Understanding the potential relationships between serious mental illness,

substance use disorders and crime amongst psychiatric inpatients

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Abstract

Despite common factors shared by individuals who present with substance abuse and psychiatric comorbidities, research shows that this is a heterogeneous population with varying types and levels of mental disorders and dependencies. Within this context, this study analyses various characteristics of psychiatric inpatients who are diagnosed with substance use disorders, with special interest to their relationship with mental illness and crime. A mixed method of research is adopted. Quantitative research is applied through retrospective case note reviews of patients admitted to Dual Diagnosis wards at Mt. Carmel Hospital in 2015 and 2016. A database including seventeen different categorical variables is created. This permits the use of cross-tabulations and chi-square tests in order to compare variables and establish potential relationships. Statistical results are further complimented by qualitative data that is derived from six semi-structured interviews with experts in the field. Results demonstrate that the majority of the population are male, unemployed and poly drug-users with negative childhood experiences and criminal histories that are dominated by theft, drug-related crimes and violence. In line with dual-diagnosis models, this study confirms that substance use can lead to mental illness and vice versa. It also verifies the complex needs and vulnerability of inpatients who suffer from dual-diagnosis. Statistically significant relationships indicate that inpatients who suffer from serious mental illness and substance use disorders have heightened risks of child physical and sexual abuse, out of home care, family history of mental illness, long-term unemployment, recurrent psychiatric hospitalisation over longer periods of time and involuntary admissions. The relationship between heavy drug-use and crime is evident but the crimes of those with substance use disorder only are not significantly different from those who are also diagnosed with serious mental illness; this result may be affected by their substance dependence. Females, irrespective of their diagnostic criteria, are also identified as a vulnerable group. They are more likely to have childhood traumas, to be early school leavers and in long-term unemployment, to have a family history of substance abuse, to work as prostitutes and to have involuntary admissions. Significant associations are also proven between early school leaving, unemployment and crime. These clarify the interplay between different factors that may affect the relationship between substance use disorders, mental illness and crime.

Key words: Dual diagnosis, serious mental illness, substance use disorders, crime

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To Lauren

Let nothing stop you from developing your potential

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Glossary

Comorbidity	A diagnosis of two or more medical conditions, which in this study, refers to the co-existence of mental health and substance abuse disorders.
Dual-Diagnosis	Presence of a substance use disorder together with another mental health disorder at a particular moment in time.
Mount Carmel Hospital (MCH)	The only psychiatric hospital in Malta, which provides multidisciplinary mental health care for patients who are admitted either on a voluntary or on an involuntary basis.
Psychiatric inpatients	In this study, this term refers to individuals who are admitted in Male Dual Diagnosis Unit (MDDU), Female Dual Diagnosis (FDDU) and ward 8b of Mt. Carmel Hospital.
Retrospective case note review	The study of a cohort of individuals through collection of data from medical records.
Serious Mental Illness	A diagnosis including schizophrenia, bipolar disorder, schizoaffective disorder, major depression and substance induced psychosis that leaves a marked impairment on the individual's level of functioning.
Statistically significant relationship	It results when a Chi-square test result is less than 0.05 when two categorical variables are compared to each other, indicating that the relationship is not due to random chance.
Substance use disorder	Diagnosis given to individuals whose substance use is a predominant feature in their lives despite adverse consequences.

Chapter 1: Introduction

1.1 Introduction to the research topic

Drug abuse, mental illness and crime are often associated with fear, stigma, problems and disturbances. They present situations which are unpopular but which are very real and common. It is estimated that 29.5 million persons worldwide suffer from drug use disorders (United Nations Office on Drugs and Crime (UNODC), 2018), one in four persons suffer from a mental disorder (World Health Organisation (WHO), 2001) and about 4% of the population suffer from serious mental illness (Substance Abuse and Mental Health Services Administration (SAMHSA), 2017). SAMHSA also estimates that by 2020, mental and substance use disorders will surpass all physical diseases as a major cause of disability worldwide (SAMHSA, 2018). Furthermore, substance abuse and mental illness are often perceived as promoters of crime, which relationship may be partially considered to be justified because of their high prevalence amongst prisoners (Wright, Walters, & Strang, 2016).

However, despite the frequent occurrence of substance abuse, mental illness and crime and a general awareness of the problems that surround them, scientific research about the associations of these three variables is limited and there have not been any studies related to this subject in Malta. Therefore, this research attempts to fill this void because it considers the three categories as equal variables and any relationships between them will help to explain the risks and interactions that may possibly contribute to complex presentations and poor prognoses (European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 2016a). Acquired knowledge will be beneficial to key stakeholders and policy makers as it will enable informed decisions in the treatment and service provision of persons with substance use disorders and serious mental illness.

In this study, the substances which are most relevant include cannabis, opioids (e.g. heroin), stimulants (e.g. cocaine) and hallucinogens (e.g. LSD). Unlike previous editions, the DSM 5 does not differentiate between substance abuse and substance dependence but incorporates them in one spectrum of substance use disorders (SAMHSA, 2015). A diagnosis of substance use disorder depends on at least two of eleven stipulated terms while the severity of the condition (mild, moderate or severe) is measured on the amount of met criteria. The diagnostic criteria is based on four main categories including impaired control related to the use of the substance, social impairment because of continuation of use, risky use due to failing to stop despite the harm being caused and pharmacological indicators which include withdrawal symptoms and tolerance (Horvath, Kaushik, Epner, & Cooper, 2013).

Mental illnesses may take different forms and have different levels of intensity. Severity is generally measured according to the level of interference in one's daily functioning. SAMHSA (2013) distinguishes between serious mental illness (SMI) and severe and persistent mental illness (SPMI). It defines serious mental illness as following:

> persons aged 18 or older who currently or at any time in the past year have had a diagnosable mental, behavioural, or emotional disorder (excluding developmental and substance use disorders) of sufficient duration to meet diagnostic criteria specified within DSM –IV (APA, 1994) that has resulted in serious functional impairment, which substantially interferes with or limits one or more major life activities" (p.11).

The difference between serious mental illness and severe and persistent mental illness is that while SPMI are always of a serious kind, SMI might not be severe and persistent despite causing some form of disability (NREPP, 2016). Although all mental disorders may present with severe symptoms and may produce a degree of impairment, the most common disorders that usually meet the criteria for serious and/or severe and persistent mental illness are schizophrenia, schizoaffective disorder, bipolar disorder and major depressive disorder (NREPP, 2016). For the purposes of this study, the term serious mental illness will be the one

applied, as the given diagnosis might not indicate if the disorder is severe and/or persistent. Substance induced psychosis will be included as a serious mental illness because it is a treatable condition which causes functional impairment and often requires hospitalization.

In this study, crime refers to "a violation of a moral rule that has also been legally defined" (Dahlin, Gumpert, Torstensson-Levander, Svensson, & Radovic, 2009, p. 380). The root causes of crime are portrayed from a biopsychosocial perspective which incorporates the complex dynamics that are often associated with substance abuse and mental disorders. Criminal offences include violent crimes such as murder, robbery and assaults, property crimes such as theft and burglary, drug related crimes including possession or dealing of illegal substances and other types of crimes such as prostitution (Swartz & Lurigio, 2004).

1.2 Research aims and objectives

The study is being undertaken to address gaps in research relating to potential relationships between substance use disorders, mental illness and crime (Zettler, 2018), the heterogeneity of individuals with dual-diagnosis (Mowbray, Ribisi, Solomon, Luke, & Kewson, 1997), risk factors and effects of comorbidity in the Maltese context and the best treatment possibilities for this cohort of individuals (Baingana, Absi, Becker, & Pringle, 2015). Against this background, the main purpose of this research is to develop an understanding of the potential relationships between mental disorders, drug abuse and crime amongst a cohort of substance users who are also psychiatric inpatients. This is sought through retrospective case note reviews of individual characteristics and criminal histories of substance abusers who were admitted to Malta's psychiatric hospital (i.e. Mount Carmel Hospital) in 2015 and 2016 and thematic analysis of expert opinions about the subject.

More specifically, quantitative and qualitative methods are applied in a complimentary manner (Greene, 2007) in order to answer the following 'descriptive'[1] and 'difference'[2] research questions (Morgan & Harmon, 2000):

Research question 1: What are the potential relationships that exist between mental disorders, substance abuse and crime?

Research question 2: What are the characteristics of female and male inpatients with co-occurring substance use disorder and serious mental disorders? Are there any differences between those who are only diagnosed with a substance related disorder and those who also suffer from serious mental illness?

Research question 3: What types of crimes are the most common within this cohort of patients? Do substance abusers who do not suffer from serious mental illness engage in the same type of crimes?

Research question 4: What are the views of professionals who specialize in the field?

Potential answers to the research questions will shed light on how combinations of substance use disorders, serious mental illness and crime may feature in one's life in relation to other important factors including childhood experiences, educational level, occupation and family history of substance abuse and psychiatric illness. Findings will also provide a comprehensive representation of the population's difficulties and needs within the Maltese context.

1.3 Synopsis of the literature

In literature, documentation related to comorbidity of substance use disorders and mental illness is mainly based on three aspects: a) prevalence b) impact and b) models of occurrence.

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[1] Descriptive questions aim to quantify the variables that are being studied
[2] Difference questions aim to elicit the relationship or difference between two variables

Studies show high prevalence of dual diagnosis amongst substance users and individuals with mental health problems (EMCDDA, 2015; Regier, Farmer, Rae, & Goodwin, 1990), with those who suffer from comorbidity being more likely to have more complex presentations with higher incidences of suicide (EMCDDA, 2015) and longer spans of hospitalization (Wright, Gournay, Glorney, & Thornicroft, 2000). The process of comorbidity can vary and may not be unidirectional. It may also be formed by multiple influences that make the course of comorbidity even more intricate (Mueser, Noordsy, Drake, & Fox, 2003).

Furthermore, the relationship between substance use and mental illness can also be affected by other external factors including crime. The association between drugs and crime is widely acknowledged (Pirard, Sharon, Kang, Angarita, & Gastfriend, 2005); however, the link between mental illness and crime is ambiguous. The risks of crime amongst individuals with mental illness become more evident with comorbidity (Swartz & Lurigio, 2004; Swartz, Swanson, Hiday, Borum, Wagner, & Burns, 1998). However, studies indicate that this correlation is not simplistic because it can be affected by an interplay of other variables including treatment non-compliance and inadequate lifestyles (Silver & Teasdale, 2005). In fact, crime and concurrent disorders often create a challenge in both the criminal justice system and health services (Drake & Wallach, 1989).

Within this context, crimes that are committed by individuals who suffer from comorbidity can be understood from different perspectives. The Social Bond theory (Hirschi, 1969) explains that delinquency is more likely when the individual fails to build strong attachments within society and is not actively involved in conventional activities. As this matter can be relevant to the outcomes of this study, socio-demographic characteristics will also be included in order to study potential influences from a wider perspective. In fact, issues related to comorbidity are multifactorial and require integrative interventions. Such a holistic stance can be better understood through a Biopsychosocial approach (Engel, 1980), which does not only encompass

all the facets that may contribute to complex presentations but also promote a multidisciplinary approach which is a prerequisite in the treatment of individuals with comorbid disorders (Mueser et al. 2003).

1.4 Dissertation Overview

Subsequent to this introductory chapter, Chapter 2 reviews the relevant literature about the topics under study, with particular reference to scientific evidence and relevant theories. Chapter 3 proceeds by describing the research methodology and the procedures that the researcher went through in order to satisfy the chosen methods. Chapter 4 presents an overview of descriptive and inferential statistical findings from the collected data, including imagery descriptions. Chapter 5 analyses in detail the findings, including potential explanations to the main themes of the literature review. Chapter 6 outlines the main conclusions of the study, presents a discussion on limitations whilst highlighting recommendations for policy and future research.

Chapter 2: Literature Review

2.1. Introduction

Literature shows that substance use disorders are a common type of mental health disorders (Cohen, Runciman, & Williams, 1999). However, they are often not an isolated form but incorporated within a complex spectrum of other psychiatric disorders (Fortuna, 2009 as cited in Palijan, Mužinić, & Radeljak, 2009). The Mental Health Commissioner's Annual Report 2015, specifies that one can "cautiously estimate that from one-fourth to one-third of all admissions to the psychiatric hospital are directly or indirectly associated with psychoactive substance use". The report acknowledges that this yields "substantial burden on the mental health service" (Camilleri, 2015, p. 93). In fact, linked to these admissions there is a complex and wide spectrum of problems (Peters, Luvigio, & Wexter, 2015) that are often the product of a combination of biological, psychosocial and contextual factors.

Against this background, the following section comprises a general overview of literature including scientific evidence and theories which explain and demonstrate criteria and associations representing mental disorders, drug related disorders and crime. In essence, the following section provides a foundation for the research under study.

2.2 Co-morbidity

A well-researched phenomenon is the association between mental disorders and substance use disorders (SAMHSA, 2006; Regier et al. 1990; Watkins et al. 2004) which is also known as 'co-occurring disorder', 'comorbid disorder' or 'dual diagnosis'. The World Health Organization defines 'dual-diagnosis' as the co-occurrence in the same individual of a psychoactive substance use disorder and another psychiatric disorder (World Health Organization (WHO), 1994). The European Monitoring Centre of Drugs and Drug Addiction

refer to it as the 'temporal coexistence of two or more psychiatric disorders as defined by the international Classification of Diseases, one of which is problematic substance use' (EMCDDA, 2004, p.94).

The study of comorbidity is relevant for several reasons. These include high prevalence rates, difficult management and high probability of poor outcomes for affected individuals (EMCDDA, 2016a). In the Epidemiologic Catchment Area (ECA) study conducted by Regier et al. (1990), it was found that whilst the rate of lifetime substance abuse disorder in the general population was about 17 %, it increases to 47% for individuals with schizophrenia, 56% for individuals with bipolar disorder and 30% for individuals with other mood or anxiety disorders. On the other hand, EMCDDA (2015) estimates that 50% of those persons with substance use disorders are diagnosed with at least another mental health disorder. These individuals often present a combination of psychiatric symptoms or disorders which may be interdependent or independent of their substance abuse. According to EMCDDA (2016a), commonly reported psychiatric comorbidities among substance users include "major depression, anxiety disorders (mainly panic and post-traumatic stress disorders) and personality disorders (mainly antisocial and borderline)" (p.59). While drug disorders are more common in males (National Institute on Drug Abuse (NIDA), 2010), females are more likely to suffer from mental health disorders (EMCDDA, 2015) however the magnitude of psychopathology in males with substance use disorders is higher than in the general population (Gearon, Kaltman, Brown, & Bellack, 2003).

Certain after-effects of substance abuse can be very similar to symptoms of mental health disorders which makes it challenging to distinguish psychiatric disorders from the symptoms of intoxication and withdrawal (Langas, Malt, & Opjordsmoen, 2011). Individuals with co-current disorders might also present with personality problems and challenging behaviour which tend to hinder the treatment process. The chronicity and/or severity of the presenting symptoms together with the possibility of noncompliance will also not augur well for a good

prognosis. Treatment outcomes and recovery can also be negatively affected by other factors including medical problems that might be a direct cause of risky behaviour such as HIV, AIDS, hepatitis C virus and serious falls and psychosocial problems such as unemployment, homelessness, social isolation and criminal behaviour (Greenberg & Rosenheck, 2014).

In view of the above, it is evident that the processes through which concurrent disorders are formed are complex. There are various theories that attempt to explain the pathways to comorbidity. A common theory explains that individuals might use drugs to self-medicate psychiatric symptoms (Khantzian, 1985, Murray, Grech, Phillips, & Johnson, 2003). In these instances, symptoms of mental health disorders would have preceded the use of substances and therefore the psychiatric disorder will be known as the 'primary' diagnosis. The validity of this theory has yielded mixed results. There are studies that show that psychiatric symptoms trigger substance use (Kessler, Amminger, Guilar-Gaxiola, Alonso, Lee, & Ustun, 2007) while other evidence shows that individuals with serious mental illness use drugs for the same reasons as reported by those who are not so diagnosed (Mueser, Drake, & Wallach, 1998). These include loneliness, boredom and insomnia rather than pathological symptoms (Drake & Mueser, 2000).

In accordance with this theory, the drug of choice would often be the one that accommodates the desired state of mind. For instance, cocaine can be used to alleviate low moods (Khantzian, 1985, Morton, 1999) and to aid attention levels in cases of ADHD (Puri, Beeker, & Islam, 2014) while heroin can suppress anger (Khantzian, 1985) and pain (National Institute on Drug Abuse for Teens, 2016). However, besides such short term effects, the use of drugs amongst persons with serious mental illness puts them at risk of developing a chronic substance use disorder that might persist as being problematic even when the mental disorder is treated or contained (Moeller, Barratt, Dougherty, Schmitz, & Swann, 2001). These individuals seem to be more sensitive to the influence of psychoactive substances (Mueser et al, 1998) and more likely to be exposed to substances due to various factors including disadvantaged home

environments, poor socioeconomic status and social vulnerability (Drake, Brunette, & Mueser, 1998) hence the heightened risk of substance dependence. In such situations, the stabilisation of the psychiatric disorder will also be more difficult to attain as substance dependence negatively impacts the severity and prognosis of the primary mental illness (Brady, Killeen, & Jarrell,1993) therefore, increasing the risk of long-term manifestation of concurrent disorders.

Another theory relates to the fact that harmful use of substances can trigger mental health symptoms which can take the form of acute temporary states which are also known as substance- induced or develop into long-term and independent disorders (Radhakrishnan, Wilkinson, & D'Souza, 2014) such as schizophrenia and bipolar disorder in vulnerable individuals. The most common comorbidity, with prevalence rates of 12% to 80 %, lies between substance use disorder and depressive disorders (Torrens et al., as cited in EMCDDA, 2016a, p47.). Studies show that substance users are at a significant risk of developing a major depression which in turn increases the risks for suicides and suicidal attempts as in other independent cases of depression (Shantna, Chaudhury, Verma, & Singh, 2012). In fact, it is calculated that up to 40% of this population have a history of suicidal attempts (Youdelis-Flores & Ries, 2015). Another well-known correlation is between substances and psychosis (EMCDDA, 2016b) which is especially evident with heavy use of cocaine and cannabis. Studies show that up to 85% of frequent cocaine users experience cocaine induced psychosis including paranoia, hallucinations and delusions (Morton, 1999; Smith, Thirthalli, Abdallah, Murray, & Cottler, 2009). Subsequently up to 55% of individuals with cocaine-induced psychiatric symptoms are also prone to violent behaviour (Morton, 1999). It is also calculated that continuous use of cannabis doubles the risk of psychosis (EMCDDA, 2016b). A Swedish longitudinal study conducted by Andreasson, Allebeck, Engstrom, and Rydberg (1987) concluded that individuals who have used cannabis more than 50 times, are six times more likely to develop schizophrenia. Grech, Camilleri and Taylor East (2012) also found that

persons who have used marijuana were at a higher risk of developing psychosis at an early age. In fact, early drug use is known to be a risk factor for long term use and for the development of mental disorders later in life (Volkow, 2005).

Concurrent disorders and their interrelatedness can also be the product of overlapping predisposing factors such as sexual and physical abuse (Read & Bentall, 2012), antisocial personality (Mueser et al. 1998), childhood environment including out of home care (Browne, 2009) and genetic disposition (NIDA, 2010) which are known to be of possible negative influence on both substance and mental disorders. While these factors are pertinent to both sexes, females are more likely to have a history of trauma in their childhood and/or adulthood (Brunette & Drake, 1997; Pirard et al. 2005). In fact, research shows that around 80 % of women with comorbidity report sexual and/or physical abuse (Cohen & Hien, 2006). Parental comorbidity is also positively associated with adolescents' substance use disorders and psychological problems (Wiegand- Grefe, Geers, Petermann, & Plass, 2011). According to Ali, Dean Jr and Hedden, 2016, adolescents whose mothers are diagnosed with co-occurring disorders are four times more likely to have substance use disorders themselves. Therefore, the common hypothesis theory is an important factor in etiological studies of comorbidity and its attributes are also significant to the prognosis. It is important to add, that the presence of concurrent disorders can also be coincidental (Langas et al. 2011). In such situations, the two disorders might have originated independently of each other but they can still be positively related (i.e. they trigger or exacerbate each other).

Despite the commonality of comorbidity, studies related to the subject emphasize that concurrent disorders are still underestimated and at times unrecognized (EMCDDA, 2008). Failing to make an accurate diagnosis and to treat both disorders can pave way to further negative consequences that might also cause irreversible damage such as injuries, ill health, suicide, disabilities and crime (SAMHSA, 2016). There are findings that show that it is more

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probable that dual-diagnoses individuals will be male, young, single, have a family history of substance abuse and personal history of conduct disorder (Drake & Mueser, 2000; Gregg, Barrowclough, & Haddock, 2007). This cohort of individuals is also known to be less driven, more difficult to engage with, find it harder to undergo long rehabilitation programs, makes slower advancement than those with substance abuse only (Gregg et al. 2007) and will be hospitalized at a younger age (Scheller-Gilkey, Lewine, Caudle, & Brown, 1999, as cited in Soyka, 2000). Despite possible common factors, individuals with comorbidity are highly heterogeneous (Drake, Mueser, & Brunette, 2007; Lehman, 1996) and thus require different combinations of treatment. Horsfall, Cleary, Hunt and Walter (2009) divide individuals with concurrent disorders into four different categories each attributed to specific treatment modalities. These include a) those who will need intensive and cohesive treatment by both mental health and drug services because of their severe disabilities caused by comorbidity, b) those who will be treated mainly by mental health services due to being severely disabled by mental illness and badly affected by harmful use of substances, c) those who will be treated predominantly by drug services due to being disabled by substance use disorders and badly affected by psychiatric symptoms and d) those who can be treated by a general practitioner with the involvement of either mental health or substance abuse services due to being mildly disabled by comorbid disorders.

These categories help to better define the diversity of this client group and treatment possibilities. It also contextualizes the study whose target population is expected to be in the first two categories because of their hospitalization in a psychiatric hospital. The latter shall be discussed in depth in the section below.

2.3 Hospitalisation of drug dependent individuals

A longstanding argument related to drug abuse is the illness versus crime dichotomy. For years, governments declared a war on drugs and tried to eradicate its availability through punitive measures. In recent years, the recognition of drug dependence as a health issue came to the fore as treatment started to be increasingly recommended. In Malta, this change is evident with the introduction of the Drug Dependence (Treatment not Imprisonment) Act 2014 which promotes the rehabilitation of drug dependent individuals. In congruence with the law, the National Report on the Drug Situation in Malta 2015 declares that "people dependent on drugs should stop being punished for their drug use and instead they should have access to evidence-based treatment" (p.12).

Admissions to psychiatric hospitals, especially involuntary admissions, have long been surrounded by controversy in relation to individuals' right to autonomy. In fact, several Mental Health law reforms have introduced procedures and criteria that restrict and limit involuntary admissions. This is particularly true in regard to involuntary admissions of substance users. For instance, England's Mental Health Act 2007, which makes amendments to Mental Health Act 1983, does consider substance dependence as a mental disorder but an individual can only be detained if one's substance use problem is accompanied by another mental disorder. However, internationally 73 out of 90 countries (Israelsson & Gerder, 2010 as cited in Opsal et al., 2013) permit some form of compulsory commitment of persons with substance use disorders to safeguard them from self-destructive and dangerous situations. For example, Norway has "The Social Services Act 6.2" which allows involuntary admissions, for up to 3 months, of substance users who do not have a serious mental disorder. The grounds for these admissions include serious risk to self, due to dangerous and continuous use of illicit substances and unsuccessful voluntary efforts towards their rehabilitation (Opsal et al., 2013).

In Malta, the new Mental Health Act 2012 promotes the rights of the service users and entails that involuntary admissions are to be carried out as a last resort. More specifically an individual can be admitted involuntarily on grounds of risk to self or others, a diagnosis of severe mental disorder and on the premise that one cannot be treated in the community (Mental Health Act, 2012). In 2015, there were 423 involuntary admissions to Mount Carmel Hospital. Those suffering from schizophrenia and other delusional disorders were the highest cohort with involuntary admissions (37.8%). These were followed by individuals diagnosed with mood disorders (27.8%) and "disorders due to psychoactive substance use" (15%), (Office of the Commissioner of Mental Health, 2016, p.22). As these statistics are based on primary diagnoses, comorbidity is not identified; however, it is possible that substance abuse may also feature in cases of serious mental illness. In fact, in a study carried out in Norway, by Opsal, Kristensen, Ruud, Larsen, Grawe and Clausen in 2011, it was found that individuals with a combination of poly drug use and schizophrenia had a higher probability of being admitted involuntarily to a psychiatric hospital. Stimulant-induced psychosis and/or behavioural disorders associated with use of stimulants were also found to increase the risk of involuntary admissions. In fact, aggressive behaviour associated with the use of stimulants was considered a significant determinant of involuntary admissions even surpassing the severity of the mental health disorder.

In view of the above, it seems that admissions to psychiatric hospitals of drug dependent individuals might not always be based on the severity of the mental disorder but on a wider spectrum of reasons. For instance, in a retrospective case note review of 346 patients who were considered to be sectioned under the Belgian Mental Health Act of 1990 it was found that the primary reason for those admitted was the lack of "less restrictive alternative form of care" (p.364) especially for the most vulnerable (Lorant, Depuydt, Gillain, Guillet, & Dubois, 2007). Such practices are also evident in the U.S. In a research study of 105 males who suffered from

schizophrenia and cocaine dependence, it was found that admissions to hospital were linked to the depletion of their disability allowance. These participants spent nearly half of their income on drugs with the result of getting entrenched into a cycle of psychiatric relapse, homelessness and recurrent hospitalization (Shaner et al. 1995). On a similar note, Prince (2012) argues that in 2007 in the US, individuals with substance use disorders were 71% more likely to be admitted in a psychiatric hospital. In his study, which explored the combinations of substances that created the highest risk for hospitalization, severity of drug use was found to be a prominent reason for psychiatric hospitalization while abuse or dependence on opioids and cocaine, alcohol and cocaine and alcohol and marijuana were the combinations with most risk. Such findings are congruent with Opsal et al.'s (2013) conclusion that "rather than ICD-10 diagnoses, demographic characteristics and severity of drug use were associated with involuntary admissions to a treatment institution" (p.7).

