disorder was earlier in Group 2 than in Group 1 patients (mean age of onset of Group 2 was 24.7 years vs. 28.7 years of Group 1, t= 5.29, df= 798, p<. 001) (Table 4). Both groups' age was positively correlated with their age at onset (r= 0.68, p<. 01 for Group 1 and r= 0.79, p<. 01 for Group 2). Not surprisingly, the younger patients of the sample had younger age at onset.

Age of onset also provides information about the **chronicity of the disorder**, by subtracting the age of onset from the patient's current age in the following way: [(35.92 years which is the mean age for Group 1) – (28.7 years which is the age of onset for Group 1)= 7.22 years for Group 1] and respectively for Group 2 [28.7- 24.7= 4]. Thus, 7.22 years is the duration of the psychiatric disorder for Group 1 and 4 years for Group 2 (Table 5).

The **gender** in both groups was predominantly male. Male gender was over represented among dual diagnosis patients (51% vs. 82.2 %, x^2= 55.9, df= 1, p<. 001) with significantly earlier onset of the psychiatric disorder than Group's 1 males (t= 4.60, df= 462, p<. 001). There was no significant difference between the two groups regarding the females age of onset (t= 1.44, df= 334, n.s) (Table 4).

It is important to examine the premorbid period, which is defined as the period six months before the onset of the psychiatric disorder, since it has well documented in previous studies (e.g. Jackson, 1996) for its predictive power. Therefore, this project takes into account the following characteristics associated with the premorbid period: Premorbid adjustment and critical life events during this premorbid period.

Dual diagnosis patients exhibited better premorbid adjustment than Group 1 patients did. The difference in the mean Premorbid Adjustment Scale (PAS) scores between the 2 Groups was significant, where PAS mean scores in dual diagnosis patients were lower (better PAS) (0.37 vs. 0.34)] ($t = -2$, $df = 798$, $p < .05$) (Table 4).

A review of the literature indicates the influence of negative life events in psychiatric disorders (Johnson, 1997). There was a statistically significant difference between the Groups with regard to the existence of **critical life events** ($\chi^2 = 32.6$, $df = 12$, $p < .001$). Ninety-five (11.9%) of Group 1 and 30 (3.8%) of Group 2 patients lived in the context of marital/family disharmony at least six months before the onset of their psychiatric disorder. It is noteworthy that a significant percentage of males [54 (8.7%) of Group 1 and 31 (17.2%) for Group 2] were in the army during the onset of their mental illness. There was statistical

significance between gender and the phase of life that the patient was in at the onset for Group 1 (χ^2= 111.46, df= 9, p<. 001) and Group 2 (χ^2= 19.6, df= 7, p<. 05).

Chi-square analysis also revealed significant differences in terms of marital status, socioeconomic level, employment status and educational level. The majority of the patients were single [262 (55.3%) for Group 1 and 104 (90.5%) for Group 2] while they reported significant levels of loneliness (χ^2= 29.8, df= 3, p<. 001). Almost half 331 (41.4%) of Group 1 and 118 (14.8%) of Group 2 patients were from a lower socioeconomic level (χ^2= 8.3, df= 1, p<. 004), 225 (36.3%) of Group 1 and 104 (57.8%) of Group 2 were unemployed (χ^2= 44.4, df= 4, p<. 001)] and (40% Group 1) and (48.9% Group 2) had finished high school, but did not continue with university studies (χ^2= 51.8, df= 6, p<. 001) (Table 4).

Table 5 presents a summary of the Demographic Characteristics between the Groups. The differential demographic characteristics of the dual diagnosis group were the variables associated with age at the time the data were collected, age of onset, and gender. Dual diagnosis patients were younger males from lower socioeconomic status who finished high school with an earlier onset of psychiatric disorder and better premorbid adjustment than single diagnosis

patients. In addition, almost half of them had divorced parents while they were the oldest child in the family, having one or more siblings in the majority of cases.

Table 5. Summary of the Demographic Characteristics between the Groups

Demographic Characteristics of the Sample	Group 1 (N=620)	Group 2 (N=180)
Gender	Males (51%)	Males (82.2%)
Age (mean)	35.92 years	28.7 years
Age of onset (mean)	28.7 years	24.7 years
Length of Illness	7.22 years	4 years
Socioeconomical Level	Low (53.4%)	Low (65.6%)
Educational Level	High school (40%)	High school (48.9%)
Marital Status	Single- reported significant levels of loneliness (31.6%)	Single- reported significant levels of loneliness (40.6%)

6.2 FINDINGS RELATED TO OUTCOME

According to the hypothesis formulated at the beginning of this project, when compared to psychiatric patients who do not abuse substances, dual diagnosis patients have **poorer outcome**.

The difference in the outcome, over a 2-year follow-up, between the 2 groups was significant (t= 2.39, df= 798, p<. 01). A greater number of Group 1 patients demonstrated a more favourable (no relapse) clinical outcome (mean= 46.68, S.D.= 44.31) than of Group 2 (mean= 37.72, S.D.= 43.48). Specifically, fewer than half of the patients of Group 1 [258 patients (41.6%)] and exactly one-third of the Group 2 patients [60 patients (33.3%)] had no relapses in 2 years. Thus, the percentages of 58.4% of Group 1 and 66.7% of Group 2 who relapsed were in a proportion predicted by other studies reported in the literature within the first two years, range between 30% and 60% (Birchwood et al., 1998; Lines, 2000).

Overall, the majority of patients from both groups, independently of diagnosis, relapsed within 1 year of remission. In particular, the majority of Group 1 patients [121 (19.5%)] relapsed in the 9th month after their last episode followed by those who relapsed the 8th month [57 (9.2%)]. For Group 2, the majority also relapsed in the 9th month

[33 (18.3%)] followed by those who relapsed the 5th month [18 (10%)]. Most frequently Group 1 patients with the diagnosis of schizophrenia [73 (11.8%)], major depression [22(3.5%)] and mania [11(1.8%)] relapsed in the 9th month. In Group 2, patients with the diagnosis of schizophrenia also relapsed in the 9th month [25 (13.9%)] but those with major depression relapsed in the 8th month [7 (3.9%)], and those with mania relapsed in the 9th and the 7th month [2 (1.1%)].

In terms of gender, Group 1 males' (S.D.= 43.88) and females' (S.D.= 44.72) outcome was not significantly different when compared to the outcome for Group 2 males' (S.D.= 43.41) and female's (S.D.= 44.47) (t= 1.62, df= 462, n.s).

Finally, in relation to the age of onset, Pearson correlation analysis reveals that poor outcome has been associated with younger age at onset only in Group 2 patients (r =. 025, n.s for Group 1 and r = -2.41, p<. 001 for Group 2).

6.3 PREDICTORS OF OUTCOME

To examine the hypothesis that dual diagnosis patients will have different predictors of outcome from single diagnosis patients, a multiple regression analysis was performed in both groups. The

dependent variable was the outcome measured in the number of months that the patient relapsed after the treatment. The independent variables were the demographic and clinical characteristics of the sample: gender, age at the onset of illness, diagnosis, Duration of Untreated Mental Illness, number of admissions, scores of the PAS (Premorbid Adjustment Scale), education, CLE (Critical Life Events), EE (Expressed Emotion with it's variables), marital status, number of siblings, employment status, number of suicide attempts, way of suicide, the presence of diabetes mellitus and substances abused. Summary statistics for the individual predictors entered in the regression are provided in table 6 for Group 1 [R^2=.33, F(16,603)= 18.86, p<. 001)] and table 7 for Group 2 [R^2=. 61, F(17,162)= 5.91, p<. 001].

Table 6. Regression Analysis Summary for Variables predicting Outcome in Group 1

Coefficients	Unstardarised Coefficients		Standarised Coefficients
	B	Std. Error	Beta
Gender	2,807	3,159	,032
Diagnosis	1,283	,900	,049
Onset	-,165	,186	-,035
PAS	-21,270	7,438	-,096*
Number of Admissions	-6,556	1,045	-,219**
DUMI	-2,963	, 476	-, 216**
Employment	-, 877	1,293	-, 023
Education	1,435	1,177	, 044
Marital Status	2,207	1,453	, 063
Critical Life Events	-6,929E-02	, 493	-, 005
Expressed Emotion	-42,458	3,511	-, 420**
Siblings	-7,940E-02	, 979	-, 003
Suicide Attempts	, 213	2,349	, 004
Way Suicide	-1,817	1,843	-, 041
Place of Onset	-7,148E-02	,824	-,003
Diabetes	-2,307E-02	, 050	-, 016

*p<. 05; p<. 01

Outcome (Dependent Variable): The number of months that the patient relapsed after the treatment

Table 7. Regression Analysis Summary for Variables predicting Outcome in Group 2.

Coefficients	Unstardarised Coefficients		Standarised Coefficients
	B	Std. Error	Beta
Gender	6,907	8,104	,061
Diagnosis	4,476	2,132	,145*
Onset	-,889	,495	-,131
PAS	16,274	14,403	, 073
Number of Admissions	-2,967	1,909	-, 098
DUMI	-1,322	, 682	-, 133*
Employment	-2,823	3,441	-, 056
Education	-, 639	2,526	-, 017
Marital Status	-9,549	3,272	-, 234**
Critical Life Events	1,178	1,043	, 075
Expressed Emotion	-, 498	, 085	-, 391**
Siblings	-, 516	2,045	-, 017
Suicide Attempts	-, 868	3,765	-, 018
Way Suicide	-, 449	1,940	-, 019
Place of Onset	-,322	1,978	-,011
Diabetes	3,804E-03	,123	,002
Drugs used	-1,374	1,115	-, 081

*p<. 05; **p<. 01
Outcome (Dependent Variable): The number of months that the patient relapsed after the treatment.

The findings related to the predictors of outcome were only partially consistent with the hypothesis, with approximately half of the predictors of outcome varying across groups. Using multiple regression analysis to identify predictors of outcome within 2 years, the following factors were found to be significant and serve as predictors of outcome.

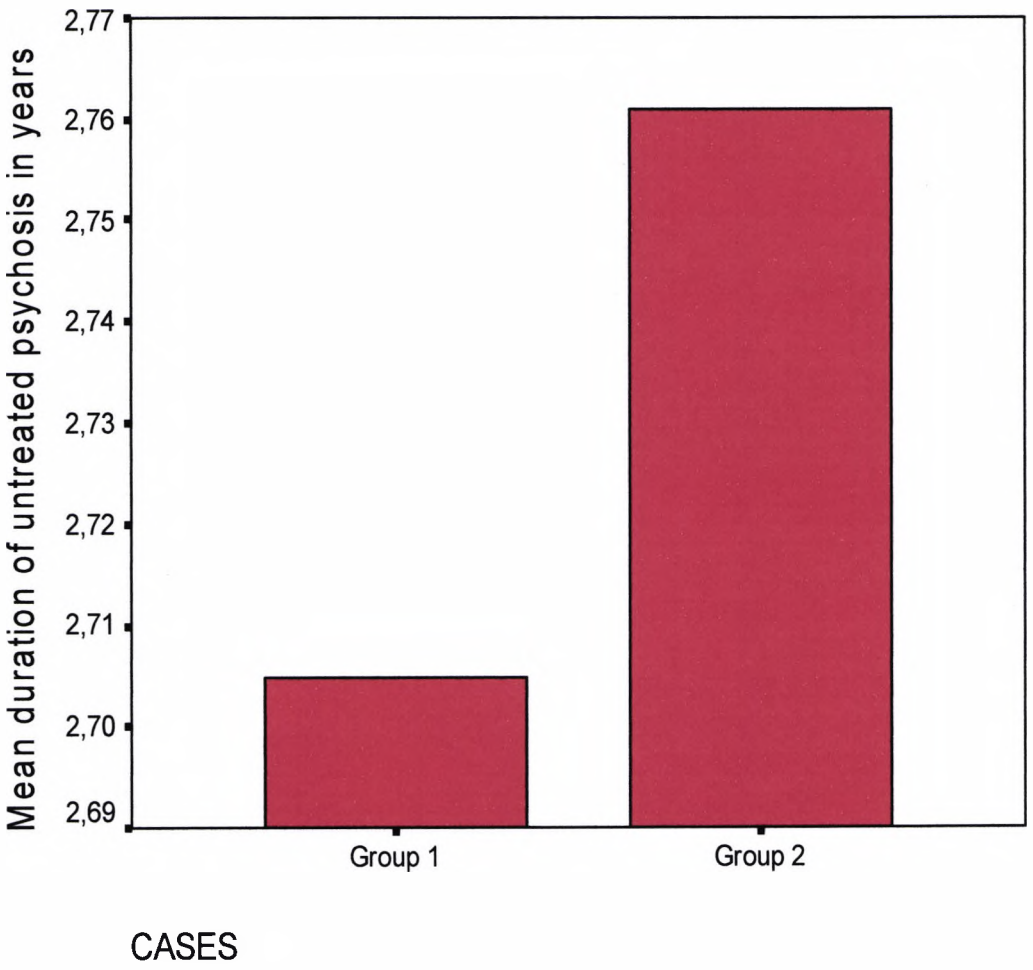
Long Duration of Untreated Mental Illness and **High Expressed Emotion** were common negative predictors of outcome for both groups. **Number of admissions** and **Poor Premorbid Adjustment** appeared to be the Group 1 predictors of outcome. A **Diagnosis of Schizophrenia** and **Divorced Marital Status** appeared to be the Group 2 predictors of outcome, all negatively associated with the outcome.

6.3.1 Predictors of Outcome to both Groups

Multiple regression analysis revealed **Duration of Untreated Mental Illness (DUMI)** as a common negative predictor of outcome for both Groups (Tables 6 and 7). Therefore in both Groups, the longer the DUMI, the poorer the outcome ($r = -.264$, $p < .001$ for Group 1 and $r = -.251$, $p < .001$ for Group 2). DUMI was also a negative predictor of outcome for both genders [($r = -.245$, $p < .001$ for males and $r = -.292$,

p<. 001 for females of Group 1] and [(r=-.235, p<. 001 for males and r= -.523, p<. 001 for females of Group 2].

Figure 4. Mean Duration of Untreated Mental Illness in the two Groups.



Group 1 mean DUMI=2.70

Group 2 mean DUMI=2.76

There was no significant relationship between the two Groups in the time interval between onset of illness and first treatment [t= -.19, df= 798, n.s]. As illustrated in Figure 4, Group 1 DUMI varied from zero to 25 years (mean= 2.70, SD= 3.22) and Group 2 from zero to 35 years (mean= 2.76, SD= 4.36). Gender was statistically significant (t= -2.26, df= 618, p<. 05) only for Group 1 females with longer DUMI (mean= 3, SD= 3.51) than males (mean= 2.41, SD= 2.89).

A surprising finding concerned patients who had no DUMI. All patients, in both groups, who had no DUMI, were men and in the army during the onset. This finding should be interpreted in the understanding that military service in Greece is obligatory only for men and psychiatric examination takes place on admission. Thus, 223 (36%) of Group 1 and 85 (47.2%) of Group 2 male patients were accepted to enter the army. The rest of them were excluded from service due to their psychiatric condition with psychotic symptomatology present in the majority of cases [52 (8.4%) for Group 1 and 44 (24.4%) for Group 2]. According to Greek military records (1996) about 20% of soldiers were diagnosed with a severe psychiatric disorder while 10% had dual diagnosis.

In an effort to understand why some people take longer than others to receive treatment (high rate of DUMI) this project documented the

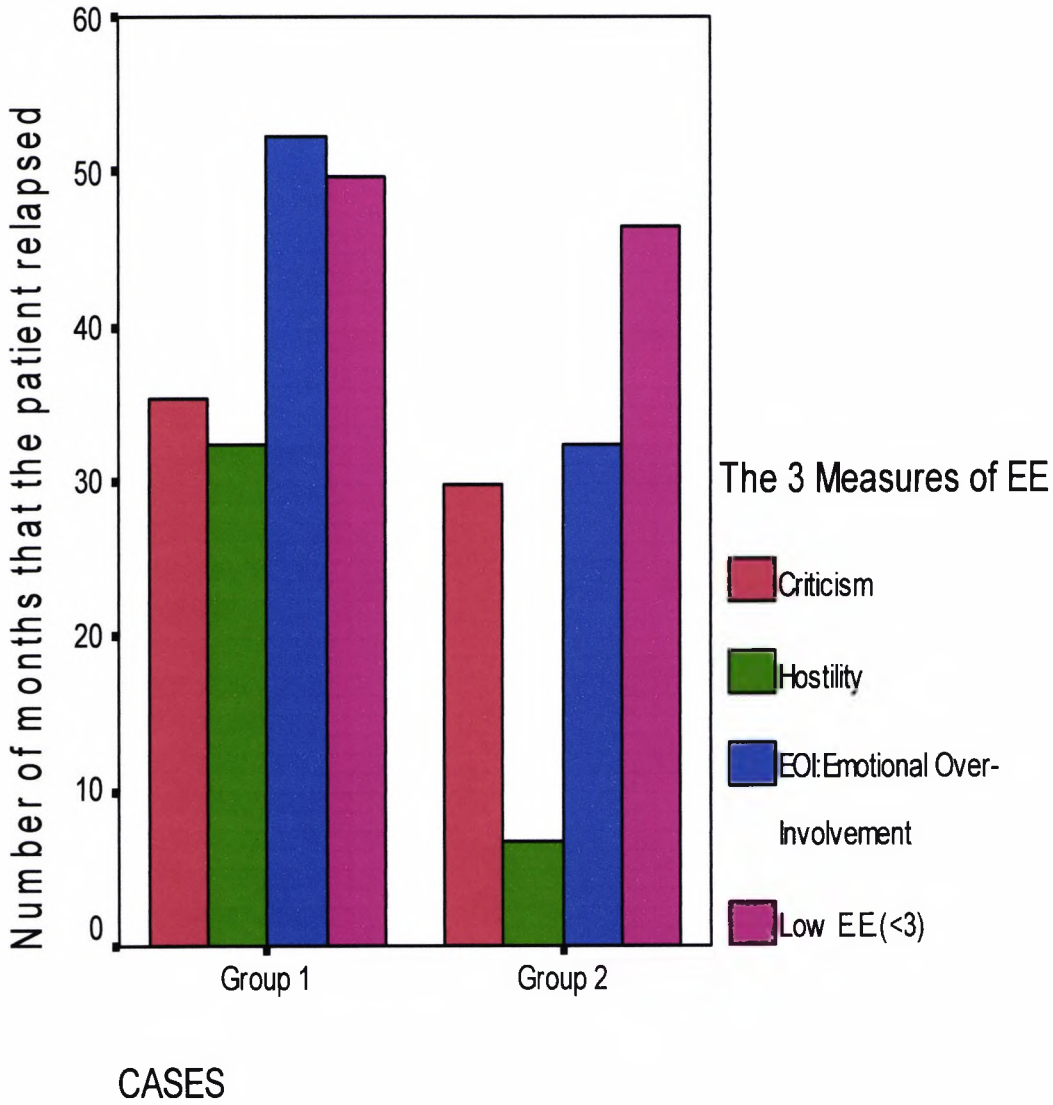
reasons for delays in psychiatric consultation, as reported by patients' family members. The fear of stigmatisation, social isolation and premorbid personality disorders were reported as the main obstacles for seeking professional help. The results of t-test analysis demonstrated that the fear of stigmatisaton [166 (20.8%) (Group 1) and 27 (3.4%) (Group 2)] was not associated with the duration of untreated mental illness (t= 1.097, df= 618, n.s, for Group 1 and t= -0.7, df= 618, n.s, for Group 2). It was significantly associated with the outcome (x^2= 10.5, df= 1, p<. 001). There was also significant correlation for Group 1 between stigma and socioeconomical level [x^2= 5.91, df= 1 p<. 01] but not for Group 2 [x^2= 1.02, df= 2, n.s].

Social isolation is a known prognostic factor (Jablensky, 1992) in the sense that intimate relationships encourage early identification and adherence with treatment monitored by people who care about their health and well-being (Rook, 1985). A one-way ANOVA was performed on the DUMI scores (dependent variable) for the 5 categories of the family-marital status variable. The results were statistically significant for both Group 1 [F (4,615)= 2.46, p=. 044] and Group 2 [F (4,175)= 4.02, p=. 004]. In both groups, patients with the highest DUMI were single and reported significant levels of loneliness. However it should be noted that in this case, due to the small number of participants in Group's 2 divorced category, (which is likely to be a

function of the younger age of Group's 2 patients), the use of ANOVA was not seen as prudent. Although not subjected to statistical analysis the result was similar to previous studies (e.g. Jablensky, 1992) findings.

The impact of the family on the course of the psychiatric disorder as assessed by the psychosocial measure of **Expressed Emotion (EE)** and its subscales [criticism, hostility and Emotional Over-Involvement (EOI)] was measured using the Camberwell Family Interview. Multiple regression analysis identified EE as the second most common negative predictor of outcome for both Groups (Tables 6 and 7). Therefore in both Groups, the higher the expressed emotion at home the poorer the outcome of the patients ($r = -.480$, $p < .001$ for Group 1 and $r = -.495$, $p < .001$ for Group 2). Figure 5 illustrates Expressed Emotion (EE) as a common negative predictor of outcome (presence of relapse to a new episode) for both Groups. As is apparent from Figure 5, both Groups' patients with low EE (<3) had better outcome (in number of months that the patient relapse) than patients with high EE. Only in Group 1 patients, the higher the variable of EOI at home the better the outcome.

Figure 5. Expressed Emotion (EE) as a Common Negative Predictor of Outcome for both Groups



Patient's heterogeneity factors, such as gender and age of onset were compared between the two groups in relation to EE at home. Group 1 males' EE scores (mean= 1.77, S.D. = .41) were significantly higher than that of females (mean= 1.70, S.D.= .45) [t= 1.939, df= 618, p< .05]. For Group 2 there was no significant difference between the gender and the EE scores [t= -.446, df= 178, n.s]. Pearson's Correlation revealed that the age of onset of the psychiatric disorder was not associated with EE rates (r = -.006, n.s for Group 1 and r= .10 n.s for Group 2). Higher rates of EE was associated with older patient's relatives (r= .114, p< .001 for Group 1 and r=. 020, p<. 001 for Group 2) with the greater number of admissions (only for Group 1, r= .138, p<. 001but not for Group 2, r= -.002).

Although the majority of studies investigate the EE scale strictly with schizophrenic diagnosis, a one way ANOVA was performed on the EE rates of all diagnoses of the sample. The result of the analysis [F (6,613)= 1.407, n.s for Group 1 and F (2,177)= .254, n.s for Group 2] was not statistically significant, suggesting that diagnosis is not associated to the EE rates.

In order to clarify if parental factors affect the rate of EE, t-test for independent groups was conducted on parents' marital status. Divorced parents of patients of Group 2 have significantly higher

scores (mean= 90.20, S.D.= 27.79) of EE than Group 1 (mean= 80.34, S.D.= 38.07) (t= -2.04, df= 203, p<. 05). Non-divorced parents did not exhibit significant EE scores (t= -1.39, df= 593, n.s).

6.3.2 Predictors of Outcome for Group 1

Predictors of outcome only for Group 1 patients are shown in table 6. Multiple regression analysis revealed poor premorbid adjustment and number of admissions as a negative predictor of outcome for Group 1 patients only (table 6). The **Premorbid Adjustment Scale (PAS)** was used in assessing the individual's psychosocial functioning and developmental tasks before the onset of psychiatric illness i.e. the premorbid period which was defined as the period 6 months before their first psychiatric hospitalisation. Therefore in single psychiatric diagnosis patients, the poorer the patient's premorbid adjustment (high PAS scores), the poorer the outcome (r = - .104, p<. 001).

The difference in the mean PAS scores between the 2 Groups was significant, where PAS mean scores in dual diagnosis patients were higher (poor PAS) (t= -2, df= 798, p<. 05) (Table 4). Similarly, Group 2 males had significantly higher PAS scores than Group 1 males (t= -2.5, df= 462, p<. 001). For the PAS scores in females there was no significant difference between the two groups (t= -.30, df= 334, n.s).