In essence, psychiatric admissions continue to be surrounded with opposing views. Criticism is generally based on arguments that hospitalization can lead to institutionalization, revolving door syndrome and clinical paternalism (Chow & Priebe, 2013). Favourable arguments suggest that hospitalization of individuals who are afflicted with mental impairment, problematic drug-use and negative life situations should be seen as a good opportunity as it enables the initiation of treatment, their stabilization in a safe environment and transitions to drug rehabilitation programs and/or post-discharge follow-ups (Havassy & Arns, 1998).

Alongside this background, the following section presents a discussion on the possible influences that different combinations of mental illness and drug abuse might have on crime.

2.4. Serious mental illness, substance use disorders and crime

Whilst in the first section, co-occurring disorders were mostly portrayed from a psychopathological perspective, this section deals more with criminological elements. It

focuses on aspects of crime and takes into account social and interpersonal influences related with crime, mental disorders and drug use. It also depicts possible relationships between them as derived from research studies and sociological theories.

In general, criminal offences are mainly condemned because of their strong negative impact and disarray on individuals and society. For such reasons, perpetrators of crime tend to be considered deviants and are expected to carry responsibility for their behaviour. Formal penalties are coordinated through criminal justice systems. At the same time, society tends to punish offenders by labelling and stigmatising them. In fact, substance users and the mentally ill have both been shrouded by the harsh realities of stigma which is strongly associated with their criminal connotations. Research carried out in North America, Europe and Australia confirms a clear association between illegal drug abuse and crime (Hammersley, 2011). On the other hand, the relationship between mental disorders and crime presents a much debated discussion.

2.4.1 Drugs and Crime: using theory to understand the relationship between phenomena

Drug abuse and drug-related crime are two major social phenomena that have been researched and analysed extensively. As Walters (2000) argues, it is difficult to quantify the extent of drug-related crimes because of the multifactorial causes of crime, subjective interpretations and disputed validity of reports. Despite this, the association between them is widely acknowledged, as criminal involvement tends to become more frequent when drug use becomes more intense (Swartz & Lurigio, 2004). In fact, a meta-analysis of 30 studies by Bennett, Holloway and Franklin (2005) showed that drug users had 3 to 4 greater chances of offending than non-users. Furthermore, when treatment manages to decrease drug abuse, it also brings with it a decrease in crime (Gottfredson, Kearley, & Bushway, 2008). These correlations

have been researched internationally and findings indicate that problems related to drugs and crimes are relatively homogenous (Hammersley, 2011). For instance, studies have repeatedly found that cocaine and heroin use lead to an increase in illegal earnings (Uggen & Thompson, 2003) most especially in property crimes that enable the substance users to maintain their habit (Gottfredson et al., 2008). This is also relevant to the local scenario, as the EMCDDA (2017) confirms that a substantial percentage of reported offenses in Malta, especially "petty crime such as thefts from vehicles, street robbery and other kinds of opportunistic thefts" (p.5) are considered to be drug-related. In line with this argument, it is interesting to note that CrimeMalta (Formosa, 2016) annual report indicates that in 2015, theft amounted to 51% of all crimes with pickpocketing increasing by 32% and common theft by 16% over the previous year. Reports of pickpocketing and theft from residences and vehicles also dominated in 2016, increasing by 12% and 25% from the previous year. It is also noteworthy that reports related to drugs increased by 38% in 2016 (Formosa, 2017).

Hammersley (2011) has identified three main categories of drug use and offending in his theoretical review of the processes leading to drugs and crime. The first category includes delinquency and drug use in teenage years. According to Hammersley (2011) delinquency amounts to about 20% of the teenage population, and in most cases tends to fade away as the individual enters adulthood. The second category includes "temporary intense use" (p. 268) which is experienced by a minority who engage in intensive drug use and offensive behaviour over a period of time as a possible consequence of trauma and personal hardships. Hammersley argues that this cohort of individuals, who usually does not develop drug dependence, may not be well distinguished because of them being possibly incorporated in general delinquency and drug dependency. The third category includes those individuals, amounting to about 20% of those who use drugs, who become dependent (Degenhardt & Hall, 2012). These individuals will often become immersed into a self-perpetuating negative cycle which they maintain

through the on-going use of substances in order to cope with the problems and hardships associated with the drug lifestyle itself.

Literature shows that the relationship between drugs and crime is not unidirectional. According to Gorman and White (1995) this association can be understood through the following three theories; substance use precedes crime, crime leads to substance use and the possibility of common causes between them.

2.4.1.1 How substance use can lead to crime

The first theory (i.e. substance use leads to crime) can be better understood through Goldstein's (1985) tripartite conceptual framework that explains this relationship through the following three models: pharmacological, systemic and economic. The pharmacological model addresses the fact that the drug itself can lead to crime because of the direct effects of intoxication and other repercussions such as withdrawals, sleep difficulties and escalation of psychopathological symptoms. In other words, the effect of drugs can badly influence the individual's level of self-control leading one to engage in behaviours that one might not have engaged in if not under the influence of drugs. This theory has been criticized on a number of factors such as the fact that different drugs have different pharmacological effects and that their effects might vary in relation to one's gender, tolerance, body size and other individual susceptibilities (Kuhns & Clodfelter, 2009). However, authors such as White and Gorman, (2000) maintain that there is enough empirical evidence to substantiate Goldstein's explanations.

Goldstein's systemic model explains that violent crime is an inevitable reality of the drug lifestyle and tends to be associated with all the processes of purchasing, use and distribution of drugs. Although evidence shows that income-generating property offences are the most common crime among heavy drug users (Gottfredson et al., 2008), it is also known that an

increase in drug use leads to an increase in violent crimes amongst both sexes (Morton,1999). These often consist of high-risk crimes which will be instigated by strong urges for income (Wright & Decker, 1997). Violence can be even more central in drug trafficking. This is often surrounded by rivalry amongst drug dealers and competition for markets and consumers. Such violence can also lead to fatal consequences (Walters, 2000). A case in point is the drug related homicide of Roderick Grech of Naxxar which took place on the 31th March 2017.

The economic motivation model is widely supported as substance abusers are at high risk of committing income-generating crimes (such as drug dealing, theft and prostitution) in order to acquire financial means to purchase substances. Deitch, Koutsenok and Ruiz (2000), describe this cohort of drug users as the "criminogenic drug takers" (p.391) and argue that treating these individuals, especially those from an antisocial environment that supports deviancy, is different from treating individuals who suffer from drug addiction but are not criminogenic in society. They mention that such individuals may be found more often within a penal setting. Faupel (1987) analysed this relationship in terms of how the addiction process can impact criminality. Through a study of heroin addicts, he identifies four different categories of substance users. The occasional users are just starting their career, have a structured lifestyle and low drug availability. These individuals usually use legitimate means such as gainful employment to purchase their drugs. The stabilized addicts might still enjoy an adequate life structure but their drug availability is high. For this reason, they start to experiment in criminal activities to gain more income in order to finance their growing habit. The free-wheeling addicts lack daily structure but still have a high availability of heroin which continues to exacerbate their habit. As the need for the substance becomes central, the free-wheeling addicts might quit their employment for a more profitable crime. Lastly, the street junkies are known to have a very low life structure and minimal availability of heroin. Having no stable or very limited financial income but a great urge to take heroin, the street junkies' main interest is how to get the next

fix. This might involve them in compulsive criminal acts which might put them at higher risk of getting arrested.

2.4.1.2 How crime can lead to substance use

The second theory according to Gorman and White's (1995) model (i.e. crime leads to substance use) explains the fact that deviant behaviour can expose the individual to drug subcultures (Collins & Messerschmidt, 1993). Drug use may help to shield negative mind states associated with crime and may serve as an excuse for criminal behaviour (Khantzian, 1985). Studies show that in approximately two –thirds of offenders, crime would have preceded drug abuse (Deitch et al., 2000; Hammersley, Forsyth, Morrison, & Davies, 1989). This is associated with observations of disruptive and aggressive behaviour in early childhood and the possibility that early adolescents who are involved in delinquency and substance abuse will continue to engage in criminal behaviour during their adulthood (Deitch et al., 2000). Criminal behaviour can also become learned behaviour which should be addressed on its own merit during treatment for drug dependency. Failing to do so, the individual would be at high risk of returning to a deviant lifestyle that would lead to previous problems including substance use (Deitch et al., 2000).

2.4.1.3 'Common hypothesis' model

Gorman and White's (1995) third theory is similar to a previously mentioned association between mental illness and substance use disorders. This explains that drugs and crime may not be interrelated but are susceptible to similar triggers which include family history of substance use and deviancy, poor levels of education, dysfunctional and poor neighbourhoods and diagnoses of conduct disorders when young (Dembo, Williams, Wothke, & Schmeidler, 1994). For example, in a study involving 19,312 emerging adults, conducted by Maynard, Salas-Wright & Vaughn, (2015) in the United States, it was concluded that school dropouts-

were two to three times more likely to have been arrested for a variety of crimes including drug-possession or dealing and assaults. The strong association between conduct disorder, substance use and crime was evident in a study held in Turkey by Copur, Turkcan and Erdogmus (2005). Results showed that 34.8% of 230 juvenile delinquents were found to be substance abusers, 46.3% of substance users were diagnosed with a conduct disorder and 48.5% of participants who had been involved into multiple crimes were substance abusers.

2.4.1.4 Summary

In summary, the social costs of drugs and crime are so high that society cannot afford to give up on treating these individuals. Criminal sanctions by themselves tend to increase recidivism because they do nothing to treat the multitude of problems that will often be enforcing their habits. In fact, Hammersley (2011) explains that problems related to drugs and crime can be severe enough to constitute major psychological trauma. Events such as sudden drug-related deaths of friends and family members, serious illness and accidents are common occurrences in the lives of drug dependent individuals. Other drug related experiences such as abuse, violence, rejection by loved ones, mental health problems, imprisonment and criminal justice proceedings can also be traumatizing (Maruna, 2008 as cited in Hammersley, 2011). However, as these experiences are so intrinsic to the chaotic lifestyles of drug abusers, they tend to be normalised as common and expected occurrences to the extent that they may remain untreated triggers of the perpetuation of substance use, mental health problems and crime.

The following section presents a more specified discussion on the complex dynamics that exist between mental health disorders and crime.

2.4.2 Mental Disorders and Crime

This topic has repeatedly been at the centre of negative publicity with high profile criminal cases involving individuals who suffer from severe mental disorders, and with the increase of imprisonment of individuals with mental illness (Lamb & Bahrach, 2001). Such occurrences have often been attributed to the promotion of patients' rights in modern mental health legal enactments and the deinstutionalisation of the mentally ill (Lamb & Weinberger, 1998). However, despite various generalized claims that there is a causal relationship between mental illness and crime, scientific evidence does not show a clear association.

Literature that supports a positive relationship between mental health and crime includes data that shows that the percentage of criminal convicts who suffer from mental disorders is higher when compared to the general population (Fazel & Grann, 2006; Hodgins, 1998; Walsh, Buchanan, & Fahy, 2002). Various studies also suggest that individuals who suffer from schizophrenia, even those who are not substance abusers, commit more violent crimes than those who are not so diagnosed (Modestin & Wuermle, 2005; Tiihonen, Isohanni, Rasanen, Koiranen, & Moring, 1997; Brennan, Mednick, & Hodgins, 2000; Coid, 1996). Moreover, it is perceived that unlike criminality amongst the general population which tends to peak during youth and young adulthood and then drops substantially (Moffitt, 1993) criminality amongst pathological individuals might persist across all age groups and across sexes. In relation to the latter, Hodgins (2008) distinguishes early onset offenders from late start offenders, whose criminal behaviour including aggression occurs after the onset of their mental disorder. The latter can be substantiated by evidence showing that while in the general population, males are potentially more likely to be violent or engage in criminal behaviour than women (Bonta, Law, & Hanson, 1998), among psychiatric populations there is not much difference in the criminal rates of males and females (Robbins, Monahan, & Silver, 2003).

However, these findings do not necessarily prove a causal relationship between mental disorders and crime. In fact, in a longitudinal study of criminal offending in schizophrenia, Wallace et al., (2004) conclude that the rate of criminal accusations by the experimental group (i.e. 2861 individuals with schizophrenia) was similar to the control group (i.e. 2861 individuals from general population with matched demographic variables) despite significant increase in community care. Andrews and Bonta, (2010) also argue against a direct relationship between mental disorders and crime and explain that offenders who suffer from mental disorders might find it more difficult to follow rehabilitation programs and therefore they have poor treatment outcomes and higher risks of relapse. Furthermore, mental disorders do not feature in Andrews and Bonta's (2010), General Personality and Cognitive Social Learning (GPCSL) model which includes the strongest predictors of criminal behaviour. These include "criminal history, pro-criminal companions, pro-criminal attitudes, antisocial personality pattern, education/employment, family/marital, substance abuse, and leisure/recreation" (as cited in Kingston, et al., 2016, p. 679).

A significant measure of the direct relationship between mental illness and crime is the insanity defence that distinguishes criminal acts which result directly from psychiatric disorders. This legal provision stipulates that the accused will not be found guilty if s/he was unable to comprehend the nature, the quality and the wrongfulness of the act at the time of the offence, and did not have the ability to choose whether to do it or not because at the time of the crime s/he was suffering from a mental disorder (Article, 33(a), Criminal Code. Laws of Malta). In the United States it is estimated that only about 1% of defendants invoke the insanity plea and from these defences only about 15% - 26% are successful (Lilienfield, 2011). UK statistics show that there are only about 30 successful insanity pleas per year in the Crown court (Law Commission, 2013).

Considering the rarity of these cases, it is suitable to acknowledge theories that show the causal link between criminal behaviour and people with serious mental disorders as an interplay of multiple risk factors. These include substance abuse, psychological impairments that include the individual's premorbid personality, stressful life events, poor interpersonal relationships, social stressors and disadvantaged social environments (Vogel, 2014; Swartz et al., 1998). Also, Wallace et al.'s (2004) study, in which the criminal records of individuals who suffer from schizophrenia were compared with those of individuals from the community, concluded that the most common criminal convictions amongst those who suffer from schizophrenia were property-related offenses (mostly minor thefts). They explain this finding in the context of "the social and occupational dysfunction associated with schizophrenia which can drive patients into the ranks of the poor and the isolated" (p. 724) and argue that such crimes are mainly related to the individuals' subsistence and surely do not relate to crimes committed by career criminals.

Silver and Teasdale (2005) explain that the relationship between mental health and violence can be heightened through factors such as violent victimisation. They claim that this can trigger a mental disorder and increases the possibility that the individual will victimize others. On the other hand, they maintain that emotional support is a protective factor towards mental well-being and decreases the risk of violent behaviour. On a similar note, in a study by Fonagy and Levinson (2004) which compared attachment styles amongst 22 inmates diagnosed with a mental disorder, with 22 non-offenders who are diagnosed with personality disorders and 22 individuals from a normal control group, it was evident that the first cohort was the most likely to have an insecure attachment style. The inmates also reported more incidents of physical abuse which was frequently of a severe nature.

There is also a growing amount of literature, which shows that criminal and antisocial tendencies are evident from a young age (Hodgins, 1998) possibly before the onset of a

psychiatric disorder. It is probable that young delinquents have criminally involved or/and substance abusing parents and that they would have been raised up outside their family home (Jones, Van den Bree, Ferriter, & Taylor, 2010). In fact, the UK report by Transition to Adulthood (2009) that relates to young adults in the criminal justice system denotes that "in the vast majority of cases, the underlying causes of young adult involvement in crime are severe need, social exclusion, poverty and family instability" (p.15). Early arrests are significant because they are linked with a high propensity of crime and violence in adulthood (Bonta et al., 1998; Rice, Harris, Lang, & Bell, 1990). On a similar note, previous criminal and violent behaviour is a strong indicator of future violence and criminality (Gendreau, Little, & Goggin, 1996).

The interrelated links between dual diagnosis and crime as well as evidence-based ideas for treatment and service provision are presented in the next section.

2.4.3. Co-morbidity and crime

Co-morbidity is an important feature that often converges the findings of studies that investigate the relationship between drug use and crime with those related to mental health and crime. This is because criminal offenders are frequently found to be substance users and suffering from mental instability (Swanson, Holzer, Ganju, & Tsutomu Jono, 1990; Swartz & Lurigio, 2004; Swartz et al., 1998). Possible explanations for such associations are various. It is perceived that a substance abuse disorder inevitably increases the risk that an individual who also suffers from mental illness, commits violent crime (Fazel, Långström, Hjern, Grann, & Lichtenstein, 2009). Drug intoxication and symptoms of mental illness such as poor impulse control, paranoia, ideas of grandeur and hallucinations may lower one's inhibitions thus increasing the risk of violent behaviour (Volavka & Swanson, 2010). Individuals with dual disorders are also prone to various risk factors that can be direct or indirect triggers for

criminality. These include homelessness, inadequate living conditions, poverty, unemployment, low rates of treatment compliance and abusive relationships (Silver & Teasdale, 2005).

In general, adults with serious mental disorders and co-occurring substance use disorders are at the highest risk of being arrested and incarcerated (Havassy & Arns, 1998; Kubiak, Essenmacher, Hanna & Zeoli, 2011). In a study by Swartz et al. (1998), it was found that individuals with severe mental disorders who abused illicit substances and were non-compliant to medication were twice as likely to be violent when compared to those who suffered from either of the conditions on its own. The study further explained that persons with severe mental disorders were at risk of falling "into a self-perpetuating cycle of resistance to treatment, illness exacerbation, substance abuse, violent behaviour and institutional recidivism' (p. 230).

However, the positive association between drug dependence, mental disorders and crime is not straightforward but depends on various variables including the specific types of psychiatric disorders, substance abuse and crime categories. In a research study carried out by Swartz and Lurigio (2004) with 228 individuals who used to be eligible for drug abuse and alcoholism social benefits, it was concluded that participants who suffered from depression were less likely to be arrested and were at a lower risk of being arrested for violent offenses. Such offences were found to be most commonly related with individuals who were dependent on alcohol and diagnosed with an antisocial personality disorder. Those who were diagnosed with schizophrenia were more likely to be arrested, most specifically for property offenses. In this study, 68% of the participants were positive to at least one illicit substance.

As Ekblom (2002) argues, "successful prevention requires knowing how to deliver the right interventions to the right causes of a crime problem and properly attune them to the context", (p. 152). This is highly pertinent to the subject as individuals with comorbidity tend to present

themselves in different ways and at different places and one might easily fail to address all the components that exist behind the presenting problem/s. In other instances, individuals with co-occurring disorders are provided either with sequential treatment[3] or parallel treatment[4]. These might fail to address the interactive components of comorbidity and might offer incompatible modes of treatments (EMCDDA, 2016a, Langas et al. 2011; Mueser et al., 2003).

To prevent fragmentation, various authors recommend an integrative approach which includes jointed treatment for mental health and substance abuse run by multidisciplinary teams of professionals who are trained in both fields (Kubiak et al., 2011, Lurigio, 2000, Mueser et al., 2003). Effective dual diagnosis programs are managed by a single provider and include various comprehensive levels of care that are both hospital and community based. Critical components of these services include shared decision making (Mueser et al., 2003), assertive outreach, motivational interventions, counselling, social support interventions and a long-term perspective (Drake et al., 2001). Evidence based studies have shown that integrated treatment proved to be more effective in the engagement and retention of service users and led to better outcomes in relation to rates of arrests, substance use, mental health symptoms, hospitalization and housing stability (Drake et al. 2001; Evans Cuellar, Markowitz, & Libby, 2004).

Considering the high rates of criminal offending and arrests amongst persons with comorbidity, a system of collaboration is also important between mental health professionals and the criminal justice system. The barriers between these services have been prominent because of differences in their approaches (treatment vs. punishment) and modus operandi (Kubiak et al. 2011; Lurigio, 2000). However, these two systems might often be dealing with the same cohort of individuals who might become trapped within a negative cycle of psychiatric hospitalization and imprisonment due to their inability to cope in society. This revolving-door syndrome can

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[3] eligible for mental health or substance use treatment only when the other problem is stabilized
[4] mental health problems and substance abuse treated simultaneously by different agencies

become arduous and needs an integrative force of professionals working within the two settings to enable these individuals to break this pattern, through a "unified, accountable case management system" aimed at "maintaining the mentally ill in the community" (Craig & Kissell, 1986 as cited in Lurigio, 2000 p. 319).

The section below presents a discussion on theoretical frameworks that allow for examining the phenomena in relation to sociological and psychological knowledge.

2.5 Theoretical Framework

This study is formulated through a synthesis of medical, psychological and sociological knowledge related to mental disorders, substance use and crime. Two main theories that support the main themes of the dissertation are the 'Social bond theory' developed by Hirschi (1969) and the 'Biopsychosocial theory' developed by Engel (1980). Both theories have been very influential and used extensively within the psychiatric and sociological fields.

2.5.1. Social Bond Theory

The social bond theory, also known as the social control theory, seeks to understand the forces that help individuals to abstain from getting involved into offending behaviour (Alston, Harley, & Lenhoff, 1995). It assumes that those individuals who commit crime have got weak connectivity and interrelationships with society and the advantages of crime will appear more tempting than the probable rewards of conformity (Hirschi, 1969). As can be seen from the previous sections, the type of an individual's relationships with significant social institutions is an important determinant of one's lifestyle. This is pertinent to both social and psychological perspectives. In fact, in Adler's theory of personality and crime, lack of social interest is viewed as the common bond which is shared by "neurotics, alcoholics, drug addicts and "criminals" (as cited in Chong Ho Shon. & Barton-Bellessa, 2015, p.96).

Hirshi's theory identifies the following four elements: attachment, commitment, involvement and belief to describe the different bonds, with the presumption that the stronger the bonds, the less likely will an individual deviate and engage in criminal activity. Attachment is described as the affectionate connection between a human being and others in one's primary group including parents and peers that help the individual to internalize social norms and integrate in society (Chriss, 2007). Individuals coming from families with high levels of attachment develop loyalties that protect them from engaging in delinquent behaviour because they respect and care about parental expectations (Hoeve, Stams, Van Der Put, Dubas, Van Der Laan, & Gerris, 2012). On the other hand, individuals who do not form adequate attachments will be insensitive to conventional rules and will be more likely to deviate from the norm.

Through the second element of commitment, Hirschi (1969) relates to the individual's efforts and investments in conventional activities (such as education and employment) that enable him/her to gain a status in society. Within this context, opportunities for deviancy would be weighed against one's investments with the result that the more one would have invested in one's time and energy the less likely one would risk the costs of deviancy. The basic concept behind the element of involvement is about how the individual occupies his/her time. In other words, if a person keeps himself/herself occupied with conventional activities such as school, work and social encounters, s/he will not have time to get involved in deviant behaviours. Finally, the element of belief relates to what legal and moral norms mean to the individual. If one values social expectations and gives importance to how one's behaviour affects the other members of society, one would be less likely to participate in deviant activities that might badly affect one's peers.

Considered as one of the most popular theories of deviancy the social bond theory has been extensively discussed and tested (Akers, 1997) and despite various criticisms, it has solid empirical support (Gardner & Shoemaker, 1989). In fact, it has been used to investigate

deviancy in various contexts and with different cohorts. Durkin, Wolfe and Clark (1999) applied the attributes of the social bond theory to investigate binge drinking amongst 247 college students and it was evident that alcohol abuse was negatively associated with most of the theory's elements. The results were similar to a study held in Turkey which related to juvenile delinquency in high schools. In the study, by Ozbay and Ozcan (2006) it was also found that strong bonds with teachers, commitment to their education and "beliefs in conventional values" (p.723) were of a constant negative influence on total delinquency.

Alston et al. (1995) used the social control theory to substantiate the possible social reasons that might prompt persons with disabilities to abuse substances. The authors argue that this cohort of individuals is at risk of being devalued and socially isolated. Such situation can lead to depression which increases the chances that one will resort to drugs to self-medicate the symptoms (Clayton, 1992). These individuals might also have fewer opportunities to invest in educative and financial goals and thus might have more empty time. This might negatively affect their outlook towards life and they might resort to substance abuse as a means of excitement. The authors quote other literature (Corthell & Bright, 1991; Wright, 1983) to explain that disability might also lead family members to compromise norms and values as they might become more lenient and permit certain behaviours (such as use of alcohol and drugs) as a means of compensation to the disabled person's difficult life situation. From this data, the authors proceed to present ideas, also based on this theory, for rehabilitation. These include the strengthening of healthy attachments, the involvement and commitment in productive activities and individual and group therapy to facilitate adherence to social norms and values. Nijdam-Jones, Livingston, Verdun-Jones, & Brink (2015) also explored the functions of the social bond theory in relation to the recovery process of individuals who were inpatients in a forensic mental health hospital. The study consisted of semi-structured interviews with thirty patients who related positively with the importance of strengthening

social bonds to aid in their recovery. The participants supported the importance of attachments with family members and staff, involvement in hospital programs and therapy sessions and adherence to hospital's rules.

2.5.2 Biopsychosocial Model

The biopsychosocial model proposes a holistic approach towards a human condition. It focuses on the interplay of biological, psychological and social factors in order to understand how each element can contribute to the presenting symptoms and how their dynamics might be influencing behaviour (Griffiths & Gardner, 2002; Sarafino, 2011). The model depicts the co-equality of all the three aspects which is ideally analysed coherently through a circular method of assessment and interpretation. This forms the basis on which the multidisciplinary team can form correct attributions of complex cases (Kinderman, 2005) and integrative treatment plans.

The model was developed as an alternative to the reductionist, unidimensional, biomedical model through which health related disorders were mostly addressed from a biological perspective and treated medically (Benning, 2015; Griffiths & Gardner, 2002). Crime and deviance were also associated with pathology (Bala & Daniel, 2013) while mental and behavioural problems were not recognized unless associated with a physical condition (Johnson, 2013). On the other hand, the biopsychosocial model promotes a systematic perspective that aims to diagnose and treat the presenting problem in the context of general well-being. Biological and psychosocial theories do not compete with each other but promote a complete case formulation. An example of its application is the following conceptualization tool which has originated from the field of psychology (Dudley & Kuyken, 2006 as cited in Ingham, Clarke, & James, 2008) and which can be amalgamated within the biopsychosocial approach. It refers to five important areas that enable a thorough understanding of mental health problems. These include: "presenting issues or problems, predisposing factors (what has led to

the problem), precipitating factors (what instigates the problematic behaviour), perpetuating factors (what is maintaining the behaviour) and protective factors (what prevents escalation)" (p.42).

To illustrate this approach in relation to an individual who suffers from comorbidity, one needs to build a holistic assessment based on biological (e.g. genetics), psychological (e.g. behavioural and mental processes) and social (e.g. environmental influences) vulnerabilities that increase the risk of the challenging behaviour. Therefore, as a case example, the presenting problems may include harmful use of substances, depressive disorder and a pending court case related to theft. Within this context, predisposing factors may comprise family history of mental and/or substance use disorder, low self-esteem and weak bonding with parents. Precipitating triggers may include depressive symptoms, the use of drugs to self-medicate negative emotions and recent unemployment. Perpetuating factors may consist of poor response to medication, high expectations and no support from relatives while protective factors may consider previous history of positive recovery, self-awareness and a wish to regain a child's custody. It is pertinent to point out that such an approach is similar to Ekblom's (2010) theory of crime preventers and crime promoters which is about decreasing identified social and environmental risk factors and enforcing identified protective factors in order to reduce crime.

The biopsychosocial model is criticised for not providing guidance regarding the integration of the different elements (McLaren, 1998) and its lack of prioritization techniques (Ghaemi, 2009). This can reveal discrepancies between professionals especially if fair attribution to all of the elements is not respected (Kinderman, 2005). It is also known to bring an element of eclecticism that can lead to a certain level of clinical freedom which might not always be based on a valid rationale (Ghaemi, 2009). In essence, case management remains within the discretion of the team members who ideally will succeed in finding a common ground of shared meanings and objectives (Melchert, 2010). Griffiths & Gardner (2002) argue that assessments and

interventions cannot be compartmentalized but should be carried out in an integrative way that reflects the dynamic and interactive nature of the influential factors. This is congruent with a statement by Melchert (2010) indicating that "failing to take a comprehensive approach…..can result in incomplete case conceptualisations that can be ineffective and potentially even deleterious" (p. 359). In fact, he describes the biopsychosocial model as a possible "unified conceptual framework for the mental health profession" (p. 359).

2.6. Conclusion

Through the literature review, the reader can appreciate the complexities related to mental illness, substance abuse and crime especially when these become intertwined with comorbidities. The pathways leading towards such presentations can vary however it is widely acknowledged that comorbidity tends to complicate diagnoses, treatment needs and prognosis and often leads to multiple individual and social problems. Literature also shows that this cohort of individuals is susceptible to being imprisoned or hospitalized in psychiatric hospitals. These might not always be the best solutions but possibly the 'best' available options.

In summary, comorbidity is known to have a positive relationship with crime. However, this association is not absolute or invariable and certainly not straightforward. Recent studies show that solutions should not be fragmented but based on scientific evidence, integrative treatment and consistent alliance between health, social and legal services. A good understanding of the importance of working with systems and professional collaboration can also be derived from two popular theoretical frameworks such as the social bond theory and the biopsychosocial model, which are not only applicable for assessment purposes but which can also be beneficial in recovery methods.

In tandem with this background, the current research is an attempt to study a representative sample of psychiatric inpatients who are diagnosed with substance use disorders and to

interview a number of professionals in order to determine the extent and types of comorbidities, potential risk factors, criminal connotations and possibilities of service improvements. The research methods that are employed in order to attain such a comprehensive overview of this client group are presented in detail in the following chapter, which also includes the samples criteria, the processes of data collection and analysis, ethical issues and study limitations.

Chapter 3: Methodology

3.1 Introduction

This chapter aims to explain the sample criteria and research methodologies selected in this study in order to identify potential relationships between substance use disorders, serious mental disorders and crime amongst psychiatric inpatients. The opening section presents the research framework including the process by which the study evolves to reach its objectives. The succeeding two sections comprise detailed descriptions of the chosen quantitative and qualitative methods and how these are applied and analysed. This leads to an explanation of how the final analysis of both methods together is conducted in order to elicit inclusive results. The chapter concludes by two separate sections which include the ethical issues and the limitations that are associated with the study.

3.2 Research process

The research study is based on a twofold approach through which quantitative and qualitative methodologies are implemented in an explanatory sequential procedure (Creswell, 2003; Creswell & Plano, 2011). This mixed-methods approach, which follows the methodology rationale of complementarity (Creswell, 2013), enables a broader perspective and understanding of the research phenomenon, helps to strengthen the level of validity (Chaumba, 2013) and to reduce bias (Muskat, Blackman, & Muskat, 2012). In other words, by looking at the same phenomenon from different standpoints, the researcher aims to cross -check the findings and to achieve a better sense of completeness (Shih, 1998, Whitley, 2007). This is especially significant within the context of the present study which relates to complex themes that might not be holistically portrayed and analysed through a single method due to several possible factors including missing data in retrospective case note reviews and personal biases

in qualitative interviewing. In essence, a mixed methods approach is applied so to "draw on the strengths and minimize the weaknesses of both types of research" (Connelly, 2009, p.31).

Preliminary research consisted of a wide-ranging search of readings and studies related to the subjects under study. This enabled a comprehensive understanding of the complexities that are associated with comorbidity and crime and how these have been studied in relation to relevant theories and variables that include serious mental illness, substance use disorders, gender, hospitalization, risk factors, criminal sanctions and treatment possibilities. It also depicted gaps in the data which enabled the researcher to have a clear mind-set about the main topics and objectives of the study and to formulate the research questions. This was further enhanced by the formulation of a mind map (Refer to Appendix D, page 166) that helped to "visually draft the process from concept to tangible measuring" (Formosa, Scicluna, Azzopardi, Formosa Pace, & Calafato 2011, p.xvi). In summary, this introductory phase served as a reference point to the formulation of the research questions, the selection of the research methods and the formation of the interview questions.

This was followed by quantitative research that was applied through a retrospective case note review of substance users who were admitted to hospital during a period of two years. This method was chosen in order to portray a numerical synopsis of the population and to depict any possible relationships between serious mental illness, substance use disorders and crime. Subsequently, the researcher carried out qualitative interviews with six professionals who work in the field in order to understand in more detail the realities of individuals who suffer from comorbid disorders and to explore treatment possibilities. Each method was analysed separately in terms of the specific research questions that it pursued. The results were further compared in the final analyses in relation to all of the research questions (Henderson, Holland, McGrellis, Sharpe, & Thomson, 2007 as cited in Edwards & Holland, 2013). It was expected that this final process would further define the meanings of the statistical and qualitative

presentations and possibly converge the collected data. However, the researcher was also aware of the possibility that the final analysis will result into inconsistent or contradictory data (Yeasmin & Rahman, 2012).

Further details that include general knowledge pertaining to quantitative, qualitative and mixed methods and how these were applied within the current study are discussed at length in the following section.

3.3 Quantitative Research: Retrospective Case Note Reviews

According to Chaumba (2013) "quantitative data analysis seeks to quantify phenomena including identifying statistical relationships among variables, differences between groups, or change over time" (p.309). These concepts are congruent to the study objectives. In fact, the research questions include the need to identify possible associations between a number of variables namely those related to serious mental illness, substance use disorders and crime and to recognize any significant differences between inpatients who suffer from serious mental illness and substance use disorders and those who are only diagnosed with a substance related disorder. Any changes or consistencies in the reasons of referral and modes of admission and the time span in between the individual's first and last admissions are also important because they can point to one's primary problem in relation to mental illness, substance abuse and crime.

To address these questions, the researcher used a retrospective case note review. Vassar and Holzmann (2013) describe this method, which is also known as "a medical record review", as "a type of research design in which pre-recorded, patient-centred data are used to answer one or more research questions" (p.1). Although most of the data would have been elicited from the patient, it is not primary data because it is also dependent on the interpretation of the clinician (Banks, 1998) who has collected it for a different purpose. However, Gearing, Mian,

Barber, & Ickowicz (2006) argue that it is still a valuable and advantageous research tool as it provides a wealth of accessible data. Another positive of this method is that it includes those individuals with the most severe conditions, who might not be able to actively participate in interviews or questionnaires and thus might be left out in other types of studies (Vassar & Holzmann, 2013).

3.3.1 The creation of a database from archival records: identification of the sample

In this study, the medical records of individuals who were admitted to Dual Diagnosis wards at Mount Carmel Hospital during 2015 and 2016 were utilized as the sample frame. Mount Carmel Hospital was considered as an appropriate setting for the selection of the sample population as it is the local mental health hospital which covers the whole population of Malta which was estimated to be 460,297 in 2016 by the National Office of Statistics (N.S.0.). It is also the only place in Malta where persons who will be in acute mental distress or crisis situations including substance users can be admitted immediately, at any time and without any conditions[5]. The Dual Diagnosis wards of the hospital consist of three units; Female D.D.U is a six bedded ward, Male D.D.U is an eight bedded ward and ward 8B is a ten bedded ward[6]. In Female and Male D.D.U. priority is given to those inpatients who have a rehabilitation plan and the wards' occupancy level is never exceeded. On the other hand, Ward 8B often houses more inpatients than originally intended due to high rates of admissions by substance users. Inpatients of these wards should be over 18 years of age and may be hospitalized either on a voluntary or an involuntary basis. Those who are admitted involuntary would need to be sectioned on grounds stipulated by the Mental Health Act 2012. An emergency admission for observation needs to be signed by a medical doctor and the responsible carer or a mental

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[5] Except for a doctor's referral in voluntary admissions and a section under the Mental Health Act in involuntary admissions.
[6] Ward occupancy is enlisted as found in 2015/16

welfare officer in cases where the responsible carer is not found or when the latter does not approve of the admission. The application needs to be countersigned by a specialist within 24 hours (Mental Health Act, 2012, Part IV). An individual can also be admitted involuntary to Mt. Carmel Hospital through a Court Order. Those who will be serving a sentence of imprisonment when transferred to hospital will be admitted in the Forensic Units[7]. The most common reasons for such transfers take place due to mental instability, vulnerability, need for treatment stabilization and need for nursing care. This is relevant to the study because there are a number of individuals who have been admitted to Dual Diagnosis Wards between 2015 and 2016 whose first admission was in the Forensic Unit. It could also be that the individual was admitted to a Dual Diagnosis Ward and subsequently to the Forensic Unit during the two-year timeframe. These admissions will be included as they provide clear evidence of their criminal history.

Although all inpatients records were available for the researcher, a convenience sample was chosen because most of the inpatients who would have been found positive to marijuana only, on admission, were not included in the study. This is because the majority of these individuals would not be admitted into Dual Diagnosis Wards but in any of the other acute wards and it would have been an exhaustive process to trace them. As this cohort of individuals was a relevant subject to this study, its exclusion limits the generalizability of the results. However, the chosen sample is highly representative of the cohort of inpatients who are heavy drug users and who are most likely to be diagnosed with a substance use disorder and/or dual diagnosis. Therefore, it includes the population which best fits the inclusion criteria. In fact, the sample comprises nearly all of the individuals that were identified as having been admitted in a Dual Diagnosis Ward between 2015 and 2016. The few individuals[8] who were not included in the

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[7] The male section is a 48 bedded unit, the female section is a 5 bedded unit.
[8] These amounted to about seven individuals

sample, were because their files were not accessible. In general, the sample is representative of the population under study. The time-frame that was chosen adds to the validity of the results as it includes the most recent years in history. Therefore, it depicts a snapshot that is the closest to the present. This period also comprises the most recent practices especially in the context of changes that came about with the new Mental Health Law 2012.

3.3.2 Data Collection and Analysis

As this method is retrospective, its application is dependent on available data, which might not always be clear or complete. The results can also be influenced by how the data is collected. Therefore, a rigorous process of data collection is crucial for this method to be scientific and reliable (Gregory & Radovinsky, 2012). To enhance the reliability of the results, it is suggested that researchers will examine the composition of the case files and how the data is recorded (Jansen et al., 2005), develop a retrospective review form (RRF), select a data collection tool and make a pilot study (Gearing et al., 2006; Gregory & Radovinsky, 2012). An RRF is important as it serves as a guide, provide direction and specify how each variable should be logged (Gearing et al., 2006). It also helps the researcher to avoid bias, assumptions or personal interpretations. Data abstraction tools can either be in a paper format or an electronic record. The former medium may be simpler to use during data collection however it can increase the probability for error when written data will then be inserted into a database. Therefore, electronic data abstraction software packages are known to be more precise; enabling a higher level of reliability. It also facilitates access to data (Gregory & Radovinsky, 2012). In this study, data was stored and organised electronically in SPSS. It was inputted as per RRF (Refer to Appendix E, page 167) which is described in more detail in the following paragraph.

The researcher, who is familiar with the structure and content of the case files due to her work experience at Mt. Carmel Hospital, formulated the RRF in a pattern which followed the layout

of the medical records (Vassar & Holzmann, 2013). This included the "Guide to psychiatric history, physical examination and management plan" which is the formal assessment tool used by doctors on admissions of patients. However, certain variables of this guide were manipulated in order to fit into the realm of the study. For instance, *'educational level'* was included instead of *'school'* because the latter included other variables such as relationship with peers and teachers which are not included in this research. On the same reasoning, the heading *'childhood'* was changed to *'childhood experiences'* and *'relationships'* was changed to *'living situation in last admission'* because the original terms included variables such as delays in developmental milestones and sexual history which are not relevant. The format of the coding manual was also made compatible with SSPS. For example, separate variables were created for questions with multiple responses such as *'reasons of referral'*, *'childhood experiences'* and *'criminal history'*, 0 represents a "NIL" answer which indicates that the variable is negative (not existent) while 99 represents a "Not Indicated" answer which stands for the data that was missing. As per National Statistics Office's regions of Malta, localities were categorised into the following six districts: Southern harbour, Northern harbour, South eastern, Western, Northern and Gozo and Comino. The localities as found in every region are enlisted in Table 4.17 (p.174).

A pilot study is encouraged in retrospective case reviews as it helps the researcher to evaluate if the data collection tool and the coding manual are user friendly, feasible and applicable (Gregory & Radivinsky, 2012). In this study, a pilot test was carried out with the first thirty case file reviews. Through this exercise, the researcher was able to evaluate the practicality of the exercise and made various adjustments so to make it more doable. This included reprinting the retrospective case note form in smaller fonts so to have less papers and marking off the surnames of those indicated in the lists which had several admissions in 2015-2016 so to prevent searching for the same files. The researcher also made amendments in various

variables such as age groups and diagnosis so to be more accurate in collected data and cancelled variables such as emotional abuse which was not recorded specifically despite its probability. Through the pilot study, a number of missing villages were also detected and corrected accordingly.

Data collection was carried out at Mt. Carmel Hospital within the records department, under the surveillance of the Data Protection Officer. No files were taken out of hospital and no copies were made. There were few files that were analysed within the wards as the person would have been an inpatient at the time of the study. In such circumstances, the researcher still collected the data related to the first admission and the one that took place between 2015-2016. It took the researcher about 45 hours in order to collect the data from the files and to input it in the computer. Data which included the relevant variables was mostly collected from the "Guide to psychiatric history, mental state examination, physical examination and management plan". However, data from the general case notes and discharge summaries was also collected especially when the formal clerking was missing or not well detailed. Cases were analysed on the number of admitted individuals. In those cases where the individual had more than one admission between 2015 and 2016, the researcher only reviewed the last admission within that period unless the first admission was also during that time. This exercise became strenuous when the individual had more than one file because first volumes were stored elsewhere and it was quite exhaustive to find them so to review first admissions. In fact, there are seven cases with data relating to their first admission missing because the first volume was not accessible.

The variables that were considered included demographic data (i.e. gender, age and locality in last admission), age, mode and reason of referral in first and last admissions, living situation in last admission, childhood experiences, employment in last admission, educational level, family history of mental illness and/or substance use, type of substance dependency in last admission, criminal history and psychiatric diagnosis, (Refer to Table 3.1). These variables were selected

in view of relevant literature stating the need for "descriptive research on dual diagnosis" that includes "a comprehensive array of clinical, social, and community functioning variables, as well as demographics" (Mowbray, Ribisl, Solomon, Luke, & Kewson, 1997, p.311) so to enable the investigation and classification of different groups of individuals with dual diagnosis. Through the chosen variables, the researcher also aims to identify possible risk factors and treatment needs.

Table 3.1: Variables included in the quantitative analysis

Q1	Study ID
Q2	Gender
Q3	Age in first admission
Q4	Reason of referral for first admission
Q5	Mode of first admission
Q6	Locality in last admission
Q7	Age in last admission
Q8	Reason of referral for last admission
Q9	Mode of last admission
Q10	Family history of substance use
Q11	Family history of mental illness
Q12	Childhood experiences
Q13	Level of education
Q14	Occupation
Q15	Living situation in last admission
Q16	Type of dependency in last admission
Q17	Criminal history
Q18	Diagnosis

The categories that are attributed to each variable were identified from the most common responses in the medical records. It is important to note that the category *'other'* in *'gender'* relates to individuals who have changed their sex, *'positive childhood'* in *'childhood experiences'* relates to good childhood memories while *'other'* includes family turmoil, ill health or death of an important family member, neglect or abandonment by a parent, imprisonment of a parent, unknown fathers and mothers who worked as prostitutes. Those specified as *'recently unemployed'* included those inpatients who were employed within twelve months before the admission while those who were included in *'long-term unemployment"* would had been unemployed for more than twelve months. *"Drug related"* category in *'criminal history'* includes both drug possession and drug trafficking. These were not specified from each other as in most cases they were recorded under one heading. The category *'prostitution'* also includes in some cases the procuring of prostitution while the category *'other'* associated with criminal history includes fraud, hit and run, driving under the influences of substances, counterfeit money and arson. The category *"substance use disorder only"* under *'diagnosis'* includes those who are solely diagnosed with a substance related disorder when discharged from hospital while *'substance use disorder and other diagnoses'* category mainly includes ADHD, depression, anxiety, personality disorders[9] and conduct disorders. A small and simplified sample of the database can be found in Appendix F (p. 172).

As the variables are categorical, cross-tabulation was used so to explore the relationships between them. The possible associations were identified through the formulation of a matrix (Refer to Figure 3.1). According to Formosa et al., (2011) a matrix facilitates the structuring of the data and identifies comparable variables. By translating multiple variables into a visual

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[9] Anti-social personality disorder being the most common

image, it permits an overview of what otherwise is a complex phenomenon. Through its colour coding it also prevents inaccurate comparisons such as the comparison of the same variables.

Figure 3.1: Matrix

	GENDER	AGE 1ST ADMISSION	REASON OF 1ST ADM.	MODE OF 1ST ADM	LOCALITY	AGE IN LAST ADMISSION	RESON ON LAST ADM.	MODE OF LAST ADM.	FAMILY HISTORY 1 &2	CHILDHOOD EXPERIENCES	LEVEL O F EDUCATION	OCCUPATION	LIVING SITUATION	HABITS AND DEPENDENCY	CRIMINAL HISTORY	DIAGNOSIS
GENDER		X	X	X		X	X	X	X	X	X	X	X	X	X	X
AGE 1ST ADM.																X
REASON OF 1ST ADMISSION				X												X
MODE OF 1ST ADMISSION																X
LOCALITY IN LAST ADM.																
AGE IN LAST ADMISSION																X
REASON OF LAST ADM.								X								X
MODE OF LAST ADM.																X
FAMILY HISTORY 1&2[10]																X
CHILDHOOD EXPERIENCES																X
LEVEL OF EDUCATION												X		X		X
OCCUPATION																X
LIVING SITUATION																X
HABITS AND DEPENDENCES															X	X
CRIMINAL HISTORY																X
DIAGNOSIS																

The variables that were chosen to be cross-analysed or compared are marked with the letter 'X'. These were selected purposively in line with the knowledge acquired through the literature

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[10] Family history 1 = family history of substance use
   Family history 2 = family history of mental illness

review and in view of the research questions. In summary, the researcher compared the following three variables: *type of substance dependency in last admission*, *criminal history* and *diagnosis* against each other to answer the first research question[11]. The answers to the second[12] and third[13] research questions mainly consisted of descriptive statistics and cross-tabulations of various variables which were mainly compared to *diagnosis*, *gender* and *criminal history*.

As cross tabulations do not reveal if the relationships are statistically significant and because the variables are all categorical, the researcher also made use of the Pearson Chi-Square test. This determines if there is a scientific relationship between two variables or if any possible connection between them has resulted by chance (Bryman & Cramer, 2001). In this study, a statically significant relationship is detected when the chi-square value is less than 0.05. As the study consists of multiple response variables, the variables *'criminal history', 'childhood experiences'* and *'diagnosis'* were manipulated into the new variables *'forensic_new'*, *'childhood_new'* and *'diagnosis_new'* in order to facilitate statistical testing. The variable *'diagnosis_new'* was manipulated into three categories consisting of *'substance use disorder and serious mental illness'*, *'substance use disorder and other diagnoses'* and *'substance use disorder only'*. This was done so to distinguish comorbidity from single diagnosis according to the study's objectives. The variable *'forensic_new'* includes 'yes' for having a criminal history and 'no' for not having a criminal record. The variable *'childhood_new'* includes 'yes' for having experienced any of the indicated negative experiences and 'no' for not having experienced any. Despite the changes, these variables are still referred to according to their original terms, for ease of reference. It is important to note, that the combinations of the

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[11] What are the potential relationships that exist between mental disorders, substance abuse and crime?

[12] What are the characteristics of female and male inpatients with co-occurring substance use disorder and serious mental disorders? Are there any differences between those who are only diagnosed with a substance related disorder and those who also suffer from serious mental illness?

[13] What types of crimes are the most common within this cohort of patients? Do substance ausers who do not suffer from serious mental illness engage in the same type of crimes?

categories also helped to reduce the possibility of having several cells with an expected count that is less than five.

The completion of the above process led to the commencement of the second phase of research that consisted of qualitative methodology in the form of semi-structured interviews. This method will be described in detail in the following section.

3.4 Qualitative research: Semi-structured Interviews

In criminology, qualitative research has not been the most popular, mainly because it has been considered to be less scientific than quantitative studies. In fact, it is estimated that only about 5 – 10% of articles in top journals of criminology are based on qualitative methods (Copes, Tewksbury, & Sandberg, 2016). Despite this, qualitative research is being increasingly promoted (Copes et al., 2016; Edwards & Holland, 2013; Buckler, 2008) as an equally important research method which provides "valuable insights and advances to knowledge" (Tewksbury, 2009, p.42). Unlike quantitative methods, it is not based on numbers and it may not be generalizable to a wider population. Instead, it elicits the meanings that individuals assign to life experiences, organizational systems and social processes. Qualitative methods can zoom in and provide deep and detailed understanding which quantitative data cannot attain. (Tewksbury, 2009). This approach is considered necessary to the study as it gives an exploratory dimension to the research whose topic has not yet been researched in Malta (Morse, 1991 as cited in Creswell, 2003).

The quality of qualitative research in terms of its propensity for trustworthiness and rigour has also gained momentum. Although, this type of research cannot really be compared to quantitative methods for reliability, internal validity, objectivity and generalizability, it can still be a source of trustworthiness. According to Guba & Lincoln (1985) this is achieved through elements of dependability (the possibility that research can be repeated with consistent results),

credibility (confidence in the truth of the findings), transferability (evidence of the applicability of the findings to other contexts) and conformability (neutrality of the findings), which criteria can be attained through the application of various techniques, some of which pertain to this study. These include detailed descriptions of how every step of the research process was managed (audit trail) to facilitate conformability, the presence of the researcher within the field (prolonged engagement) to promote credibility and rich and thick descriptions of the phenomenon under study to obtain transferability. Qualitative interviews mostly incorporate semi-structured and unstructured interviews (Edwards & Holland, 2013) and are usually carried out either with lay persons or with experts in the field, with whom the interviewer would not have any prior relationship. However, there are certain instances, including the type of interviews in this study, in which the interviewees will be known and possibly familiar with the interviewer. This scenario which is also known as 'peer' interviewing (Chew-Graham, May, & Perry, 2002) has brought with it particular dynamics which have resulted into ambiguous debates. Such interviews have been criticized for the increased risk of preconceptions that may influence the data. As interviewees may feel under scrutiny, they may also mould their answers in order to protect their professional identity (Coar & Sim, 2006). The interviewer will also have the challenge of managing a dual position (i.e. researcher and colleague) in relation to the interviewer (Hockey, 1993).

However, 'peer' interviewing has also received support as it has been found that a common professional background or working system can serve as a motivational factor to the interviewee (Bogner, Littig, & Menz, 2009) and facilitates trust and disclosure. It can also enable a smoother dialogue and more thorough responses due to shared knowledge (Coar & Sim, 2006). In fact, in a study by Chew-Graham et al. (2006), which researched GPs' perceptions of being interviewed by another GP, it was concluded that "where the interviewer appeared to be identified as a non-clinical researcher, the interview was narrower in focus, with

less discussion and diversion, and much less emotionally charged" (p.288). On the other hand, where the interviewer was recognized as a clinician, the interview was more dynamic and intense, leading to better outcomes. Within this context, the authors argue that the researcher's influence on the collection and analysis of qualitative data is indisputably. However, this should not be merely considered as a disadvantage because in order for the researcher to construct the meanings that the participants assign to the questions, the researcher cannot be a passive collector of data but an active participant. In fact, the authors suggest that it is possible for the researcher to control preconceptions by acknowledging and clarifying them. This will help to prevent bias and to bring forward the opinions of the respondents.