Premorbid adjustment was not associated with the age at onset of the mental illness (r= -.5, n.s for Group 1 and r= -.016, n.s for Group 2), the type of diagnosis [F (6,613) = .69, n.s] or the duration of untreated mental illness (r=. 018, n.s for Group 1 and r=. 078, n.s for Group 2).

The **number of admissions** in a psychiatric unit, used as a measure for relapse, appeared as a negative predictor of outcome for Group 1 patients only (Table 6). Therefore in single psychiatric diagnosis patients, the higher the number of admissions in a psychiatric unit, the poorer the outcome (r = - .263, p< .001). There was no significant difference between the two Groups (t= 1, df= 798, n.s) regarding the number of admissions in a psychiatric unit.

In agreement with Winokur and Kadrmas' criteria (1989), the sample was subdivided into oligoepisodic (OE) patients with two episodes as maximum, and poliepisodic (PE) patients with three or more episodes. The majority of the patients had two episodes as maximum (**OE**-Oligoepisodic) [433 (54.1%) Group 1 and 129 (16.1%) Group 2] while the remainder had more than three episodes [187 (23.4%) Group 1 and 51 (6.4%) Group 2] (**PE** - Polyepisodic).

Compared with **OE** subjects of both groups, **PE** patients had significantly higher age (t= 39, p< .05), displayed a significantly earlier age of onset (t = - 2.06, p< .05) (t = - 3.17, p< .05 for Group 1) (t =2.18, p< .05 for Group 2) and higher ratings of negative symptoms in schizophrenia according to PANNS (negative syndrome scale) (t= 3.02, p< .05). The PE group displayed a serious worsening in occupational level. PE (10.5%) took early retirement due to their disease while almost half of them (47.9%) were unemployed. All other variables such as the duration of untreated illness (t= .5, n.s) were not significantly different.

To evaluate whether the number of admissions was related to diagnosis, one way ANOVA was conducted with the number of admissions as the dependent variable. The result of the analysis was significant only for Group 1 patients suggesting that poliepisodic (PE) patients appear to have more severe diagnosis such as schizophrenia {[F(6,613= 2.876, p<. 05] for Group 1 and [F(7,172)= 2.438, n.s] for Group 2}.

A question that arises from the negative findings (poor outcome, more severe diagnosis) for PE patients is why they were readmitted to the psychiatric institutions. The majority of patients in both groups [79(12.7%) of Group 1 and 11 (21.7%) of Group 2] were readmitted

subsequent to non-compliance in their treatment. In Group 2, non-compliance included also substance abuse after at least one month of abstinence. Paradoxically, 19 (10.6%) of Group 2 patients who used heroin had exacerbation of psychotic symptoms when they stopped the use.

Patients were most frequently readmitted to the psychiatric institutions subsequent to non-compliance to treatment. Non-adherence has been implicated in a large number of studies (e.g. Kingdon, 1994) with involuntary admissions. Table 8 demonstrates that in this project Group 2 (N=180) patients had more involuntary admissions 98 (54.4%) while Group 1 (N=620) had more voluntary 348 (56.1%), (x^2= 6.27, df= 1, p<. 05).

Table 8. Comparison of the Way of Admissions between the Groups

Route to Admission	Group 1 (N=620)	Group 2 (N=180)
Voluntary	348 (56.1%)	82 (45.6%)
Involuntary	272 (43.6%)	98(54.4%)

In both groups, those patients admitted involuntarily had poorer outcome. Only in Group 1 was the difference statistically significant (t= 2.35, df= 618, p<. 05). Male gender dominates in both groups' involuntary admissions but only in Group 1 was there statistical significance (x^2= 7.90, df= 1, p<. 05).

In Group 1, patients admitted involuntarily had poorer outcome when compared to those admitted voluntarily (t= 2.35, df= 618, p<. 05). In Group 2, involuntarily admitted patients had better outcome when compared with voluntarily admitted patients, but their relationship was not significant (t= 1.14, df= 178, n.s).

6.3.3 Predictors of Outcome for Group 2

Predictors of outcome only for Group 2 patients are shown in table 7. Multiple regression analysis revealed schizophrenic diagnosis and marital status as a negative predictor of outcome for Group 2 patients only (Table 7).

Schizophrenia, reportedly the most serious mental health problem facing contemporary society (Barrowclough, 1992), was related to poor outcome only in Group 2 patients. Group's 1 patients diagnosed with schizophrenia had significantly better outcome (mean= 46.67,

S.D.= 44.54) than Group's 2 patients (mean= 36.87, S.D.= 43.35) (t= 2.37, df= 480, p<. 05). No other diagnosis such as major depression (t= 1.38, df= 166, n.s) or bipolar II - mania phase (t= -.17, df= 75, n.s) had a significant relationship with the outcome for both groups.

The rates of diagnosis distribution between Group 1 and Group 2 were not significantly different (x^2= 3.63, df= 2, p= .16) with the diagnosis o f schizophrenia being over-represented in this project [397 patients (49.6%) for Group 1 vs. 126 patients (15.8%) for Group 2] (Table 9).

Distribution by diagnosis in both groups, as illustrated in Figure 6, revealed schizophrenia, independently of gender, as the most frequent current diagnosis [193 (31.1%) for males and 163 (26.3%) for females in Group 1 vs. 114 (63.3%) males and 12 (6.7%) females in Group 2] followed by major depression [55 (8.9%) males and 71 (11.5%) females in Group 1 vs. 25 (13.9%) males and 17 (9.4%) females in Group 2]. Only in Group 2 was there statistically significant difference (x^2= 21.1, df= 2, p<. 005) in the diagnosis and the gender of participants.

Figure 6. Diagnosis Distribution in both Groups

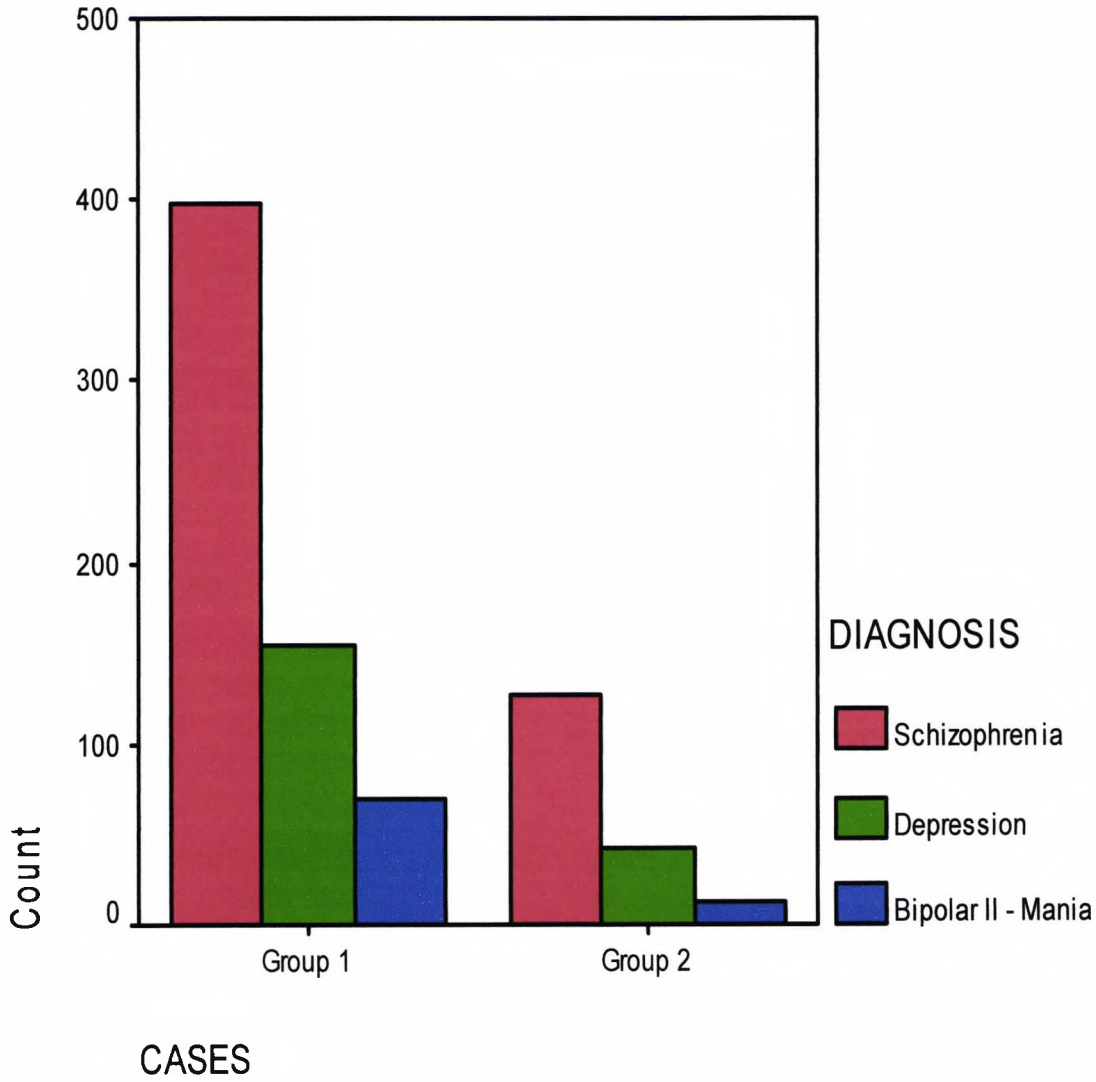


Table 9. The Breakdown of the three Diagnoses in each Group

CASES DIAGN. Cross Tabulation	Schizophrenia	Depression	Bipolar – Mania	Total
Group 1	397 49.6%	154 19.3%	69 8.6%	620 77.5%
Group 2	126 15.8%	42 5.3%	12 1.5%	180 22.5%

Schizophrenic diagnosis is a negative predictor of outcome for dual diagnosis patients. In order to have accurate dual diagnosis, the concomitant substance abuse should be examined, also. In Dual Diagnosis patients, the most commonly consumed substance was heroin. As secondary drugs, 63.9% regularly used hypnotic drugs (Benzodiazepines especially Flunitrazepam) and a smaller percentage (17.8%) used cannabis (Figure 7).

Figure 7. The Secondary Substances Consumed in Combination with Heroin by the Dual Diagnosis Group Patients.

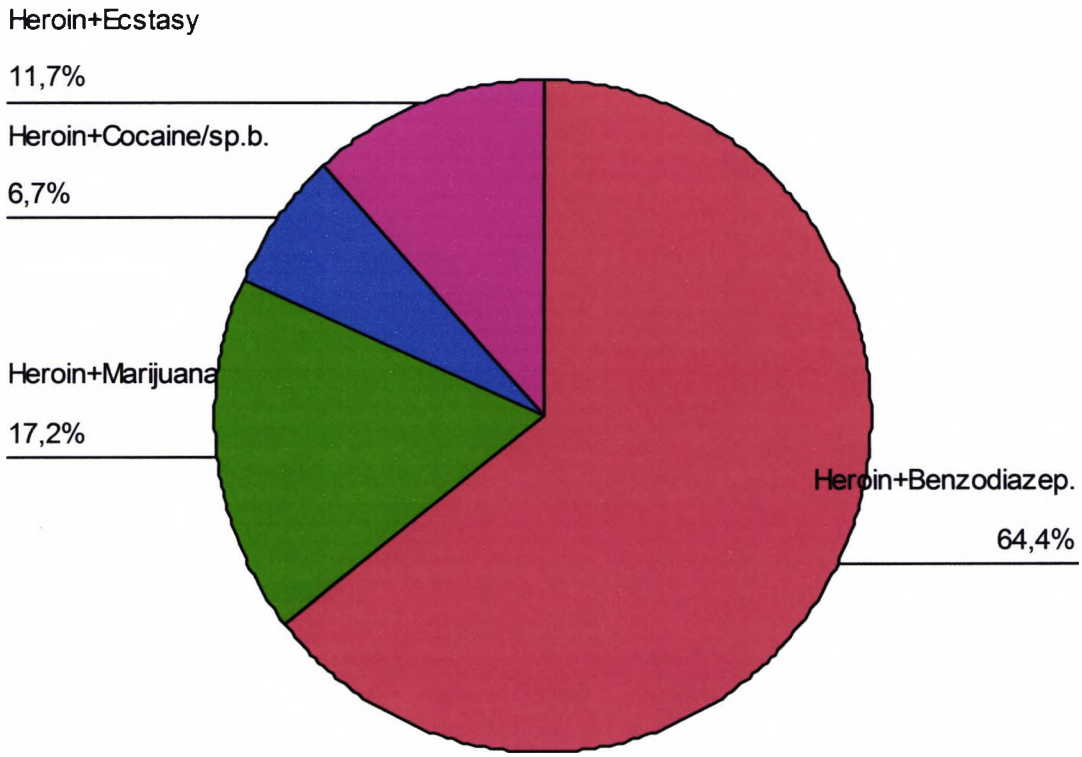


Table 10 shows the results of one-way ANOVA performed on the scores of the outcome for the 4 combinations of heroin with secondary drugs. The result of the analysis was statistically significant [F (3,167)= 2.60, p<. 05].

Table 10. Outcome between the Combinations of Heroin with Secondary Drugs

Combinations	N	Mean	SD	One –way ANOVA
heroin+benzodiazepines	115	42,2957	44,8631	
heroin+marijuana	32	24,1563	36,5779	
speed-ball (heroin+cocaine)	12	52,5000	48,5976	F (3,167) = 2.60, p<. 05
Heroin+ecstasy	21	24,9048	36,8713	
Total	180	37,7222	43,4836	

Dual Diagnosis (Group 2) patients were asked to describe their reasons for using drugs. The effects of drugs to enable patients "to get away from my problems or troubles" was mentioned as a reason for drug use by 25% while 23% of drug using patients made

reference to boredom as an explanation for their drug use. Finally, a great number (30%) of dual diagnosis patients reported that they abused drugs in order to decrease side effects of medication, as extra-pyramidal symptoms. Few reported other reasons such as the difficulty to develop social relationships.

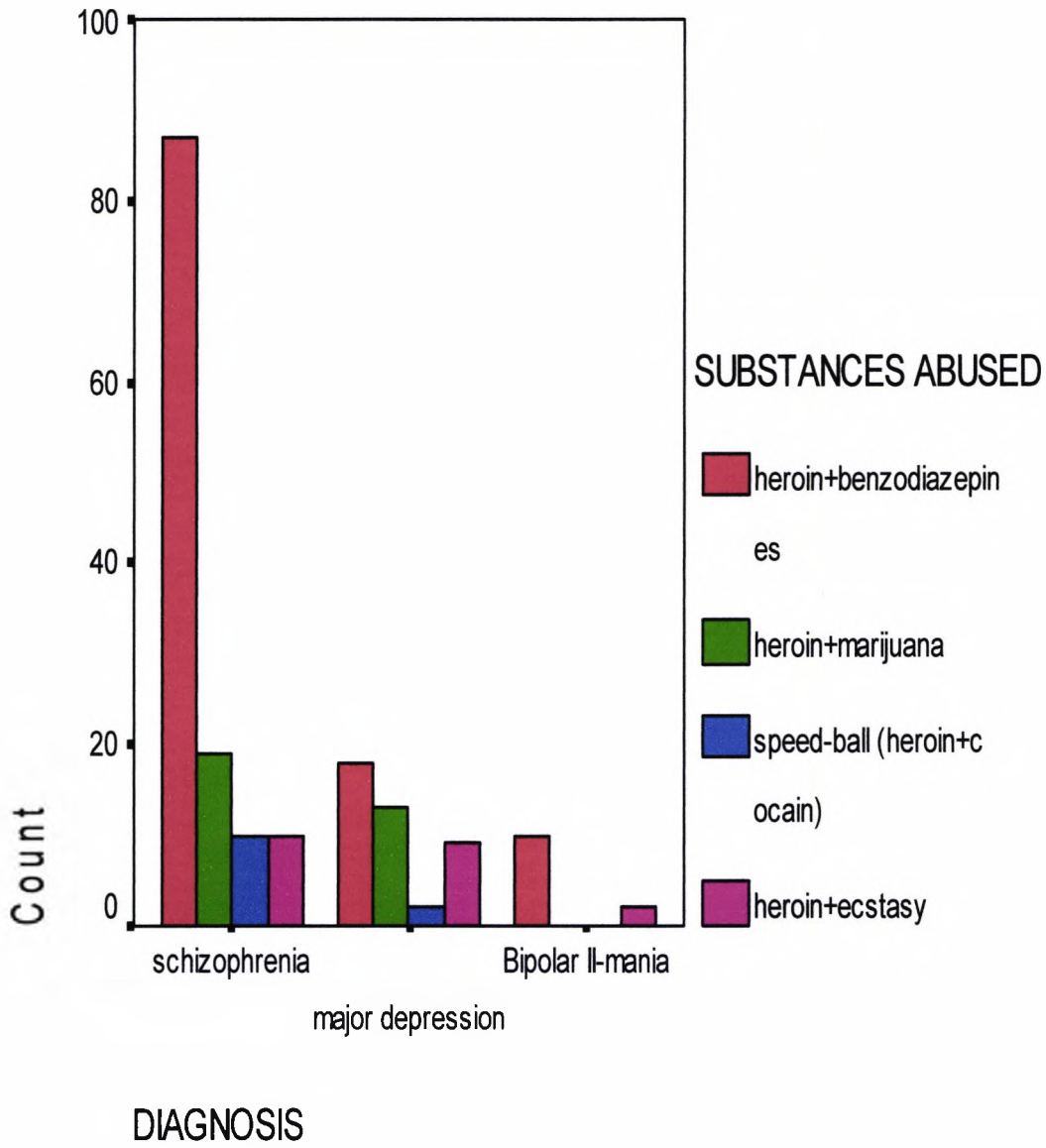
Table 11 presents the majority of dual diagnosis patients are injecting heroin users. A disturbingly large proportion (31.5%) reported sharing needles and syringes. There was statistical significance between the combinations of drugs used and the diagnoses distribution (x^2= 17.4, df= 6, p<. 005).

Table 11. Characteristics of Substances Abused in Dual Diagnosis Group

Characteristics of substances abused	
Average usage	11 days/month
Mean age of first drug injection	28 years old
Risk behaviours	
Injecting heroin (i.v. use)	58%
Syringes shared	31.5%
Consequences of Risky behaviours	
Hepatitis C	15%

The diagnosis of schizophrenia was over-represented in all the combinations as shown in Figure 8.

Figure 8. Diagnoses and Substances abused by Dual Diagnosis Patients



In order to compare the clinical profile of patients diagnosed with schizophrenia at the time of admission (Baseline) and at the time of discharge (Endpoint), the level of psychopathology and the between changes across treatment were rated (Table 12).

Table 12. Psychopathological Changes in each PANSS scale for the period between Admission (Baseline) and Discharge (Endpoint)

PANSS-positive syndrome:	Baseline t=-1.67, df=480, n.s
	Endpoint t=-1.94, df=480, p<.05
PANSS-negative syndrome :	Baseline t=.17, df=480, n.s
	Endpoint t=.29, df=480, n.s
PANSS-gen. Psychopathology :	Baseline t=1.16, df=480, n.s
	Endpoint t=0.29, df=480, n.s

Psychopathological Changes were assessed using the Positive and Negative Syndrome Scale (**PANSS**) and its three sub-scales: PANSS-positive syndrome, PANSS-negative syndrome, PANSS-general Psychopathology (Table 13).

Table 13. Psychopathological Changes on Patients with Diagnosis of Schizophrenia in both Groups

PANSS Scales	PATIENTS WITH DIAGNOSIS OF SCHIZOPHRENIA					
	Group 1 (N=355)			**Group 2** (N=127)		
	Baseline Mean St.Dev.	**Endpoint** Mean St.Dev.	**Change** Mean	**Baseline** Mean St.Dev.	**Endpoint** Mean St.Dev.	**Change** Mean
PANSS-positive	29.26 4.64	.95 5.49	7.01	30.13 5.80	25.13 6.69	4.99
PANSS-negative	21.08 5.56	18.05 7.15	3.03	20.98 6.24	17.84 6.98	3.14
PANSS-general Psychop.	44.76 6.70	38.38 9.16	6.38	44.00 5.33	38.36 7.60	5.64

Note: Lower scores signify fewer symptoms.

A two-way mixed design ANOVA was performed on the means of psychopathological changes (Repeated Measures Factor) for both Groups (Between-subjects Factor), on the following three sub-scales of PANSS.

PANSS (Positive Syndrome Scale): There was no significant difference between the two Groups in the PANSS-positive syndrome scale [F (1,480)= 3.82, n.s (factor group)]. Between the means of the Baseline and the Endpoint values in the PANSS-positive syndrome scale of both Groups, there was a highly significant difference. Lower values were observed at the Endpoint, indicating an improvement in Positive symptoms of schizophrenia at the discharge in comparison to admission [F (1,480)= 617.66, p<. 001]. The interaction between the two independent variables (Group 1 and Group 2) was not significant [F (1,480)= .57, n.s.].

PANSS (Negative Syndrome Scale): There was no significant difference between the two Groups in the PANSS-negative syndrome scale [F (1,480)=. 061 n.s. (factor group)]. Between the means of the Baseline and the Endpoint values in the PANSS-negative syndrome scale of both Groups, there is a highly significant difference. Lower values were observed at the Endpoint, indicating an improvement in Negative symptoms of schizophrenia at the discharge in comparison

to the admission [F (1,480)= 321.68, p<. 001]. The interaction between the two independent variables was not significant [F (1,480) = .019 n.s.].

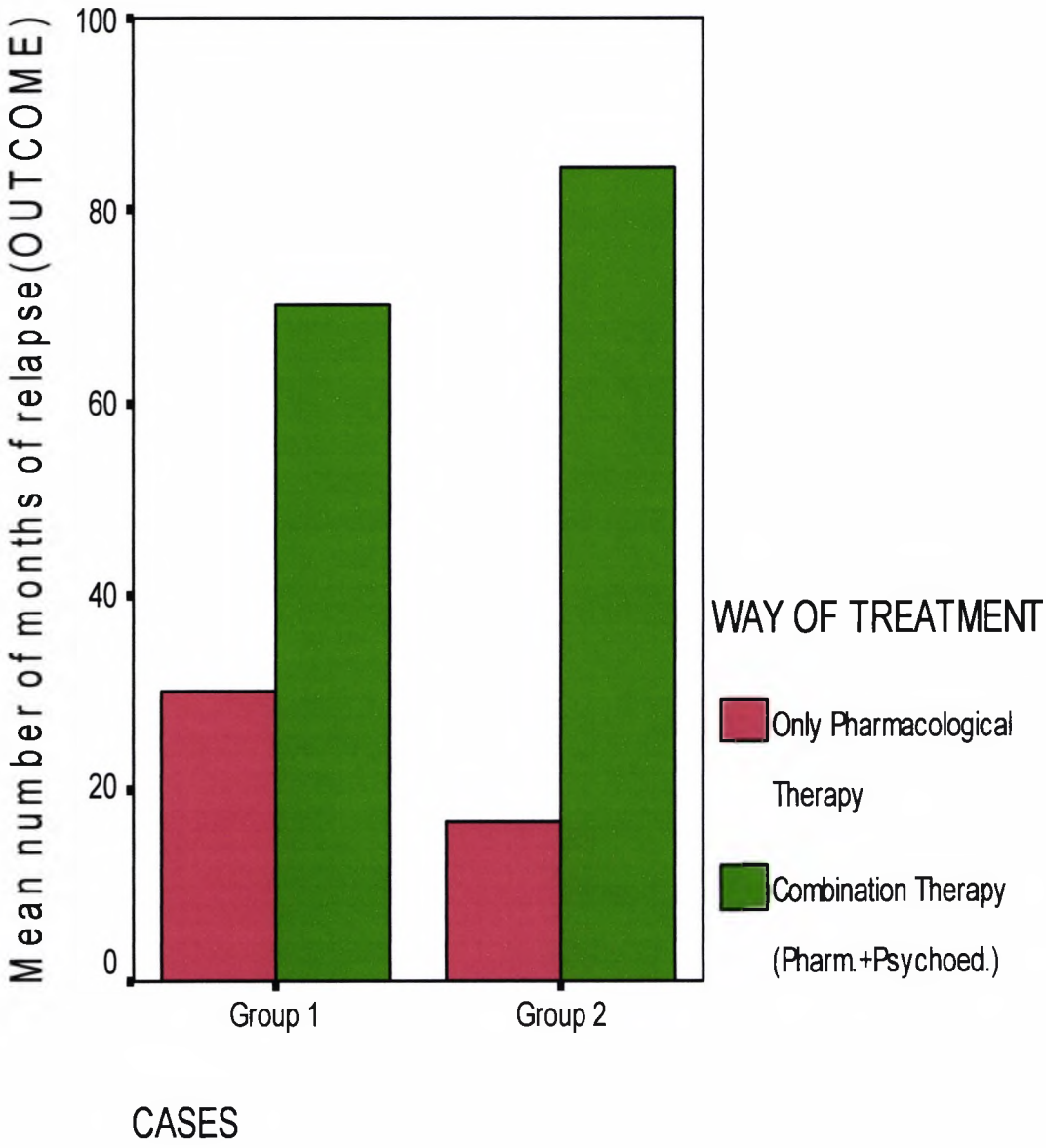
PANSS (General Psychopathology Scale): There was no significant difference between the two Groups in the PANSS-general Psychopathology scale [F (1,480)= 0.30, n.s (factor group)]. Between the means of the Baseline and the Endpoint values in the PANSS-general Psychopathology scale of both Groups, there was a highly significant difference [F (1,480)= 358.89, p<. 001]. Lower values were observed at the Endpoint, indicating an improvement in General Psychopathology of schizophrenia at the discharge in comparison to the admission. The difference between the two independent variables (Group 1 and Group 2) was not significant [F (1,480)= 1.36, n.s.].

Group 1 psychopathological changes in the positive symptoms of schizophrenia (mean= 23.95, SD= 5.49) were significantly lower than that of the Group 2 (mean= 25.31, SD= 6.69) [t= -1.94 p<. 05]. According to Pearson's correlation, high scores on general psychopathology were related to poor outcome (r= -.442, p<. 001 for Group 1 and r=-.517, p<. 001 for Group 2).

Following from Altamura's et al (2001) observation that at the onset of schizophrenia, patients with more severe negative symptoms have longer Duration of Untreated Mental Illness (DUMI), Pearson's correlation was conducted between DUMI and PANNS rates. The results revealed that Group 1 schizophrenic patients with more severe negative symptoms had longer DUMI (r=. 0207, p<. 01). In Group 2, schizophrenic patients with more severe positive symptoms had shorter DUMI (r= -.178, p<. 05).

Of particular importance for the psychologist's work in the psychiatric setting was the significant improvement in the degree of general psychopathology (PANSS - gen. psychopathology) at discharge in the patients whose treatment was based on combination therapies. Graphic representation of the data is shown in Figure 9. Each decile was higher for both Groups' patients whose treatment was based on the combination of pharmacological and psychoeducation therapies than patients without combination therapies. This finding supports the positive contribution of psychoeducation approaches to the process of disease [t= 9.9, df= 353, p<. 001 for Group 1 and t= 7.5, df= 125, p<. 001 for Group 2].

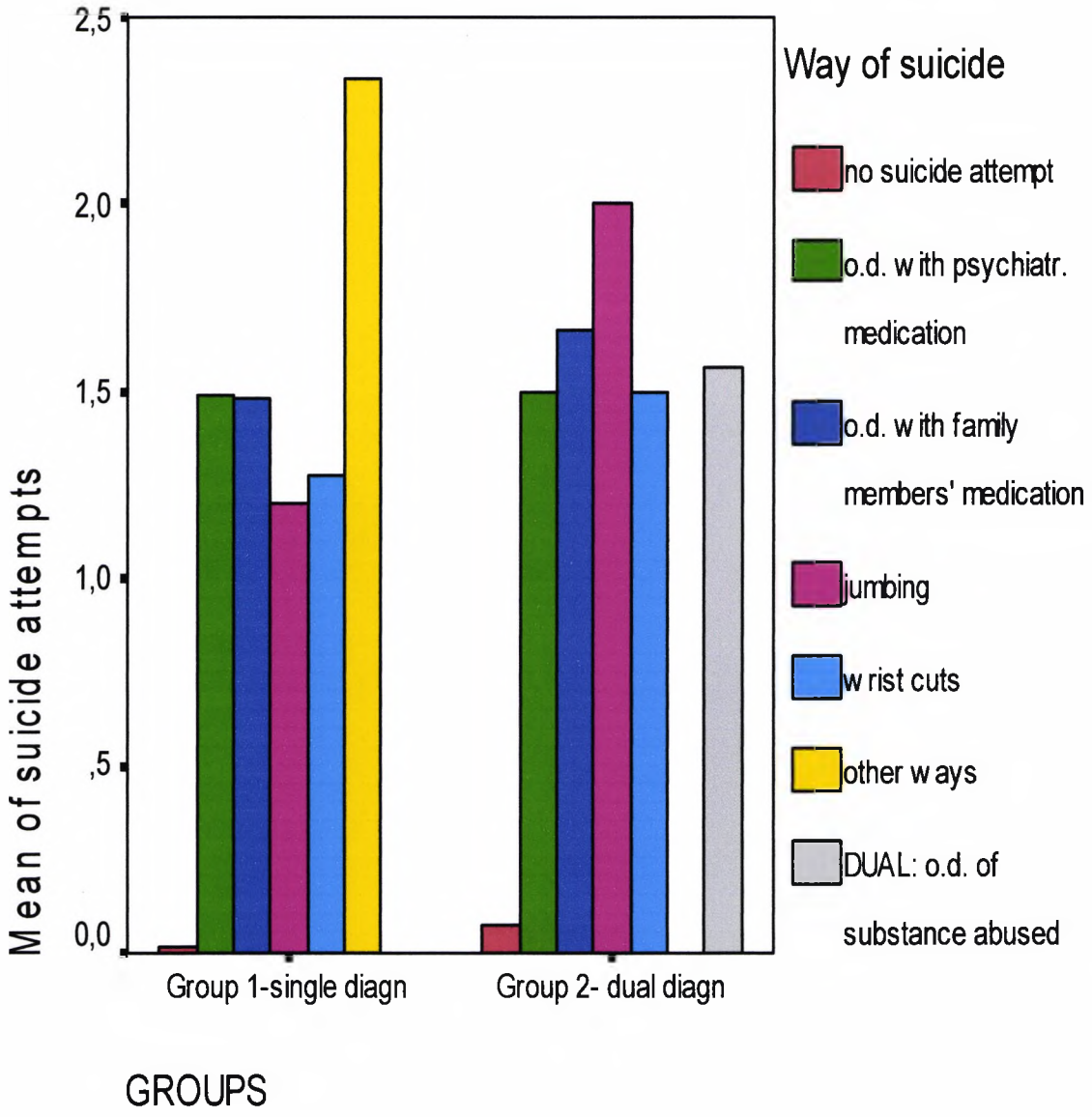
Figure 9. Therapeutic Modalities across sample



There was a significant relationship in combination therapies for Group 1 and Group 2 (χ^2= 6.45, df= 1, p<. 01) with the majority of patients in both groups failing to receive psychoeducation. In Group 1 only 258 patients (41.6%) had psychoeducation while in group 2 only 56 patients (31.1%). Treatment based on combination therapies (psychopharmacological and psychosocial therapies), was significantly associated with more favourable outcome over the follow-up period in both Groups (t= -12.4, df= 618, p<. 001) when compared to medication alone.

In order to replicate previous findings where episodes of suicide were twice as likely to occur among dual diagnosis patients with schizophrenia (Anderson, 1998), a one-way ANOVA was performed on the scores of suicide attempts for all diagnoses for the two groups. The result of the analysis was significant for both groups suggesting that contrary to previous reports patients with depressive and not psychotic symptomatology expressed more suicide attempts in this sample [F(6,613)= 17.39, p=. 001 for Group 1 and F(2,177)= 21.6, p=. 001 for Group 2]. Figure 10 illustrates the significant relationship between the means of suicide among Group 1 and Group 2 patients (x^2 = 62.2, df= 6, p<. 05).

Figure 10. Method used for Suicide Attempt by Group 1 and Group 2 Patients.



Finally, multiple regression analysis implicated divorced marital status as a negative predictor of outcome only for Group 2 patients (Table 7). In addition, they predominantly had not been involved in subsequent relationships and reported significant levels of loneliness.

As shown in Table 14, a one-way ANOVA was performed on the outcome scores (dependent variable) for the conditions of the marital status variable. The result of the analysis was statistically significant [F (4,175) = 9.6, p=. 001] only for Group 2 but not for Group 1 [F (4,619) = 1.95, p= .1, n.s]. In Group 1, the more positive outcomes were found in the category "divorced" (mean= 55.96, S.D. = 45.45) and in Group 2 the category "living with parents" (mean= 57.58, S.D. = 46.19).

Table 14. One-way ANOVA on Outcome (in number of months that the patient relapsed after the treatment) as dependent variable for the conditions of marital status.

Marital Status as Predictive Factor			
Group 1 (N=620)			
MARITAL STATUS	**N**	**Mean**	**SD**
Parental Family	184	49,51	45,07
Living alone	66	48,30	45,30
Single	196	39,70	42,49
Married	145	49,94	44,49
Divorced	29	55,96	45,45
ANOVA			
F df p			
F (4,619) = 1.95, p = 0.1, n.s			
Group 2 (N=180)			
MARITAL STATUS	**N**	**Mean**	**SD**
Parental Family	60	57.58	46.19
Living alone	31	51.74	46.54
Single	73	18.34	30.51
Married	12	29.58	41.89
Divorced	4	9.25	3.40
ANOVA			
F df p			
F (4,175) = 9.6, p = .001			

In summary, table 15 displays the characteristics of each group that are related in a negative way with the mental illness' outcome.

Table 15. Comparison of the Characteristics of the two Groups in relation to Poor Outcome

COMPARISON OF THE CHARACTERISTICS OF THE TWO GROUPS IN RELATION TO POOR OUTCOME		
Characteristic	**Group 1 (N=620)**	**Group 2 (N=180)**
Gender	Male	Male
Marital status	Single	Divorced
Route to admission	Involuntary	Voluntary
Education	No education at all	University
Duration of Untreated M.I.	Long DUMI	Long DUMI
EE	High	High
Age at onset	Later	Early
Diagnosis	Schizophrenia	Schizophrenia
Psychopathology	High scores	High scores
Relapse rate	Within 1 year of remission	Within 1 year of remission

6.4 SUMMARY OF THE FINDINGS RELATED TO HYPOTHESES

In summary, Tables 16 and 17 show the sociodemographic and clinical factors that were related to the hypothesis that dual diagnosis patients have poorer outcome and different predictors of outcome than psychiatric patients who do not abuse substances.

Table 16. Factors that were associated with poor outcome

Sociodemographic	Single Living alone
Premorbid Adjustment	Poor
Clinical	Schizophrenia
	High scores in psychopathology
	Substance abuse
	Polyepisodic
	Involuntarily admissions

Table 17. Comparison of the Predisposing factors for both Groups leading to Poor Outcome

Variables of poor outcome	**Predisposing factors**	
Long DUMI	Group 1	Group 2
	• Schizophrenia • Male gender • Single-living alone	• Early age of onset • Drug abuse
High EE	Group 1	Group 2
	• Schizophrenia • Older age	• Male gender • Divorced parents • Drug abuse
Poor Premorbid Adjustment	• Schizophrenia • Male gender • Single Diagnosis	
Number of psychiatric episodes-Polyepisodic	• Schizophrenia • Involuntary admissions • Single Diagnosis	
Marital status	• Dual diagnosis • Divorced-reported significant levels of loneliness	
Diagnosis of Schizophrenia	• Dual Diagnosis • Male gender • High scores in general psychopathology	

Discussion

Chapter 7

7.1 Preface

Mental health professionals have increasingly recognised comorbid substance abuse by psychiatric patients as a serious problem (Hattencchwiller, 2001). Various studies have looked at the prevalence of substance misuse in this population, but few studies compared different groups of patients with dual and single diagnosis. Identification of the differences is very important as early detection of psychopathology contributes to a more effective management of substance users in treatment facilities, a lower risk of relapse (Ransaville, 1987; Randval, 1991; Kokkevi, 1995) and aids in the assessment of patients who may benefit from different therapeutic approaches (Hattencchwiller, 2001).

The main objectives of the present project were to investigate the prevalence of substance abuse in psychiatric inpatients and to identify any significant differences in the psychosocial profiles, clinical course and outcome in those with (dual diagnosis - Group 2) or without (single diagnosis - Group 1) concomitant substance abuse. A comparison was undertaken of the clinical and demographic characteristics of psychiatric disorders (schizophrenia, bipolar

disorder, etc.) on the one hand and dual diagnosis (psychiatric diagnosis with comorbid substance abuse) on the other, in order to establish any difference or similarity in the specific profiles of the patients who achieved better clinical outcome. This project attempted to determine whether patients with comorbid disorders respond to treatment differently from those with single disorders and if by determining differences and similarities amongst them, it may ultimately be possible to reduce psychiatric disorders' chronicity, relapse and poor prognosis.

The overlap among different disorders was rarely taken into consideration in epidemiological research in terms of either the causes or consequences of mental disorders and substance abuse disorders. Yet the small amount of research that had been done on dual diagnosis shows that comorbidity is important both as a predictor of the subsequent onset and course of psychiatric disorders and also as a determinant of the consequences of psychiatric disorders (Kessler, 2002). Previous research has indicated that patients with a mental illness have higher rates of substance abuse than would be expected in the general population (Anderson, 1998); patients with a dual diagnosis were more likely than those with single disorders to be found in clinical settings (Regier, 1990) and there was considerable heterogeneity among persons with mental illness with or without

concurrent substance abuse (Lehman, 1989). This project's findings on these issues and their contribution to the overall project will be discussed in the following section.

The prevalence of substance abuse among psychiatric patients will be discussed first. Subsequently, the identified demographic characteristics that distinguish dually from single psychiatric diagnosed patients and finally, dual and single diagnosis patients' post-treatment outcome and predictors will be compared. Identification of predictors of outcome is useful clinically because they enable the clinician to formulate a more accurate prognosis. These parameters may also serve as aims for therapeutic intervention.

7.2 PREVALENCE OF DUAL DISORDERS

Individuals with nearly every type of psychiatric disorder were at least twice as likely to have a substance abuse disorder as compared to the general population (Carrey, 1991; Perkins, 1999; Kessler et al., 2002). In the UK, it is estimated that approximately one third of psychiatric patients with serious mental illness have a substance misuse problem (Banerjee, 2002). More precisely, bipolar disorder has been reported to have the greatest risk of any psychiatric disorder for coexistence of

drug abuse (Brady et al., 1995). People with schizophrenia were six times more likely than those without to abuse drugs (Ries et al. 2000).

The results of this project were broadly consistent with those reported in the literature. From the 800 patients of this project's sample, 620 (77.5%) were diagnosed with a single psychiatric disorder and 180 (22.5%) with dual diagnosis. The percentage of 22.5 of dual diagnosis patients in comparison with the 20-50% in literature review (e.g. Hasin, 1988; Ross, 1988; Wolf et al., 1988; Bukstein, 1989; Minkoff, 1989; DeMillo, 1989; Perkins, 1999) indicates this project's sample were in the lower range of this estimate.

This variability in the prevalence rates across studies could be attributed to the settings in which patients were sampled (e.g. inpatient or outpatient). In the current project, the sample was highly controlled. It was composed of inpatients only, in an attempt to maintain diagnostic homogeneity. Hence, the low percentage of dual diagnosis patients in this project (within the range of the rates reported in the literature review), was not an unexpected finding.

The majority of the previous studies did not have this project's control of inpatients only. According to SASMSHA (2001), 65% of dual diagnosis patients were more likely to be treated in outpatient

settings, so the range of diagnosis was broader and as a result more difficult to avoid diagnostic heterogeneity. The percentage of 22.5% of dual diagnosis in the present project concerned only psychiatric inpatients that obviously had sufficiently severe psychiatric disorder, such as schizophrenia, in order for a clinician to proceed with their admission to a psychiatric institution.

Another possible explanation for this variability in comorbidity rates between the studies could be the differences in the methods of interview (Ghanizadeh, 2000). In this project, the diagnostic evaluations were made not only at the time of admission which is associated with increased symptom reports (Rounsaville, 1982) but also several weeks after admission. The second evaluation was important because drug induced symptoms most typically clear within ten days of withdrawal from the drug (Turner, 1990) and cease to mask the psychiatric disorder.

The finding of substantial comorbidity between psychiatric and substance use disorders, was consistent with previous studies and therefore contributed to the consensus in the area of psychiatric epidemiologic research that the prevalence of dual disorders in the psychiatric population is a frequent and arguably universal phenomenon.

7.3 REASONS FOR SUBSTANCE USE AMONGST PSYCHIATRIC PATIENTS

The reasons of use stated by dual diagnosis patients with comorbid schizophrenia were similar to those reported in patients with comorbid bipolar disorders (Table 18).

Table 18. Reasons of Substance Abuse stated by Dual Diagnosis patients

Relieving dysphoria	Pleasure enhancement
Medicating side-effects	Desire to socialise with others
Coping with stress and tension	To get away from problems

The belief that drug abuse exacerbated their mental illness was very popular among the patients who participated in this project. Most reported that they took drugs primarily to relieve dysphoria

and anxiety. Drugs were reportedly used to increase pleasure, to 'get high' and to reduce depression. However, subjective effects of increased depression were also reported.

Comorbidity may be a consequence of self-medication of coexisting psychiatric symptoms (Silver, 1994). Specifically, psychiatric patients abused drugs in order to relieve psychological suffering (Khantzian, 1985). The findings of this project were in accordance with previous studies (e.g. Bukstein, 1989) that reported that self-medication of psychiatric symptoms may be the common denominator in explaining the relationship among various psychiatric disorders coexisting with pathological substance use. It is clear that the influences of psychiatric comorbidity can be extremely complex.

The patients in this project reported that they had great difficulty developing social relationships. Few reported that they found themselves more easily accepted by groups whose social activity was based on drug use. Others believed that an identity based on drug addiction was more acceptable than one based on mental illness, emphasising the negative effect of stigmatisation due to a psychiatric disorder. Finally, a great number of dual diagnosis patients reported that they abused drugs in order to decrease side effects of medication, as extra-pyramidal symptoms. This has previously been

referred to as "downward drift" (Hartfield, 1993) and provides a further example of self-medication for unpleasant symptoms.

The choice of drug was the result of an interaction between the psychopharmacological properties of the drug and the primary state experienced (Bukstein, 1989). Dislaver (1987) supported the view that the substances abused and medications prescribed for affective disorders have common neurochemical effects that presumably medicate the abnormality. Cocaine has been noted for its use in maintaining and intensifying the high of bipolar affective disorder, rather than alleviating the depression (Gawin & Ellinwood, Jr., 1988). This finding was not consistent with the finding of this project since none of our patients in mania used cocaine. The anti-anxiety effect of benzodiazepines in combination with heroin was the ancillary drug of choice for this project's patients independently of diagnosis.

Dependence on heroin has increasingly been observed in recent years. Ladewing, et al. (1990) reported that the decreasing use of barbiturates was found to have been replaced by an increased intake of benzodiazepines. On the whole, multiple drug dependence was the most frequently observed form of dependence, an observation that was strongly supported by this project.

It could be a challenge for a clinician to persuade patients, who may have "successfully" self-medicated their psychiatric disorder's symptoms, to start treatment. They may often exhibit denial and can be very resistant to treatment. Clinical experience indicates that working with "self-medicated" patients is demanding and treatment must be adapted to each patient's needs. For instance, confrontation and disclosure are often elements of substance abuse treatment, but just the opposite is emphasised for people with schizophrenia (APS, 1996). Methods and philosophies in psychiatric comorbidity are clearly demand more than is offered in traditional substance abuse treatment.

7.4 DEMOGRAPHIC VARIABLES THAT DIFFERENTIATE DUAL FROM SINGLE PSYCHIATRIC DIAGNOSIS

7.4.1 Gender

Consistent with the findings of previous researchers (e.g. Jessen-Petersen, 1994; Jimeno, 1997; Green 1999), this project further demonstrated that there was a significant gender difference between the groups, indicating that women do not meet criteria for one or more substance use disorders as frequently as men. Specifically, psychiatric patients with substance use disorders were more likely to

be male. Substance use disorders were more prevalent among male patients in this study.

Male gender was not only over-represented among dual diagnosis patients, regardless of the comorbid psychiatric diagnosis, but was also associated with a less favourable outcome. The majority of studies for the outcome predictors indicated that male gender was associated with poorer prognosis (Kay, 1987; McGlashan, 1988; Geddes, 1994).

7.4.2 Age

Previous reports (e.g. Green, 1999; SAMSHA, 2001) have suggested that psychiatric patients with substance use disorders were more likely to be younger than patients who did not abuse substances. This study showed that the mean age for the Group 2 was significantly lower than for the Group 1, 35.92 and 28.7 respectively ($p<.001$). In particular, Group 2 was on average of almost 8 years younger than Group 1.

7.4.3 Employment status

Results from the present study are consistent with other reports in the literature which suggest that dual diagnosis further contributed to unemployment due to poor functioning (Harrow, 1997).

7.4.4 Educational level

The majority of patients (40% Group 1) and (48.9% Group 2) had finished high school, but they did not continue with university-level studies. It could be argued that the age of onset of the psychiatric illness could be the most possible obstacle for higher education, but the results (28.7 years for Group 1) and (24.7 years for Group 2) did not support this hypothesis since the majority of patients were already in early adulthood when they were admitted.

The majority of Group 1 patients with more favourable outcome had been registered at a University but unable to complete their studies. As Rolland (1994) has commented: "The onset of a chronic illness may cause a different kind of disruption if it coincides with a life structure – building / maintaining period in individual or family development" (p. 116).

7.4.5 Familial Factors

Finally, it is worth noting that almost half of the dual diagnosis patients had divorced parents; they were also the oldest child in the family, having one or more siblings in the majority of cases. This finding may of course be an artifact of the particular sample.

7.5 OUTCOME

There is a consensus amongst clinicians that co-occurring substance abuse and psychiatric illness is one of the most significant problems facing mental health systems today (Migdole, 2002). The high rate of substance use disorder among persons with severe mental illness had important clinical implications because their substance abuse was associated with an array of negative outcomes. Treatment providers generally agreed that comorbid clients often abandoned treatment early (Lyons, 1997), were more difficult to treat (Sheehan, 1993; Leshner, 1997) and frequently had poorer post-treatment outcomes (McLellan, et al. 1986; Drake, 1995; Platt 1995; Alterman, et al. 1996).

There is controversy amongst scientists over the definition of outcome (global vs. subtle evaluation, multidimensionality vs.

unidimensionality). The findings of this project demonstrated that the outcome of psychiatric and comorbid disorders was not a monolithic phenomenon but a multidimensional one. Based on the findings of previous reports, that the majority of new episodes occured within two years of remission (Lee, 1988), this project measured outcome in a 2-year follow-up period and in a multidimensional way by evaluating several aspects of outcome (relapse, rehospitalisation etc.)

A greater number of single disorder (Group 1) patients had more favourable (no relapse) outcome when compared to patients with comorbid disorders (Group 2) [258 patients (41.6%) vs. 60 patients (33.3%)]. Specifically, fewer than half of the patients of Group 1 and exactly one-third of the Group 2 patients had no relapse in 2 years. The relapse percentages of Group 1 (58.4%) and of Group 2 (66.7%) were in accordance with the findings from the literature which report a range of between 30% and 60% (Birchwood et al., 1998; Lines, 2000).