3.4.1 Identifying the sample of professionals as interviewees

The researcher carried out semi-structures interviews with six professionals (2 psychiatrists, 1 social worker, 1 psychologist and 2 psychiatric nurses) who work with substance users and dual-diagnosis inpatients at Mt. Carmel Hospital, in order to get their opinions about the subject. A purposive sample was adopted to ensure that the interviewees had expertise in the research area. In fact, all eligible participants had more than five years of experience in working with these individuals. A code (P1 to P6) was assigned to each of the interviewees, according to the order in which they were interviewed. Interviews were carried out over a period of three weeks. These were held face-to-face, in a private office at the participants' workplace and they lasted around 20-30 minutes. The interviews were conducted in either English or Maltese depending on the preference of the participant. Some quotations from interviews are included in Chapter 4 in their original form. Quotations which are taken from Maltese interviews are translated in English by the researcher and included in footnotes.

A semi-structured style of interviewing was chosen as it permits a certain degree of flexibility while still having enough structure to enable comparison across participants (Edwards &

Holland, 2013). In other words, all interviews were formed from a common set of open-ended questions which were based on the primary themes of the study but which provided the interviewees with the opportunity to develop their answers according to their personal styles and experiences. The researcher was also able to gain a deeper understanding of the concepts by encouraging the participants to develop their ideas and thoughts. In essence, the questions were designed to explore the respondents' opinions about the population under study pertaining to any significant differences within this cohort, pathways leading to their admissions, service provision, possible reasons and associations between crime and comorbid disorders and ideas related to better treatment opportunities for persons with serious mental illness and substance abuse disorders (Refer to Appendix G, p. 171).

The section below presents a discussion on qualitative data analysis employed in this research study.

3.4.2 Data Analysis

The interviews were all recorded and fully transcribed. This enabled the researcher to start familiarising herself with the contents (Riessman, 1993 as cited in Braun & Clarke, 2006). Data was then analysed by hand, using thematic analysis which is a fundamental process for qualitative analysis (Chaumba, 2013). In line with this method, the researcher proceeded to repetitively reading through all the data set and noting prominent features of the interviews. Consequently, the written material was coded into categories which enabled the identification of meaningful patterns and the formation of themes. These were identified through a deductive approach which Braun & Clarke (2006) also describe as 'theoretical' thematic analysis (p. 12) because the identified themes are linked to the research theoretical background and the research questions. Themes were then evaluated, refined and analysed. Differences and possible

relationships between them were identified and interpreted in relation to the overall meanings of the data set and the theoretical framework.

This process completed the research and served to fill gaps in quantitative data, to build further on the findings and to give them a more practical dimension. The next section includes how the findings of this method where blended with those of quantitative research in order to elicit the final outcomes.

3.5 Final Analysis

As stated previously, this study follows a sequential explanatory design in which quantitative data was collected first followed by qualitative data. However, an important aspect in a mixed methods approach is the integration of the findings (O'Cathain, Murphy, Nicholl, 2010) which is not a straightforward task because the chosen methods are based on opposing paradigms. In fact, the philosophical underpinning of the quantitative approach is positivism which confines research to objective observations and quantifiable classifications that lead to statistical analysis. On the other hand, the philosophical position of qualitative research is interpretivism or social constructivism which aims to discover the meanings and motives behind social action through detailed descriptions (Haralambos & Holborn, 1995). Despite such differences, mixed methods research has become increasingly popular (Creswell, 2003; O'Cathain et al., 2010) especially since pragmatic knowledge promoted the possibility that positivism and interpretivism positions can be combined in order to fully understand the research problem which is considered to be the most important determinant of the research philosophy (Creswell, 2003). According to Creswell & Plano Clark (2011) (as cited in Chaumba, 2013, p. 313) there exist four possible points of integration. These include mixing *at the design level*, during *data collection, during data analysis* and *during interpretation.*

In this study, quantitative data is considered with more emphasis than qualitative data which is primarily used to "augment quantitative data" (Hanson, Creswell, Plano Clark, Petska, & Creswell, 2005, p.229). Data was analysed separately but the final analysis and discussion merges and integrates the quantitative and qualitative components together in order to elicit comprehensive results built on the precision of numerical measurement in the quantitative phase and the richness of the professionals' narratives in the qualitative phase (Castro, Kellison, Boyd, & Kopak, 2010). This process is essential in order to attain complementarity[14], which is the main purpose of the mixed-methods research in this study (Greene, 2007). Therefore, the study's point of integration is at the interpretation phase (Creswell, 2003) when the researcher evaluates the findings of both sets of data not solely to find the likeness and discrepancy between them but to transform them into a complete and informative context (Mertens & Hesse-Biber, 2012).

Fielding (2010) describes such integration as "the heart of mixed methods" where the two methods are "put into dialogue with each other" (as cited in Martens & Hesse- Biber, 2012, p. 78). Such process is not straightforward and prone to biased interpretations. In fact, this method can be quite challenging, especially when the findings contrast (Padgett, 2009). However, any conflicting results will be considered an important outcome as they mirror the complexity of the subject under study.

As the topics being studied are also of a sensitive nature involving confidential information, the following section explains the ethical procedures that were followed in order to protect the rights of the population and the participants.

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[14] *Complementarity* includes the use of multiple research methods to study different aspects of a particular subject to enable richer and more valid interpretations of results (Greene, 2007)

3.6 Ethical Considerations

This research study was compiled following strict ethical procedures. All the necessary permissions for data access and qualitative interviewing were obtained in writing from the Clinical Chairperson of Psychiatry and the Data Protection Officer (Refer to Appendix A, p. 165). The former also acted as a gatekeeper for the interviews in line with an opt-in method of participants' recruitment ("The Research Ethics Guidebook," n.d.) The study was also approved by the Boards of Ethics of the University of Malta namely FREC and UREC.

The research methods were chosen in consideration of ethical implications related with research involving vulnerable participants (Battle, Zlotnick, Miller, Pearlstein, & Howard, 2006 as cited in Gregory & Radovinsky, 2012). None of the methods presented any deceptive practice or any physical or psychological harm to the patients' or interviewees (British Society of Criminology, 2015). Although the name of the organization was mentioned, the researcher made sure that no patient or participant could be recognized. Their anonymity was preserved by assigning a code to each and by not divulging the profession of the particular interviewee. This was possible because the main objective of the interviews was to fill in gaps in the data, therefore the link between the content of the interviews and the interviewee's profession was not relevant to the study. This approach also permitted that each participant will be equally treated and valued.

All archival data was collected according to ethical procedures and was used solely for the purpose of this study. Storage of personal details was not possible as the names, the I.D. Card numbers and the dates of birth were not collected. Potential participants were invited to participate on a voluntary basis through a recruitment letter which was forwarded to them through the Office of the Chairperson of Psychiatry. The interview sheet explained the main purpose of the study, the procedure of the interview and informed the potential participants that

they could request to see the questions prior to the interview (Refer to Appendix B, page 166). The six professionals that were invited to participate all accepted the invite. Before starting the interview, the interviewees signed a consent form (Refer to Appendix C, page 167) which informed them of their rights. These included their right to withdraw from the interview at any time and without any reason. The participants were also given the choice of being or not being recorded. Therefore, the autonomy of the interviewees was respected at all times.

In summary, this research study aims to improve the lives of individuals with dual diagnosis and all presented material intends to serve the purpose of the study and to protect the dignity of the subjects. The following section discusses the limitations that are associated with the research methodology.

3.7 Limitations of the research design

Although the research methods were chosen to encompass a reliable perspective of the population under study, the researcher perceives that the results are bounded with a series of limitations. For instance, the results were formulated from retrospective data which might have included incomplete, unclear, inconsistent and unrecorded information (Gearing et al., 2006). Most of the clerking data is dependent on the replies of the patients who might have been under the influence of drugs/alcohol when interviewed or not comfortable enough to disclose certain personal information such as childhood experience, employment, living situation and criminal history. The entries in the medical files might also have had a certain degree of bias and inconsistency considering that these were completed by different professionals who might have different approaches and skills. Therefore, certain information might not be accurate. To make up for this possible setback, the researcher did not only collect data from the clerking reports but also from discharge summaries and other professional reports which often also include feedback from significant others. It is also important to note that diagnoses were not elicited

through standardised instruments but were recorded as decided by the Consultant and/or his medical team according to ICD-10 psychiatric manual (WHO, 1994). Diagnoses related to substance disorders were amalgamated into one category. This might have affected statistical results especially the relationship between *type of substance dependency* and *diagnosis*. The fact that a number of variables had several categories could have also badly affected the expected counts in Chi-Square tests. In fact, in some of the tests the expected counts of a number of cells amount to less than five. This limits the confidence of the results.

As the study was carried out by one researcher data collection was not counter checked. This might have led to undetected errors or misinterpretations of data. On the other hand, this might also be considered as a strength as data collection was carried out in a consistent manner. The researcher was also aware that her experience as a social work professional who has worked within Mount Carmel Hospital for more than ten years, might bias the study. By acknowledging her position, being objective in data collection and capturing the perspectives of the experts, the researcher was able to base her arguments and discussions on the findings of the study.

3.8 Conclusion

Through this chapter, the reader becomes familiar with the philosophical underpinnings behind the research methodology and with how the chosen methods of data collection and analysis were implemented. It describes how the research attempted to reach the objectives through a mixed methods approach including the application of retrospective case note reviews from a sample of 203 case files and semi structured interviews with a sample of six professionals. The chapter also presents the process of how the data was collected and analysed and how each stage of research was carried out according to appropriate ethical procedures. Finally, it enlists a number of limitations that are recognised as possible obstacles to the study.

The following chapter encompasses the most relevant findings from the statistical analysis of the archival data and from the thematic analysis of the semi-structured interviews. It also portrays the potential relationships between variables through statistical analysis.

Chapter 4 – Research Findings

4.1 Introduction

This chapter presents an account of the study's findings through which the researcher aims to elucidate any potential relationships between serious mental illness, substance use disorders and crime. The results include descriptive and inferential statistics that were drawn from quantitative data and the main themes that were elicited from the qualitative interviews.

The chapter is divided into two main sections, which separate quantitative from qualitative findings. The first section is further subdivided into four subsections which include descriptive data and the results that are associated with the first three research questions. These include cross-tabulations that compare the relationships between variables and the results of the chi-square tests. The second section, which is dominated by the last research question, includes four subsections which consist of the main themes that were brought out from the thematic analysis and a summary of their content. This allows for a complete analysis of the results and the construction of conclusions.

4.2. Results from quantitative research

The following four sections consist of the main findings from the quantitative research method that included the formation of a database with information pertaining to 203 individuals who were admitted to dual diagnosis wards at Mt. Carmel Hospital during 2015/2016. The first section presents descriptive data from the retrospective case note reviews which include

demographics and other significant characteristics of the sample. This helps the reader to better understand the population of interest and the context of the study. It also provides a background framework for qualitative data because it describes the population about whom the professionals will relate. The subsequent three sections provide a detailed summary of the most relevant data that satisfies the criteria of the research questions. Tables and graphs are used to facilitate a more effective presentation of the results (Frankfort-Nachmias & Nachmias, 1996) and to substantiate the text (Bell, 1999). The Chi-Square test results, which help to establish the presence or the absence of any statistical associations between variables (Bryman & Cramer, 2001) are incorporated within the text.

4.2.1. Descriptive data

As can be seen in Table 4.1a, archival data included the analysis of 203 case records of inpatients who were admitted in Dual Diagnosis wards between 2015 and 2016. These consisted of 147 males (72.4%), 54 females (26.6%) and 2 individuals (1%) who had changed their sex. During their last admission within the period of 2015-2016, the highest percentage of inpatients came from Bormla (12.3 %). This was followed by 10.8 % of inpatients who were admitted to MCH in a state of homelessness. Qormi and Valletta came next with a percentage of 5.4% each (refer to Appendix H, Table 4.17. p. 172). In Table 4.1a, the localities are assembled according to the main six Maltese regions, indicating that the greatest percentage of inpatients came from the Southern Harbour District (38%) followed by the Northern Harbour District (31.6%). The inpatients' most common living arrangement was with their family of origin (43.8%), followed by living on their own (23.2%) and homelessness (13.3%). The latter percentage is not congruent with the statistic of *no address* in previous table because there were a number of inpatients who would still present with an address but who would in reality be homeless.

Table 4.1a: Descriptive Data

Variable	Category	N	Percent of cases
Gender	male	147	72.4
	female	54	26.6
	other	2	1
Locality	Southern harbour district	77	38
	Northern harbour district	64	31.6
	South eastern district	14	7.5
	Western district	11	5.4
	Northern district	12	5.9
	Gozo and Comino	2	1
Living Situation	marital home	14	6.9
	family of origin	89	43.8
	co-habiting	19	9.4
	friends	4	2.0
	on one's own	47	23.2
	homeless	27	13.3
	shelter	3	1.5

With regard to age in first admission and last admission in 2015-2016, the mode age group changed from 19 to 29 years in first admissions, to 30-39 years in last admissions. The 4.9% of *not applicable* in last admission include those inpatients who had their first and only admission during 2015/16 and therefore they are only included in the first table. All of the other inpatients have had more than one admission to hospital. First admissions are more likely to be carried out on an involuntary basis through sectioning (28.6%), CCF (17.2%) or court order (2%) than last admissions, the majority of which are carried out on a voluntary basis (84.7%). The most common reasons for admissions are drug abuse and low mood. These remain significant in both first and last admissions with the rate of drug abuse reaching a very high percentage of 96.9% in last admissions (refer to Table 4.1b).

Table 4.1b: Descriptive Data

Variable	Category	N	Percent of cases
Age in first admission	less than 18	20	10.3
	19-29	108	55.4
	30-39	61	31.3
	40-49	6	3.1
Age in last admission	not applicable	10	5.0
	less than 18	1	0.5
	19-29	47	23.3
	30-39	85	42.1
	40-49	41	20.3
	over 50	18	8.9
Mode of first admission	voluntary	89	43.8
	involuntary	58	28.6
	CCF	35	17.2
	court mandated	4	2
	Not indicated	17	8.4
Mode of last admission	not applicable	5	2.5
	voluntary	172	84.7
	involuntary	15	7.4
	CCF	4	2
	court mandated	1	0.5
	Not indicated	6	3
Reason for first admission	suicidal ideation	25	12.9%
	suicidal attempt	23	11.9%
	elated mood	3	1.5%
	low mood	60	30.9%
	drug abuse	171	88.1%
	psychosis	18	9.3%
	homelessness	8	4.1%
	aggression	38	19.6%
	other	1	0.5%
Reasons for last admission	suicidal ideation	13	6.8
	suicidal attempt	8	4.2
	elated mood	3	1.6
	low mood	64	33.3
	drug abuse	186	96.9
	psychosis	20	10.4
	homelessness	21	10.9
	aggression	6	3.1
	other	7	3.6

The mode education level amongst the population is secondary level of schooling (40.6%) followed by dropouts in secondary level (33.7%) and tertiary level of schooling (12.4%). More than half of the population (53.7%) reported being unemployed for more than a year, 31% have been recently unemployed and 14.3% were employed on admission (refer to Table 4.1c). Inpatients' diagnoses as originally collected are presented in Table 4.1c, however as stated previously, the different types of diagnoses were amalgamated into three main categories (i.e. substance use disorder and serious mental illness, substance use disorder only and substance

use disorder and other diagnoses) for ease of application. This indicated that 43.8% were diagnosed with a substance use disorder only, 31.3% were diagnosed with a substance use disorder and other diagnoses and 24.9% were diagnosed with substance use disorder and serious mental illness (refer to Figure 4.1).

Table 4.1c: Descriptive data

Variable	Category	N	Percent of cases
Childhood experiences	sexual abuse	22	11.0
	physical abuse	16	8.0
	residential care	14	7.0
	parental separation	45	22.5
	bullying	29	14.5
	other	36	18.0
	positive childhood	61	30.5
	not indicated	25	12.5
Employment	employed	29	14.3
	long-term unemployment	109	53.7
	recently unemployed	63	31.0
	not indicated	2	1.0
Educational level	primary level	11	5.4
	finished secondary level	82	40.4
	dropped out in sec. level	68	33.5
	tertiary level	25	12.3
	not indicated	16	7.9
Habits & dependencies	poly drug use	125	61.9
	heroin	42	20.8
	cocaine	25	12.4
	marijuana	4	2.0
	other	6	3.0
Diagnosis	Substance related disorder	88	43.3
	Schizophrenia and substance related disorder	16	7.9
	Bipolar disorder and substance related disorder	12	5.9
	Schizoaffective disorder and substance related disorder	12	5.9
	Substance induced psychosis	7	3.4
	Major depressive disorder and substance related disorder	3	1.5
	Substance related disorder and other diagnosis	63	31.0
	Other diagnosis without substance related disorder	2	1.0
Criminal history	no crime	33	16.8
	theft	82	41.8
	robbery	13	6.6
	attempted murder	5	2.6
	prostitution	8	4.1
	drug related	71	36.2
	violence	36	18.4
	other	31	15.8
	crime not specified	6	3.1
	not convicted- prostitution	13	6.6
	murder	2	1.0

Figure 4.1: Diagnostic categories
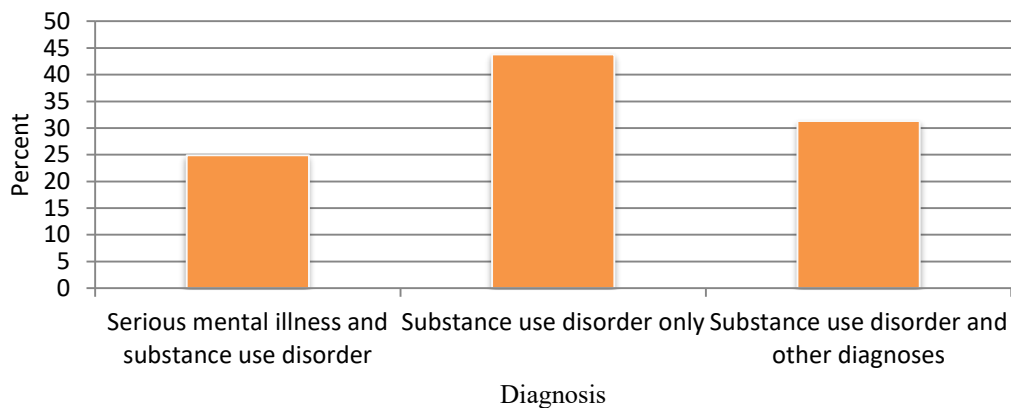
In summary, the population of substance users who was admitted to Mt. Carmel Hospital in 2015 – 2016 typically consisted of males who were between 19 and 29 years in first admission and between 30-39 years in last admission between 2015-2016. The probability of being admitted voluntarily or involuntarily was more or less the same during first admission but it is most probable that one is admitted voluntarily during last admission. Those who were found to be positive for substances on admission were also very likely to suffer from low mood. Inpatients were also more likely to be unemployed with a secondary level of education and a criminal history. The majority had negative childhood experiences, lived with their family of origin and came from the southern harbour district. Inpatients were most commonly poly drug users, with a diagnosis of a substance related disorder.

Following this overview of descriptive data, the next section incorporates the results for the research questions which were elicited from statistical tests and thematic analysis.

4.2.2. Research Question One

What are the potential relationships that exist between mental disorders, substance abuse and crime?

To answer this question, the researcher analysed a number of combinations between the variables '*diagnosis*', '*criminal history*' *and* '*type of substance dependency*'. The cross tabulation in which *diagnosis* is compared with *type of substance dependency* is not statistically significant. Since the p value was 0.413, thus greater than 0.05, it can be concluded that a relationship between diagnosis and the type of dependency is due to random chance. Within the sample, poly-drug use is the most common amongst all inpatients, with the highest rate amongst inpatients who also suffer from serious mental illness. Heroin use is most frequent amongst inpatients who are diagnosed with a substance use disorder only, while cocaine is equally used amongst dual diagnosis inpatients amongst whom it is the most common (refer to Figure 4.2). Although, amongst this population, marijuana is not commonly used by itself, it is worthwhile to note that it is the most common amongst those with serious mental illness and substance use disorder (4.1%).

Figure 4.2: Cross-tabulation between type of substance dependency and diagnosis
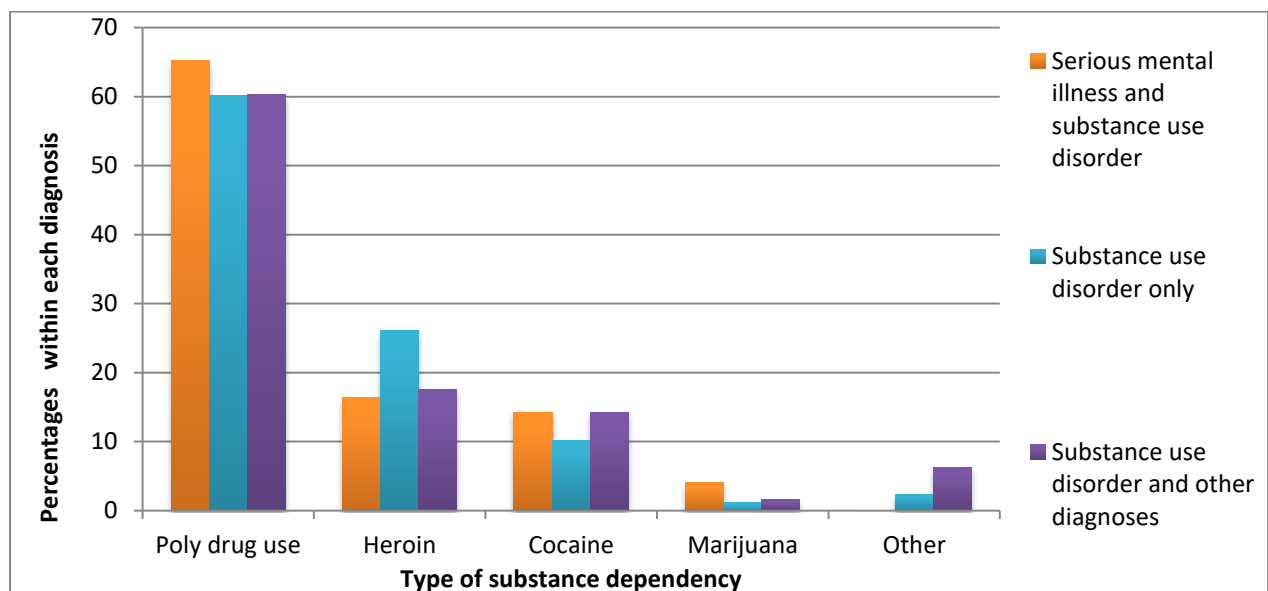
The relationship between criminal history and diagnosis is also not statistically significant as the p value is 0.176, thus greater than 0.05 (refer to Figure 4.3). This means that although

having a criminal history is very common amongst the population (83% have a criminal history), substance abusers who also suffer from dual-diagnosis do not have a statistically greater probability that they will commit crimes than substance abusers who do not suffer from dual diagnosis and vice versa.

Figure 4.3: Cross-tabulation between criminal history and diagnosis
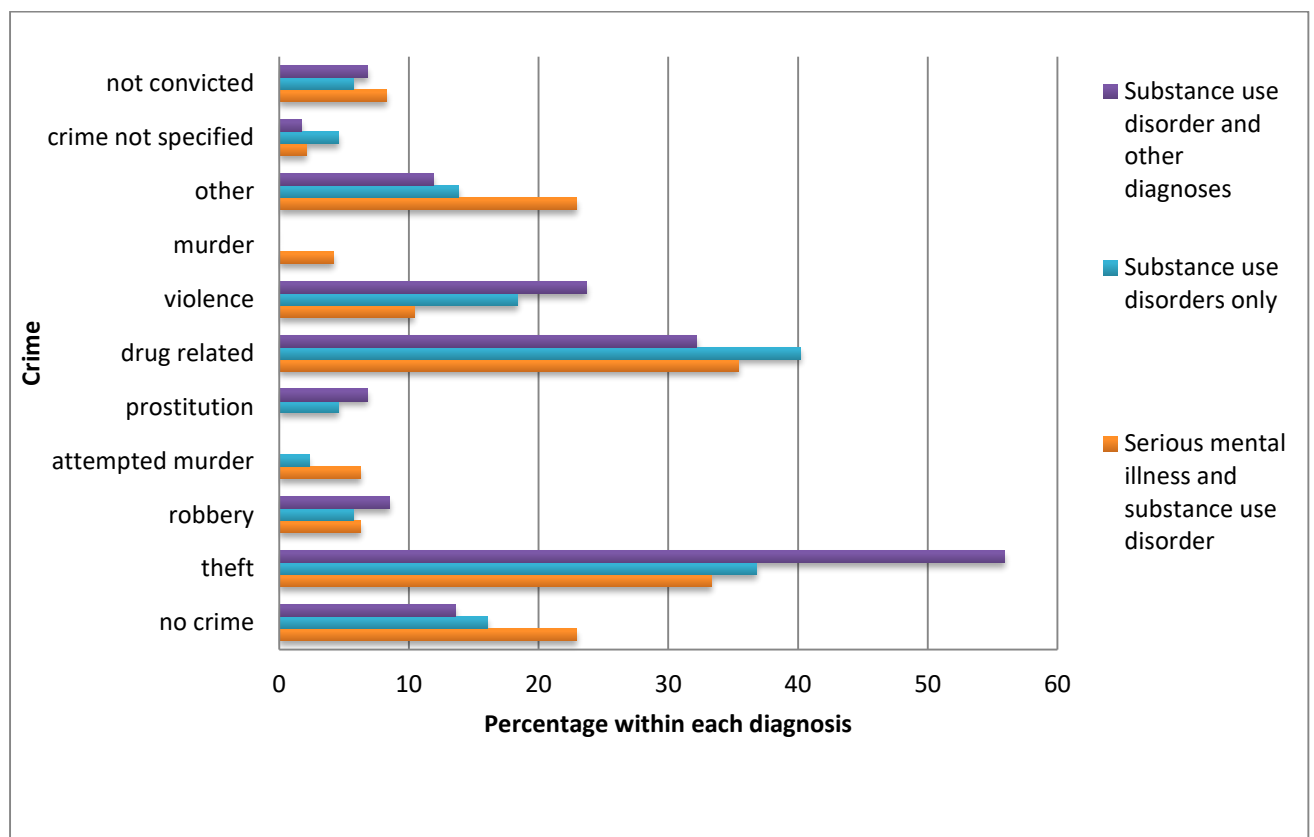
As can be seen from Table 4.2, there is a statistically significant relationship between criminal history and type of substance dependency because the p value is 0.001. This signifies that the relationship between drugs and crime is not due to random chance. In other words, individuals who abuse drugs are at a great risk of getting involved into criminal activities. This is valid for all types of substances, with poly drug use having the highest percentage of risk as results indicate that 91.7% of poly drug users have a history of criminal offending. It is also noteworthy

that individuals who use cocaine have the highest percentage (28%) of violent crimes (refer to Appendix H, Table 4.18, p.175).