The difference in the outcome, over a 2-year follow-up, between the 2 Groups was significant ($p < .01$). The present findings were consistent with previous reports indicating that patients with co-existing psychiatric disorder and substance use disorder typically have poorer

outcomes than patients diagnosed with either disorder alone (Regier, 1990; Toner, 1992; Greenfield, 1992).

The bulk of the literature suggested that comorbidity was an important predictor of the course of psychiatric disorders (Kessler, 2002). The comorbid psychiatric disorder that was significantly related to poor outcome in this project was schizophrenia. Patients who received a diagnosis of schizophrenia had more severe symptoms, more readmissions which means more relapses and eventually poorer outcome than the rest of the patients who had different psychiatric profiles. The negative profound effect of substance abuse on the outcome of schizophrenia also reported in the literature (Alterman, 1982; McLellan, 1983; Turner, 1990; Dixon, 1991). Therefore, comorbidity of drug use with psychiatric disorder, particularly schizophrenia, was a predictor of poor prognosis.

Even given the highly effective neuroleptic drugs that have been available for the past 40 years, literature review indicates that fifty per cent of schizophrenic patients, under normal treatment conditions, relapse within 1 year after their latest episode (Ayuso-Gutierrez, 1997). Lee and Muray (1988) estimated that relapse and recurrence rates ranged from 50-80% in cases of unipolar depression and even higher in bipolar illness. The data of this study confirm the findings

from the literature. The majority of patients from both groups relapsed within a few months after the last episode, before the completion of the first year.

Comorbid substance abuse affected the outcome of psychiatric illness in a negative way. Surprisingly, comorbid substance abuse did not affect the relapse rate between the two groups. Interpretation of this unexpected finding should take into account self-medication hypothesis according to which dual diagnosis patients abused drugs in order to relieve psychological suffering (Khantzian, 1985) and maintain a normal psychological state for periods of time. As a result, even though dual diagnosis patients had worst outcome they did not relapse earlier than single diagnosis patients.

7.6 COMMON OUTCOME PREDICTORS FOR BOTH GROUPS

The question of whether single and dual diagnosis patients have common outcome predictors is an important one. Although there was a significant difference in the outcome of the two groups, there were two common factors that predicted outcome in both groups; Duration of Untreated Mental Illness (DUMI) and Expressed Emotion (EE). Number of admissions and Premorbid Adjustment, appeared to be Group 1 predictors of outcome. Schizophrenic diagnosis and Marital

Status appeared to be the most powerful Group 2 predictors of outcome. It should be noted that all predictors were significantly associated with the outcome in a negative way (predicting poor outcome).

7.6.1 Duration of Untreated Mental Illness (DUMI)

Duration of Untreated Mental Illness (DUMI), the time interval between the onset of mental illness and the first treatment (Loebel, 1992), was a common negative predictor of outcome for both Groups. In order to assess DUMI, the onset of the psychiatric disorder should be determined.

7.6.1.1 Early onset

Kosky et al. (1992) and McGorry (1996) argue that the period of maximum risk for the onset of a psychiatirc disorder is the early adult phase that is critical for the person's development. In this life stage where identity formation takes place, educational and career plans may be postponed or permanently damaged if the person does not recover.

In the current project's sample the onset of psychiatric illness was not in the critical period of the early adult phase but several years later. Group 2 had a significantly younger age at onset of psychiatric illness (24.7 years) than Group 1 (28.7 years). Regarding gender, Group 1 males had significantly higher age of onset than Group 2 males. In females, there was not significant difference between the two groups. Early onset has been consistently associated with poor outcome (Kay, 1987). The present findings indicated that even though patients' age at onset was relatively older, it was still associated with poor outcome but only for comorbid (Group 2) patients. Thus, the earlier the onset in Group 2 patients the less favourable the outcome. This project supported the importance of age at onset factor in the long-term outcome of dual diagnosis. The significant relationship between early onset and poor outcome, only observed in patients that received dual diagnosis, suggests that substance abuse, the variable that differentiates Group 2 from Group 1 patients, may account for this finding.

7.6.1.2 Early Intervention Rationale: The Relationship between the Duration of Untreated Psychosis and eventual Outcome

A good reason for focusing not only on the early onset, but also on the DUMI, was the range of clinical and theoretical reports that suggested a strong relationship between the duration of untreated mental illness and eventual outcome (Loebel, 1992; Lieberman, 1997). The vast majority of studies reported that early treatment (short DUMI) was correlated with a better outcome (Johnstone, 1986; Johnstone, 1992; McGorry et al., 1996; Waddington, 1998; Lines, 2000). However, a study by Barnes (2002) and colleagues showed a longer duration of untreated mental illness was not associated with a poorer outcome in their sample. Similarly, Robinson (1999) and colleagues in their study noted that the duration of pretreatment illness did not predict post treatment response. In this project, early intervention helped to improve outcome. Thus, the longer the time interval between onset of illness and initiation of first treatment, the poorer the outcome independently of group and gender. Early intervention appeared to be crucial; its delay was related to poor outcome in the current project.

There is a consensus amongst clinicians that patients with a psychiatric disorder often present themselves for treatment many years after the onset of symptoms (Beiser, 1993). In Loebel's (1992) study, the mean length of untreated psychotic episode was one year. Other studies (e.g. Frangou, 1996) estimated that illness could remain undetected for up to 3-4 years after the onset of clearly diagnosable symptoms. In this project DUMI was 2.70 years for Group 1 and 2.76 years for Group 2. In particular, DUMI varied from 1 month to 25 years for Group 1 and from 1 to 35 years for Group 2, independent of gender. The difference in the length of DUMI was not significant between the two groups. Interpretation of the present finding should take into account that DUMI is refers to the onset of the psychiatric disorder only, which in this study precedes drug use in order for someone to be diagnosed as a dual diagnosis patient and participate to this project (subjects' inclusion criteria).

7.6.1.3 The Categories with no DUMI at all

The results of this study revealed findings that are likely to be unique to the location of the present study. All patients, in both groups who had no DUMI, were in the army during the onset, where mental illness is identified without delay. This finding explains why only men did not have DUMI as in Greece only men are required to fulfill compulsory

military service and undergo the comprehensive medical and psychological assessment that accompanies this. The current data indicated that DUMI in men was significantly lower that seen in women and this is inconsistent with other reports (e.g. Larsen et al., 1996).

Research reviews (e.g. Larsen et al., 1996) suggested that women have a significantly lower DUMI than men. Vaglum (1996) commanded this finding in his study about the factors that influence DUMI, by arguing that in programs for early detection one should be especially aware of the risk for delayed treatment in men. As previously stated, contrary to Larsen's et al. (1996) and Vaglum's (1996) reports, this study revealed finding contrary to those currently accepted as typical. It would appear that clinicians working with Greek population should be mindful of the risks associated with delayed treatment in women also.

7.6.1.4 Reasons for Long DUMI

In both groups, the longest delays for psychiatric consultation and beginning of treatment (long DUMI) were experienced in single patients who reported loneliness. Social isolation may be a prognostic factor (Jablemsky, 1992) in the sense that intimate relationships may

encourage early identification by people who care about patient's health and well-being (Rook, 1985) although this hypothesis would need to be subject to further investigation.

The fear of stigmatisation had been as explanation by [166 (20.8%)] Group 1 and [27 (3.4%)] Group 2 patients' families. According to them, stigma was the main obstacle for their reluctance to seek professional help.

Stigma can led to feelings of guilt and shame and may prevent family members from accepting that their relative has a mental illness. As an alternative they may seek help from medical specialties who do not have the knowledge to intervene effectively and hesitate to refer them to mental health professionals in order not offend or stigmatise them. Without doubt, the family plays an important role in the treatment-seeking and treatment-receiving process of mentally ill patients, but apart from their statements, there is no statistically reliable evidence in the current project as to how strongly and in what ways this was associated with the fear of stigmatisation. Evidence that stigma is a real problem was highlighted in a recent survey by Rethink (2003) (formerly the National Schizophrenia Fellowship) which found that more than twice as many people with mental health problems had experienced harassment than those without.

Even though the previous findings indicated that the fear of stigmatisation was no stronger than the devastating process of mental illness, which eventually leads to psychiatric intervention, the stigmatisation that patients experienced was significantly associated with the outcome. Psychiatric disorders are often accompanied by a stigma that affects all aspects of a patient's life.

It is noteworthy to mention two patients' comments about stigma, their experience of, and how it negatively affects their lives: "Stigma is that the others look at me strangely" and "stigma is knowing that my opinion will never be taken seriously".

Stigma will persist even after the symptoms of the disorder have disappeared and may be the main reason for the difficulties which the patient experiences (Sartorius, 1997). It seems that patients who were not able to preserve full autarky (autonomy) i.e. to be able to take care of themselves and their families without needing to resort to social support systems (Marneros, 1992), live with the stigma. Given how difficult it must be to live with the stigma and try to cope in western societies with a psychiatric disorder, reducing the Duration of Untreated Mental Illness (DUMI) can make a significant contribution to relapse prevention.

7.6.1.5 Duration of the Psychiatric Disorder

The mean duration of the psychiatric disorder was 7.22 years for Group 1 and 4 years for Group 2. The results showed increased length of illness at the time of the project in comparison to other studies such as Loebel's (1992), where the mean length of total illness (prodrome plus psychosis) was three years. Interpretation of this finding should take into account the limitation of this project that patients had to be adults only (>18 yrs old). Therefore, their current age and consequently the length of illness were higher than in other studies.

7.6.1.6 Predictors of Onset of the Psychiatric Disorders: Stressful Life Events

The literature emphasised the predictive importance of stressful events in the course and outcome of psychiatric disorders (Moore et al. 1992; Kivela, 1995) rather than in their onset (Johnson, 1997). However, Bebbington's et al. (1993) study provided evidence for the existence of a relationship between life events and onset of a psychiatric disorder. In addition, 'vulnerability-stress model' suggests that stressors can precipitate the initial development or recurrence of symptoms in a vulnerable person (Herz, 1984). Thus, the current project first focused on the existence of any stressful events, that

occurred at least six months before the onset of the mental illness, in order to find out if the onset happened when the patient was in a particular stressful phase in his/her life. Of course it is noteworthy to mention that the degree of vulnerability to mental illness determines the amount of stress needed in order to become mentally ill (Barrowglough, 1992).

In the current project, stress appeared to be associated with the onset of psychiatric symptoms. The majority of both groups' patients initially presented symptoms of a psychiatric disorder in the context of a stressful life event, in particular marital or family disharmony depending on their age.

All psychosocial stressors reported in this study were well matched with the stressors reported as those suggested by APA (1997). Those included stressful life events such as interpersonal loss, problems in the work environment and distressing emotional climate such as hostility, criticism and emotional over-involvement, the three measures of Expressed Emotion. These findings were supportive of the association of psychiatric disorders with significant family dysfunction (Friedmann, 1997).

7.6.2 Expressed Emotion (EE) – The Impact of the Family on the Course of Illness

7.6.2.1 EE and Outcome

The possibility of a link between relatives' emotional reactions towards the psychiatric patient and the relapse process has begun to receive attention in the literature. The impact of the family on the course of the chronic disorder has been increasingly assessed through the use of the psychosocial measure of Expressed Emotion (EE) and its variables (criticism, hostility, emotional over involvement) (Vauughn and Leff, 1976).

The majority of studies have reported that when patients return home from the psychiatric hospital to live with family members who are rated as high in EE, relapse is two or three times more likely to occur in the following 12 months (Kavanagh, 1992; Beddington, 1994; Hooley, 1997). The findings of this study also indicate that the Expressed Emotion status of the family members of patients was shown to be a strong predictor of the course of the disease for both groups. Family members included household members as well as members of the patient's support system.

High EE (>3) was a negative predictor of outcome for both Groups. Eventhough both Groups' patients with low EE (<3) had better outcome than patients with high EE, family emotional overinvolvement (EOI) was associated with better rather than worse clinical outcome in Group 1 patients only. Stated another way this project points out that high emotional overinvolvement (EOI), in psychiatric patients with no concomitant substance abuse, delayed or prevented relapse. Interpretation of the present finding should take into account some important considerations. Ethnicity, race and religion strongly influence family beliefs concerning health and illness (McGoldrick et al., 1982). The majority of the families participated in this project were Greek.

Greek families learn from their traditions and religion to have strong ties between their members, preserved by certain rituals such as celebrations (e.g. religious or New Years) that help them to face a family member's disease as a group. Many clinicians argue that family contact is of a great benefit for an individual (Dixon et al. 1995).

The Greek home desires strongly to be a shelter for family members, from the youngest to the oldest (Coclami et al., 1993). According to Wollin (1980) families that preserve rituals were more likely to sustain empowering family beliefs than those families who lose their rituals.

The question of whether the health and well being of a person may be placed in jeopardy by those who are close to him if they increase stress and provoke anxiety, is an intriguing one. The attempts that they make in order to cope with the problem may make things worse and indeed create chaos. On the other hand, family members who show high levels of EOI may provide reassurance that there is someone in their life who will remain with them and will suffer along with the patient (Hooley, 1999). An answer to these dichotomous views could be the results of the present study which are consistent with Stricker's (1997) data which suggest that even dysfunctional, over involved efforts seem to be better than resigned withdrawal.

The need for an "acceptable social façade" in Greek families is an important reason for the denial of problems (Rolland, 1994). According to the current findings, with the male gender it may be more important to maintain this "acceptable social façade" since only male gender (only Group 1) was relevant to relatives' high levels of EE. This finding may indicate that families still believe in the traditional male-female roles where women could stay at home and men go at work. In the working environment the mental health problems were more easily observed by co-workers. On the contrary, gender was irrelevant to (EE) in Group 2. Substance abuse may be implicated in this difference since even in the case where "self-

medication" did not exacerbate psychiatric symptoms, the drug dependent patient was unable to function effectively or to be well integrated into the broader society.

Clinicians, when they refer to the association between EE and relapse, have in mind strictly schizophrenia since the EE scale was initially developed and validated only for this disorder. Actually, the majority of studies reported that patients with schizophrenia who were discharged from the hospital to live in high EE family environments were at twice the risk of subsequent relapse than were patients with low EE family environments (Kavanagh, 1992; Bebbington, 1993). Since in this project schizophrenia was the predominant diagnosis although not exclusive, an investigation between EE rates and all the diagnoses of the sample was conducted. The results demonstrated that EE was a negative predictor of outcome for single and dual diagnosis regardless of the diagnosis.

Since patients' clinical characteristics such as diagnosis and age at onset did not reveal any significant findings I chose to focus on parental factors. A parental factor that revealed an interesting finding was divorce. Non-divorced parents of both groups did not exhibit significant high EE rates. On the contrary, divorced parents, in particular Group's 2 who had the significantly larger number,

exhibited significantly higher scores of EE. This finding is likely to be accounted for by divorced parents' emotional reactions towards the psychiatric patient which are highly rated for conflict comments and of emotional over involvement.

An interesting finding was that patients who had divorced parents reported it as a stressful life event but according to the results it did not affect significantly the outcome of the illness. According to this project's results, it is not parents' divorce that affected the course of patient's illness but the family dysfunction, which may exist even when parents are together.

7.6.2.2 Recognising the Problem

As it seems from the results, the higher rates of EE were found in the relatives of Group 1 older patients with the greater number of admissions (which indicates more severe cases). This finding reflected family members' strong emotional response to the patient's condition when it becomes chronic and not at the onset as one might expect. It could be argued that the "denial phase" during the onset may not allow the family member to see the patient's illness in perspective since he/she believed or hoped that it was just a crisis that would not exist in a few days. After many years, relatives

observed the deterioration in patient's psychological and physical condition, which was the result of both the illness' nature and the medications' side effects. When conditions become chronic they place considerable strain on relationships. As a result, key relationships may weaken at a time when they need to be at their strongest. According to Arino (2003) the President of the European Federation of Associations of Families of Mentally Ill People, if family members do not accept the illness, there was little chance those with mental illness would be accepted outside the family unit.

From the interviews with high EE family members it was apparent that they all expressed a lineal concept of causality (the family or the individual cause the problem), instead of circular (each part of the system influences all the other parts), through the process of recognising the problem. This result reflected the potential for psychoeducation and more helpful family reconceptualisation.

7.6.2.3 Interpretation of the Problem

Interviews with families elicited in several cases the belief that the source of their problem was not related to the nature of the psychiatric disorder but to something wrong in patient's intentions and behaviour towards them. In dual diagnosis families, the situation was

more complicated since they did not recognise that their mentally ill family member also had a substance abuse problem. This was not surprising because many of the behavioural changes that lead to suspicion of drug problems in other people already exist in persons with mental illness. Therefore, behaviours such as rebelliousness and argumentativeness were less reliable clues for this group.

A family history of one disease increased the risk for the other; a family history of both disorders multiplied the risk factor. Facts like these could be interpreted in an unhelpful way by members of the family who may cease blaming themselves and each other for a disorder that no one could have caused or prevented (Hartfield, 1993). The way a clinician informs family members is crucial. They may feel guilty in the sense that their relative's substance abuse was in some way their fault.

It is important, first, to realise that substance abuse is a disease, too. Unfortunately, most of the family members said that their doctors did not care for their human experience and core personal beliefs as a family living with a mentally ill person. As Crawford (2001) mentioned staff attitudes are sometimes negative towards patients with dual diagnosis. If they are able to understand that what had been viewed as "bad behaviour" is as a result of neurocognitive impairment it may

lead to greater empathy. Akins (1997), in his study described the importance of understanding the context of addiction from the family member's perspective.

The person who is truly addicted is no more able to take control of this problem without help than he/she is able to take control of his or her mental illness. Thinking of this problem as a disease may reduce the sense of anger and blame. Family members may learn to take negative behaviours less personally and feel less hurt. Families found it difficult enough to cope with problems presented by a relative's mental illness, but when substance abuse was also a problem, family stress is amplified. Many researchers, such as Boye (2001), postulated that an increase in family stress could induce greater guilt in relatives.

It is clear that treatment of the single and dual disorder patient can be substantially supported and enhanced by direct involvement of the patient's family. It is important however to identify the symptoms or behaviours that present the most stress to relatives (Boye, 2001) in order to improve family intervention programs.

7.7 OUTCOME PREDICTORS FOR NON-DRUG ABUSING PSYCHIATRIC PATIENTS (GROUP 1)

7.7.1 Premorbid Adjustment (PAS)

Arndt et al (1992), based on the results of their investigation, suggested that comorbidity of substance abuse and mental illness may be explained by a common antecedent factor: premorbid adjustment.

In this project, premorbid adjustment, which is the individual's psychosocial functioning and achievement of developmental tasks before the onset of psychiatric disorder, was a predictor of the outcome only in Group 1 patients. In these patients poor premorbid adjustment was significantly related to poor outcome. For instance, patients who were socially active in the premorbid phase had a better prognosis than those who were introverted and withdrawn.

This finding was also consistent with Kay's (1987) finding that patients with positive outcome demonstrated low scores on PAS, suggesting that they had better premorbid adjustment than the patients with poor outcome. Similar results were reported by the relatively small number of studies (e.g. Robinson, 1999; Guerra,

1996; Remschmidt, 1993) that focus on premorbid personality. This paucity of research was somewhat surprising given the potential significance of this finding to shape preventative and treatment interventions.

The finding that Premorbid Adjustment was a predictor of outcome only for Group 1 patients leads to the conclusion that substance abuse, the factor that differentiates dual from single diagnosis group, should be responsible. Based on my clinical experience one possible interpretation of this finding could be that substance abuse increases the propensity for patients to develop acting out behaviours. The term "acting-out" refers to behavioural patterns that have angry, hostile tone and may range in severity from subtle insults to tantrums to physical abuse of self or others (Evans and Sullivan, 1990). In some patients this behaviour was part of the premorbid personality disorder (passive-aggressive, antisocial and borderline personality disorder), which usually coexists with patients who abuse substances. In most cases this behaviour was a consequence of substance abuse (Nathan, 1988).

Premorbid personality pre-exists psychiatric disorder and undoubtly exacerbates the mental illness and consequently influences the way that a patient will express the symptoms that he/she experiences. For

example, an extremely uncooperative patient is most at risk of treatment dropout or premature discharge. One could also expect that certain premorbid personality characteristics could interfere with the patient's reactions towards mental illness and influence his or her willingness and capacity to ask for help. This finding however was not verified since Premorbid Adjustment was not correlated with Duration of Untreated Mental Illness. In other words, Premorbid Adjustment may not have interfered with patient's reactions in prodromal period of illness but affects the patient's reactions during the illness and consequently predicts the outcome.

7.7.2 Number of Admissions as an Indicator of Relapse

Relapse to a new episode is a common problem in all individuals suffering from substance abuse, mental disorders or both and typically opperationalised in the literature (e.g. Loebel, 1992) as a measure of poor outcome. In this project in agreement with Winokur and Kadrmas' criteria (1989) the sample subdivided into oligoepisodic (OE), patients with two episodes as maximum and poliepisodic (PE), patients with three or more episodes. Since the majority of the patients relapsed within one year of remission, they were characterised as OE.

7.7.2.1 Differential Profile of PE form OE patients

A characteristic that differentiated OE from PE patients was the psychiatric diagnosis. In accordance with the literature review (e.g. Harrow, 1997) the patients with the most severe psychiatric disorders, such as schizophrenia, predominated in the PE group. PE patients were also older regardless of gender. This finding was not unexpected given the earlier age of onset; patients had more time to have multiple episodes.

The high number of admissions in a psychiatric unit, proved a negative predictor of outcome only for Group 1 patients. Contrary to previous reports (e.g. Lyons, 1997) indicating that coexisting substance related disorders were at greater risk for readmission, surprisingly in this project the number of admissions in a psychiatric institution was not as strong predictor of relapse in dual diagnosis as it was in single diagnosis patients.

Interpretation of the present finding should take into account some important considerations. Dual diagnosis patients appeared not to be admitted easily in a psychiatric hospital, even though they had a poorer outcome than single diagnosis group. Either drug abuse masked the psychiatric symptoms so the family shifted its focus to the

detoxification process or it was more difficult to persuade them due to the personality disorder that often coexists in patients who abuse substances (Evans, 1990). Therefore, Group 2 patients had more involuntary admissions, as it is more difficult to persuade them, than Group 1. On this point the literature predicts the following finding; dual patients have been reported to utilise increased rates of acute (involuntary) hospitalisation, than either the psychiatric patients or chemical abusers alone (Anderson, 1998). It is also noteworthy to mention that in both Groups, more women were admitted voluntarily than men.

Only in Group 1, the involuntarily admitted had a significantly poorer outcome than the voluntarily admitted patients. This was an expected finding for Group 1 in view of the long-held belief that involuntary admitted patients are over-represented in the less desirable outcome categories (Houston, 2001). Involuntary admission was associated with the lack of recognition that the individual had a mental illness and had to be compliant with treatment in order to avoid relapse, a condition described by Kingdon (1994) as "lack of insight".

7.7.2.2 Relapse Prevention

A question that arised from the negative associations (poor outcome, more severe diagnosis) with PE patients was, why they were readmitted to the psychiatric institutions? The majority of patients in both groups were readmitted because they were not compliant / adherent in their treatment.

At this point, it is important to mention that the terminology "compliance" was more commonly used in the past suggesting that patients follow the steps assigned to them by the medical team. The present notion of "adherence" requires that people make informed decisions, by selecting and then adhering to a specific protocol (Atwood, 1996).

The present findings are consistent with previous findings (e.g. Evans, 1990) indicating that the majority of patients in both groups were readmitted subsequent to non-adherence in their treatment. In Group 2, non-adherence included also substance abuse after at least one month of abstinence. Paradoxically, Group 2 patients who used heroin had exacerbation of psychotic symptoms when they stopped the use. This phenomenon could probably be explained by "self-medication theory" according to which psychiatric patients use drugs in order to

medicate against specific symptoms (Anderson, 1998) such as to relieve depression or to reduce extra pyramidal symptoms, the most common side effect of anti-psychotic medication.