Table 4.2: Cross tabulation between criminal history and type of dependency

Criminal history			Type of substance dependency					Total
			Poly drug use	Heroin	Cocaine	Marijuana	Other	
Yes		Count	110	31	15	2	4	162
		% within habits & dependencies last adm	91.7%	77.5%	60.0%	50.0%	66.7%	83.1%
No		Count	10	9	10	2	2	33
		% within habits & dependencies last adm	8.3%	22.5%	40.0%	50.0%	33.3%	16.9%
Total		Count	120	40	25	4	6	195
		% within habits & dependencies last adm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

X^2 (4) = 20.914, p=0.001

Cross-tabulations which included the three variables together (i.e. *diagnosis, type of substance dependency and criminal history)* were also carried out in an attempt to possibly identify any significant relationship within their combinations. When applying *type of substance dependency* as the control variable, *diagnoses* as the explanatory variable and *criminal history* as the response variable, the chi-square test results show a significant relationship of p = 0.009 between cocaine and the other two variables (Refer to Appendix H, Table 4.19, p.176). In fact, the criminal history of inpatients who also suffer from mental illness was significantly less than all other combinations. This means that when controlling for type of substance dependency, the relationship between diagnoses and criminal history is not statistically significant overall; however, partial association remains for cocaine. Therefore, there is a significant relationship between inpatients who also suffer from serious mental illness, and whose drug of choice is cocaine, and a less probability of a criminal history.

4.2.3 Summary

In summary, the results to research question one do not show a significant relationship between *diagnosis* and *type of substance dependency* and between *diagnosis* and *criminal history*. This means that there is not a statistical association between any diagnostic category and specific substances and neither between any diagnostic category and any particular criminal offence. A significant relationship resulted between *type of substance dependency* and *criminal history*. Therefore, the study confirms that there is a statistical relationship between drugs and crime with poly drug use having the strongest link with criminal offences. The cross-tabulation between diagnosis, type of substance dependency and criminal history resulted in partial association for cocaine. This indicates that individuals who suffer from substance use disorder and from serious mental illness, and who use cocaine as their drug of choice have a least likelihood of committing crime.

In the following section, various other cross-tabulations are applied in order to better understand any possible differences between inpatients with dual diagnosis and those who are only diagnosed with a substance use disorder and gender characteristics.

4.2.4 Research question 2

What are the characteristics of female and male inpatients with co-occurring substance use disorder and serious mental disorders? Are there any differences between those who are only diagnosed with a substance related disorder and those who also suffer from serious mental illness?

Research question 2 investigates the characteristics of female and male inpatients with co-occurring substance use disorder and serious mental disorders and examines any possible differences between these individuals and those who only suffer from a substance use disorder.

In order to answer this question, cross tabulations between *diagnosis* and other variables including *gender, age, mode* and *reasons of first and last admission, family history of substance abuse and mental illness, living situation, childhood experiences, education and occupation* were carried out. All of these cross tabulations were also worked out by applying *gender* as the control variable in order to identify similarities and differences between male and female inpatients (refer to Appendix I, Figures 4.8 – 4.19, pp. 177- 182).

The cross-tabulation between gender and diagnosis (refer to Table 4.3) indicates that female are diagnosed with higher rates of substance related disorders and bipolar disorder (11.1%) and substance related disorders and other diagnosis (37%) while males are more likely to be diagnosed with substance related disorders only (44.9%) and psychotic disorders (19.8%).

Table 4.3: Cross-tabulation between gender and diagnosis

			Gender			
			Male	Female	Other	Total
Diagnosis	Substance related disorder	Count	66	21	1	88
		% within gender	44.9%	38.9%	50.0%	43.3%
	Schizophrenia and substance related disorder	Count	12	4	0	16
		% within gender	8.2%	7.4%	0.0%	7.9%
	Bipolar disorder and substance related disorder	Count	5	6	1	12
		% within gender	3.4%	11.1%	50.0%	5.9%
	Schizoaffective disorder and substance related disorder	Count	11	1	0	12
		% within gender	7.5%	1.9%	0.0%	5.9%
	Substance induced psychosis	Count	6	1	0	7
		% within gender	4.1%	1.9%	0.0%	3.4%
	Major depressive disorder and substance related disorder	Count	2	1	0	3
		% within gender	1.4%	1.9%	0.0%	1.5%
	Substance related disorder and other diagnosis	Count	43	20	0	63
		% within gender	29.3%	37.0%	0.0%	31.0%
	Other diagnosis without substance related disorder	Count	2	0	0	2
		% within gender	1.4%	0.0%	0.0%	1.0%
Total		Count	147	54	2	203
		% within gender	100.0%	100.0%	100.0%	100.0%

The relationship between age in first admission and diagnosis is not statistically significant (p = 0.078). Therefore, there is no direct link between age of first admission and diagnosis. Relevant findings include the fact that first admissions are the most common amongst age group 19 – 29 years (refer to Figure 4.4). These amount to 55.4% amongst the whole sample. Inpatients who are diagnosed with a substance use disorder only have the highest percentage of admissions during this period (66.7%). Dual diagnosis patients [15] have the highest percentages of being admitted at an early age (less than 18). Females have a higher percentage of being admitted at an early age (17%) (Refer to Appendix I, Figure 4.9, p. 177) than males, however the most common age group (41.5%) for first admissions of females is 30 -39 years which is higher from that of the males (19-29 years). In fact, the relationship between gender and age in first admission is statistically significant (X^2 (6) = 13.931, p= 0.037).

Figure 4.4: Cross tabulation between age in first admission and diagnosis
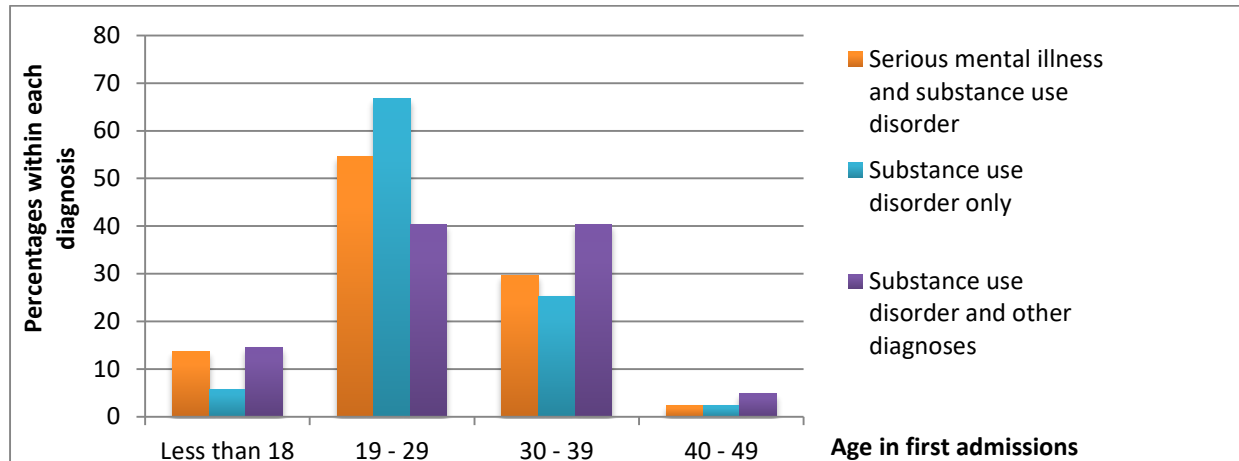
The variable age in *last admission* is statistically significant when compared with *diagnosis* (p=0.018) (refer to Table 4.4). In other words, age in last admission is statistically dependent on diagnosis. The most significant difference is that inpatients who are also diagnosed with serious mental illness are the most likely to be admitted to hospital at an older age. This pattern

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[15] These include those who are diagnosed with substance use disorder and serious mental illness (13.6%) or other diagnosis (14.%)

is significant for both sexes (refer to Appendix I, Figure 4.10, p. 177). Results also indicate that inpatients who are diagnosed with substance use disorder only still have the highest percentage of last admissions within the 19 -29 age group (32.2%). This shows a tendency for frequent readmissions amongst this cohort during this period. In this cross-tabulation, the mode age group within the whole sample increases to 30-39 from 19-29 indicating that in general the population continues to have admissions at MCH over a number of years.

Table 4.4: Cross tabulation between age in last admission and diagnosis

Age in last admission			Serious mental illness	Substance use disorder only	Substance use and other diagnoses	Total
			Diagnosis			
Not applicable		Count	3	5	2	10
		% within diagnosis_new	6.0%	5.7%	3.2%	5.0%
Less than 18		Count	0	0	1	1
		% within diagnosis_new	0.0%	0.0%	1.6%	0.5%
19-29		Count	5	28	14	47
		% within diagnosis_new	10.0%	32.2%	22.2%	23.5%
30-39		Count	22	38	25	85
		% within diagnosis_new	44.0%	43.7%	39.7%	42.5%
40-49		Count	11	15	13	39
		% within diagnosis_new	22.0%	17.2%	20.6%	19.5%
Over 50		Count	9	1	8	18
		% within diagnosis_new	18.0%	1.1%	12.7%	9.0%
Total		Count	50	87	63	200
		% within diagnosis_new	100.0%	100.0%	100.0%	100.0%

X^2 (10) = 21.522, p= 0.01

When comparing the *mode of the 1ˢᵗ admission* with the variable *diagnosis, (*refer to Figure 4.4) the relationship is not statistically significant (p=0.160). This means that one cannot generalize between the mode of first admissions and inpatients' diagnosis. It is pertinent to note that within this sample, substance users who are also seriously mentally ill have the highest percentages (50%) of being admitted involuntarily in their first admission. This is especially

significant for the female population as 72.7% of females with serious mental illness were admitted involuntarily (refer to Appendix I, Figure 4.11, p. 178). In fact, the cross tabulation between *gender* and *mode of 1st admission* is statistically significant (p= 0.001). Inpatients who are diagnosed with a substance use disorder only have the highest percentage (20.9%) of being first admitted to MCH through CCF. The percentages of CCF admissions by dual diagnosis inpatients are also significant, involving 15% of inpatients who are also diagnosed with serious mental illness and 17.2% of inpatients who have other diagnoses.

Figure 4.4: Cross-tabulation between mode of first admission and diagnosis
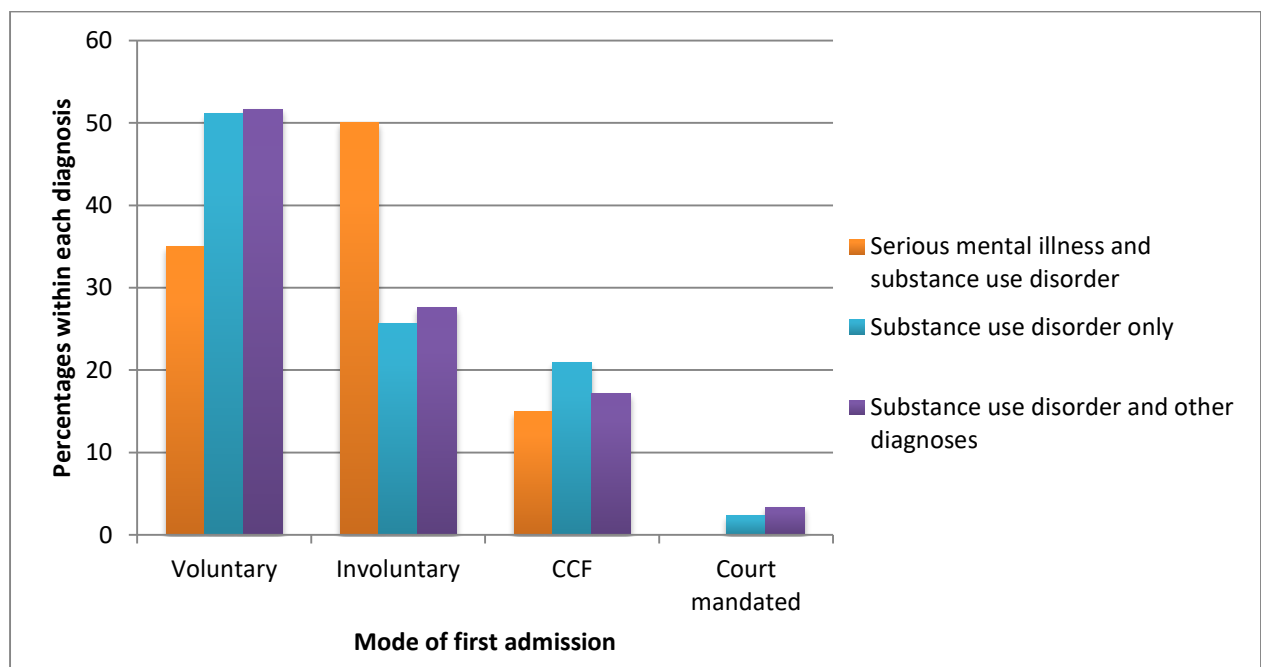
The relationship between the *mode of last admission* and *diagnosis* is statistically significant (Chi-square test result is 0.001). This means that the relationship between them is not due to random chance. In fact, there is a positive relationship between being diagnosed with serious mental illness and being admitted involuntarily (23.4%) (refer to Table 4.5). Once again, this is especially significant for females with serious mental illness, as 41.7% of them were

admitted involuntarily (Refer to Appendix Figure 4.12, p.178). Overall, this cross tabulation indicates that the percentages of involuntary admissions decrease considerably when compared to the mode of first admissions; however, they remain significant for inpatients who also suffer from serious mental illness. Inpatients who are diagnosed with substance use disorder only still have the highest percentage of being admitted from prison (3.5%).

Table 4.5: Cross tabulation between mode of last admission and diagnosis

Mode of last admission			Diagnosis			
---	---	---	Serious mental illness	Substance use disorder only	Substance use and other diagnoses	Total
Not applicable	Count		0	4	1	5
	% within diagnosis		0.0%	4.7%	1.6%	2.6%
Voluntary	Count		36	77	57	170
	% within diagnosis		76.6%	89.5%	91.9%	87.2%
Involuntary	Count		11	2	2	15
	% within diagnosis		23.4%	2.3%	3.2%	7.7%
CCF	Count		0	3	1	4
	% within diagnosis		0.0%	3.5%	1.6%	2.1%
Court Mandated	Count		0	0	1	1
	% within diagnosis		0.0%	0.0%	1.6%	0.5%
Total	Count		47	86	62	195
	% within diagnosis		100.0%	100.0%	100.0%	100.0%

$X^2(8) = 27.649$, p=0.001

With regard to the relationship between *diagnosis* and the *reason for first admission* one finds a statistically significant correlation (Refer to Table 4.6). In other words, one can generalize between diagnoses and reasons of first admission. Males and females who are diagnosed with a substance use disorder only are the most likely to be admitted due to drug abuse. This amounts to 98.5% amongst males and 95.2% amongst females (Refer to Appendix I, Figure 4.13, p. 179).

Table 4.6: Cross-tabulation between reason of first admission and diagnosis

Reason for first Admission			Diagnosis		Total
		Serious mental illness	Substance use disorder only	Substance use and other diagnoses	
Suicidal ideation	Count	8	7	9	24
	% within diagnosis	18.6%	8.0%	14.5%	
Suicidal attempt	Count	5	11	7	23
	% within diagnosis	11.6%	12.6%	11.3%	
Elated mood	Count	2	0	1	3
	% within diagnosis	4.7%	0.0%	1.6%	
Low mood	Count	17	19	24	60
	% within diagnosis	39.5%	21.8%	38.7%	
Drug abuse	Count	34	84	51	169
	% within diagnosis	79.1%	96.6%	82.3%	
Psychosis	Count	15	0	3	18
	% within diagnosis	34.9%	0.0%	4.8%	
Homelessness	Count	1	5	1	7
	% within diagnosis	2.3%	5.7%	1.6%	
Aggression	Count	11	14	12	37
	% within diagnosis	25.6%	16.1%	19.4%	
Other	Count	1	0	0	1
	% within diagnosis	2.3%	0.0%	0.0%	
Total	Count	43	87	62	192

$X^2(16) = 48.635$, p=0.001

As expected, substance abusers who also suffer from serious mental illness have the highest risk of being admitted due to psychosis (34.9%). In fact, psychosis on admission was experienced amongst 50% of females and 30% of males who also suffer from serious mental illness. Homelessness is the most common amongst inpatients who are diagnosed with substance use only (5.7%) especially amongst males (6.2%). Amongst females, it only exists amongst those who are diagnosed with substance use only (4.8%). Inpatients who suffer from dual diagnosis are the most likely to be admitted due to aggressive behaviour. Aggression on admission is most prominent amongst the females, amounting to a mean average of 21.5%

amongst the three diagnostic categories which is 2.2% more than males. Aggression is most common amongst males who also suffer from serious mental illness (26.7%) and females who are diagnosed with substance use disorder and other diagnoses (30%). Findings also indicate that the three categories of inpatients have a comparable chance of being admitted because of a suicidal attempt (11.6%, 12.6% and 11.3%)[16]. The probability is the highest amongst males who suffer from substance use disorder only, whose rate of suicidal attempts is 15.4%. Amongst females, this is most common amongst those inpatients who are diagnosed with substance use disorders and other diagnoses (15%).

The cross-tabulation between *reason of last admission* and *diagnosis* is also statistically significant (refer to Table 4.7). In other words, there is a relationship between one's diagnosis and one's reasons for being admitted again to hospital. The chances that one is readmitted because of drug abuse becomes more prominent amongst the three categories. In fact, inpatients with serious mental illness have all presented with a drug problem in last admission. This shows an increase of 20.9% from first admission. The rate of homelessness also increased amongst all three categories with the largest percentage amongst inpatients with substance use disorders and other diagnoses (1.6% to 21.3%). Interestingly, findings also indicate that suicide attempts have significantly decreased amongst inpatients with substance use disorder only but it remained quite high amongst inpatients who suffer from serious mental illness (10.6%). This is relevant to both sexes (refer to Appendix I, Figure 4.14, p.179). The percentage of being readmitted because of psychosis remains consistent amongst inpatients who also suffer from serious mental illness (36.2%). The rates of aggression on admission have decreased significantly from 19.6% in first admission to 3.1% in last admission. Aggression amongst women remains comparable to males.

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[16] This percentage does not include accidental overdoses

Table 4.7: Cross-tabulation between reason of last admission and diagnosis

Reason for last admission		Diagnosis			Total
		Serious mental illness	Substance use disorder only	Substance use and other diagnoses	
Suicidal ideation	Count	3	1	9	13
	% within diagnosis	6.4%	1.2%	14.8%	
Suicidal attempt	Count	5	1	2	8
	% within diagnosis	10.6%	1.2%	3.3%	
Elated mood	Count	2	0	1	3
	% within diagnosis	4.3%	0.0%	1.6%	
Low mood	Count	16	18	29	63
	% within diagnosis	34.0%	22.0%	47.5%	
Drug abuse	Count	47	80	57	184
	% within diagnosis	100.0%	97.6%	93.4%	
Psychosis	Count	17	2	1	20
	% within diagnosis	36.2%	2.4%	1.6%	
Homelessness	Count	3	5	13	21
	% within diagnosis	6.4%	6.1%	21.3%	
Aggression	Count	2	3	1	6
	% within diagnosis	4.3%	3.7%	1.6%	
Other	Count	2	3	2	7
	% within diagnosis	4.3%	3.7%	3.3%	
Total	Count	47	82	61	190

$X^2(16) = 60.080$, p=0.001

Other interesting cross-tabulations that are related with hospital admissions of individuals with substance use disorders include the comparison between the mode and the reasons for admissions. As can be seen in Table 4.8 and Table 4.9, during first admissions it is more likely that individuals are admitted on an involuntary basis irrespective of the reason for admission except for homelessness.

Table 4.8: Cross-tabulation between mode and reason of first admission

			Mode of 1st admission				
			Voluntary	Involuntary	CCF	Court mandated	**Total**
Reason of admission	Suicidal ideation	Count	12	9	3	0	24
		% within reason	50.0%	37.5%	12.5%	0.0%	12.9%
	Suicidal attempt	Count	6	15	2	0	23
		% within reason	26.1%	65.2%	8.7%	0.0%	12.3%
	Elated mood	Count	0	3	0	0	3
		% within reason	0.0%	100.0%	0.0%	0.0%	0.16%
	Low mood	Count	39	12	5	0	56
		% within reason	69.6%	21.4%	8.9%	0.0%	30.1%
	Drug abuse	Count	82	45	34	3	164
		% within reason	50.0%	27.4%	20.7%	1.8%	88.1%
	Psychosis	Count	4	13	1	0	18
		% within reason	22.2%	72.2%	5.6%	0.0%	0.96%
	Homelessness	Count	8	0	0	0	8
		% within reason	100.0%	0.0%	0.0%	0.0%	0.43%
	Aggression	Count	5	30	2	1	38
		% within reason	13.2%	78.9%	5.3%	2.6%	2.04%
	Other	Count	1	0	0	0	1
		% within reason	100.0%	0.0%	0.0%	0.0%	0.05%
Total		Count	89	58	35	4	186

Table 4.9: Cross-tabulation between mode and reason of last admission

			Mode of last admission				Total
			Voluntary	Involuntary	CCF	Court Mandated	
Reason of last admission	Suicidal ideation	Count	11	1	1	0	13
		% within reasonlast	84.6%	7.7%	7.7%	0.0%	
	Suicidal attempt	Count	5	3	0	0	8
		% within reasonlast	62.5%	37.5%	0.0%	0.0%	
	Elated mood	Count	1	2	0	0	3
		% within reasonlast	33.3%	66.7%	0.0%	0.0%	
	Low mood	Count	62	1	1	0	64
		% within reasonlast	96.9%	1.6%	1.6%	0.0%	
	Drug abuse	Count	166	15	4	1	186
		% within reasonlast	89.2%	8.1%	2.2%	0.5%	
	Psychosis	Count	13	7	0	0	20
		% within reasonlast	65.0%	35.0%	0.0%	0.0%	
	Homelessness	Count	20	1	0	0	21
		% within reasonlast	95.2%	4.8%	0.0%	0.0%	
	Aggression	Count	2	3	1	0	6
		% within reasonlast	33.3%	50.0%	16.7%	0.0%	
	Other	Count	5	1	1	0	7
		% within reasonlast	71.4%	14.3%	14.3%	0.0%	
Total		Count	172	15	4	1	192

The relationship between the living situation of the population under study and its particular diagnosis is not statistically significant. Therefore, there does not exist any scientific difference between the living situation of inpatients who suffer from dual diagnosis and those who are only substance users (refer to Figure 4.5) In fact, the most popular arrangements are the same across the three diagnostic categories and across sexes (i.e. living with family of origin followed by living on one's own). The mean average of living with family of origin is 43.8% while the mean average of living on one's own is 24.1%. Other important findings include a mean average of 7% of inpatients who reported living with their wife/husband and a mean

average of 8.6% of those who co-habit with their partner. Overall, this data is similar across sexes (refer to Appendix I, Figure 4.15, p.180).

Figure 4.5: Cross-tabulation between living situation and diagnosis in last admission
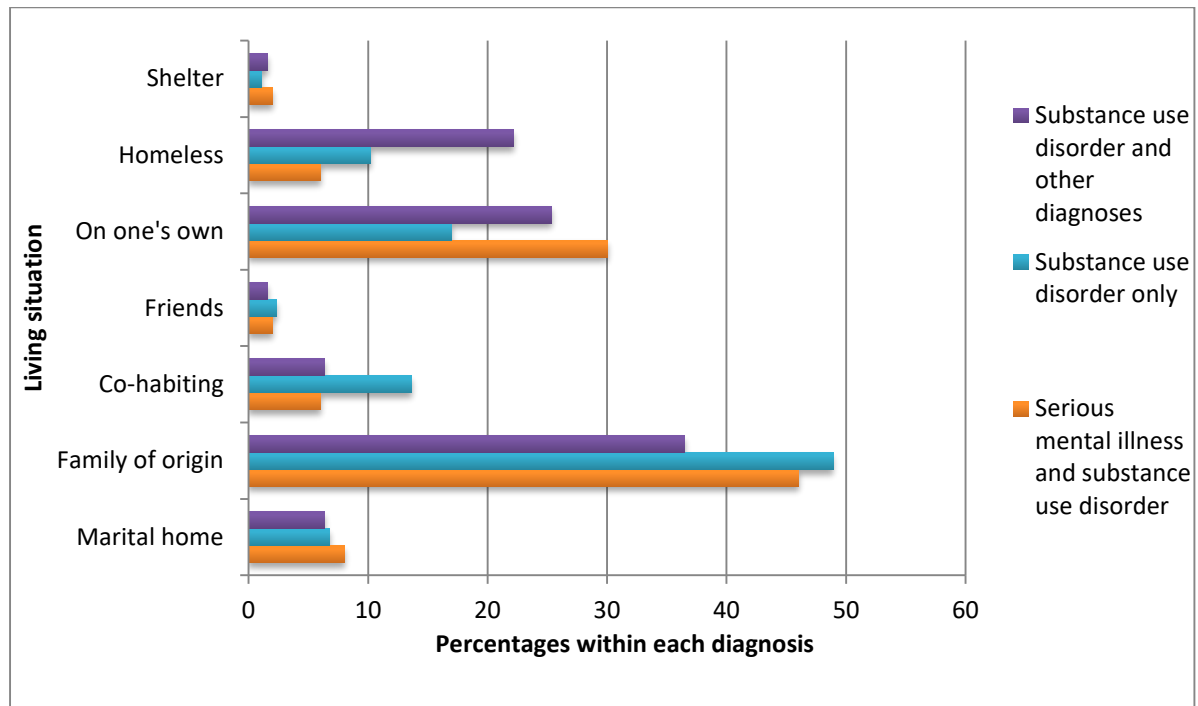
When comparing *diagnosis* with *family history of substance use* (refer to Figure 4.6 p. 77), the result is not statistically significant (p=0.455). Therefore, one cannot generalise about inpatients who have a family history of substance use disorders and their risk of any of the diagnostic categories. However, it is relevant to note that females and dual diagnosis inpatients have the highest percentages of a family history of substance use (refer to Appendix I, Figure 4.16, p.181). They also have the highest percentages of a family history of mental illness (refer to Appendix I, Figure 4.17, p. 181). In fact, the cross tabulation between *diagnosis* and *family history of mental illness* is statistically significant (chi-square test is 0.03) (refer to Table 4.10). This means that there is a strong association between a diagnosis of serious mental illness and a family history of mental illness. This is relevant amongst both sexes.