This way of looking at relapse helps the patient to recognise the significant gains of treatment (Evans and Sullivan, 1990). Staying out of the psychiatric hospital for a long time, working in a job, abstinence from substances abused can motivate patients to comply more consistently with treatment. Particularly in dual diagnosis, relapse should be seen as a process and not as an event due to the long-term detoxification (in cases of backsliding) (Evans, 1990). Thus, a crucial issue is the need for aftercare in order to support continual recovery.

7.7.2.3 Proposed Practical Treatment Interventions as suggested by the Findings of this Project

All mental health professionals agree that the more relapses a person has, the harder it is to recover from them (Expert Consensus Guidelines for Schizophrenia, 1999). Kalfas (1998) studied the 'revolving door' syndrome, the increased number of readmissions to the psychiatric hospital, and concluded that responsibility for it lay in the decreasing lengths of stay in the psychiatric hospital for stabilising acute episodes. Therefore the goal was to brake the "revolving door"

cycle by preventing relapse to a new episode which disrupts treatment and increases drop-out rates (EMCDDA, 2004).

In this project one of the exclusion criteria was the short length of stay, defined as the drop out of treatment before the completion of inpatient treatment phase. Based on my experience from clinical practice this period between episodes that pharmacotherapy alone does meet the needs of a patient, described as 'clear' recovery by Prien (1995), must not be misinterpreted by both patients and clinicians as a full recovery. There is always the possibility of remission of symptoms before recovery from the episode. Maintenance psychotherapy is needed in order to stabilise or improve compliance with medication and occupational functioning. This phenomenon was evident mainly in bipolar patients who seem to have better periods between episodes than patients with schizophrenia. Interepisode periods are always crucial for patient's prevention of recurrences.

The fact that medication is the only obligatory treatment in psychiatric hospitals in Greece and psychoeducation is not adjunct to the general psychiatric inpatient care, gave the opportunity to the author of this project to compare the outcome between the patients with medication alone and combination therapies (psychopharmacological and

psychoeducational therapies). The result was of particular importance for the psychologists' work in the psychiatric setting since combination therapies were associated with a more favourable outcome in both groups of patients when compared to medication alone. This finding demonstrated the positive contribution of the holistic, biopsychosocial approach (Rolland, 1994), which conceptually unites mind and body by integrating pharmacological and psychoeducational therapies, in to the process of disease.

The interpretation of these results should focus on the beneficial effects of combination therapies not only in single but dual diagnosis patients equally. Findings of previous research (McGlashan, 1996; Lublin, 1998) have stressed the importance of combination therapies but only in studies conducted in each disorder separately (single diagnosis) and not after the comparison of patients with single or dual diagnosis, as in this project.

Psychoeducation It is a systematic, comprehensive collection of information by the psychologist concerning the patients' bio-clinical, educational, psychological and social status. This information is to serve as a basis for the construction of an individualised therapeutic education programme in order to help them cope in managing their psychiatric illness. It is a continuous process, which has to be adapted

to the course of the disease. It concerns the patient's daily life and psychosocial environment (WHO, 1998).

Psychoeducation is part of the long-term care of the patient and consequently of the relapse prevention process. According to my clinical experience an important component of relapse prevention was the early intervention through psychoeducation, by identifying each patient's specific relapse signs (prodromal symptoms). The patients' characteristic prodromal period before relapse was idiosyncratic to the patient and heralded imminent relapse (Barrowclough, 1992).

The relapse process was marked by predictable and identifiable warning signs that are described by the literature (Herz, 1984; Birchwood, 1989). By a questionnaire (APPENDIX A), and with close collaboration with the patient and family members, we identified each patient's prodromal signs. I found it very helpful to write these signs on a paper and give it to patients in order to help them remember by having them check for the signs as part of the daily routine activity and seek treatment as soon as they notice their return. Therefore, prophylaxis [the maintenance therapy in order to prevent the recurrence of an episode (Kupfer, 1993)], could be achieved by teaching the patient to recognise early the prodromal symptoms and seek treatment as soon as they notice their return.

The patient develops his or her own individualized warning sign list by thinking of irrational thoughts, unmanageable feelings, and self-defeating behaviors. According to Terence (2002) warning sign lists identify two different types of warning signs: those related to core psychological issues (problems from childhood) and those related to core addictive issues (problems from the addiction). Warning signs related to core psychological issues create pain and dysfunction, but they do not directly cause a person to relapse into chemical use. When patterns of addictive thinking that justify relapse are reactivated, a return to using alcohol and drugs occurs.

In the identification process of these early signs of relapse, patients revealed great enthusiasm because it required a high degree of active participation. As Janz et al. (1984) suggest active involvement of the patient in the education's contracting process may combat the stereotype of the ideal client as a passive recipient of "medical care". If these assessments are based on such assumptions, rather than on objective information, therapeutic interventions are likely to be ineffective and may serve to alienate patients (Blalock, 1986).

Table 19. Frequent Signs and Symptoms reported by the Patients During the Prodromal Period of Relapse.

Trouble sleeping	Disorganised behaviour	Signs of paranoid symptoms e.g. the patient's sudden and constant use of sunglasses.	Undue preoccupation with spiritual matters
Trouble concentrating	Increase in abuse of drugs reported as 'self-medication'	Loss of daily structure	Social withdrawal

Stereotyping is a cognitive, unconscious process in beliefs about social groups (Greenwald, 1995). Experiments (e.g. Banaji, 1995) have demonstrated that stereotyping can occur implicitly, without subjects' conscious awareness of the source or use of stereotyping information in judgment. Moreover, a test by Banaji (1996) showed that stereotyping can occur even when the perceiver retains

awareness of the source of influence on judgement, since he/she is still unable to readily control the stereotyping response.

In particular, in the psychiatric hospital, which is the clinical setting where this project was conducted, it was difficult to attack stereotyping since there was not sufficient time for mental health professionals to listen to patients' concerns and to incorporate individuating information about each patient into their assessments (Di Matteo, 1982). Instead, overgeneralisation about characteristics shared by members of a group (e.g. patients with schizophrenia are dangerous) did not lead to modification of the stereotype itself, and jeopardised the clinician's ability to provide the proper combinational therapy that is individualised to patient's unique need.

In order to avoid 'stereotyping' in the hospital to affect assessments of patients in this study, the author decided to collaborate close with the patient and family members of the sample in order to have a thorough knowledge of the clinical status before the individual becomes a member of the schizophrenia or depression spectrum. In addition, many variables, such as the onset of the psychiatric disorder, defined retrospectively by mental health professionals, not only through questionnaires filled by them but also by patients and family members.

7.8 OUTCOME PREDICTORS FOR DUAL DIAGNOSIS PATIENTS (GROUP 2)

7.8.1 Diagnostic Differences

An aspect of care complicated by dual diagnosis concerned diagnostic differences. Diagnosis can often be difficult because it takes time to unravel the interacting effects of substance abuse and the mental illness while symptoms of psychiatric disorder can be mimicked or masked by substance use (Knowlton, 1995). In order to avoid differential diagnosis, in this project only the patients whose history indicated that the psychiatric symptoms began prior to substance abuse and consequently were not the result of withdrawal from drugs received dual diagnosis (Evans, 1990).

This project points out that the incidence of substance abuse disorder was higher in patients with schizophrenia. Distribution by diagnosis revealed schizophrenia, independently of gender, as the most frequent current diagnosis in dual diagnosis group, followed by major depression and bipolar II-mania phase. This finding was consistent with Mueser's (2002) in that patients with schizophrenia were more than four times as likely to have dual diagnosis, but not with the majority of studies such as Regier's (1990), Ries' (1994), Sloan's (1998) and Migdole's (2002) where dually diagnosed patients were

more likely to have a mood disorder, with the rate of substance abuse in bipolar people being two to three times higher than in those with depression. The diagnosis of schizophrenia was over represented also in the single psychiatric disorders group but with a significantly lower percentage than in dual diagnosis group, regardless of gender.

In both groups, schizophrenic patients with more negative symptoms had a high DUMI while those with more positive symptoms had low DUMI.

Table 20. The Positive and Negative Symptoms of Schizophrenia

Positive Symptoms	Negative Symptoms
• Delusions	• Avolition
• Hallucinations	• Social withdrawal
• Inappropriate affect	• Blunted and flat affect
• Positive formal thought disorder	• Alogia

Source: Adapted from Crow (1985).

One possible interpretation for this finding could be that positive symptoms were more noticeable and disruptive for family members and for society so that the expression of positive symptom resulted in more immediate professional intervention and probable hospitalisation. In addition, patients who obtained high scores on general psychopathology tended to have poor outcome. These findings strongly supported those reported in the literature that in dual diagnosis the best single predictor of treatment response was the severity (as measured by the PANSS scale for psychopathology) of the comorbid psychiatric condition (McLellan et al., 1985).

In Dual Diagnosis patients, the main consumed substance was heroin. As secondary drugs, over half of the patients regularly used hypnotic drugs (benzodiazepines especially Flunitrazepam) and a smaller percentage (17.8%) cannabis. Table 21 compares these findings to the drug users' findings in Greece (EMCDDA-European Monitoring Centre for Drug Addiction, 2000).

Table 21. Comparison of the Findings of the EMCDDA-European Monitoring Centre for Drug Addiction, 2000 (for drug users) with the Results of this Project in Dual Diagnosis patients (drug use and Mental Illness).

Drugs Used		**EMCDDA** (only drug users)	**DUAL DIAGNOSIS**
Primary Drug Used	Heroin	83.7%	100%
Secondary Drug Used (1)	Cannabis	51.8%	17.8%
Secondary Drug Used (2)	Hypnotic drugs (benzodiazepines)	34.7%	63.9%

Heroin was the primary (83.7%) drug used, with cannabis (51.8%) as the main secondary drug, followed by hypnotic drugs (benzodiazepines) (34.7%). Interpretation of this difference in the main secondary consumed drug should take into account the psychiatric comorbidity of this project's sample. Benzodiazepines may be a part of their treatment or a medication that a doctor could have

prescribed to them sometime in their lives for relief from their psychiatric symptoms.

An important issue was the risky behaviour detected in the dual diagnosis patients group. The majority were injecting heroin users reporting sharing needles and syringes. The consequence of this risky behaviour was the large percentage of hepatitis C given that half of the injecting heroin patients used shared syringes.

7.8.1.1 Practical Problems in the Identification and Management of Dually Diagnosed Patients

The most difficult patient population to communicate with is the severely ill dual diagnosed since the best predictor of noncompliance is to have a substance abuse problem (Vieta, 2003). It appears that the period of inpatient treatment in this study's sample was necessary to clarify the diagnosis and to facilitate the detoxification process and treatment of the acute phase of mental illness. The majority of participants tended to deny or minimise the extent of their substance abuse.

In order to engage them in treatment, a gentle confrontation that they had drug problem may be needed. Abstinence from all non-prescribed

drugs was the goal of the inpatient treatment. As Kramer (2003) noted, the great paradox in the message that clinicians give to the comorbid patients is to "take drugs" that is, comply with the psychopharmacological treatment but "don't take drugs" that is, avoid all illicit substances. While this paradox might not be difficult for a high functioning patient to navigate, for the more severely ill patients who may have some cognitive impairment as a function of their illness and for whom taking medication is all the more critical, a careful clear and supportive method of presenting this message is absolutely essential.

In practical terms, comorbidity is often underestimated and under diagnosed by mental health professionals. They avoid treating addicts although addictions are part of their training. Similarly, addiction treatment centres also face a challenge when dealing with clients with severe mental health problems. As a result, dual diagnosis patients with past admissions were under diagnosed. Comorbid patients are often sent back and forth between psychiatric and drug services ('revolving-door' patients), not receiving proper assessment or treatment (EMCDDA, 2004). Commenting on the issue, EMCDDA chairman Marcel Reimen (2004) said: 'When we see drug users, we tend to attribute their problems to their use of drugs. However, more often than not, drug-users have comorbid mental health disorders, which we often fail to recognise' (p. 1).'

Psychiatric units should integrate addiction treatments with psychotic-relapse management (Ayuso-Gutierrez, 1997). Ideally, integrated treatment would involve clinicians cross-trained in both mental health and addiction, as well as a unified case management approach, making it possible to monitor and treat patients through various psychiatric and substance abuse crises. In the majority of European countries treatment staff are not trained to deal with comorbid patients, since their training usually is specialized (medicine, psychology, social work, etc.) (EMCDDA, 2004). Thus, a multidisciplinary comprehension of how to deal with dual diagnosis is vital for all levels of treatment staff.

7.8.2 Marital Status

In dual diagnosis patients, marital status was another predictor of outcome revealed by multiple regression analysis. Comorbid patients who lived with their family (parental or partner/children) had better outcome while the poorest outcome was found in those who divorced. Divorces mostly occurred at a young age and drug addiction was cited as a significant precipitating factor. The patients in Group 2 were much younger and it may be important to consider the various interpretations of divorce experience considering the age range. Regardless of the outcome the majority of the patients were single.

This may be due to the isolation associated with the psychotic process.

According to the literature reviewed, the importance of family and non-family social contacts for the outcome of a psychiatric illness is now well documented (Breier, 1984; Jackson, 1996). In early psychosis those with low non-family social contacts tended to relapse earlier (Johnstone et al. 1992) and had poorer earlier outcomes (Beiser, 1993). Psychosocial stress and isolation associated with the psychotic process may contribute to poor outcome (McGlashan, 1998).

In the between Groups comparison, with the poorest outcomes in Group 1 were patients who were single and in Group 2 were those who were divorced. In addition, they had not been involved in relationships and they reported significant levels of loneliness. Therefore, close relationships were of a great benefit for an individual with a mental illness (Frude, 1991). As "increased well-being hypothesis" stresses, good personal relationships enhance an individual's personal strength enabling him or her to cope better with stressful life events (Willis, 1984).

An explanation for this positive association between health, well-being and individual's involvement in close relationships could be that important relationships encourage compliance with certain regimes monitored by people who care about their health and well being (Rook, 1985). Thus, it was not a surprising finding that both groups' patients with high duration of untreated illness tended to be single. Family members typically expressed concern about their relative's disorganised behaviour and this was likely to precipitate asking for help from a mental health specialist.

7.9 OTHER FACTORS POSITIVELY OR NEGATIVELY CORRELATED WITH THE OUTCOME AND THAT DIFFERENTIATED THE PROFILE OF DUAL DIAGNOSIS FROM SINGLE PSYCHIATRIC PATIENTS

7.9.1 Suicide

Suicidal behaviour has been reported as an indicator of negative clinical outcome in many reviews (Judd et al. 1998). Literature suggests that dual diagnosis patients were more likely to have a history of suicidal behaviour than single disorder patients. EMCDDA (2000) revealed suicide attempts in around 50% of comorbid patients. In particular, in the population of patients with schizophrenia,

episodes of violence and suicide were twice as likely to occur among dual as among single diagnosed patients (Anderson, 1998).

On behavioural characteristics of this project's sample, the records of each patient were inspected for evidence of past suicide attempts. The groups did not differ with respect to the rate of suicide attempts.

A more detailed analysis in each group revealed a difference in the rates of suicide attempts only in relation to diagnoses. In Group 2 those patients with the diagnosis of major depression had more suicide attempts while in Group 1 those with bipolar II (depression phase) were more likely to attempt suicide. The results indicated that in both Groups the majority of patients who attempted suicide had depressive symptomatology. This finding was in accordance to the large body of literature on this topic (e.g. Frank, 1999), suggesting that depression was highly associated with suicide attempts.

Attempted suicide was the main reason for admission in a psychiatric hospital. In particular, bipolar patients had admissions mainly in their depressive phase. Thus, independently of how patients felt about their act, they were involuntarily admitted to a psychiatric unit by relatives, hospital or public services because they attempted suicide. This finding may reflect the tendencies of families not to pathologise

mania. When a patient was in a manic phase and seemed happy and full of energy, relatives had no reason to think about admission in a psychiatric clinic because manic symptoms are not threatening to them or to the patient's lives. In other words, family members' decision for admission was related not to the severity of psychopathology but to how they perceived the danger based on their own perceptions.

Results also revealed a significant relationship between means of suicide for Group 1 and Group 2. The most frequent method (46%) of suicide attempt for Group 1 was the overdose with their prescribed psychiatric medication while in Group 2 the overdose of the abused substance.

Conclusion

CHAPTER 8

Chronic conditions, such as mental illness with probable comorbid substance abuse, are universal experiences (Rolland, 1994) and one of psychiatry's greatest challenges. Although specialists in addiction have been aware for over twenty years of the intimate relationship between mental illness and substance misuses, it was only recently that the nature and extent of the problems have become more clearly defined. The literature suggests that substance abuse in psychiatric patients is associated with an array of negative outcomes including increased relapses, rehospitalisations and family burden. Overall, the findings of this project were consistent with trends identified in the literature.

This project first presented a review of the dual diagnosis literature and highlighted a number of key issues that contribute to what we currently know about this area. A literature research was conducted using PubMed and Psychiatric databases as well as extensive use of bibliographies. An investigation was undertaken which aimed to (i) evaluate the incidence of the comorbidity of substance abuse with major psychiatric disorders in a Greek psychiatric population and of that sample; (ii) determine if differences in clinical course, outcome

and psychosocial factors were present in those with or without concomitant substance abuse.

This project determined the predictors of outcome for single and dual diagnosis patients in order to help clinicians to improve the outcomes by preventing disorders' chronicity, relapse and poor prognosis.

8.1 THE IMPLICATION THAT THE PREVALENCE OF SUBSTANCE ABUSE IS HIGH IN PSYCHIATRIC POPULATION

One of the key findings was that patients with a mental illness had higher rates of substance abuse than would be expected in the general population. This finding supports most prior clinical studies (Carrey, 1991; Anderson, 1998; Perkins, 1999; Kessler et al. 2002). Therefore, one important implication of this finding was that dual diagnosis was not simply a statistical phenomenon of co-occurrence (Lehman, 1989) but rather an interactive phenomenon placing psychiatric patients at high risk for substance abuse.

8.2 THE IMPLICATION THAT SUBSTANCE ABUSE WAS NEGATIVELY AFFECT THE COURSE OF PSYCHIATRIC DISORDERS

The profoundly negative impact of substance abuse on the course of severe psychiatric disorders has become this study's major focus of attention. Patients with a dual diagnosis were more likely than those with a single disorder to have poor outcome (Bergman, 1985; Lehman, 1989, Regier, 1990).

It is noteworthy that both this study and that of McLeelan's (1983) found that more severe symptoms, such as schizophrenic symptoms which were over-represented in both groups, predicted poorer outcomes. The most complex and challenging comorbid patients appeared to be those with a substance use disorder and schizophrenia.

8.3 THE IMPLICATION THAT DUAL DIAGNOSIS PATIENTS HAD DIFFERENTIAL PROFILE

A considerable heterogeneity was found amongst persons with mental illness with or without concurrent substance abuse (Lehman, 1989). A differentiated profile of the dual diagnosis patients from the

other psychiatric patients was suggested in the sense that they had differential demographic and clinical characteristics.

Dual diagnosis patients were younger males of lower socioeconomic status who finished high school and had predictably an earlier onset of psychiatric disorder and better premorbid adjustment. In addition, almost half of the dually diagnosed group had divorced parents and were the oldest child in the family, having one more sibling in the majority of cases.

Multiple regression analysis revealed different predictors of outcome for psychiatric patients with a substance abuse disorder. A diagnosis of schizophrenia and divorced marital status with significant levels of loneliness appeared to be strong negative predictors of outcome for dual diagnosis patients.

Duration of Untreated Mental Illness (DUMI) and Expressed Emotion (EE) were the common negative predictors of outcome for single and dual diagnosis patients. Therefore, in both Groups early treatment (short DUMI) and good family relationships (low EE) which encourage patients health and well-being were associated with more favourable outcome.

The combination of pharmacological and psychosocial therapies was associated with a more favourable outcome in both groups of patients. This finding should help practitioners working in dual diagnosis field to understand that medications in conjunction with psychosocial therapies were associated with a more favourable outcome than medication alone in both groups of patients.

The achievement of a valid diagnostic assessment and the decision of appropriate treatment can be difficult. Therefore, the need for specialised treatment approaches in dually diagnosed person's conflicts with the traditional treatment philosophies can create confusion in clinicians. The method used to instruct patients to recognise the prodromal signs and their pathogenesis that was presented in this project, appeared to be useful. It helped patients to achieve better clinical outcome.

In conclusion, it is worth noting that this project was a prospective follow-up investigation of six years duration with a large sample of patients and did not utilise retrospective methodology as the majority of previous studies (Geddes, 1994) who have attempted to identify outcome predictors. This unique feature added substantial value to the growing knowledge base in this domain.

LIMITATIONS

The conclusions of this project must be evaluated in the context of its design limitations. The sample was highly controlled. It was composed of inpatients only, who were adults (>18 yrs old), in an attempt to maintain diagnostic homogeneity.

The majority of the previous studies did not have this project's limitation of inpatients only. The percentage of 22.5 of dual diagnosis in the present project concerns only psychiatric inpatients that obviously had sufficiently severe psychiatric disorder, such as schizophrenia, in order for a clinician to proceed with their admission to a psychiatric institution. It is important to note that rates of dual diagnosis can vary greatly depending on a number of factors including the way dual diagnosis is initially defined, the instruments used to measure the disorders, the ability of the clinician to recognise the disorders, the population which is investigated and the location in which the prevalence research is conducted (Afuwape, 2003).

Thus, another possible explanation for this variability in comorbidity rates between the studies may be the differences in the methods of interview (Ghanizadeh, 2000). In the present project, the diagnostic evaluations were made not only at the time of admission which is associated with increased symptom reports (Rounsaville, 1982) but also several weeks after admission. The second evaluation was important because drug induced symptoms most typically clear within ten days of withdrawal from the drug (Turner, 1990) and cease to mask the psychiatric disorder.

Another limitation was that the very early dropouts of some voluntary admitted patients, who were consequently excluded by the project, might have included patients with the most severe symptoms and that the inclusion of these participants might have produced more robust data. On the other hand, this limitation was important in order not to get a non-valid result for shorter length of hospital stay which could be due to premature discharge, as happened in the studies of Lyons et al. (1989). This could be avoided if the sample included only non-voluntary admitted patients who were not permitted to drop out of the treatment without the hospital's permission. But in this project the sample included all the types of admissions purposefully for obtaining a representative sample of treatment service in a psychiatric setting.

The definition of variables was based on procedures used in earlier studies. For example the assessment of onset of psychiatric diagnosis and of the Duration of Untreated Mental Illness (DUMI) was made by the mental health team, including the author, based on patient's family members' reports and records of treating facilities, similar to the method of Haas et al. (1992) and Craig (2000). This comparability of this project's methodology with earlier studies was designed to and achieves the accumulation of comparable data and ultimately adds to scientific knowledge.

However, despite those limitations the project had also methodological strengths. Most importantly, the standardised assessment of diagnosis, blind to the eventual outcome, was performed in a sample composed of inpatients only. The diagnostic evaluations were made not only at the time of admission that is associated with increased symptom reports (Rounsaville, 1982) but at also several weeks after admission. The second evaluation is important because drug induced symptoms most typically abate within ten days of withdrawal from the drug (Turner, 1990) and cease to mask the psychiatric disorder.

SUGGESTIONS FOR FURTHER RESEARCH

There is important interaction between drug use and psychiatric dysfunction. The present project throws some light on this interaction, but clearly more research is needed. Researchers still have much to learn about the nature of psychiatric comorbidity.