Figure 4.6: Cross-Tabulation between diagnosis and family history of substance use
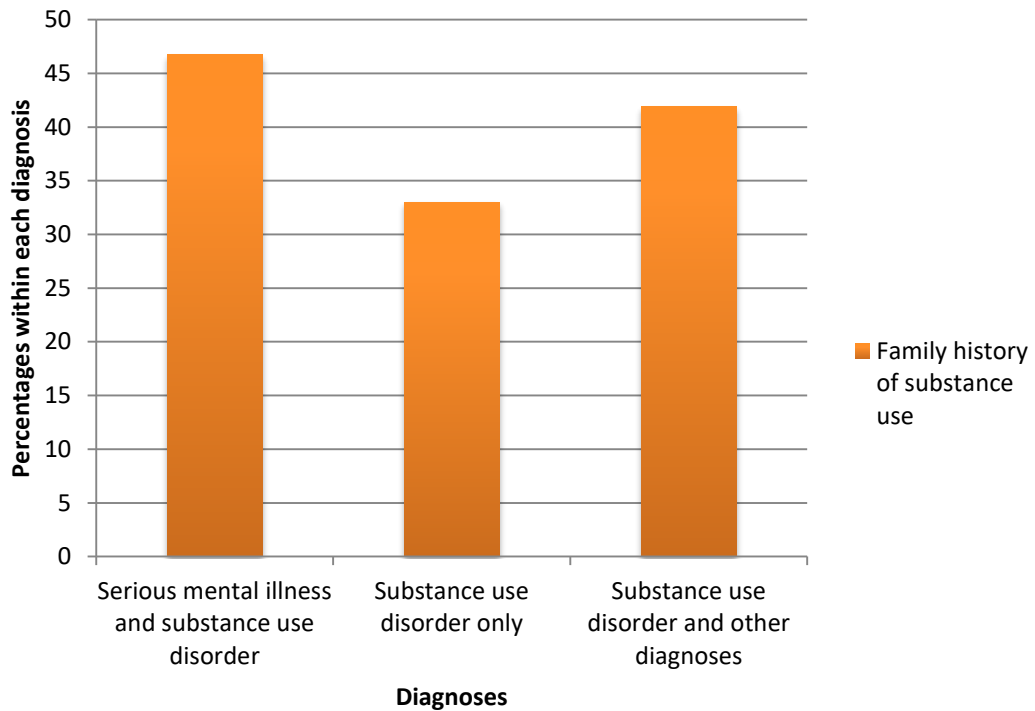
Table 4.10: Cross-tabulation between diagnosis and family history of mental illness

Family history of mental illness		Diagnosis			Total
		Serious mental illness	Substance use only	Substance use and other diagnoses	
No	Count	10	49	30	89
	% within diagnosis	21.3%	55.7%	49.2%	45.4%
Yes	Count	27	26	24	77
	% within diagnosis	57.4%	29.5%	39.3%	39.3%
Not indicated	Count	10	13	7	30
	% within diagnosis	21.3%	14.8%	11.5%	15.3%
Total	Count	47	88	61	196
	% within diagnosis_	100.0%	100.0%	100.0%	100.0%

$X^2(4) = 16.031$, p = 0.003

The relationship between *childhood experiences* and *diagnosis* is statistically significant (Chi-square test result 0.001) (refer to Table 4.11). Therefore, the association between childhood experiences and diagnosis is not random. Inpatients with substance use disorders only have the highest rate of positive childhood (39.1%) while inpatients with dual diagnosis have the highest percentages of negative childhood experiences (mean average of 74.4%). This is relevant to both sexes; however, females with dual-diagnoses have the highest rates of sexual (mean average of 28.6%) and physical abuse (mean average of 22.1%) (refer to Appendix I, Figure 4.18, p. 180). Dual-diagnosis inpatients also have the highest rates of being in residential care (mean average of 10.8%). The only experience that has a similar distribution between the three categories is parental separation (mean average of 22.6%).

Table 4.11: Cross- Tabulation between diagnosis and childhood experiences

Childhood experiences			Serious mental illness	Substance use only	Substance use and other diagnoses	Total
			Diagnosis			
Sexual abuse		Count	8	5	9	22
		% within diagnosis	16.3%	5.7%	14.5%	
Physical abuse		Count	8	1	7	16
		% within diagnosis	16.3%	1.1%	11.3%	
Residential care		Count	5	1	7	13
		% within diagnosis	10.2%	1.1%	11.3%	
Parental separation		Count	10	20	15	45
		% within diagnosis	20.4%	23.0%	24.2%	
Bullying		Count	5	11	13	29
		% within diagnosis	10.2%	12.6%	21.0%	
Other		Count	9	8	18	35
		% within diagnosis	18.4%	9.2%	29.0%	
Positive childhood		Count	13	34	13	60
		% within diagnosis	26.5%	39.1%	21.0%	
Not indicated		Count	5	16	4	25
		% within diagnosis	10.2%	18.4%	6.5%	
Total		Count	49	87	62	198

$X^2 (14) = 38.761$, p= 0.001

The relationship between *diagnosis* and *level of education* is not statistically significant (p=0.684) (refer to Figure 4.7). In fact, findings do not show a clear pattern between the different categories. In general, 5.4% of all categories have a primary school level, 40.6% finished secondary school, 33.7% dropped out of secondary school and 12.4% have a tertiary level education. Dropout rate in secondary school is the highest amongst persons with serious mental illness, amounting to 42.9% amongst its cohort. This is especially high amongst females (58.3%) (refer to Appendix I, Figure 4.19, p.182). It is interesting to note that the percentage of tertiary education is similar amongst the three categories with inpatients who have dual-diagnoses having the highest rates (mean average of 13.5%).

Figure 4.7: Cross–tabulation between educational level and diagnosis
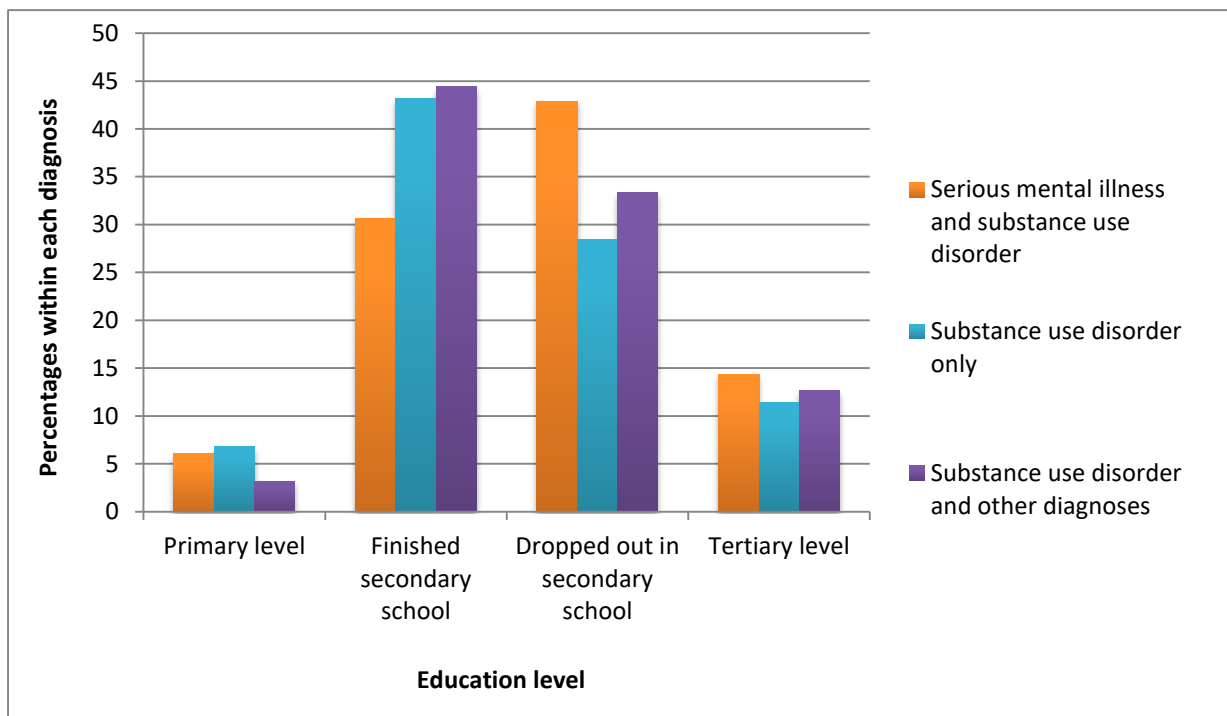
Cross-tabulations that include the educational variable and result in statistically significant relationships include the association between level of education and occupation (refer to Table 4.12) and between level of education and crime (refer to Table 4.13). The first cross-tabulation (Table 4.12) shows that 41.4% of those who are employed have finished secondary level of education. This shows the significant impact of the completion of compulsory schooling on employment. The second cross-tabulation (Table 4.13) indicates that those who have finished secondary level of education have the lowest percentage of a criminal history (75.6%). This implies that completion of compulsory schooling is a protective factor against crime.

Table 4.12 – Cross-tabulation between level of education and occupation

Level of education			Employed	Long-term unemployment	Recently unemployed	Not indicated	Total
Primary level	Count		3	4	4	0	11
	% within occupation		10.3%	3.7%	6.3%	0.0%	5.4%
Finished secondary level	Count		12	36	34	0	82
	% within occupation		41.4%	33.3%	54.0%	0.0%	40.6%
Dropped out in secondary school	Count		7	47	14	0	68
	% within occupation		24.1%	43.5%	22.2%	0.0%	33.7%
Tertiary level	Count		4	12	9	0	25
	% within occupation		13.8%	11.1%	14.3%	0.0%	12.4%
Not indicated	Count		3	9	2	2	16
	% within occupation		10.3%	8.3%	3.2%	100.0%	7.9%
Total	Count		29	108	63	2	202
	% within occupation		100.0%	100.0%	100.0%	100.0%	100.0%

$X^2(12) = 38.157$, p=0.001

Table 4.13: Cross-tabulation between level of education and criminal history

Level of education			Criminal history		Total
			Yes	No	
	Primary level	Count	10	1	11
		% within level of education	90.9%	9.1%	100.0%
	Finished secondary level	Count	62	20	82
		% within level of education	75.6%	24.4%	100.0%
	Dropped out in secondary school	Count	62	4	66
		% within level of education	93.9%	6.1%	100.0%
	Tertiary level	Count	20	5	25
		% within level of education	80.0%	20.0%	100.0%
	Not indicated	Count	9	3	12
		% within level of education	75.0%	25.0%	100.0%
Total		Count	163	33	196
		% within level of education	83.2%	16.8%	100.0%

$X^2(4) = 10.036$, p=0.040

Findings indicate a significant relationship between *diagnoses* and *occupation* with dual diagnosis inpatients having the highest percentages of long-term unemployment (refer to Table 4.14). In fact, the chi-square test results show a statistically significant association with p value of 0.002 confirming that co-morbidity and being female increases the risk of long-term unemployment. Indeed, 76% of inpatients with serious mental illness and 68.5% of all females had been unemployed for more than a year (refer to Appendix I, Figure 4.20, p.182). Overall, only 14.3% of all inpatients were employed on admission but 40.9% of patients with substance use disorder had been recently employed.

Table 4.14: Cross Tabulation between diagnosis and occupation

Occupation			Diagnosis			Total
			Serious mental illness	Substance use disorder only	Substance use and other diagnoses	
Employed	Count		5	18	6	29
	% within diagnosis		10.0%	20.5%	9.5%	14.4%
Long-term unemployment	Count		38	33	37	108
	% within diagnosis_		76.0%	37.5%	58.7%	53.7%
Recently unemployed	Count		7	36	19	62
	% within diagnosis		14.0%	40.9%	30.2%	30.8%
Not indicated	Count		0	1	1	2
	% within diagnosis		0.0%	1.1%	1.6%	1.0%
Total	Count		50	88	63	201
	% within diagnosis		100.0%	100.0%	100.0%	100.0%

$X^2(6) = 21.403$, p= 0.002

4.2.5 Summary

The tests that were carried out to answer research question two resulted in the following statistical relationships. The association between *age in last admission* and *diagnosis* shows that inpatients who also suffer from serious mental illness have admissions till later years while inpatients who suffer from substance use disorders only are mostly admitted during young adulthood. The relationship between the *mode of last admission* and *diagnosis* demonstrates that inpatients who also suffer from serious mental illness, especially females, have the highest probability of being admitted involuntarily. The *reasons of first admission* and *diagnosis* indicate that inpatients who suffer from substance use disorder only are the most likely to be admitted because of drug abuse and to be in a homeless state. Inpatients who suffer from dual diagnosis have the most frequent admissions because of psychosis and aggressiveness, with females having even higher percentages of aggressiveness on admission than males. *The reasons of last admission* and *diagnosis* prove that inpatients who also suffer from serious

mental illness remain the most likely to be readmitted because of psychosis and suicidal attempts while homelessness and drug abuse become more prominent amongst the whole population.

Statistically significant relationships also include the following associations. The cross tabulation between *family history of mental illness* and *diagnosis* results in a greater probability of serious mental illness amongst inpatients who have a family psychiatric history. The association between *childhood experiences* and *diagnosis* shows that inpatients who are diagnosed with a substance use disorder only are the most likely to have had a positive childhood while dual diagnosis inpatients, especially females have the highest probability of having been through negative experiences. The correlation between *occupation* and *diagnosis* produces a significant link between co-morbidity and unemployment which is especially strong amongst females. *Occupation* also results into a significant relationship when compared with *education level* indicating that finishing compulsory schooling increases the possibility of employment. Another positive impact of compulsory schooling can be seen in the cross-tabulation between *education level* and *criminal history* which results into a significant relationship showing that those who finish secondary school have a less chance of getting involved into crime.

The cross tabulations between *age in first admission* and *diagnosis*, *mode in first admission* and *diagnosis*, *living situation* and *diagnosis, family history of substance use* and *diagnosis* and *educational level* and *diagnosis* do not result into statistically significant relationships. Findings that are noteworthy amongst these cross-tabulations include the fact that dual diagnosis patients are more likely to be admitted to hospital at an early age while females are overall more likely to be admitted at an older age than men. Dual diagnosis inpatients also have the highest rates of a family history of substance abuse, living on one's own and early school

leaving. The rates of first admissions to the Forensic Ward at MCH are relatively significant at 18.5% with the three diagnostic categories having comparable results.

In general, the above statistics give a detailed overview regarding particular characteristics of females and males and associations between diagnosis and various categorical variables. The next section will deal specifically with the criminal history of the population.

4.2.6 Research question 3

What types of crimes are the most common within this cohort of patients? Do substance users who do not suffer from serious mental illness engage in the same type of crimes?

Research question 3 aims to identify the most common crimes within the population of interest and to find out if there are any similarities or differences amongst crimes committed by substance users who are also diagnosed with serious mental illness and those who are not so diagnosed. Descriptive statistics in Table 4.1c (p.59) demonstrate that theft (41.8%) followed by drug related crimes (36.2%) are the most common offences amongst the sample. These are the most common offences for both males and females (refer to Figure 4.7). This cross-tabulation also signifies that females have a significantly higher rate of prostitution, while males tend to be more involved in violent crimes. Overall 16.8% of all population have no criminal history. *No crime* rate is significantly higher amongst females (30.8%) than amongst males (12%).

Figure 4.8: Detailed cross-tabulation between criminal history and gender
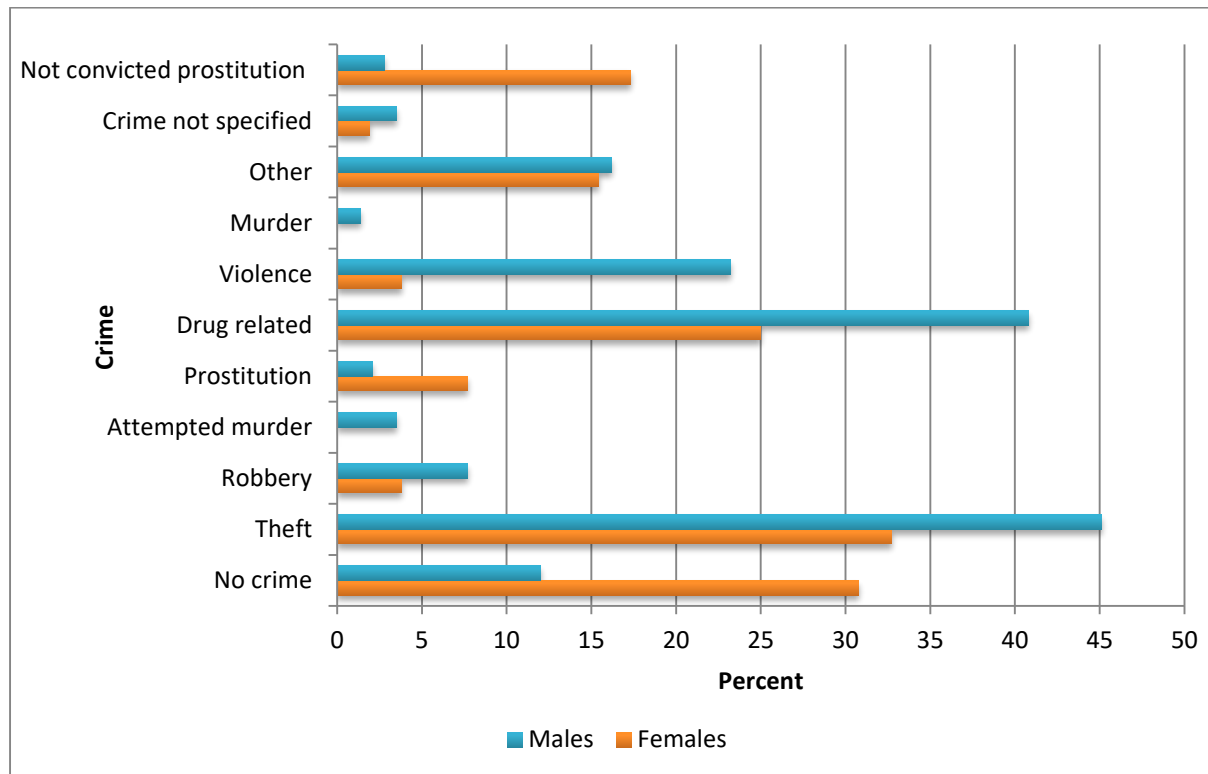
As stated previously the cross tabulation between *criminal history* and *diagnosis* is not statistically significant (refer to Figure 4.3). Within this sample, substance users who also suffer from serious mental illness have the highest percentage of no crime within the cohorts (22.9%). They also have the lowest rates of theft (33.3%), prostitution (0%) and violence (10.4%) from all the sample and the highest rates of non-convicted prostitution (8.3%), other crimes (22.9%) attempted murder (6.3%) and murder (4.2%). Inpatients who are diagnosed with substance use disorders only have the highest rates of drug related crimes (40.2%) and crimes that are not specified (4.6%). Those diagnosed with substance use disorders and other diagnoses have the highest rates of theft (55.9%), violence (18.4%), robbery (8.5%) and prostitution (6.8%). With regard to gender, females have significantly lesser rates of criminal offences. In fact, the chi-square test results of the cross-tabulation between gender and criminal history show a statistically significant association of p = 0.007 (refer to Table 4.16). The only crime that is

more common amongst females is prostitution as 7.7% of females were convicted for prostitution and 17.3% of females engaged into prostitution but were not convicted. Only 3.5% from the females have a criminal history of violent offences.

Table 4.16: Cross-tabulation between criminal history and gender

			Criminal History		Total
			Yes	No	
Gender	Male	Count	125	17	142
		% within gender	88.0%	12.0%	100.0%
	Female	Count	36	16	52
		% within gender	69.2%	30.8%	100.0%
	Other	Count	2	0	2
		% within gender	100.0%	0.0%	100.0%
Total		Count	163	33	196
		% within gender	83.2%	16.8%	100.0%

$X^2 (2) = 10.014$, p= 0.007

4.2.7. Summary

Data related to research question 3 indicates that theft and drug related crimes are the most common offences amongst both genders. Crimes that are more gender related include violent crimes amongst males and prostitution amongst females. The relationship between *criminal history* and *diagnosis* is not statistically significant meaning that one cannot generalize between any type of offence and any diagnostic category. With the sample, prominent findings include the fact that inpatients with serious mental illness have the lowest percentages of crime and females are the least likely to have a criminal history. Interestingly, inpatients with serious mental illness have the lowest percentage of violent crime but the highest percentages of attempted murder and murder. Inpatients with substance use disorders and other diagnoses have the highest percentage of violent crime while inpatients who are diagnosed with substance use disorder have the highest percentages of drug-related crime.

This research question ties up the findings from the quantitative study. The section below outlines the findings that aim to answer the last research question which requires a qualitative approach as it seeks to explore, to elicit detail and to understand the 'what' rather than the 'why' inquiry of the quantitative study (Creswell, 1998, p.17).

4.3. Results from Qualitative Interviews

The purpose of this section is to provide a detailed overview of how the interviewees interpret their knowledge and experience of working with psychiatric inpatients who are substance abusers. Their responses enable a deeper understanding of the population, highlight current difficulties and define the needs towards better service delivery.

The main categories that were elicited from the analysis of the interviews are presented into different segments, each of which describes the interpretation of the interviewees. These are also backed up by a number of quotations that bring in the voice of the participants in the study (Creswell, 1998). As two of the participants preferred to do the interview in English, while the other four preferred to do it in Maltese, quotations are included in their original form.

4.3.1 The heterogeneity of the population

All of the six participants agreed that there are significant differences amongst inpatients who suffer from substance use disorders with P5 emphasizing the importance that the professional will be aware of these differences so that the treatment plan will attend to them and will be formulated accordingly. Overall P3, P4 and P6 explained differences in terms of those who suffer from serious mental illness and substance use disorders and those who are diagnosed with substance use disorders only but who might also show behavioural problems and emotional instability. P1, P2 and P5 described differences in terms of a variety of factors

including their personality, family background, levels of support, level of substance dependence, history and mode of substance use, functional levels and reasons for admission.

There was a general agreement that inpatients who suffer from serious mental illness and substance use disorders are more vulnerable and difficult to treat. P1 expressed that these individuals are disorganized, often abandoned by their families and unable to survive in the community. P3 mentioned that they usually have a genetic component of psychiatric illness. P4 went further to say that inpatients who also suffer from serious mental illness are bullied and abused, even in the ward, by others whose main problem is purely substance abuse.

> They tend to be more vulnerable and abused by the substance misuse people who are just in here purely for substance misuse. They are bullied, they are intimidated, (the others) steal of these people (P4).

> We have this particular case who is bullied daily. He is a dual diagnostic. A pure dual diagnostic. And he cannot help his behaviour although the substances have affected him in such a way that he is very very challenging now. But he is still abused throughout it. He is caught in the toilet and someone goes and pushes him against the wall, they take his tobacco and stuff. They have to be observed more carefully (P4).

P6 expressed that these cohorts are the ones who are most in need of psychiatric admissions but who are the most resistant and lacking in insight. The latter also explained that admissions of patients who are also seriously mentally ill generally take a longer period. In fact, P2 and P3 expressed that in these cases, one needs to treat the mental instability first before starting to target the addiction. P1 mentioned the possibility that dual diagnosis inpatients use substances to self-medicate their symptoms. She also spoke about their drug of choice, with poly drug use being described as the most common.

> Addiction …is the manifestation of the illness like so, either they do it to cope or self-medicate. If they're using drugs especially if they're using heroin (they) want to forget, if they are using coke they think they're Gods …..mostly they end up being poly drug users (P1)

> Normally they use heroin and then to go up they use coke and to go down they use heroin. And the worst is when they inject a snowball, have you heard about it? A lot of the deaths occur when they do that. Heroin and coke together…. (P1)

As common factors between the two cohorts, P1 mentioned that those who have a family history of substance use have a greater risk of becoming substance users themselves. P3 expressed that both groups are admitted into hospital with a multitude of problems including social and legal problems that complicate the process of recovery and prognosis. P2 and P3 also mentioned that these inpatients often have underlying traumas that contribute to the addiction.

> Ħafna mill-klijenti li nara l-isptar ikun hemm underlying issues perezempju ikun hemm trauma, ikun hemm ċertu abbuz, ċertu issues ta'self-esteem, ikun hemm attachment issues. Jista' jkun li meta kien għadhom żgħar, ikunu trabbew f'ambjent fejn forsi jkunu exposed għal ċertu sustanzi, forsi jkun hemm minn naħa tal-parents ċertu vjolenza d-dar, forsi anke prostitution. Din mhijiex biss kwistjoni ta' vizzju, hija iktar minn hekk, hija iktar fonda, hija iktar ikkumplikata, hija iktar ta'sfida u iktar diffiċli (P3)[17].

Besides the above-mentioned differences, another marked difference that was clearly brought out in the interviews is the variety in the reasons of admissions. This theme will be described in detail in the following section.

4.3.2 The reasons for admission

This theme, which was attributed to the second interview question, has resulted through rather intense and abrupt replies from all the participants each of whom presented a list of reasons that may lead to an admission. These mainly include social problems which generally lead to voluntary admissions, mental and physical deterioration which can lead to both voluntary and involuntary admissions and aggressiveness and other uncontrollable behaviour which often lead to involuntary admissions.

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[17] Many of the clients whom I see at hospital have underlying issues for example traumas, there will be abuse, issues regarding self-esteem, attachment issues. It could be that when they were young, they would have been brought up in an environment in which they would have been exposed to substance use, maybe there would have been domestic violence at home, maybe even prostitution. It is not just a question of habit, it's more than that, it's more ingrained, it's more complex, it's more challenging and more difficult (P3).

All of the interviewees mentioned social problems as a common reason for voluntary admissions with P4 mentioning that such problems are the main cause of revolving door hospital admissions. These primarily include financial, legal and housing problems. The possibility of coming into hospital because they would have ended up without any money was expressed by all the participants. P3 stated that some might abuse the system and come to hospital to apply for social benefits. On the other hand, P4 expressed that the financial assistance that they receive from the government does not last them long. P1 and P4 went further to mention that they might also be running away from the creditors.

> The news has got round through the whole of the drug users ring now. If you're short of money or you need this or need that or you're being abused or fear for your life go to MCH (P4).

Three of the participants mentioned the possibility that substance users might seek an admission because they would be nearing a court case and come to hospital thinking that the Court will consider that they are inpatients and thus doing something to tackle their addiction.

> ...... u problemi oħra ta' natura legali perezempju jekk hux qegħdin taħt xi probation order allura qed jinkwetaw li jekk jidhru li m'hu qed jagħmlu xejn fuq il-problema tagħhom ha jispiċċaw immorru l-ħabs (P5)[18].

Homelessness was another reason mentioned by all the participants. P2 and P4 associated homelessness with relationship problems and losing their place in the family home. This was supported by P1 who mentioned that they come to an extent that no one wants to keep them, not even their families.

> Il-~housing ukoll hija problema kbira…ħafna ħafna ħafna. Aħna l-pazjenti li jkollna kważi kollha homeless (P2)[19].

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[18] ……and legal problems such as being under a probation order and concerned that if they will be seen as not doing anything about their problem they would risk going to prison (P5).

[19] Housing is another big problem…..a massive problem. Most of our patient are homeless (P2).

In view of the above, P6 explained that certain inpatients might not come to hospital for treatment but seek an admission to solve their social problems for a temporary period. She warns that one needs to be careful so that the hospital does not end up as a shelter. P5 also mentioned that the system might be abused however the latter attributed this to MCH being the only residential service where one can be admitted at any time.

> Hemm min ukoll jipprova jabbuża mis-servizzi, ghax dan huwa l-unika servizz li huwa residenti fejn wieħed jista' jidħol fil-mument li jiddeciedi. La hemm waiting list, m'hemm xejn u qatt ma nirrifjutaw lil ħadd minħabba problemi ta' sodod anke jekk niġu kritikati li mhux dejjem noffru l-aħjar ambjent (P5)[20].

This was supported by P2 who stated that substance users might resort to MCH because they do not find enough support in the community while P4 expressed that at MCH they find the "family" that they do not have on the outside.

Another common reason given by all the participants relates to the damaging effects of the drugs on the individual. Four of the participants mentioned the chaotic lifestyles that substance users often end up living. This is to the extent that they come to a point where they will not be able to manage any longer and seek an admission. As P3 explained, this can also be with the intention to start the rehabilitation process.

> Ikun hemm pazjenti li jidħlu voluntary ghax iħossu li xebgħu f'din l-istil ta' ħajja u qed jippruvaw jagħmlu xi ħaga, waslu fi stat li ma jistgħux jibqgħu għaddejjin kif inhuma (P3)[21]

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[20] There are those who try to abuse from our services because this is the only residential service where one can be admitted at the moment when one decides. There is no waiting list at all and we never refuse anyone due to bed availability even if we are criticized that we do not always offer the best environment (P5).

[21] There are patients who are admitted on a voluntary basis because they feel fed up of this lifestyle and will be trying to do something about it, they have reached a stage where they will not be able to continue living as they are (P3).

All of the participants brought out the ill effects of substance use on physical and mental well-being. In summary, P1 mentioned that through their addiction they get out of control. P2 spoke about the damage on their physical health including loss of weight. P3 mentioned the risk of an overdose. P4 emphasized the harm being caused by synthetic drugs, which can trigger a crisis in a short time. P5 and P6 spoke about drug-induced mental illness which can lead to serious psychiatric symptoms including psychosis.

> They just want to be admitted right there and then because they need their bodies sorted out quickly, because they cannot cope with their mental state (P4).

Interviewees explained that individuals in such circumstance might come to MCH both on a voluntary or an involuntary basis. However, they attributed involuntary admissions primarily to aggressive or uncontrollable behaviour and mental instability. P2 also mentioned that involuntary inpatients can be admitted to hospital on a Court Order. P6 attributed the difference in the mode of admission according to one's diagnosis. She explained that individuals who suffer from dual diagnosis are at higher risk of involuntary admissions.

> Naħseb li l-kategorija tal-iskizofrenija etċ jidħlu l-isptar b'mod involontarju għaliex xorta ma jibqgħux jarfgħu li ghandhom bżonn il-kura u dawn huma l-iktar nies li għandhom bżonn jidħlu l-isptar (P6)[22]

P2 and P4 mentioned crime as a possible occurrence prior to an involuntary admission. This might directly or indirectly contribute to the individual being sectioned to MCH. In fact, the possibility of criminal offences amongst this population was a prominent feature of the interviews and is considered as one of the primary themes. This will be presented in detail in the following section.

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[22] I think that patients who suffer from serious mental illness are admitted to MCH on an involuntary basis because they would still not recognize that they need treatment and these are the persons who mostly need to be admitted to hospital (P6).

4.3.3 Crime

All of the participants spoke openly about a strong relationship between drugs and crime. This was attributed to the addict's need to finance his habit since it is not affordable.

> Huwa ovvju li min għandu problema serja ta' droga ma jista' qatt jaffordja dawn is-sustanzi fejn dawn is-sustanzi jekk toqgħod tqis gramma għal gramma huma iktar expensive mid-deheb. Għalhekk il-persuna li tidħol f'addiction serja u gravi ikollha bzonn li ħafna drabi tuza metodi illegali biex ikollha biżżejjed flus (P5)[23]

The most common crimes that were mentioned by the participants are theft, drug dealing, prostitution and violence.

> Not every drug addict goes to prison but I would say 70% of them have gone to prison. Somehow they always get in trouble. Because of their addiction they end up either stealing, being violent. It is nearly inevitable (P1).

The question regarding a possible link between mental illness and crime elicited different responses from the participants. P1 associated this with the consequences of substance induced psychosis most specifically cocaine induced paranoia. S/he explained that all drug addicts are prone to commit crime and possibly engage into aggressive behaviour in order to acquire the money for drugs however she emphasized that the after effects of cocaine can be particularly dangerous. She supported this by mentioning a case of a patient who committed murder while he was under the effect of cocaine. This was also mentioned by P4 who stated that intoxicated people are more at risk of committing violent crimes including rape, sexual abuse on children and murder. The latter stated that drugs affect the chemicals in the brain and increase impulsivity. She mentioned that individuals who also suffer from mental illness might already

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[23] It is obvious that those who have a serious drug problem can never afford these substances which if you calculate them gram by gram they are more expensive then gold. This is why a person who has a serious problem of addiction often needs to make use of illegal methods to have enough money (P5).

be more impulsive than others therefore substance use will exacerbate this tendency even more. P4 described the urge to commit a crime amongst individuals with dual diagnosis as being triggered by 'voices'.

> Oh I need to steal this, the voice tells me because they've stolen of you so you have to steal to fit in like them (P4).

This perception was not supported by P6 who stated that criminal behaviour amongst the study population is generally triggered by their substance dependence and not because of any particular mental disorder.

> Il-problema tad-droga twasslek diġa biex tikser il-liġi minħabba nuqqas ta' flus. Trid tixtri, trid tisraq etc etc. Rari huma dawk il-każijiet li jkollhom problema akuta mentali u minħabba f'hekk jiksru l-ligi. Rari ħafna. Mill-esperjenza tiegħi hija rari ħafna. Jigifieri ma nistax ngħidlek ċar u tond li hemm konnessjoni bejn mard mentali partikolari u kriminalita imma hemm ċar u tond konnessjoni bejn droga u kriminalita (P6)[24].

A common perception that was shared by three of the participants is that individuals who suffer from dual diagnosis are more vulnerable and at risk of abuse. P4 maintained that these individuals might disturb the public in an attempt to get help. She gave an example of these patients knocking on doors and ordering people to give them things and stated that this is becoming an increasingly common occurrence which is also leading to involuntary admissions by the police. The latter described violent behaviour amongst these individuals as learned behaviour.

> They will come in an aggressive manner, in aggressive physical stunts and demand because their experience outside is now being transferred inside. That's what they are learning from other substance misusers in the community. And it is horrible to see (P4).

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[24] The drug problem leads one to break the law, due to shortage of money. One needs to buy so one needs to steal etc etc. Cases where individuals have an acute mental illness and because of this, they break the law are rare. Very rare. From my experience it is very rare. So I cannot tell you point blank that there is a connection between certain mental illness and crime but there is a clear relationship between drugs and crime (P6).

P5 stated that substance users who also suffer from serious mental illness are not so street wise. The latter elaborated that this might prevent them from being involved into criminal behaviour but it can also lead to early arrests.

This section has tied up the possible consequences of substance use amongst the population under study. The following theme will present the interviewees' suggestions about providing a better service to persons with dual diagnosis.

4.3.4 Suggestions for service improvements

The need for improvements in the current service provision is evident as interviewees mentioned various ideas about how the state can better address the needs of persons who suffer from serious mental illness and substance use disorders. Five of the participants maintained that individuals who are admitted to hospital because of a substance use problem cannot all be treated in the same way and argued that patients who will also be suffering from acute mental illness should be accommodated in a separate ward. The main reasons given include the need to protect these patients because they are more vulnerable than those who only suffer from substance use disorders and their need for more intensive care as they tend to present with more complex issues and can be more demanding especially in the initial stages.

> Hafna drabi min għandu dual diagnosis jew ikun qed ibati min xi dipressjoni qawwija jew anke dipressjoni bi psikozi jew psikozi; ikun vulnerabbli allura hemm jista' jkun li jekk inpoġġuh f'dak l-istadju ma' persuni li qed jiġu rikoverati, qed jiġu stabilizzati, qed jippreparaw ruħhom għal programm dawn il-persuni jiddisturbaw l-ambjent tas-sala minħabba l-bżonnijiet taghhom imma wkoll dawn il-persuni jkunu aktar vulnerabli mill-pazjenti l-oħra (P5)[25].

Another proposition that was strongly indicated by all the participants is the need for better community care. P5 explained that those inpatients who choose not to go to a drug

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[25] Generally, who suffers from dual diagnoses or who would be suffering from a severe depression or psychotic depression or psychosis would be more vulnerable therefore if at that stage we place him/her with individuals who would be recovering, who would be getting more stable, who would be getting prepared for a rehabilitation program, these will disturb the ward environment and would also be more vulnerable than the other patients (P5).

rehabilitation program should be provided with community services that cater for their needs and help them to stay clean. P3 argued that in general community services for drug addicts in Malta are seriously lacking. She mentioned in particular the need for a smoother transition from drug rehabilitation programs to the community. P2, P4 and P6 emphasized the importance for continuous community support and monitoring of individuals with dual diagnosis. P6 maintained that at hospital their problems will only be temporary solved. P2 and P6 explained that these individuals need daily support from an outreach team who will help them with their basic needs. They explained that these individuals would have generally lost the capacity to survive in society without drugs and they would easily become immersed into a vicious cycle of stopping medication, drugs, crime and readmissions into hospital.

> Irid ikun hemm monitoring għaddej il-ħin kollu fil-komunita li jaraw li jmorru u jieħdu l-medicina u għajnuniet oħra….jkollhom persuni li jgħinuhom u jissaportjawhom…….Hawnhekk niltaqgħu ħafna ma' dawk in-nies li jwaqqfu l-pilloli fuq barra allura jerġgħu ikollhom relapse. Ikollhom relapse għax is-sintomi li jibdew iħossu jridu jwaqqfuhom b'xi ħaga u the easiest way out tagħhom, l-uniku triq li jafu, li jirrikorru u jużaw id-droga (P2)[26].

P1 and P4 also mentioned the need for communal residential services for individuals who suffer from dual diagnosis. P1 described it as a self-sufficient community where the residents work and live together in a sheltered environment. She explained that this type of accommodation needs to be less intense than a program adapted for persons with very vulnerable personalities. P4 spoke at length about how such a service will function because she has worked in a similar set up abroad. According to this participant, the place will accommodate a small group of individuals and will provide high levels of support by 24hr staff. These will enable them to

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[26] There needs to be ongoing monitoring in the community so to make sure that patients will be compliant with treatment and to provide any needed assistance…..they need persons who can help and support them. Here we meet a lot of patients who stop their treatment when in the community and relapse. They relapse because they would need to self-medicate their symptoms and the easiest way for them, the only solution they know, is to return to drug use (P2)[26]

follow their individual care plans while living in shared accommodation. The staff will also be able to intervene early and liaise with responsible professionals according to need.

> They got a structured day and a roster and as the days went on, the less likehood of ever touching the substance, because they felt wanted, needed, cared of and they have something to do with their time which meant they weren't meeting the other substance abusers, they weren't being attacked, they weren't being violated, they weren't being abused and they actually enjoyed the company of the six people (P3).

Other suggestions that were conveyed by the participants included the use of the Mental Health Act with dual diagnosis patients. P2 explained that this can help in their stabilization process. P6 mentioned the need for better liason with probation officers when inpatients have a criminal history and also with other drug organizations mainly Sedqa, Caritas and Oasi. This was supported by P3 who emphasized the need for better communication, liason and teamwork between hospital staff and the mentioned drug agencies so that the services provided will be less fragmented and more effective.

> Jiena nahseb li we're not doing it the right way (m'aħniex nagħmlu sew) …m'hemmx dik il-liason, m'hemmx dik il-komunikazzjoni, nuqqas kbir ta' rizorsi u kif ghidt l-ewwel kulhadd jahdem ghall-rasu u jekk ha nahdmu b'dik is-sistema m'hijiex ha tkun effettiva (P3)[27].

The latter also maintained that professional staff working with drug addicts needs to be well trained and specialized in the area. This participant also appealed for more research studies pertaining to our local context so that we would know better what works for our country. Also on a national level, P1 expressed frustration towards the war on drugs describing it as "a total failure". Instead, she highlighted the need to invest more money into rehabilitation, into helping these people to stay safe and continue to be valuable citizens.

> What they need rather than spend money on policing and the law courts etc is to put the money into rehabilitation, into helping the people cause really and truly they're not helping them. When they come

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[27] I think that we're not doing it the right way…..there isn't a good system of liason, there isn't good communication, serious lack of resources, and as I said before everyone working independently and if we're going to continue working within this system it is not going to be effective (P3)

out (of prison) they have nowhere to go, nothing to do…no jobs because they have a bad conduct etc (P1).

As required from a sequential design in mixed methods research (Fetters, Curry & Creswell, 2013), this section has elaborated on the quantitative findings in order to produce a comprehensive representation of the population under study. This also enabled a thorough and more refined analysis of the research area.

4.3.5 Summary

The qualitative interviews enabled a richer portrayal of the population under study by adding a more tangible dimension to quantitative data. Through the interviews, the reader can better understand the heterogeneity of the population and the complexities of comorbidity. The participants also bring to the fore the different but common scenarios that lead to voluntary or involuntary admissions that are not necessarily based on symptoms of serious mental illness. They also perceive very clearly the relationship between drugs and crime. In fact, the high rates of criminal offences amongst the population are mainly described as the consequence of their substance dependence rather than a manifestation of their mental conditions.

It is interesting to note that the narratives of the participants related to similar needs and lacunae, and led to common recommendations. From the results, it is evident that neither the psychiatric hospital nor the community services are meeting the needs of the population adequately. In fact, the need for better service provision was voiced out strongly by all the interviewees.

In the final section, the findings of the qualitative interviews will be integrated with those of the quantitative method so to present a conclusive representation of all the results.

4.4 Conclusion

In summary, the first research question resulted in one statistically significant relationship between criminal history and type of substance dependency especially amongst poly drug users. This association is also confirmed by the interviewees who associated criminal involvement including violence as a consequence of heavy drug use. This cross-tabulation also depicted a higher probability of violence amongst cocaine users which was also indicated by one of the participants. The relationships between type of substance dependency and diagnosis and between diagnosis and crime are not statistically significant. The majority of the participants also did not make a direct association between serious mental illness and crime. To answer this research question, the researcher also conducted a cross tabulation between the type of substance dependency as the control variable in comparison with diagnosis and crime. This brought out partial association between cocaine use and a reduced rate in the forensic histories of inpatients who also suffer from serious mental illness.

The second research question resulted into a number of statistically significant relationships between diagnosis and other variables which together with qualitative findings indicate marked differences between inpatients with substance use disorders only and those who also suffer from serious mental illness. These include an association between diagnosis and mode of last admission, which show that inpatients who also suffer from serious mental illness are more likely to have recurrent involuntary admissions. This was also depicted in the interviews. Reasons behind the first and last admissions also resulted in statistical relationships when compared with diagnosis indicating that inpatients who also suffer from serious mental illness have the highest rates of psychosis and aggressiveness on admission. The participants described possible reasons of admissions in more detail including others which are not included in quantitative data such as financial problems and upcoming court cases. Another significant relationship is that between diagnosis and unemployment with dual diagnosis inpatients

especially females having the highest levels of long-term unemployment. Interviewees did not specify differences related to unemployment but mentioned limitations in the levels of functioning, dire financial problems and dependence on social benefits in relation to the population as a whole. Quantitative research also generated an association between diagnosis and childhood experiences with inpatients who also suffer from serious mental illness as the most likely to have had negative experiences. Once again, the participants who spoke about past traumas and psychological issues related these to the whole population rather than to specific groups. Other statistical associations include relationships between dual diagnosis and a family history of mental illness which was also mentioned in the interviews, between diagnosis and age of last admission, between level of education and occupation and between level of education and crime.

With regard to research question three, the most common crimes amongst the whole population are theft, drug related offences, violence and prostitution. These offences are the same as those mentioned by the interviewees. Overall, results did not indicate any particular associations between diagnosis and types of crime. Therefore, one cannot conclude that there is any particular differences between crimes that are committed by inpatients with dual diagnosis and those who are only diagnosed with substance related disorders. However, interviewees attributed a difference in the criminal propensity of inpatients who also suffer from serious mental illness which they attributed to their risk of exploitation, learned behaviour and impulsivity.

Research question four sought to elicit the views of professionals who work with the population under study. Besides their contribution of sharing their knowledge and experience regarding the realities that are associated with substance abusers who are admitted to MCH, the interviewees also made various suggestions about how the service can be improved. These include the need to separate substance abuse inpatients according to their symptoms and needs,

the need for residential and outreach services in the community and better working relationships between agencies.

Overall, the outcomes for this research resulted into various significant relationships and other important data related with the population under study. These results will be further analysed in comparison to each other and to relevant literature in the following chapter.

Chapter 5: Discussion and Analysis

5.1 Introduction

Subsequent to the previous chapter which highlighted the main findings, the researcher aims to make a critical appraisal of the results in order to present a discussion on the outcomes, including potential explanations to the findings.

The chapter is structured according to the main themes of the study including socio-demographic findings, comorbidity, hospitalisation, criminal associations and service improvements.

5.2 Socio-demographics

This section presents an overview of socio-demographic characteristics related to gender distribution, locality, living situation, occupation and educational level. With regard to gender, the result of this study[28] indicates a majority of male inpatients. This is similar to those of international studies of psychiatric inpatients with comorbid substance abuse. These include studies in America[29] (Mombray, Ribisi, Solomon, Luke & Kewson, 1997), in Norway[30] (Opsal, 2012), in Iran[31] (Sepehrmanesh, Ahmadvand & Moraveji, 2014) and in South Africa[32] (Lachman, Nassen, Hawkridge, & Emsley, 2012) all of which indicate that the male population exceeds the female population by an approximate ratio of 1 to 3. With regard to locality, the present study shows that the highest percentage of the participants come from the southern harbour district namely Bormla (12.3%), Valletta (5.4%) and Qormi (5.4%). This is followed by the North Harbour District which is dominated by St. Paul's Bay (4.4%). These results are

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[28] males – 72.4%
[29] males – 74.3%
[30] males - 52 – 73%
[31] Males – 62.9%
[32] males – 73%

similar to the localities reported in other local studies that include the areas with the highest prevalence of socio-economic inequalities, early-school leavers (Gatt, 2012) and unemployment in Malta (Debono, 2013). They are also the same areas that are identified in the "National Report on the Drug Situation in Malta" (2016), as having the highest rates of drug abuse. Such findings therefore support theories which identify neighbourhood disadvantage as a risk factor for social problems including substance abuse and crime (Boardman, Finch, Ellison, Williams, & Jackson, 2001; Fite, Wynn, Lochman & Wells, 2009; Lambe & Craig, 2017). In other words, a significant percentage of inpatients may have been exposed to substances and deviant behaviour within their neighbourhood and may continue to be subjected to such risks if they return to the same neighbourhoods when discharged from hospital.

Although data from qualitative interviews indicates that the majority of the population is abandoned by relatives, statistical data shows that living with the family is the most common arrangement. This finding points towards the possibility that the family, even if providing accommodation for the patient, may not be involved in one's treatment plan possibly because the patients will not want them to be involved or because of a possible general perception that the patients have lost contact with their family. Another important implication that is associated with the most common living arrangements[33] of the population is the fact that although the population consists of adult individuals, the majority seems to be either of a single status or separated/ divorced. A possible explanation to this finding is that their mental health conditions and/or substance abuse have adversely affected the likelihood of marriage or posed a risk for separation/divorce (Breslau et al., 2011).

Despite such findings, homelessness amongst the population under study remains a reality (Denkins, 2005; Drake, Osher & Wallach, 1991). This is evident through both research

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[33] Living with their family and living on their own

methods with quantitative data indicating a 10% to 13% of homeless inpatients and qualitative data indicating that the population may seek an admission to fulfil its basic needs including shelter. The fact that the participants seem to consider homelessness as one of the major problems that this client group presents may signify that the housing instability of these patients is not fully depicted in the records or that homeless cases impose significant burden on service provision. An interesting observation is that inpatients who are also diagnosed with a serious mental illness have the smallest percentage of homelessness (6%) in first admissions with females having 0%. This might indicate that serious mental illness might constitute a protective factor against homelessness (Draine, Salzer, Culhane, & Hadley, 2002).

Unemployment is another social problem that is prominent in the study especially amongst persons with dual diagnosis who may be more liable to non-productive lifestyles due to functional difficulties and possibly higher levels of stigma. In this study, the rate of long-term unemployment is very prominent (53.7%) with only 14.3% of the sample being gainfully employed. Unemployment is most significant amongst females who have the highest percentages of long-term unemployment in all three of the diagnostic categories. This signifies an unemployment gender gap which is consonant with the Maltese context as Malta remains the EU country with the biggest gender difference in employment amounting to 27.8% in 2016 (Eurostat, 2017).

Significant consequences of the population's high rates of unemployment are clearly depicted in the interviews as participants described financial problems, including reliance on social benefits, as a major reason for hospital admissions amongst the population. In fact, literature indicates that joblessness increases the risk of substance use and relapse after treatment while problematic substance use is known to generate unemployment (Henkel, 2011). Therefore, lack of employment can be considered as a significant factor behind the revolving-door syndrome (Schmutte, Dunn, & Sledge, 2009). Moreover, Kleck and Jackson (2016) associate the category

of individuals who are unemployed for socially unacceptable reasons and who are generally not looking for work, as the most likely to commit property crimes. Unemployment of individuals who suffer from serious mental illness might be more socially acceptable because of possible disabling consequences of their conditions. In fact, in the current study, the relationship between occupation and diagnosis is statistically significant as 76% of inpatients who also suffer from serious mental- illness, have been unemployed for more than a year. However, despite having the least percentage of criminal offending (77.1%), the criminal history of inpatients who also suffer from serious mental illness in the current study is still high. This might be partially attributed to their substance abuse which is known to exacerbate the criminal risk (Almeida & Moreira, 2017; Fazel et al,. 2009).

This research also confirms the relationship between unemployment and early school leaving (ESL) (Gatt, 2012; Hjorth et al., 2016; Maynard et al., 2015). Inpatients who have finished secondary school or who attended tertiary education have a greater chance of being employed or recently employed while those inpatients who have dropped out of secondary school have the highest percentage (43.5%) of long term unemployment. Although the relationship between education and diagnosis is not statistically significant, the school dropout rates are noteworthy. In fact, it is estimated that 39% of the sample have not attended compulsory schooling up till 16 years of age. When considering that Early School Leaving (ESL) in Malta includes those individuals who have not attained at least a pass in five subjects of the Secondary Education Certificate (Ministry of Education and Employment, 2014), the percentage of ESL might be even higher. Therefore, the ESL rate of a population of individuals who suffer from mental disorders in Malta, is much higher than the national ESL rate, which was estimated to be 19.8% in 2016 (Eurostat, 2017). In fact, the association between mental disorders and ESL is internationally acknowledged (Esch et al., 2014) and it is also included in the national report of "Early School Leaving Strategy for Malta" (Ministry of Education and Employment, 2012).

This continues to confirm the longstanding difficulties of a significant percentage of the population which may also include mental health problems since childhood or adolescence. Gender differences are less prominent in the level of education. In fact, Eurostat estimates that in 2016, ESL consisted of 3% more males than females (Eurostat, 2017). In the current study, female ESL amounts to 39.6% while the total of males is 38.8%. However, this result may not be accurate because amongst males there is 10.2%, compared to 1.9% of females, whose level of education is not known.