The findings of this project have led to increased appreciation of the need to understand the role of substance abuse in a broad array of psychiatric disease parameters. Dually diagnosed patients not only require intensive psychiatric treatment for mental illness, but concomitant treatment for substance misuse symptomatology as well. As has been hypothesised, comorbidiy complicates treatment entry, diagnosis, motivation and outcomes. Substance abuse appeared to add problems such as increased non-compliant behaviours in chronic mental illness.

Lehman (1989) raised many questions about dual diagnosis that await research with regard to variables that differentiate dual diagnosis patients' profile. This project answered his question about demographic and clinical variables that distinguish mentally ill patients who abuse substances from those who do not.

Further investigation of associated psychopathology, clinical course, and response to psychosocial and psychopharmacologic treatment of psychiatric comorbidity is warranted to design effective treatment measures. Controlled studies with adequate sample sizes are necessary to determine the best pharmacologic agents to effectively treat comorbid conditions. Future research must focus on evaluating health promotion and health education programmes in an effort to increase dual diagnosis awareness and reduce the stigma attached to having a comorbid disorder.

At this point it appears appropriate to suggest that relapse prevention must be designed not only for patients with single disorders, but dual disorders also even though the best predictor of relapse in mentally ill patients is substance abuse (Kessler, 2002).

Dual diagnosis populations are heterogeneous, so there are many combinations of substance use and mental illness to be the subject of research studies. There are opportunities for research by all professionals working in the field, in order to build up a bigger picture of dual diagnosis. Challenges are amplified and may stretch mental health professionals who work with this under researched population.

REFERENCES

Afuwape, S (2003) Where are we with Dual Diagnosis? *National Schizophrenia Fellowship, a company Limited by guarantee. Registered in England no 12279770.*

Akkin, B.A. (1997) Parent's Virus on Child Welfare's response to Addiction. *Families and Society,* **78 (4)**, 393-404

Alaja, R., Seppa, K., Sillanaukee, P. et al (1997) Psychiatric referrals associated with substance use disorders: prevalence and gender differences *Alcoholism: Clinical and Experimental Research* **21**, 620-626.

Alderton, E. (1999) *The Mental Illness Activist.* The Mental Illness Activist Website

Allebeck, P. (1993) Suicide and Violent Death among patients with schizophrenia. *Acta Psychiatrica Scandinavia,* **74**, 43-49

Altamura AC, Bassetti R, Sassella F, Salvadori D, Mundo E (2001) Duration of untreated psychosis as a predictor of outcome in first-episode schizophrenia: a retrospective study. *Schizophrenia Research*; **52**, 29-36

Alterman, A.J., Erdlen, D.L., Laporte, D.J. (1982) Effects of Illicit Drug in an Inpatient psychiatric Population. *Addictive Behaviour*, **7**, 231-242

Alterman, A. J., Rutherford, M.J., Cacciola, J. S., McKay, J. R. and Woody, G. E. (1996) Response to Methadone Maintenance and Counseling in Antisocial Patients with and without Major Depression. *Journal of Nervous and Mental Disease*, **184 (11)**, 695-702.

American Psychological Association (1996) Reducing Mental Disorders. A Behavioural Research Plan for Psychopathology. *American Psychological Association Observer,* February.

Amore, C., Casagrande, V., Torroni, A., Croci, R. (2000) Outcome Predictors in Bipolar Disorder: A Catamnestic study. *The Journal of the European college of Neuropsychopharmacology*, **10(3)**, 249

Anderson, A.J. (1998) Methodological Approaches in Mental Health Services Program Evaluation. *The International Journal of Psychosocial Rehabilitation*, **1(4)**, 1-28

Andery, L. (1997) The Importance of Early Intervention in Psychosis. *Early Psychosis News*, **6**

Andreasen, N.C. (1992) Diagnosis, Assessment and Neural Substrates of Schizophrenia. *Triangle,* **31(4),** 127-131
Andreasen, N.C., Nopoulos, P., Schultz, S., Miller, D., Gupta, S. (1994) Positive and Negative symptoms of Schizophrenia: past, present and future *Acta Psychiatrica Scandinavia,* **90(384),** 51-59

Andreason S., Allebeck, P. (1987) Cannabis and Schizophrenia. *Lancet*, **ii**, 1483-1486

American Psychiatric Association (1994) Diagnostic and Statistical Manual of Mental Disorders (4th edn) (DSM-IV). Washington D.C: APA

American Psychiatric Association (1997) Practice Guidelines for the treatment of patients with Schizophrenia. Supplement to *The American Journal of Psychiatry,* **154(4).**

Appleby, L. (1992) Suicide in Psychiatric patient *British Journal of Psychiatry,* **161,** 749-758

APS-American Psychological Association (1996) Reducing Mental Disorders. A Behavioural Science Research Plan for Psychopathology. *Observer*, February, 20-26

Arino, B (2003) The stigma of Mental Illness. *Psychiatry Hot Topics*, October, Astra Zeneca

Arndt, S., Tyrrell, G., Flaum, M. and Andreasen, N.C. (1992). Comorbidity of substance abuse and schizophrenia. *Psychological Medicine*, **22(2),** 379-388

Atkinson, P. (1993) *Psychology* In: Harcourt Brace (ed.) N.Y.: Tovanovitch Inc.

Atkinson, R.L., Atkinson, R.C., Smith, E.E., Bem, D.J. (1993) *Introduction to Psychology.* Florida: H.B.J.

Atwood, J. (1996) *Family Scripts.* Chicago: Taylor&Francis

Ayuso-Gutierrez JL; del Rio Vega JM. (1997) Factors influencing relapse in the long-term course of schizophrenia. *Schizophrenia Research*, **28(2-3)**, 199-206

Bachmann, K.M., Moggi, F. (1997) Dual Diagnosis: A diagnostic and nosologic entity by its own. *Biological Psychiatry*, **42**, 84

Baigent, M., Holme, G. and Hafner, R.J. (1995). Self reports of the interaction between substance abuse and schizophrenia. *Australian and New Zealand Journal of Psychiatry*, **29(1),** 69-74

Bahnson, C. (1987) *Families and Life threatening illness.* London: Leahey Wright

Banaji, M.R., and Greenwald, A.G. (1995) Implicit Stereotyping in False Frame Judgements. *Journal of Personality and Social Psychology*, **68**, 181-198

Banaji, M.R. and Hardin, C. (1996) automatic Stereotyping. *Psychological Science*, **7(3)**, 135-141

Banerjee, S., Clancy, C. and Crome, I. (2002) *Coexisting Problems of Mental Disorders and Substance Misuse.* London: The Royal College of Psychiatrists' Research Unit

Barnes TR, Hutton SB, Chapman MJ, Mutsatsa S, Puri BK, Joyce EM. (2000) West London first-episode study of schizophrenia: clinical correlates of duration of untreated psychosis. *British Journal of Psychiatry*, **177**, 207-211.

Barrowclough, C. and Tarrier, N. (1992) *Families of Schizophrenic patients.* London: Chapman and Hall

Barrowclough, C., Tarrier, N., Johnston, M. (1996) Distress, Expressed Emotion and Attributions in relatives of Schizophrenic Patients. *Schizophrenia Bulletin,* **22(4)**, 691-702

Bartels, S.J., Drake, R.E. (1991) Characteristic Hostility in Schizophrenic Outpatients. *Schizophrenia Bulletin*, **16**, 81-85

Battaglia J. (2001) Compliance with Treatment in Schizophrenia American Psychiatric Association – 53rd Institute on Psychiatric Services

Bebbington. P., Wilkins, S., Jones, P. (1993) Life Events and Psychosis. *British Journal of Psychiatry*, **162**, 72-79

Bebbington. P., Kuipers, L. (1994) The Predictive Utility of Expressed Emotion in Schizophrenia: an aggregate analysis. *Psychological Medicine*, **21**, 1-11

Beck-Sander, A. (1998) Is Insight into Psychosis meaningful? *Journal of Mental Health,* **7(1)**, 10

Becker, M. (1984) Compliance with Medical Advice. In *Health Care and Human Behaviour* (Eds. Steptoe and Mathews), Academic Press London

Beisher, M., Erickson, D. (1993) Establishing the Onset of Psychotic Illness. *American Journal of Psychiatry*, **150**, 1349-1354

Beedle, D. and McGovern, M. (1998) Diagnosis and treatment of Psychiatric Comorbidity in Alcoholics and Drug Addicts. *Psychiatric Annals*, **28(12)**, 705-708

Bennun, I. (1988) Systems theory and Family therapy. In: Dryden, W. and Street, E. (eds.) *Family Therapy in Britain.* London: Open University Press

Bergman, H.C., Harris, M. (1985) Substance Abuse among young adult Chronic Patients. *Psychosocial Rehabilitation Journal*, **9**, 49-54

Birchwood, M., Smith, J. Macmillan, F. (1989) Predicting Relapse in Schizophrenia: the development of an early signs monitoring system using patients and families as observers. *Psychological Medicine*, **19**, 649-656

Birchwood M, Todd P & Jackson C. (1998). Early Intervention in Psychosis. British Journal of Psychiatry, **172 (33)**, 53-59.

Blalock, S. and Devellis, B. (1986) Stereotyping: The Link between Theory and Practice. *Patient Education and Counselling*, **8**, 17-25

Boyd, C. J., Blow, F., & Orgain, L. S. (1993). Gender differences among African-American substance abusers. Jo*urnal of Psychoactive Drugs*, **25**, 301-305

Boye, B., Bentsen, H., Ulstein, I., Notland, T.H., Lesbryggen, A., Lingjaerde, O. and Malt, U. (2001) Relatives' Distress and Patients' Symptoms and Behaviours: a prospective study of Patients with Schizophrenia and their Relatives. *Acta Psychiatrica Scandinavica*, **104 (1),** 42-50

Brady, K., Anton, R., Ballenger, J.,C., Lydiard, R.B., Adinoff, B., Selander, J. (1990) Cocaine abuse among Schizophrenic patients *American Journal of Psychiatry* **147(9),** 1164-1167

Brady, K.T., Sonne, S.C. (1995) The relationship between substance abuse and bipolar disorder *Journal of Clinical Psychiatry* **56,** 19-24.

Breakey, W.R. (1987) Treating the Homeless. *Alcohol and Research World*, **11**, 42-47

Breier, A. (1984) The role of Social Relationships in the recovery. *American Journal of Psychiatry*, **14(8)**, 949-955

Brown, G.W. (1989) *Life Events and Illness* N.Y.: Guildford Press

Buchanan, A. (1996) *Compliance with Treatment in Schizophrenia.* Maudsley Monograph Series: London

Bukstein, O.G., Brent, D.A., Kaminer, Y. (1989) Comorbidity of Substance Abuse and other Psychiatric Disorders in Adolescents. *American Journal of Psychiatry* **146**, 1131-114

Caldwell, J. and Gottesman, I. (1990) Schizophrenics kill themselves too. *Schizophrenia Bulletin,* **16**, 571-590

Cannon-Spoor, E., Potkin, S.,G. and Wyatt, R. (1982) Measurement of Premorbid Adjustment in Chronic Schizophrenia. *Schizophrenia Bulletin*, **8(3)**, 470-485

Carey, K.B. (1991) Research with Dual Diagnosis patients. *Therapist*, **14**, 5-8

Casey, D.E. (1999) Morbidity and Mortality in Schizophrenia. *1999 APA Annual Meeting, Washington, USA*

Casper, J. K., Colton, R. H. (1999). Overcoming Addictions: Skills training for people with Schizophrenia. New York, Wiley

Gawin F.H. and Ellinwood E. (1988) Cocaine and other Stimulants. *New England Journal of Medicine*, **318(18)**, 1173-1182.

Charlton, J., Kelly, S., Dunnel, K., Evans, B. (1992) Trend in Suicide Deaths in England. *Popular Trends,* **69,** 10-16

Chouinard, G. (1994) Risperidone and Clozapine in the treatment of Drug-resistant Schizophrenia and Neuroleptic-induced supersensitivity psychosis *Progressive Neuro-Psychopharmacology & Biology,* **18,** 1129-1141

Christodoulou, G.N. (1999) Preventive Psychiatry. *WPA Congress on Preventive Psychiatry*, Athens, Greece

Clarkin, J.F., Pilkonis, P.A. and Magruder, K.M. (1996) Psychotherapy of Depression *Archives of General Psychiatry*, **53**, 717-723

Classen, W. (1996) Psychoeducation Training in Schizophrenics *X World Congress of Psychiatry*, Madrid.

Coclami, T. and Bor, R. (1993) Family Relationships in Greek Insulin-Dependent Diabetics. *Counselling Psychology Quarterly*, **4**, 267-279

Conte, G., Croce, F. (1996) Negative Symptoms and Drug Dependence. X *World Congress of Psychiatry*, Madrid

Cook, B. (1986) EEG Abnormalities in Bipolar Affective Disorders. *Journal of Affective Disorders,* **11**, 147-149

Copas, N. (1971) Danger Periods of Suicide in Patients under Treatment. *Psychological Medicine,* **1,** 400-404

Craig, T.J., Bromet, E.J., Fennig, S., Tanenberg-Karant, M., Lavelle, J. and Galambos, N. (2000) Is there an Association between Duration of Untreated Psychosis and 24-Month Clinical Outcome in a First-Admission Series? *American Journal of Psychiatry*, **157(1)**, 60-66

Crawford V. (2001) Coexisting Problems of Mental Health and Substance Misuse ('Dual Diagnosis') Crome, I. (Ed.) London: College Research Unit

Crone, I. (2003) *Alcohol and Mental Illness.* Alcohol Concern Manchester.

Crow, T. J. (1985) The Two-Syndrome Concept: Origins and Current Status. *Schizophrenia Bullettin*, **11(3)**, 471-486

Day, R. (1989) Schizophrenia. In: G. Brown (Ed.) *Life Events and Illness*. New York: Guilford Press

DeMillo, L. (1989) Psychiatric Symptoms in Adolescent Substance Abusers. *American Journal of Psychiatry*, **146**, 1212-1214

DiMatteo M., DiNicola, D. (1982) *Achieving Patient Compliance: The Psychology of the Medical Practicioner's Role.* New York: Pergamon Press

Dislaver, S.C. (1987) The Psychopathologies of Substance Abuse and Affective Disorders. *Journal of Clinical Psychopharmacology*, **7**, 1-10

Dixon, L., Haas, G., Weiden, P. (1990) Acute Effects of Drug Abuse in Schizophrenic Patients: Clinical Observations and Patients' Self - Reports. *Schizophrenia Bulletin* **16**, 69-78.

Dixon, L., Gretchen, H. Weiden, P.J., Sweeney, J. and Frances, A.J. (1991) Drug Abuse in Schizophrenic Patients: Clinical Correlates and Reasons for Use. *American Journal of Psychiatry*, **148(2)**, 224-230

Dixon, L., McNary, S., Lehman, A. (1997) One-Year Follow-Up of Secondary versus Primary Mental Disorders in Persons with Comorbid Substance Use Disorders. *American Journal of Psychiatry*, **154(11)**, 1610-1612

Drake, R. E., Osher, F. C., Wallach, M. A. (1989) Alcohol Use and Abuse in Schizophrenia. A Prospective Community study. *Journal of Nervous and Mental Disease*, **177**, 408-414.

Drake, E.R. and Noordsy, D.L. (1995) The Role of Inpatient Care for Patients with Co-occuring Severe Mental disorder and Substance Use Disorder. *Community Mental Health Journal*, **31(3)**, 279-282

DSM-IV (1994) Diagnostic and Statistical Manual of Mental Disorders. *American Psychiatric Association*. Washington D.C.: APA

Dual Diagnosis Steering Group (2003) Dual Diagnosis Good Practice Guide. London: Mental Health Policy

Duke P, Pantelis C, Barnes T (1994) South Westminster Schizophrenia Survey: Alcohol Use and its relationship to Symptoms, Tardive Dyskinesia and Illness Onset. *British Journal of Psychiatry*, **164**, 630-636.

DuPont, R.L. (1997) Overcoming Adolescent Addiction: Working with Families and the role of 12-step programs. In: *The Hatherleigh guide to treating substance abuse, Part 2.* N.Y.: Hatherleigh Press

Economou, M. (1996) Psychoeducational Intervention on the relative's knowledge about Schizophrenia *X world Congress of Psychiatry*, Madrid.

Edwards, J., & McGorry, P.D. (1998). Early intervention in psychotic disorders: a critical step in the prevention of psychological morbidity. In C. Perris and P.D. McGorry (eds.), *Cognitive Psychotherapy of Psychotic and Personality Disorders: Handbook of Theory and Practice*. New York: Wiley & Sons Ltd.

Elyard, P. (1996) *Greek Brochure of Family Members of Mentally Ill Patients*. Athens: The Organization of Family Members of Mentally Ill Patients

EMCDDA (1997) Treated Drug Users in 23 European Cities Data 1997. *European Monitoring Centre for Drug Addiction*, Strasbourg Cedex: Council of Europe Publishing.

EMCDDA (2000) *European Monitoring Centre for Drug Addiction*. Strasbourg Cedex: Council of Europe Publishing.

EMCDDA (2004) Comorbidity – Drug Use and Mental Disorders *Drugs in Focus*, **14**, 3

Epidemiologic Catchment Area Study (1990) Journal of psychiatric research, **24,** 4-12

Evans K. and Sullivan, J.M. (1990) *Dual Diagnosis: Counselling Mentally Ill Substance abuser*. New York: Guilford Press

Fahrer, R.D. (1997) Quality of Life in the light of psychotherapeutic and pharmacological treatments. *Biological Psychiatry*, **42**, 84

Falloon, I. (1981) Persistent Auditory Hallucinations. *Psychological Medicine.*, **11,** 329-339

Favre, S., Ferrero, F., Lendais, G., and Saussure, N. (1989) Expressed Emotion of Schizophrenics' Relatives. *VIII World Congress of Psychiatry,* Athens 1989

Fawcett, J., Clark, D., Busch, K. (1993) Assessing and Treating the patient at risk for Suicide. *Italian Journal of Suicide,* **3(1),** 9-23

Fenton, W.S., Mc Glashan, T.H. (1991) Natural history of Schizophrenia subtypes. Longitudinal study of Paranoid, Hebephrenic, and Undifferentiated Schizophrenia *Archives of .General Psychiatry*, **48(11)**, 969-977

Fisher, D.E., Halikas, J.A. (1975) Frequency of Drug abuse in Psychiatric Patients. *Diseases of the Nervous System*, **36**, 550-553

Fleischhacker, W.W. (1995) New Drugs for the treatment of Schizophrenic patients *Acta Psychiatrica Scandinavia,* **91,** 24-30

Frangou, S. (1996) *Schizophrenia* London: Martin Dunitz

Frank, N. (1999) Self-reported Depression and Suicide Attempts among U.S. women Physicians, *American Journal of Psychiatry*, **156(12)**, 1887-1894

Friedmann, M., McDermut, W.H., Solomon, D.A., Ryan, C.E., Keitner, G and Miller, I. (1997) Family Functioning and Mental Illness: a comparison of psychiatric and Nonclinical Families. *Family Process*, **36**, 357-367

Friis, S. (1991) What is the importance of the milieu for the occurrence of violence in Psychiatric wards? *Nordisc Journal of Psychiatry,* **45(25)**, 21-26

Frude, N. (1991) *Understanding Family Problems.* N.Y.: Wiley

Haas, G.L and Sweeney J.A. (1992) Premorbid and Onset features of first Episode Schizophrenia. *Schizophrenia Bulletin*, **18**, 373-386

Hamilton, M. (1960) A Rating Scale for Depression. *Journal of Neurological Neurosrgery and Psychiatry*, **(23)**, 56-58

Hanson C.L. (1987) Family Variables and IDDM adolescents. *Health Psychology*, **8**, 239-253

Harrow, M., Sands, J.R., Silverstein, M.L., Goldberg, J.F. (1997) *Schizophrenia Bulletin*, **23(2)**, 287-302

Hartfield, A. (1993) Dual Diagnosis: Substance Abuse and Mental Illness *National Alliance for the Mentally Ill* N.Y., N.Y.

Hartnoll, R. (1994) Drug Treatment Reporting Systems and the First Treatment Demand Indicator. *Definite Protocol.* Strasbourg: Council of Europe

Hasin, D.S., Grant, B.F. (1988) Lifetime Psychiatric Comorbidity in hospitalized alcoholics. *International Journal of Addiction*, **23**, 827-850

Hattencchwiller, J., Rfiesch, P. (2001) Comparison of four groups of Substance-abusing in-patients with different Psychiatric Comorbidity. *Acta Psychiatrica Skandinavia*, **104(1)**, 59-65

Haynes, R.B. (1979) Introduction. In: Haynes RB, Sackett DL, Taylor DW, (eds.) *Compliance in Health Care.* Baltimore, Md: Johns Hopkins University Press;:1-10.

Heath, A.W. and Stanton, M.D. (1998) Family based treatment: Stages and Outcomes. In: Frances, R. and Miller, S (eds) *Clinical textbook of addictive Disorders* N.Y.: The Guilford Press

Herz, M.I. (1984) Recognizing and preventing relapse in patients with schizophrenia. *Hospital Community Psychiatry*, **35(4)**, 344-9

Hipwell, A.E., Singh, K, Clark, A (2000) Substance misuse among clients with severe and enduring mental illness: service utilisation and implications for clinical management *Journal of Mental Health* **9**, 37-50.

Ho, B.C., Nopoulos, P., Flaum, M., Arndt, S., Andreasen, N.C. (1998) Two year outcome in First-Episode Schizophrenia: Predictive value of Symptoms for Quality of life *The American Journal of Psychiatry,* **155 (9),** 1196-1201

Hoffman, L. (1981) *Foundations of Family Therapy.* New York: Basic

Holmes T. H. and Rahe R. H. (1967) The Social adjustment Rating Scale. In: Feuerstein, M., Labbe, E.E. and Kuczmierczyk, A.R. (1986) *Health Psychology. A Psychobiological Perspective* New York, N.Y.: Plenum Press

Hooley, J.M. and Licht, D.M. (1997) Expressed Emotion and Causal Attributions in the Spouses of Depressed Patients *Journal of Abnormal Psychology*, **2**, 298-306

Hooley, J.M. and Hoffman, P. (1999) Expressed Emotion and Clinical Outcome in Borderline Personality Disorder *American Journal of Psychiatry*, **156**, 1557-1562

Houston, K.G. and Mariotto, U. (2001) Outcomes for Psychiatric Patients Following First Admission *Psychological Rep*, **88**, 1012-4

Hunt, N., Bruce, W. (1992) Life Events and Relapse in Bipolar Disorder. *Journal of Affective Disorders*, **25**, 13-20

Hussain, H. (1998) *Suicide Prevention: The Global Context* In: Kosky,R. and Hadi, E.(eds) N.Y.: Plenum Press

Hwu, H., Tan, H., Chen, C., Yeh, L. (1995) Negative symptoms at discharge and outcome in Schizophrenia, *British Journal of Psychiatry* **166**, 61-67

Geddes, J., Mercer, G., Johnstone, E. (1994) Prediction of Outcome Following a First Episode of Schizophrenia. *British Journal of Psychiatry*, **165**, 664-668

Ghanizadeh, A., Ashkani, I. (2000) Comorbidity of Pschiatric Disorders in Iranian Treatment-seeking Opioid Addicts. *Iranian Journal of Medical Science*, **25(1&2)**, 25-30

Gibbs, J.P. (1964) *Status-Integration and Suicide.* Eugene: University of Oregon Books

GlaxoWelcome (1997) *Hamilton Depression Rating Scale.* www.glaxowelcome.com

Gleghorn, J.M., Kaplan, R.D., Szechtman, B., Szechtman, H. (1991) Substance Abuse and Schizophrenia: effect on symptoms but not on Neurocognitive Function *J. Clin. Psychiatry,* **52, (1),** 26-30

Glick, J. and Kessler, O. (1974) *Marital and Family Therapy.* N.Y.: Grune and Straton

Cohen, I.S. (1995) Overdiagnosis of Schizophrenia: the Role of Alcohol and Drug Misuse. *The Lancet*, **346**, 1541-1542

Goldman, L.S. (1999) Medical Illness in Patients with Schizophrenia. *Journal of Clinical Psychiatry*, **60(21)**, 10-15

Goodwin, F.K., Jamison, K.R. (1990) *Manic-Depressive Illness.* Oxford: University Press

Gordis, E. (2001) Alcoholism and Co-occuring Disorders. *Interenet, www MSN com.*

Graham, H. L., Maslin, J., Copello, A., Birchwood, M., Mueser, K., McGovern, D., & Georgiou, G. (2001) Drug and alcohol problems amongst individuals with severe mental health problems in an inner city area of the UK, *Social Psychiatry and Psychiatric Epidemiology*, **36 (9)**, 448-455.

Greden, J. (1998) Morbidity of Depression. *APA Annual Meeting*, Toronto, Canada

Greek military records (1996) Greek military Athens, Greece

Green, A, (1999) Early Intervention: Approach to Comorbid Substance Abuse Disorder. *APA Annual meeting*, Washington, USA

Greenfield, SF, Weiss, RD and Griffin, M (1992) Patients who use drugs during inpatient substance abuse treatment. *American Journal of Psychiatry*, **149,** 235-239.

Greenwald, A.G., and Banaji, M.R. (1995) Implicit Social Cognition: Attitudes and Stereotypes. *Psychological Review*, **102**, 4-27

Greil, W., Sassim, N. and Sassim C. (1996) *Manic-Depressive Illness: Therapy with Garbamazepine*. New York: Thieme

Guera, A. (1996) Premorbid adjustment and psychosis *X World Congress of Psychiatry*, Madrid, Spain.

Gunby, B. (1991) How to approach a Violent patient? *Nordic Journal of Psychiatry,* **45(25),** 17-19

Gunnell, D.J. (1995) The prevention of Suicide *Perspectives in Depression*,
3(1), 1-6

Imade, A.G. and Ebie, J. (1991) A Retrospective study of Symptoms of Cannabis-Induced Psychosis. *Acta Psychiatrica Scandinavia*, **83**, 134-135

Jablensky, A., Sartorious, M. Emberg, G., Anker, M. Kotrten, A., Cooper, J. and Bartelson, A. (1992) Schizophrenia: Manifestations, Incidents and Course in different cultures *Psychological Medicine*, Monograph supplement 20.

Jackson, R. (1985) The Child with Diabetes Mellitus. In P. Ahmed and N. Ahmed (eds), *Coping with Juvenile Diabetes.* Springfield, I.L.: Charles C. Thomas

Jackson, C. and Birchwood M. (1996) Early Intervention in Psychosis: Opportunities for secondary prevention *British Journal of Clinical Psychology,* **35,** 487-502

Jacobson, A.M. and Rand, L.I. (1985) Psychological Stress and Glycemic Control. *Psychosomatic Medicine*, **4**, 372-81

Janz, N.K., Becker, H.M. and Hartman, P. (1984) Contingency Contracting to Enhance Patient Compliance: A Review. *Patient Education Counselling*, **5**, 165-178

Jessen-Petersen, B.P. (1994) Dual-diagnosis patients. *X World Congress of Psychiatry*, Madrid

Jimeno, N., Jimeno, A., Lopez, M.N., Vargas, M.L. (1997) A Psychopathological Study of Substance-Induced Psychoses in a sample of Spanish patiens *European Addiction Research,* **3,** 173-183

Johnson, S.L. and Miller, I. (1997) Negative Life Events and Time to Recovery from episodes of Bipolar Disorders. *Journal of Abnormal Psychology*, **106(3)**, 449-457

Johnstone E.C., Crow T.J., Johnson A.I. (1986) The Northwick Park study of first episode schizophrenia: I Presentation of the illness and problems relating to admission. *Br J Psychiatry*, **148**, 115-120

Johnstone, E., Frith, C., Crow, T., Charlette, A. (1992) The North Park Functional Psychosis Study: Diagnosis and Outcome. *Psychological Medicine,* **22**, 331-346

Judd, L.L. and Rapaport, M. (1998) Mood Disorders in Schizophrenia, one disorder or Comorbid Disorders: Prevalence and clinical consequences. *Workshop on: Novel therapeutic Strategies in the schizophrenic Spectrum and Mood Disorders*, Venice, Italy

Kalfas, D., Valmas, P., Prassidou, A., Kanistras, A. and Angelidis, G. (1998) The 'Revolving Door syndrome'in a Greek Acute Psychiatric Ward. *Preventive Psychiatry Congress*, Athens, Greece

Kamali, M., Kelly, L., Gervin, M., Browne, S., Larkin, C., &O'Callaghan, E. 2000, "The prevalence of comorbid substance misuse and its influence on suicidal ideation among in-patients with schizophrenia", *Acta Psychiatrica Scandinavia*, **101(6)**, 452-456

Kane, J.M., Freeman, H.L. (1994) Towards more effective Antipsychotic treatment *British Journal of Psychiatry,* **165,** 22-31

Kaplan, H.I. and Sadock, B.J. (1994) *Synopsis of Psychiatry.* Baltimore: Williams & Wilkins

Kasahura, Y. (1991) The Diagnosis of Depression in Japan. In: Feigher, J.P. and Boyer, W.F. (eds.) *Diagnosis of Depression*, 163-194 N.Y.: John Wiley and sons

Kasper, K. (1999) First-Episode Schizophrenia. *Journal of Clinical Psychiatry,* **60(23)**, 50-58

Kavanagh, D.J. (1992) Recent Developments in Expressed Emotions and Schizophrenia *British Journal of Psychiatry,* **160,** 601-620

Kay S.R., Fizbein, A, Opler L.A. (1987) The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia *Schizophrenia Bulletin*, **13**, 261-276

Kay, S.R., Lindenmayer, J.P. (1987) Outcome Predictors in Acute Schizophrenia: prospective significance of Background and Clinical Dimensions *Journal of Nervous and Mental Disorders*, **175**, 152-160

Keller M.B. (1982) Relapse in major Depressive disorder: Analysis with life table. *Archives of General Psychiatry*, **48**, 911-915

Keshavan, M.S. and Schooler, N.R. (1992) First-episode studies in Schizophrenia: Criteria and Characterization. *Schizophrenia Bulletin*, **18(3)**, 491-513

Kessler, R.C. (2002) Comorbidity of Mental Disorders and Substance Use Disorders: A Review and Agenda for Future Research In Leaf, P. (Ed.) *Research in Community and Mental Health.* Greenwich, CT: JAI Press

Khantzian, E. (1985) The Self-medication Hypothesis of Addictive Disorders. *American Journal of Psychiatry*, **10**, 50-55

Kidd, B.A. (1995) Comorbidity: Substance Abuse and Depression. *Perspectives in Depression*, **3(1)**, 6-9

King, D.J. (1990) The effect of Neuroleptics on Cognitive and Psychomotor function. *British Journal of Psychiatry,* **157(6)**, 799-811.

Kingdon, D.G. and Turkington, D. (1994) *Cognitive Behavioural Therapy of Schizophrenia.* Hove: The Guildford Press

Kivela, S.I. (1995) Long-term Prognosis of Major Depression in Old Age *Int Psychogeriatr.*, **7**, 69-82

Knowlton, L. (1995) Public and Research Views of Dual-Diagnsis explored. *Psychiatric Times*, **XII(5)**, 22-25

Kokkevi, A. and Stefanis, C. (1995) Drug Abuse and Psychiatric comorbidity. *Comprehensive Psychiatry*, **36(5)**, 329-337

Kosky, R. and Hardy, J. (1992) Mental Health: Is Early Intervention the key? *Medical Journal of Australia*, **152**, 147-148

Kraemer, H.C. (2000) Methodological and Statistical Progress in Psychiatric Clinical Research: A Statistician's Perspective. *Psychopharmacology*, **22**

Kramer, T. A. (2003) Dual Diagnoses, New Perspectives. *Medscape General Medicine*, **5 (1)**, Medscape Clear Communication

Kreitman, N. (1977) *Parasuicide*. London: Wiley

Kuhn, T.S. (1977) *Second thoughts on Paradigms*. In: Suppe, F. (ed.) *The structure of scientific theories*. Urbana: University of Illinois Press

Kupfer, D.J., Frank, E., Perel, J.M. (1989) The Advantage of Early Treatment Intervention in recurrent Depression *Archives of General Psychiatry*, **46(9)**, 771-775

Kupfer, D.J. (1993) Management of Reccurent Depression *Journal of Clinical Psychiatry*, **54(2)**, 29-33

Lader, M. (1995) What is relapse in Schizophrenia? *International Clinical Psychopharmacology*, **9(5)**, 5-9

Ladewig, D., Schroeter, U. (1990) Drug dependence in Patients in Psychiatric Hospitals in Switzerland *Pharmacopsychiatry* **23(4),** 182-186

Landry, M.J., Smith, D.E., Steinberg, J.R. (1991) Anxiety, Depression and Substance Use Disorders. *Journal of Psychoactive Drugs*, **23(4)**, 397-416

Lapierre, Y.D. (1995) Schizophrenia and Manic – depression separate illnesses or a continuum *Can. J. Psychiatry,* **39(9)**, 59-64

Larsen, T.K., McGlashan, T.H., Johannessen, J.O. and Vibe-Hansen, L. (1996) First-episode schizophrenia: II. Premorbid patterns by gender. *Schizophrenia Bulletin*, **22(2)**, 257-269

Lehman, A.F., Myers, C.P., Corty, E. (1989) Assessment and Classification of Patients with Psychiatric and Substance Abuse Syndromes. *Hospital and Community Psychiatry*, **40(10)**, 1019-1030

Lee, A.S. and Murray, R.M. (1988) The long term outcome of Maudsley Depressives. *British Journal of Psychiatry*, **153**, 741-751

Leshner, A. (1997) Addiction Is a Brain Disease. *USIA Electronic Journal,* **2(3)**

Lieberman JA, Sheitman BB, Kinon BJ. (1997) Neurochemical sensitization in the pathophysiology of schizophrenia: deficits and dysfunction in neuronal regulation and plasticity. *Neuropsychopharmacology*, **17**, 205-229

Lindstrom, E., Von Knorring, L. (1994) Changes in Single symptoms and separate factors of the Schizophrenic syndrome after treatment with Risperidone and Haloperidol *Pharmacopsychiatry*, **27,** 108-113

Lines, E. (2000) An Introduction to Early Psychosis Intervention: Some Relevant Findings and Emerging Practices. CMHA National's project: *Youth and Mental Illness: Early Intervention*

Lingjaerde, O. (1991) Benzodiazepines in the treatment of schizophrenia: an updated survey *Acta Psychiatrica Scandinavia*, **84(5)**, 453-459

Loebel, A.D., Lieberman, J.A., Alvir, J.M. (1992) Duration of Psychosis and outcome in first-episode Schizophrenia. *American Journal of Psychiatry*, **149(9)**, 1183-1188

Lorenz, K. (1989) In: Morgensen, C.E. and Standl, E. (Eds.) *Concepts for the Ideal Diabetes Clinic,* N.Y: Walter de Gruyter

Lublin, H. (1998) The Educational aspect of Psychiatric information. *Prelapse*, **1**, 6-7

Lustman, P. (1999) Mediating Mechanisms and Consequences of

Lykouras , E., Botsis, A., Oulis, P. (1997) PANSS, PAS, Hamilton: Rating Manual in Greek Language, Athens: Greek Medical University Publications

Lyons, J. S. & McGovern, M. P. (1989). Use of mental health services by dually diagnosed patients. *Hospital and Community Psychiatry* **40(10)**, 1067-1069.

Lyons, S.J., O'Mahoney, M.T., Miller, S. Neme, J. Kabat, B. (1997) Predicting Readmission to the Psychiatric Hospital in a managed care environment: Implications and Quality indicators *American Journal of Psychiatry*, **154(3)**, 337-340

Machover, K. (1949) *Personality Projection in the Drawing of the Human Figure*. Springfield: IL: Thomas

Malkoff-Schwartz S., Frank E., Anderson, B. (1998) Stressful Life Events and Social Rhythm Disruption in the Onset of Manic and Depressive Bipolar Episodes. *Archives of General Psychiatry*, **55**, 702-710

Mantonakis, J., Markidis, M., Christodoulou, G. (1989) Characteristics of the Non-compliant schizophrenic. *VIII World Congress of Psychiatry*, Athens

Martinez, M.J., Calcedo, A., Varo, J.R. (1994) Cannabis consumption as a prognostic factor in schizophrenia *British Journal of Psychiatry,* **164,** 679-681

Maudsley, H. (1867) *The Physiology and Pathology of Mind.* London: Macmillan.

Mauri, M.C., Ruggiero, G.M.,Ciuna, A. (2000) One-year follow-up of pharmacological and psychoeducational treatment for 164 eating disordered subjects. *The Journal of the European College of Neuropsychopharmacology*, **10(3),** 396

McEvoy, J.P. (1989) Insight in schizophrenia. Its relationship to acute psychopathology. *Journal of Nervous and Mental Disease*, **177**, 43-47

McGlashan, T.H. (1996) Early Detection and Intervention with Schizophrenia. *Schizophrenia Bulletin*, **22(2)**, 201

McGlashan TH. (1998) Early detection and intervention of schizophrenia: rationale and research. *British Journal of Psychiatry*, **172**(suppl 33), 3-6.

McGoldrick, M., Pearce, J.K., Giordano, J. (1982) *Ethnicity and Family therapy.* N.Y.: Guildford

McGorry, P.D. (1995) Psychoeducation in first-episode psychosis: a therapeutic process. *Psychiatry*, **58(4)**, 313-28

McGorry, P.D., Edwards, J., Mihalopoulos, S. (1996) EPPIC: An Evolving system of Early Detection and Optimal Management. *Schizophrenia Bulletin*, **22(2)**, 305-327

McLeelan, A.J., Luorsky, L., Woody, G.E., O'Brien, C.P. and Druley, K.A. (1983) Predicting response to alcohol and Drug Treatments: Role of Psychiatric Severity. *Archives of General Psychiatry*, **40**, 620-625

McLeelan, A.J. (1986) In Alterman (Ed.) Drug Abuse and Psychiatric Disorders. N.Y. Plenum

Menezes, P.R., Johnson, S., Thornicroft, G., Marshall, J., Prosser, D., Bebbington, P. & Kuipers, E. (1996) Drugs and Alcohol Problems among Individuals with Severe Mental Illnesses in South London. *British Journal of Psychiatry,* **168**, 612-619.

Meyer, R.E. (1986) *Psychopathology and Addictive Disorders.* N.Y.: Guilford Press

Michalakeas, A., Skoutas, C., Charalambous, A., Peristeris, A., Marinos, V.(1994) Insight in Schizophrenia and Mood Disorders and its relation to psychopathology *Acta Psychiatrica Scandinavia,* **90(1),** 46-49

Migdole (2002) Dual-Diagnosis Program Guidelines Focus on Making Gradual Progress. *Behavioral Health Accreditations & Accountability Alert*, **7(4)**,1-3

Miklowitz, D. (1996) Bipolar Disorders Letter. **Oct.** *Psychiatric Times*, 22-24

Miles, C.P. (1977) Conditions predisposing to Suicide: a review *J. Nervous Mental Disease,* **164,** 231-246

Miller, N.S., Fine, J. (1993) Current Epidemiology of Comorbidity of Psychiatric and Addictive disorders *Psychiatric Clinic of North America,* 16, 1-10

Minkoff, K. (1989) An integrated Program Model for dual Diagnosis of Psychosis and Addiction. *Hospital and Community Psychiatry*, **40(10),** 1031-1036

Monroe, S.M., Thase, M. (1992) The Social Factors of the Psychobiology of Depression *Journal of Abnormal Psychology*, **101**, 528-537

Morin, D. and Gailledreau, J. (1989). Chronic cannabis-induced psychosis. *VIII World Congress of Psychiatry*, Athens

Mueller, T.I., Lavori, P.W. (1994) Prognostic effect of the Variable course of Alcoholism on the 10 year course of Depression. *American Journal of Psychiatry*, **151**, 701--708

Mueser, K.T., Bellack, A.S., Brady, E.U. (1990) Hallucinations in Schizophrenia *Acta Psychiatrica Scandinavia,* **82(1),** 26-29

Mueser, K. T., Yarnold, P. R., Rosenberg, S. D., Swett, C., Jr., Miles, K. M., & Hill, D. (2000) Substance use disorder in hospitalised severely mentally ill psychiatric patients: prevalence, correlates, and subgroups, *Schizophrenia Bulletin.*, **26(1)**,179-192

Mueser, K.T., Drake, R., Miles, K. (2002) The course and Treatment of Substance Use Disorder in Persons with Severe Mental Illness. *National Institute on Drug Abuse Site*

Nace, E.P., Davis, C.W., Gaspari, J.P. (1991) Axis II comorbidity in Substance Abusers *American Journal of Psychiatry,* **148, (1),** 118-120

Nathan, P.E. The addictive Personality is the Behaviour of the Addict *Journal of Consulting and Clinical Psychology*, **56(2)**, 183-188

National Comorbidity Study (1990) *Medscape Mental Health*, Internet Medscape.com

Noble, P., Rodger, S. (1989) Violence by Psychiatric In-patients *British Journal of Psychiatry*, **155(3)**, 384-390

Neuechterlein, K.H., Dawson, M.E., Ventura,, J., Gitlin, M. (1994) The Vulnerability/ Stress model of Schizophrenic Relapse *Acta Psychiatrica Scandinavia,* **89,** 58-64

Oikonomoy, M. (1992) Behaviour Therapy in Famillies for Schizophrenia. In Behaviour Therapy Isuues (Eds, Kalantzi, A and Degleris, N.) Athens: Ellinika Grammata

Olney JW, Farber NB. (1995) Glutamate receptor dysfunction and schizophrenia. *Archives of General Psychiatry*, **52**, 998-1007.

Os, J. V. (1998) Genotype- environmental Interaction and Psychosis. *Psychiatry*, **9(2)**, 31-36

Owen, R., Fischer, E., Booth, B., Cuffel, B. (1996) Medication Noncompliance and Substance Abuse among Patients with Schizophrenia. *Psychiatric Services*, **47**, 853-858

Pepper, B (2000) Mentally Ill Alcohol and Substance Abuser. *Journal of Alcohol and Substance Abuse*, **2(2)**, 50-55

Perkins, D.O. (1999) Adherence to Antipsychotic Medications. *Journal of Clinical Psychiatry*, **60(21)**, 25-32

Peruzzi, P. and Mosconi, A. (1996) Systemic Psychoeducation. *X World Congress of Psychiatry*, Madrid.

Phillips, L. Case History Data and Prognosis in Schizophrenia. *Journal of Nervous and Mental Disease*, **117**, 515-525

Platt, J.J. (1995) *Heroin Addiction Theory, Research, and Treatment: Vol. 2.* The Addict, the Treatment Process, and Social Control Malabar, FL: Krieger.

Prien, R., F.; Klett, C. J.; Caffey, E. M. (1973) Lithium carbonate and imipramine in prevention of affective episodes. A comparison in recurrent affective illness *Archives of General Psychiatry,* **29**, 420-425.

Prien, R.F. and Kocsis, J.H. (1995) Long-Term Treatment of Mood Disorders. In: Bloom F.E. and Kupfer, D.J. (Eds.) *Psychopharmacology* N.Y. Raven Press.

Rabiner, C.,J., Wegner, J.T. and Kane, J.M. (1986) Outcome Study of First-Episode Psychosis *American Journal Of Psychiatry*, **143(9)**, 1155-1158

Rajkumar, S. and Thara, R. (1989) Factors affecting relapse in schizophrenia. *Schizophrenia Research*, **2(4-5)**, 403-9

Ratakonda, S., Gorman, J.M.,Yale, A.S., Amador, X.F. (1998) Characterization of Psychotic Conditions.Use of the Domains of Psychopathology Model. *Archives of General Psychiatry*, **55**, 75-81

Regier, D.A., Farmer, M.E., Rae, D.S., Locke, B.Z., Keith, S.J. (1990) Comorbidity of Mental Disorders with alcohol and other Drug Abuse. *Journal of the American Medical Association*, **264(19)**, 2511-2524

Reimen, M. (2004) Comorbidity. *Drugs in Focus*, **14**, 1

Reiss, D. (1981) *The Family's Construction of Reality.* London: Harvard University Press

Remschmidt, H. (1993) Schizohrenic Psychoses in Children. *Triangle Sandoz Journal of Medicine*, **32 (1)**, 15-24

Rethink (2003) The National Schizophrenia Fellowship www.rethink.org

Ries, R.K., Russo, J., Wingerson, D. et al (2000) Shorter hospital stays and more rapid improvement among patients with schizophrenia and substance use disorders *Psychiatric Services* **51**, 210-215.

Roberts, LJ, Shaner A, Eckman TA et al (1992) Effectively treating stimulant-abusing schizophrenics: mission impossible? *New Directions for Mental Health Services*, **53**, 55-65.

Robins & Regier, (1991) Epidemiologic Catchment Area (ECA) study. USA.

Robinson, D., Woerner, G., Alvir, J. Bilder, R., Goldman, R., Geisler, S. Lieberman, J.A. (1999) Predictors of Relapse Following Response from a First Episode of Schizophrenia or Schizoaffective Disorder. *Archives of General Psychiatry*, **56**, 241-247

Rolland, J.S. (1987) Chronic Illness and Life Cycle *Family Process,* **26,** 203-221

Rolland, J.S. (1994) *Families, Illness and Disability.* N.Y.: Basic Books

Rook, K.S. (1985) In: Frude, N. *Understanding Family Problems.* N.Y.: Wiley

Ross, H.E. (1988) The prevalence of Psychiatric Disorders in patients with Drug Problems. *Archives of General Psychiatry*, **45**, 1023-1031

Rounsaville BJ, Weissman MM, Crits-Christoph K, et al. (1982) Diagnosis and symptoms of depression in opiate addicts: course and relationship to treatment outcome. *Archives of General Psychiatry*, **39**, 151-6.

Roy, A (2001) Characteristics of Cocaine-Dependent Patients who attempt Suicide. *American Journal of Psychiatry*, **158**, 1215-1219

Sanguineti, V.R. and Samuel, S.E. (1993) Comorbid Substance abuse and Recovery from Acute Psychiatric Relapse. *Hospital and Community Psychiatry*, **44(11)**, 1073-1076

Sartorius, n. (1997) Quality of life of the Mentally Ill. *Psychiatriki*, **8(4)**, 257-261

SAMHSA (2001) Few Dually Diagnosed Clients Managed Solely by State SA Agencies. *Alcoholism and Drug Abuse Weekly*, **13 (31)**, 4-6

Schooler, N.R. (1994) Negative Symptoms in Schizophrenia: Assessment on the Effect of Risperidone *Journal of Clinical Psychiatry,* **55,** 22-28

Sciacca, K. and Hatfield, A (1995) The Family and the Dually Diagnosed Patient. In: Lehman A.F. and Dixon, L.B. (eds.) *Double Jeopardy: Chronic Mental Illness and Substance Use Disorders*. N.Y.: Wiley

Sheehan, M. E (1993) Dual Diagnosis. *Psychiatric Quarterly*, **64 (2),** 107-34.

Silver, H. and Abboud, E. (1994) Drug Abuse in Schizophrenia. *Schizophrenia Research*, **13**, 57-63

Simoes, M. (1989) Cannabis use in the schizophrenic shift. *VIII World Congress of Psychiatry*, Athens 1989

Sloan, K. L. (1998) Substance Abuse and Psychiatric illness. *American Journal of Drug and Alcohol Abuse*, **11**, 8-20

Solomon, P. (1996) Moving from psychoeducation to education for families of adults with serious mental illness *Psychiatric Services*, **47**, 1346-1370

Steegen, G. and Lecompte, D. (1999) Relapse Prevention and Insight in Schizophrenia *Preventive Psychiatry Congress*, Athens, Greece

Strang JS, Falloon IRH, Moss HB, Razani J, Boyd JL. (1981) The effects of family therapy on treatment compliance in schizophrenia. *Psychopharmacol Bulletin*, **17**, 87-88.

Stricker, K., Schulze, M., Buchkremer, G. (1997) Family interaction and the course of schizophrenic illness. *Psychopathology,* **30**, 282-290

Substance Abuse and Mental Health Services Administration (SAMSHA) (2001) Few Dually Diagnosed clients Managed Solely by State SA Agencies *Alcoholism and Drug Abuse Weekly*, **13**, 1-6

Swan, G., Carmelli, D., Rosenman, R. (1986) Spouse-pair similarity on the C. psychological inventory. *Psychosomatic Medicine,* **48**, 185

Taiminen, T.J., Kujari, H. (1994) Antipsychotic Medication and Suicide Risk Amongst Schizophrenic and Paranoid patients-A controlled retrospective study *Acta Psychiatrica Scandinavia,* **90(4),** 247-251

Terence, T., Gorski,, M.A., Kelley, M.A., C.S.W. (2002) *Counselor's Manual for Relapse Prevention With Chemically Dependent Criminal Offenders* U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service Substance Abuse and Mental Health Services Administration

The Expert Consensus Guidelines for Schizophrenia (1999) (Ed. McEvoy). *The Journal of Clinical Psychiatry*, **60(11)**, 1-80

Tollefson, G.D., Todd, M.S. (1998) Depressive Signs and Symptoms in Schizophrenia. *Archives of General Psychiatry*, **55**, 250-258

Toner, B.B., Gillies, L.A. (1992) Substance Use disorders in a sample of Canadian Patients with chronic Mental illness. *Hospital and Community Psychiatry*, **43**, 251-255

Tucker, G. (1998) Putting DSM-IV in Perspective. *American Journal of Psychiatry*, **155(2)**, 159-162

Turner, W. and Tsuang, W. (1990) Impact of Substance abuse on the course and Outcome of Schizophrenia. *Schizophrenia Bulletin*, **16(1),** 87-95

Vaglum, P. (1996) Earlier Detection and Intervention in Schizophrenia. *Schizophrenia Bulletin*, **22(2),** 347-351

Vaughn, C. and Leff, J. (1976b) The Measuremnt of Expressed Emotion in the Families of Psychiatric Patients. *British Journal of Social and Clinical Psychology*, **15**, 157-165

Vieta E. (2003) Psychoeducation *16th European College of Neuropsychopharmacology (ECNP)* Prague

Waddington JL, Buckley PF, Scully PJ, (1998) Course of psychopathology, cognition and neurobiological abnormality in schizophrenia: developmental origins and amelioration by antipsychotics? *Journal of Psychiatric Research*, **32**, 179-189.

Watzlawick, P., Weakland, J., Fisch, R. (1974) *Change.* N.Y.:Norton
Weiden, P. (1997) Switching Antipsychotic Medications *The Journal of Clinical Psychiatry,* **15 (2)**, 34-37

Weaver, T., Rutter, D., Madden, P., Ward, J., Stimson, G., & Renton, A. (2001) Results of a screening survey for co-morbid substance misuse amongst patients in treatment for psychotic disorders: prevalence and service needs in an inner London borough, *Social Psychiatry and Psychiatric Epidemiology*, **36 (8)**, 399-406.

Weiden, P. (1999) Non-compliance and Schizophrenia. American Medical Association's (AMA) 13th Annual Science Reporters Conference, Seattle, U.S.A.

Weissman, M.M. and Klerman, G.L. (1992) Depression: Current Understanding and changing Trends. *Annual Review of Public Health*, **13**, 319-339

Westreich L; Guedj P; Galanter M; Baird D. (1997) Differences between men and women in dual-diagnosis treatment. *American Journal on Addictions*, **6(4)**, 311-317

Willis, T.A. (1985) In: Frude, N. *Understanding Family Problems.* N.Y.: Wiley

Winokur, G. Kadrmas, A. (1989) A Polyepisodic course in bipolar illness: possible clinical relationship. *Comprehensive Psychiatry*, **30**, 121-127.

Wistedt, B., Palmstierna, T. (1991) Strategies for Prevention and Treatment of Violence by Psychotic Patients. *Nordic Journal of Psychiatry*, **45(25),** 5-11.

Wolf, A.W., Schubert, D.S.P., Patterson, M.B. (1988) Associations among psychiatric diagnoses. *Journal of Consulting and Clinical Psychology*, **56(2)**, 292-294

Wolfersdorf, M. (1996) Depression and Suicidal Behaviour *Archives of Suicide Research,* **3**, 1-7

Wolin, S. (1980) In: Rolland, J.S. (1994) *Families, Illness and Disability*. N.Y.: Basic Books

WHO - World Health Organization (1973) *International Pilot study of Schizophrenia*. Geneva: WHO

WHO- World Health Organization (1990) *Global Burden of Disease*. Geneva: WHO

WHO- World Health Organization (1995) *World Health Report 1995*, Geneva: WHO

WHO - World Health Organization (1998) *Therapeutic Patient Education*. Geneva: WHO

WPA - World Psychiatric Association (1999) Preventive Psychiatry *WPA Congress on preventive Psychiatry*, Athens, Greece

Wright, P., Sham, P.C., Gilvarry, C.M., Jones, P.B., Cannon, M. (1996) Autoimmune Diseases in the Pedigrees of Schizophrenic and Control Subjects. *Schizophrenia Research*, **20(3)**, 261-7

Wright, S., Gournay, K., Glorney, E. and Thornicroft, G. (2000) Dual diagnosis in the suburbs: prevalence, need and in-patient service use. *Social Psychiatry and Psychiatric Epidemiology,* **35**, 297-304

Wyatt, R.J. (1999) Early Treatment of Schizophrenia and Long-Term Morbidity. *Psychiatric Times*

Young, R.C., Biggs, J.T., Ziegler, V.E. and Meyer, D.A. (1978) A rating scale for mania: reliability, validity and sensitivity. *The British Journal of Psychiatry*, **133**, 429-435

APPENDICES

APPENDIX A

PRODROMAL SIGNS QUESTIONNAIRE

These questions are about how you feel and how things have been with you during the past 6 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.
How much of the time during the past 6 weeks:
(please tick the appropriate box).

	All of the time	Most of the time	Some of the time	None of the time
Tense and nervous				
Difficulties in concentrating and sustaining thought which reduces ability to read or hold a conversation				
Reduced appetite				
Reduced ability to enjoy usual interests				
Less than two or three hours sleep (insomnia) or hypersomnia				
Increase in abuse of drugs/alcohol				
More talkative than usual				
Excessive involvement in activities				
Hear voices or see things				
Thought broadcast so that other people can hear them				
Feel under the control of some external power				
Other				

The same questionnaire is answered by family members.

APPENDIX B

LIFE EVENTS QUESTIONNAIRE

RANK	LIFE EVENT	STRESS VALUES (0-100)
1	Death of Spouse	
2	Divorce	
3	Marital Separation	
4	Jail term	
5	Death of close Family Member	
6	Personal injury or Illness	
7	Marriage	
8	Fired at work	
9	Marital reconciliation	
10	Retirement	
11	Change in Health of Family Member	
12	Pregnancy	
13	Sex difficulties	
14	Gain of new Family Member	
15	Business Readjustment	
16	Change in Financial State	
17	Death of Close Friend	
18	Change to different line of work	
19	Change in number of arguments with spouse	
20	Mortage over € 10,000	
21	Please state other life event	

Adapted from "The Social Adjustment Rating Scale" by T. H. Holmes and R. H. Rahe (1967).

APPENDIX C
CONTEXT AND HISTORICAL DEVELOPMENT OF THE PROJECT

This project was supported by "Athens Neuropsychiatric Hospital" in Athens, Greece where I am the lead researcher for the European Monitoring Centre for Drug Addiction (EMCDA). All the questionnaires used in this project were provided by the Department of Psychiatry of the Athens University Medical School, which supports the EMCDA program for Greece.

The EMCDA operates within the framework of the Council of Europe. The aim of the EMCDA is defined as to study drug use and trafficking problems from a multidisciplinary perspective (epidemiology, prevention, treatment, rehabilitation, criminal justice issues, etc.) (EMCDA, 1997).

In 1989, a pilot study was carried out in London and in 1991, eleven cities participated in a developmental project. Standard definitions, a core data set, and data collection procedures, which were similar as possible, were discussed and agreed upon. A definite protocol was produced, discussed at meetings and subsequently revised (Hartnoll, 1994). In the years, which followed this protocol, was implemented at city as well as at national level in many different places (e.g. Greece, Spain, etc.).

The data for the EMCDA project were collected at national level in Greek psychiatric hospitals under the supervision of the Department of Psychiatry of the Athens University Medical School. As the "Athens Neuropsychiatric Hospital's" psychologist and the lead researcher for EMCDDA, I submitted to the EMCDA of about 1000 filled in questionnaires during individual interviews (APPENDIX D) with the patients admitted in the Neuropsychiatric Hospital in the period 1995-2001.

The hospital is located in Athens, Greece and has inpatient treatment services for patients with psychiatric and/or substance abuse disorders with voluntary or involuntary hospitalisations. The population in this hospital comprised both sexes, and broad ranges of age and degree of mental handicap. Patients were referred on the basis of the severity of their acute psychopathology with respect to dangerousness and because of the exacerbation of a long-standing disorder. Assessments and treatments were performed by a team of psychiatrists and clinical psychologists who work as full-time clinicians in the hospital. Part of this team is the author of this project.

The planning and execution of this project was facilitated by the experience gained the author in the course of previous research with the EMCDDA team.

APPENDIX D

EMCDA QUESTIONNAIRE

1. Age _____ 2. Sex _____ 3. Marital Status S M D W 4. Race W B H A

Date Admitted _____ Date Discharged _____ 5. L O S (days) _____

6. Employed: _____ Yes _____ No 7. Previous psychiatric hospitalization _____ Yes _____ No

8. Previous Medical hospitalization _____ Yes _____ No

Previous Outpatient Treatment (Lifetime History) (Check all that apply)

9. A.A. _____ 10. N.A. _____ 11. Methadone Maintenance _____ 12. Psychiatric Outpatient _____

13. Residential drug rehab program _____ 14. For Alcoholism _____

Primary Diagnoses (Use DSM IIIR Code Numbers)

	At Admission	*At Discharge*
15. Axis I	_____	_____
	_____	_____
16. Axis II	_____	_____
	_____	_____
17. Axis II	_____	_____
	_____	_____

18. Drug withdrawal signs during hospital stay? _____ Yes _____ No _____ Uncertain

19. Urine (date) _____ _____ (–), or _____ (+) for _____

20. Urines (dates) _____ _____ (–), or _____ (+) for _____

21. Intoxicated state in hospital _____ Yes _____ No

Manner of Discharge

22. _____ Administrative, _____ AMA, _____ planned; _____ elopement.

23. Number of seclusions during present hospitalization _____

24. Suicide in the past? _____ Yes _____ No (gestures or attempts)

Drug Use History

	Rate of Use in Past Three Months				
	Almost Daily	*Weekly*	*Monthly*	*Rarely*	*Never*
25. Alcohol	_____	_____	_____	_____	_____
26. Marijuana	_____	_____	_____	_____	_____
27. Heroin (IV)	_____	_____	_____	_____	_____
28. Heroin (snort)	_____	_____	_____	_____	_____
29. Cocaine (IV)	_____	_____	_____	_____	_____
30. Cocaine (snort)	_____	_____	_____	_____	_____
31. Cocaine (smoke)	_____	_____	_____	_____	_____
32. Stimulants	_____	_____	_____	_____	_____
33. Sedatives	_____	_____	_____	_____	_____
34. PCP	_____	_____	_____	_____	_____
35. Other	_____	_____	_____	_____	_____

A. What and how much were you using? What and how much were your family members using?

B. How often were you using? How often were other family members using?

C. What did alcohol or drugs help you or other family members do that could not be done without using?

D. What thoughts, feelings, or situations problems did using help you or other family members to avoid?

E. What happened to you or other family members as a result of using?

F. How did people around you act when they used? Was there violence? Was there divorce, money worries, or other problems?

G. What crimes did you or other family members commit, or what trouble did you o they get into?

APPENDIX E

PAS QUESTIONNAIRE

Sociability and isolation

Would you describe X between ages 5 and 11 as outgoing and liking the company of others or as shy and withdrawn?(1) Not withdrawn, active social interaction(3) Mild withdrawal, enjoyed socialization when involved—occasionally sought opportunities to socialize(5) Moderately withdrawn, given to daydreaming and excessive fantasy, did not seek contact(7) Unrelated to others, isolated, avoided contacts*2. Peer relations*

Did X make friends easily during childhood? How many friends did X have? Were there any really close friends?(1) Many friends, close relationships(3) Casual friends only(5) Deviant friendship patterns: only friendly with children older or younger(7) Socially isolated, not even superficial relationships*3. Scholastic performance*

What sort of student was X between ages 5 and 11? Did X come at the top or bottom of his/her class?(1) Excellent student, top of class(3) Average student(5) Failing all classes(7) Required special education*4. Adaptation to school*

Did X get into trouble at school during childhood? How much and what kind of trouble?(1) Good adaptation, enjoyed school, no discipline problems(3) Fair adaptation, occasional discipline problems, not very interested in school(5) Poor adaptation, disliked school, frequent truancy and discipline problems(7) Refused to have anything to do with school—delinquency or vandalism directed against school*5. Interests*

During childhood did X have many interests and hobbies? Did his/her interests involve others?(1) Active, involved in a range of school, sporting, and social activities and hobbies(3) Involved in one school, sporting, or social activity with other young people(5) Introverted interests—one or a few hobbies which required no contacts with others(7) No interests—withdrawn and indifferent toward interests of the average youngster

APPENDIX F

Hamilton Depression Rating Scale

Clinic No. _____ Date _____ Rating No. _____ Code Number _____

Sex _____ Age _____ Patient's Name _____

Patient's Address _____ Tel. _____

Item	Range	Score
1. Depressed mood	0–4	
2. Guilt	0–4	
3. Suicide	0–4	
4. Insomnia initial	0–2	
5. Insomnia middle	0–2	
6. Insomnia delayed	0–2	
7. Work and interest	0–4	
8. Retardation		
9. Agitation	0–4	
10. Anxiety (psychic)	0–4	
11. Anxiety (somatic)	0–4	
12. Somatic gastrointestinal	0–2	
13. Somatic general	0–2	
14. Genital	0–2	
15. Hypochondriasis	0–2	
16. Insight	0–4	
17. Loss of weight	0–2	
		Total Score
Diurnal variation (morning, afternoon, evening)	0–2	
Depersonalization	0–4	
Paranoid symptoms	0–4	

APPENDIX G

Complete List of DSM-IV Codes

- An asterisk (*) marks those locations where "Sedative" stands for "Sedative, Hypnotic and Anxiolytic"

- In the mood disorders, the fifth digit is used to denote severity for Major Depressive, Manic, and Mixed episodes: .01 = Mild; .02 = Moderate; .03 = Severe Without Psychotic Features; .04 = Severe With Psychotic Features; .05 = In Partial Remission; .06 = In Full Remission; .00 = Unspecified

Alphabetical DSM-IV Codes

Name	Number
Bipolar Disorder NOS	296.80
Bipolar I Disorder Most Recent Episode Depressed	296.5x
Bipolar I Disorder Most Recent Episode Hypomanic	296.40
Bipolar I Disorder Most Recent Episode Manic	296.4x
Bipolar I Disorder Most Recent Episode Mixed	296.6x
Bipolar I Disorder Single Manic Episode	296.0x

Bipolar I Disorder, Most recent episode Unspecified	296.7
Bipolar II Disorder	296.89
Cannabis Abuse	305.20
Cannabis Dependence	304.30
Cocaine Abuse	305.60
Cocaine Dependence	304.20
Depressive Disorder NOS	311
Eating Disorder NOS	307.50
Hallucinogen Abuse	305.30
Hallucinogen Dependence	304.50
Hallucinogen Persisting Perception Disorder (Flashbacks)	292.89
Inhalant Abuse	305.90
Inhalant Dependence	304.60
Major Depressive Disorder Recurrent	296.3x
Major Depressive Disorder Single Episode	296.2x

Opioid Abuse	305.50
Opioid Dependence	304.00
Other (or Unknown) Substance Abuse	305.90
Other (or Unknown) Substance Dependence	304.90
Polysubstance Dependence	304.80
Psychotic Disorder Due to [General Medical Condition], With Delusions	293.81
Psychotic Disorder Due to [General Medical Condition], With Hallucinations	293.82
Psychotic Disorder NOS	298.9
Schizoaffective Disorder	295.70
Schizophrenia Undifferentiated Type	295.90
Schizophrenia, Catatonic Type	295.20
Schizophrenia, Disorganized Type	295.10
Schizophrenia, Paranoid Type	295.30
Schizophrenia, Residual Type	295.60

Schizophreniform Disorder	295.40
Substance [Amphetamine, Caffeine, Cannabis, Cocaine, Hallucinogen, Inhalant, Phencyclidine, Sedative*, Other (or Unknown)]-Induced Anxiety Disorder	292.89
Substance [Amphetamine, Caffeine, Cannabis, Cocaine, Hallucinogen, Inhalant, Nicotine, Opioid, Phencyclidine, Sedative*, Other (or Unknown)]-Related Disorder NOS	292.9
Substance [Amphetamine, Caffeine, Cocaine, Opioid, Sedative*, Other (or Unknown)]-Induced Sleep Disorder	292.89
Substance [Amphetamine, Cannabis, Cocaine, Hallucinogen, Inhalant, Opioid, Phencyclidine, Sedative*, Other (or Unknown)]-Induced Psychotic Disorder, With Delusions	292.11
Substance [Amphetamine, Cannabis, Cocaine, Hallucinogen, Inhalant, Opioid, Phencyclidine, Sedative*, Other (or Unknown)]-Induced Psychotic Disorder, With Hallucinations	292.12
Substance [Amphetamine, Cannabis, Cocaine, Hallucinogen, Inhalant, Opioid, Phencyclidine, Sedative*, Other (or Unknown)] Intoxication Delirium	292.81
Substance [Amphetamine, Cannabis, Cocaine, Hallucinogen,	292.89

Inhalant, Opioid, Phencyclidine, Sedative*, Other (or Unknown)] Intoxication	
Substance [Amphetamine, Cocaine, Hallucinogen, Inhalant, Opioid, Phencyclidine, Sedative*, Other (or Unknown)]-Induced Mood Disorder	292.84
Substance [Amphetamine, Cocaine, Nicotine, Opioid, Sedative*, Other (or Unknown)] Withdrawal	292.0
Substance [Amphetamine, Cocaine, Opioid, Sedative*, Other (or Unknown)]-Induced Sexual Dysfunction	292.89
Substance [Inhalant, Sedative*, Other (or Unknown)]-Induced Persisting Dementia	292.82
Substance [Sedative*, Other (or Unknown)] Withdrawal Delirium	292.81
Substance [Sedative*, Other (or Unknown)]-Induced Persisting Amnestic Disorder	292.83

APPENDIX I

Camberwell Family Interview

1. Do others know about the mental illness? (If so) how did they find out?
2. Do you think it is better to keep it a secret? Why?
3. If others knew about the mental illness, what do you think they would think?
4. Do you think mental illness is disgraceful? Why?
5. Has the patient been looked down on, discriminated against, or unfairly restricted because of the illness?
6. Is the patient worried about being discriminated against?
7. Has the discrimination or fear of discrimination affected the patient's feelings, work, study, ability to find a spouse, self-respect or social activities?
8. Are other **family** members concerned about discrimination against the patient? Has this concern affected their work, social activities or feelings?
9. Have other **family** members been concerned about being discriminated against themselves or have they actually been discriminated against because there is a person with a mental illness in the home?
10. Has this concern about discrimination or actual discrimination of healthy **family** members affected their work, social functioning, ability to find a spouse or feelings?

APPENDIX J

Family Questionnaire (FQ)

How often does this happen?	How much does this bother you?	How well do you feel able to control and cope with this behaviour?
1 = never 2 = rarely 3 = sometimes 4 = frequently 5 = always	1 = not at all 2 = a little 3 = moderately 4 = quite a lot 5 = considerably	1 = not at all 2 = fairly badly 3 = adequately 4 = reasonably well 5 = as well as possible

	How often does this happen?	How much does this bother you?	How well do you feel able to control and cope with this behaviour?
Becomes restless e g pacing about, not sitting through meals	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Complains of headaches or other pains	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Is unpredictable or impulsive	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Hits or hurts people	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Gets noisy or shouts a lot	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Is unusually fussy or finicky about things	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Gets bored very easily or has difficulty occupying himself/herself	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Gets jealous of other members of the family or friends	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Lacks interest in friends and relatives	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Is odd in appearance manner or movement	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Avoids meeting people	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Gets destructive or knocks things about in the house	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Talks to himself/herself or imaginary companions	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Wakes/gets up unusually early in the morning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Grumbles a lot	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Sits or lies around not doing much	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Thinks people are against him/her	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Lacks concentration and attention	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Slow at doing things	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Stays out very late at night	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Becomes irritable and easily upset	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Is unclean and untidy	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Spends long periods alone	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has marked difficulties with memory such as not being able to find his/her way home difficulty remembering people s houses	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Expresses odd ideas	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has unusual fears	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Continued

Is unusually cheerful or excited.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Talks or laughs to himself/herself.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Says nothing when spoken to.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Fritters money away.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Abuses drugs.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Drinks excessively.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has difficulty in getting to sleep.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has unusual habits or routines, e.g. in dressing, or hoarding strange things.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has poor appetite/does not want to eat.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has routines of doing things only in a certain way.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Keeps to himself/herself a lot.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Accuses or threatens people.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has periods of panic or anxiety.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Acts in a bizarre way.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Has rows or quarrels.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Worries a lot about things.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Swears or is rude to people.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Gets miserable and depressed.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Pays insufficient towards keep.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Talks nonsense when spoken to.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Mixes with undesirable company.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Refuses to take medication (tablets or injections).	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Any other problems (please specify).			

Thank you very much for your help

APPENDIX K

Consent Form and the Information that was given to patients about this study.

Subject Name.....

Identifying number.....

CONSENT TO PARTICIPATE IN RESEARCH

This research is part of a PhD programme pursued by the psychologist of the hospital Tina Coclami and supervised by Dr Malcolm Cross at City University, London. The choice to consent to participate or otherwise will have no bearing on the treatment offered. You should read the information below, and ask questions about anything you do not understand, before deciding whether or not to participate.

Purpose of Study

The purpose of the present project is to compare and evaluate the differential characteristics of drug-abusing and non-drug-abusing psychiatric patients in order to explore the relative roles these demographic and clinical variables may play in the course of their illness.

Anticipated Benefits from participating in this study.

You may not receive any direct benefit from participating but with the information gained from this study, we hope to throw some light on the interaction between drug use and psychiatric dysfunction. Research studies are designed to gain scientific knowledge that may help other people in the future.

Privacy and Confidentiality

This project ensures the anonymity of the subjects by replacing patient's names with unique identifying numbers before the statistical procedures begin. All subjects will be given study identification numbers and no part of this research will appear in the subjects' medical record. Data management is in a secured research area to further protect privacy. When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity.

Identification of the Investigator

Please do not hesitate to discuss with Ms Coclami (room 3, 1st floor) if you need any further information.

Signature of Research Subject

I am being invited to voluntarily participate in this research project.

I have read, or someone has read to me, and I understand the information provided above.

I have been given an opportunity to ask questions and all of my questions have been answered to my satisfaction.

By signing this form, I willingly agree to participate in the research it describes.

Signature of Subject

Signature of Investigator

I have explained the research to the subject, and answered all of his or her questions. I believe that he or she understands the information described in this document and freely consents to participate.

Tina Coclami