Statistical analysis also confirms a positive relationship between lack of educational attainment and crime, which is an evidence based association (Maynard et al., 2015; O'Mahony, 2002; UNESCO, 2016). The cross tabulation shows that early school leavers are at a higher risk of committing crimes, with 90.9% of inpatients who have a primary level of schooling and 93.9% who have dropped out during secondary school having a criminal history. This data supports international findings which convey the criminal risks and the increase in the probability of imprisonment amongst early school leavers (Falch, Borge, Lujala, Nyhus, & Strom, 2010; Machin, Marie, & Vujic, 2011). It also corresponds with previous associations between ELS, unemployment and crime which by and large confirm the importance of a good level of education in one's life.

In summary, it is evident that the socio-demographic characteristics of the population point towards social disadvantages that may contribute to problems of substance dependence, mental illness and crime. Their social vulnerability substantiates the Social Bond theory since the majority of these individuals are not engaged in the basic roles and functions that enable the fulfilment of one's role in society (Hirschi, 1969) and therefore they are more at risk of engaging in deviant behaviour. The prominence of social matters alongside medical and psychological aspects, also confirm the importance of the Biopsychosocial approach (Engel,

1980) that recognizes the significance of all the three components and promotes thorough investigations through multidisciplinary teams which are essential in order to perceive and treat the complex presentations of the population (Mueser et al., 2003).

The following section addresses other important factors that contribute to the complex relationships between substance abuse and mental illness in the context of voluntary and involuntary psychiatric hospitalization.

5.3 Comorbidity amongst substance dependent psychiatric inpatients

Camilleri's (2016) report highlights the point that individuals who are admitted at Female and Male DDU and ward 8B are "persons with psychoactive substance misuse problems" (p.142). Therefore, the percentages of comorbidity that resulted from the study were formulated from amongst a substance dependent population rather than an acute psychiatric population. In fact, diagnoses related to substance use disorders featured extensively. This was also reflected in the interviews, as the participants always referred to the population as a cohort of substance users. This situation is different from the one presented in studies which investigate comorbidity levels amongst general psychiatric populations. For instance, a Norwegian study by Berg and Restan in 2013, found that the diagnoses given to psychiatric inpatients did not signify the extent of substance abuse (not even severe use), amongst the population. The researchers pointed out that one limitation of their study was that they did not search through the files to find other possible diagnoses related to substance use. On the contrary, in the present study, the researcher leafed through the records to make sure that any diagnosis indicating other mental disorders would not be missed.

Although results did not yield a significant relationship between type of dependency and diagnosis[34], this study confirms that substance use disorders are comorbid with several mental health disorders (EMCDDA, 2016a; Langas, Malt & Ojordsmoen, 2012; Regier et al., 1990). In fact, 50% of the interviewed participants made a distinction between inpatients whose primary problem is drug addiction and others who also have a serious mental illness while quantitative data showed that 56.2% of the study population were given more than one diagnosis. This is similar to the rate established by EMCDDA (2015) which stipulates that about half of substance users suffer from comorbidity. This study, however, cannot verify the frequency of personality disorders, anxiety and depression which are known to be the most common mental health conditions amongst persons who are diagnosed with substance use disorders (EMCDDA, 2016a; Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Hasin & Kilcoyne, 2012; Sansone & Sansone, 2011). These conditions were not categorised as serious mental illnesses and therefore were enlisted under substance use disorders and other diagnosis which amounted to 31% of the whole population. However, it is noteworthy that diagnoses of personality disorders were rarely specified in the records. One possible reason for this might be that medical professionals might refrain from including them to avoid labelling the patient with a diagnosis that still carries considerable stigma (Aviram, Brodsky, & Stanley, 2006; Sheehan, Niewoglowski, & Corrigan, 2016). One unexpected finding was a low percentage of substance-induced psychosis. Weich and Plenaar (2009) explain this in terms of the possibility that this condition may be misidentified as schizophrenia. In fact, similarities between schizophrenia and substance-induced psychosis are widely acknowledged (EMCDDA, 2016a) as are other substance related presentations (such as withdrawals) that might be misperceived as symptoms of mental illness. This supports the argument that diagnosing mental disorders

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[34] This result could have been affected by the fact that the range of substance related disorders were combined in one category

where there is a concurrent substance use disorder is a complex process (Bryant, Rounsaville, Spitzer, & Williams, 1992).

In literature, one finds different opinions about the process of comorbidity (Di Lorenzo, Galliani, Guicciardi, Landi, & Ferri, 2014; EMCDDA, 2016; Langas et al., 2012). Although this process was not traced in this study because it is not possible to know if inpatients had psychiatric symptoms before starting to use drugs, the rate of drug abuse in first admissions was significantly high (88.1%). It is also noteworthy that dual diagnosis inpatients have the highest rates of cocaine use, a substance which is known to produce psychosis (Brady, Lydiard, Malcolm, & Ballenger, 1991) and which therefore could have contributed to their psychiatric symptoms. These findings may indicate that the impact of substances on one's psychiatric diagnosis was more significant than can be identified through the given data. However, it is also worth mentioning that drug abuse as a primary reason for admission, was more frequent during last admissions than during first admissions especially amongst inpatients who also suffer from serious mental illness. Amongst this cohort, the percentage of drug abuse increased from 79.1% in first admission to 100% in last admission. This result indicates that persons who also suffer from serious mental illness are the most likely to experience acute psychiatric symptoms before starting to use drugs. It also confirms that these individuals are at risk of developing a substance use disorder (Drake et al., 2007). This process is partially explained through the self-medication theory (Khantzian, 1985, 2013) which was also mentioned during the interviews, but which cannot be scientifically confirmed through this study. Another widely acknowledged reason for substance dependence and mental illness is genetic disposition.

In this study, the relationship between serious mental illness and a family history of mental illness is statistically proven. The fact, that inpatients who suffer from serious mental illness are also substance dependent, substantiates Carey et al.'s (2016) conclusion that individuals who have a family history of mental illness are not only at risk of developing a mental condition

but are also prone to use illicit substances and develop addiction. Inpatients with comorbidity also have the highest rates of substance abuse in their families. This continues to ascertain the overlap between substance use and mental illness and the vulnerability of this client group. In fact, during the qualitative interviews, genetics were also described as a further intricacy to one's prognosis.

The present study indicates a high probability of negative childhood experiences amongst the population including parental separation, bullying, physical and sexual abuse and residential care. Although qualitative data attributed such experiences to the general population, quantitative data confirmed the association between physical or/and sexual abuse or/and living in residential care with serious mental illness and substance abuse. In other words, inpatients who are diagnosed with substance use disorders only are more likely to have had positive childhood experiences than those who also suffer from serious mental illness and are similarly likely to have experienced bullying or parental separation. While, those with the most severe comorbidities are more likely to have been exposed to childhood abuse or/and living in residential care than those who suffer from substance use disorders only. This confirms the longstanding impact and the potential detrimental consequences of such negative experiences. These can include recurrent admissions to the psychiatric hospital possibly from a young age with various presentations including suicidal attempts (Read, Bentall, & Fosse, 2009), aggressive behaviour, substance abuse and psychosis (Janssen et al., 2004) and social problems that are associated with such scenarios including long-term unemployment and imprisonment. It is important to note that the risks that are associated with residential care may not necessarily be attributed to negative experiences within the placement but may be the result of being raised outside a family which increases the probability of weak attachments and emotional vulnerability (Browne, 2009).

The associations that are mentioned above incorporate both genders and are therefore attributable to males and females. However, within certain associations one finds significant gender differences that further contribute to the mechanisms of addiction and pathology. Two most prominent differences include a higher percentage of sexual and physical abuse and a more frequent family history of substance abuse amongst women. The higher rates of childhood sexual and physical abuse amongst females are similar to a study by Keyser-Marcus et al. (2015) which concluded that sexual and physical abuse amongst females with substance use disorders is reported to be twice as great than that experienced by males. This is valid for all diagnostic categories except for physical abuse amongst inpatients with substance use disorders only which featured as having 0% amongst women and 0.5% amongst males (refer to Figure X, p.). This finding compliments the fact that inpatients who are diagnosed with substance use disorder only have the highest percentage of positive childhood (39.1%).

Within the three diagnostic categories, females have higher rates of substance abuse within their families when compared to males. A potential explanation for this is that females may be more affected by family dynamics because of a closer affinity and interdependence on their families while males may be more adventurous and independent. Sun (2009) maintains that although both genders are more likely to develop substance use problems when there is a family history of substance abuse, females who do not have a family history of substance abuse are less likely to develop substance use problems than males. Moreover, the risk for comorbidity amongst females is further exacerbated by their higher frequency of childhood abuse which in literature is also associated with a family history of substance use (Taplin, Sahoo, Li, & Krausz, 2014). With regard to diagnosis, the rates of female mental disorders are more or less comparable with their male counterparts; however, the rates of bipolar disorder and substance use and other diagnoses (which include diagnosis of depression and anxiety) are significantly higher than males. These findings conform with pertinent literature which reports higher rates

of mood and anxiety disorders amongst women (EMCDDA, 2015; NIDA, 2010) and higher rates of psychopathology in males with substance use disorders (Gearon et al., 2003) .

In summary, the current study shows that from a population of substance dependent psychiatric inpatients, 56.2% were diagnosed with a substance use disorder comorbid with another mental disorder while 43.8% were given a diagnosis of a substance related disorder only. As the majority of the population tested positive for drugs during first admissions, it signifies that a significant percentage of the inpatients who were admitted in MDDU, FDDU and 8B in 2015/2016 had a substance use problem. This might also have had a causal effect on the mental disorders of patients with dual-diagnosis. On the other hand, 20.9% of inpatients who are also diagnosed with a serious mental illness did not have a drug problem during their first admission. This indicates the risk of substance use disorders amongst persons who have serious mental illness. Variables that resulted into a significant relationship with serious comorbidity include negative childhood experiences and family history of mental illness. These findings are comparable with studies outlined in the literature that indicate strong associations between childhood adversities, mental disorders and substance abuse (Read et al., 2009), and genetic dispositions of mental illness that is also linked to substance abuse (Carey et al., 2016). Gender differences include higher rates of childhood trauma, family history of substance abuse and mood disorders among females. Such findings contribute towards a better understanding of the different mechanisms of comorbidity and the identification of persons at risk.

The next section will focus on matters related to the psychiatric hospitalization of the population.

5.4 Psychiatric hospitalization

It is evident from statistical data and from the results of the interviews that the common link within this population is drug dependence. Concomitantly, there are multitudes of other factors

which affect the patients' different presentations including the processes of their admissions. In the present study, the majority of the inpatients (55.4%) were first admitted to MCH when they were between 19 -29 years of age. This is compatible with studies that claim that individuals who suffer from a substance use disorder are highly likely to have started using drugs before the age of 18 and to have developed their disorder by the age of 20 (Dennis, Babor, Roebuck, & Donaldson as cited in NIDA, 2014). In fact, inpatients who were diagnosed with a substance use disorder only were the most likely (66.7%) to be admitted to hospital during this period of life. In this study, females were more likely to be first admitted to Mt. Carmel Hospital, at a later age than males. This might indicate that males would have started using drugs at an earlier age, which fact might be attributed to socio-cultural influences and different opportunities in the initiation of drug abuse (NIDA, 2000). For instance, studies have shown that females are often introduced to injection drug use by their sexual partners (Roy, Boivin, & Leclerc, 2011). Considering that a marked proportion of inpatients (17.2%) were first admitted to the Forensic Ward at MCH through CCF also confirms the significant representation of young adults in the criminal system who may also present with mental health difficulties. Moreover, most of them have had recurrent admissions to MCH after their stay at the Forensic Ward which proves their psychopathology and/or risky behaviour. In such cases, inpatient psychiatric treatment would be initiated through the Criminal Justice System in view of acute psychiatric symptoms including suicidal attempts and other treatment needs. This highlights the importance of screening and assessment tools in order to enable early identification and adequate response to the needs of these youths (SAMHSA, 2016).

It is also important to note that 10.3% of the population was first admitted to MCH when they were under 18 years of age. The majority of these are persons with comorbid conditions including serious mental illness. This brings out the severe needs, risks and vulnerabilities of this cohort of patients who are also the largest cohort with admissions until late in life,

indicating the chronicity of their substance and mental health conditions. In fact, the relationship between age in last admissions and diagnosis is statistically significant. This presents a situation where there is a concentration of patients with substance use disorders only amongst the age groups 19-29 and 30-39 while those who suffer from dual diagnosis are more dispersed along the different age groups including under 18 years and over 50 years. Age in last admissions provides a snapshot of the population's age at a particular moment in time (i.e. admissions during 2015/2016) resulting in a mode average of 30 -39 years. This result also signifies that the majority of the population continues to have recurrent admissions to MCH over a significant period of years. The study, therefore, confirms the revolving door syndrome of substance dependent patients. Amongst the whole population, only 5% of those who were admitted at hospital during 2015/2016 did not have any other admission during the previous years. Rehospitalisation is also referred to by the interview participants who used phrases such as "*some of them are used to come in*" *(*P4) "*ghal kull problema jirrikorru dejjem lejna*[35]" (P2), "*jidhlu meta jigu darhom mall-hajt*[36]" (P3), "*li jidhlu volontarjament il-pazjenti qishom drawha. Jien gejt minn jeddi allura x'hin irrid nista' nitlaq*" *(P2)*[37] .

Subsequently, another finding that might indicate the occurrence of the revolving door syndrome is the fact that involuntary admissions were quite common during first admissions but significantly less frequent during last admissions. Involuntary first admissions will add up to 47.8% if one also considers the rates of first admissions at the Forensic Ward (CCF) and at MCH by Court Orders. This will only add up to 9.9% of involuntary patients during last admissions. This can be the result of the new Mental Health Act 2012 implementation which promotes the patients' rights and the least possible restrictions on one's freedom. However, literature shows that, involuntary first hospitalization (Rosca et al., 2006) and substance abuse

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[35] "They come to us for every problem"
[36] "They seek to be admitted when they feel helpless"
[37] "They got used to voluntary admissions. I came on my voluntary will so I can leave whenever I want"

(Abdul Hamid, Bhan-Kotwal, Kovvuri, & Stansfeld, 2017) are two well-known variables related with possible rehospitalisation. Involuntary first hospitalization may be a significant predictor for future admissions because hospitalization may offer comfort and safety to the patient and may provide temporary relief from difficult situations (Oyffe, Kurs, Gelkopf, Melamed, & Bleich, 2009). This is especially evident amongst the population when one considers that in qualitative interviews, hospital staff are described as being regarded as 'family' by the substance users. Such situation, although it helps to relieve distress and contain risks may also be creating a certain level of dependence. As Chow et al. (2013) explain, the safety and the structure of the hospital which aims to enable monitoring and treatment may be indirectly robbing the patients of their independence and responsibilities with the result that they lose the ability to manage on their own.

The need for rehospitalisation may be further exacerbated by the lack of community services and stigma which disable the individual from re-integrating in the society and increase the risk of relapse (Loch, 2014). The repercussions of the shortage of community resources featured extensively during the interviews especially in relation to unstable accommodation and the inability of the patients to cope without on-going professional support. Such lacunae can be the by-product of stigma and their consequences can continue to enforce it. The effects of stigma can be so potent that the quality of life of these individuals can fail to improve despite an improvement in their symptoms and functioning (Link, Struening, Rahav, Phelan, & Nuttbrock, 1997).

Such possible consequences of psychiatric hospitalization highlight the seriousness of the decision of whether or not to admit someone to hospital. This has been at the centre of multiple international ethical debates which have been even more compelling when involving substance abuse. Despite this, substance users continue to be admitted to psychiatric hospitals often in the context of mental instability or crisis situations that may be associated with various risks

towards themselves or others (Opsal, 2016). In the current study, results indicated that individuals who have substance use disorders only are more likely to be only admitted involuntarily in their first admission while those who also suffer from serious mental illness have a higher probability of having recurrent involuntary admissions. In fact, the relationship between the mode of the last admission and diagnosis is statistically significant. This indicates that the first cohort might be more able to see benefits from their admissions while the second cohort might have less insight and might remain resistant to help. Results also indicate that females are more likely to be involuntarily admitted than males. A potential reason behind this might be that females are considered to be more vulnerable and prone to abuse therefore tend to be also sectioned for their protection (Opsal et al., 2013). It is also possible that females show more resistance to being admitted to Mt. Carmel Hospital possibly because of their responsibilities including childcare and a stronger sense of shame which is associated with societal expectations towards the good reputation of women (O'Reilly Mizzi, 1994).

With regard to the reasons for admissions, it is a foregone conclusion that drug abuse will feature prominently because the population was all admitted in wards that accommodate patients with substance use disorders. However, this also clarifies the fact that individuals who present with substance use problems with or without other mental disorders are being considered as in need of hospital treatment. The reason behind this varies. As explained by the interview participants, harmful use of substances can have serious repercussions on one's physical, mental and social states which often lead to crisis situations. They elaborated that because in Malta there are not many options to help contain such situations Mt. Carmel Hospital is used to contain all types of risks.

Frequent presentations during admissions include drug abuse and low mood. These generally lead to voluntary admissions and are more common amongst inpatients who suffer from substance use disorders only. The most prominent reason for involuntary admissions through

both research methods is aggressive behaviour (refer to Table X, p.) This is comparable to findings in Opsal et al.'s (2011) study of admissions in psychiatric wards in Norway, which indicated that the Mental Health Act is often used with aggressive patients who will be intoxicated by stimulant drugs. In this study, such admissions were the most common amongst inpatients who also suffer from serious mental illness. This supports the notion that having a substance abuse disorder and a serious mental illness increases the risk of violent behaviour (Fazel et al. 2009; Wallace et al., 2004). Furthermore, results also indicate that inpatients who also suffer from serious mental illness are the most likely to use cocaine, therefore, in congruence to Opsal et al.'s (2011) findings, their behaviour could also be drug induced.

While in the general population, females are known to be much less violent than males (Bonta et al., 1998; Krakowski & Czobor, 2004) they were not less violent on admissions to hospital. This is congruent with findings showing that there is not much difference in violent rates amongst males and females in psychiatric populations (Robbins et al., 2003), which substantiates the association between drugs, mental illness and aggressive behaviour even further. The current study also verifies the risk of suicidal attempts amongst persons with substance use disorders. This amounted to 11.9% during first admissions and was comparable amongst the three diagnostic categories and between the two gender. The reasons behind these attempts are associated with both intrinsic (such as psychiatric symptoms) and external factors (such as social circumstances) (Roy, 2003). Therefore, substance users who are also diagnosed with serious mental illness are in a more vulnerable position as they are more likely to experience the whole spectrum of risks that are attributed to suicidal attempts. In fact, the current study shows that this cohort of inpatients was more likely to be also admitted because of a suicidal attempt during their last admission.

The variable that is mostly associated with voluntary admissions amongst the population is homelessness which increases substantially during last admissions. This confirms that when

acute services are offered to the homeless, the costs are far greater than the expense of a brief admission. Studies by McCormick & White (2016) and Abdul Hamid et al., (2017) of homeless people in NHS hospitals in the UK both indicate that this cohort of inpatients has more frequent and longer stays. Such situation does not augur well neither for the well-being of the patients who will not necessarily need to be hospitalized and will be at risk of getting institutionalized and nor for the feasibility of the system as these admissions incur high costs from public expenditures which might be invested in more effective services. In fact, Cachia (2016) maintains that substance abusers "are disrupting the care processes for other deserving cases within Mental Health Services" (p.6). This statement indicates that mental health services might not necessary be the best solution for all substance users.

To recapitulate, it is evident that the local psychiatric hospital is serving as one of the main residential facilities for individuals with substance use disorder in Malta, irrespective of whether one has other psychiatric disorders. In fact, the rate and the type of voluntary admissions to Mt. Carmel Hospital, indicate that it still functions as a safeguarding system in lieu of other services in the community. Findings also confirm that a diagnosis of serious mental illness is not necessarily always the driver of involuntary admissions. Instead, the decision whether to section someone who has a substance use disorder seems to be the determined by the risk to self or others.

The following section will address the criminal component amongst the sample population and its associations with substance use disorders and serious mental illness

5.5 Criminal associations

The present study demonstrates a high rate (83%) of criminal offences amongst the sample population. This adds another important dimension to the presentation of this client group because the intrinsic and extrinsic causes and consequences of criminal offending can have a

close connection with one's mental state and drug dependence. The current study does not explore the development of criminal careers and other offending trajectories but it identifies the type and the extent of criminal offences in relation to drug abuse and mental illness. In fact, the occurrence of crime is investigated amongst a group of problem drug users, the majority of whom are poly drug-users and had tested positive to hard drugs on admission to hospital. In literature, problem drug users are known to centre their life in the community around the acquisition of substances in order to maintain the habit (Hammersley, 2011). Despite this, the cohort is not homogenous and differs substantially in various aspects including its mental health status and criminal tendencies. These will be further discussed in the following section.

Both research methods verify the relationship between drugs and crime amongst the sample population which relationship is strongest when the inpatient is a poly drug user. This association is supported in literature (Sweeney & Payne 2011) to the extent that Palijan et al., (2009) include poly drug use as part of the description of a "typical" forensic case (p.433). Against this background, the high rate of criminal offenses amongst the population can be partly attributed to the fact that the majority of the inpatients are poly drug users (61.9%). This also indicates the severity of their drug abuse, which was also well depicted in the interviews. Subsequent to poly drug use, the study also confirm the high risk of property and other drug related crime amongst heroin (77.7%) and cocaine users (60%).

Findings from the study mainly identify two types of drug-related crimes as identified by Goldstein (1985). These include violent crime that can be possibly associated with the psychopharmacological model and income generating crime that can be related to the economic motivation model. Crimes that can be linked with Goldstein's systemic model cannot be distinguished because the type of drug related crime is not specified. Amongst the sample population, 18.4% have a criminal history of violence. Although this surely cannot be solely attributed to the effects of drugs, it is interesting to note that inpatients who use cocaine have

the highest rates of violent crimes including attempted murder. This can be linked with literature that describes the after effects of acute cocaine intoxication as including "agitation, hyperactivity, excitation and paranoid symptoms" (Esbec & Echeburúa, 2016, p.50; Morton, 2009) which can contribute to violence.

All the interview participants attributed income-generating crime as an unavoidable consequence of heavy drug use because of one's need to maintain an expensive habit. The most common crimes that were mentioned by the interviewees, including theft, drug-related crimes, violence and prostitution are congruent with statistical findings and with results of international studies (Esbec et al., 2016; Gottredson et al., 2008; Sirotich, 2008; Wallace et al., 2004). The study also portrays females as having a significantly less probability of a criminal history. A possible reason behind this is that females may depend on their partners for financial support (Gauci, 2002). However, such reliance puts them in a vulnerable position and makes them easy targets for exploitation and abuse. In fact, the only crime that is more common amongst women is prostitution (7.7%), the extent of which is surely not fully depicted through the rate of convicted prostitution. In fact, the interviewees all mentioned prostitution as a common crime amongst females and quantitative results also indicate a rate of 17.3% of non-convicted prostitution. This might also not be a valid estimate because its occurrence is informally and inconsistently recorded. In essence, it is evident that substance dependent females are often victims of abuse and have a poor quality of life (Surratt, Inciardi, Kurtz & Kiley, 2004).

Subsequent to this, the study results in higher rates of convicted violent crimes amongst males (23.2%), especially amongst inpatients who are diagnosed with substance use disorder and other diagnosis (23.7%). This cohort includes persons with anti-social personality disorders who are known to have a high risk of violence (Vogel, 2014). An important observation, is the fact that while inpatients with serious mental illness (25.6%) and females (20.8%) from all diagnostic criteria have significant rates of aggressive behaviour on their first admissions their

rates of convicted violent crimes are much lower (10.4% amongst the seriously mentally ill and 3.8% amongst females). A possible reason for this is that admissions to Mt. Carmel Hospital may also be serving to decriminalize certain incidences of violent behaviour. In fact, literature shows that female violence is more likely to be attributed to pathology (Bonsfield as cited in Sirotich, 2008). This argument might also be valid for individuals who also suffer from serious mental illness. In fact, interviewees associated drugs and violence as a major reason for involuntary admissions and attributed aggressive behaviour to impulsive or learned behaviour or as a defence mechanism against exploitation and bullying. In other words, it is indirectly associated with their weakness and vulnerability. However, the fact that inpatients who also suffer from serious mental illness have the highest rates of attempted murder (6.3%) and murder (4.2%) shows that their violence might lead to serious injuries. Such findings merit further research in order to better understand the triggers and the management of violence amongst the population.

Despite the above data, both research methods do not identify a strong link between criminal history and diagnosis. This means that statistically there is no significant difference between the criminal history of inpatients who also suffer from serious mental illness and those in the other categories. This result may be influenced by the population's dependence on substances which, as explained by the interviewees, can have a strong impact on one's probability of engaging into criminal activities. Findings related to this cross-tabulation also indicate that in the present study, inpatients who also suffer from serious mental illness have the lowest rate of criminal convictions. Interviewees also mentioned this possibility and explained it in terms of their vulnerability and inability to cope in criminal circles with the result that they may not be able to sustain their habit. This argument may be one reason behind the significant relationship between cocaine use, serious mental illness and a lower criminal probability. In other words, these inpatients may not have been using cocaine for a long period before the admission,

possible due to their fragile mental state. It can also be that these inpatients were gainfully employed while using cocaine and were hospitalized due to cocaine-induced psychosis. Another reason, which was also brought out in the interviews, may be that these inpatients will still have the financial means to buy cocaine, even if they are unemployed. It may be possible that their habit is financed by family members who might provide the money for various reasons including the need to offset the suffering that the patient might be going through (Alston et al., 1995), to prevent them from getting violent at home or involved into any other illicit activities and possibly also to protect them from stigma. Such situations indicate that there is a percentage of inpatients who despite having substance use and comorbid problems manage not to get involved into criminal activities.

In view of the above, the relationships between serious mental illness, substance use disorders and crime are complex and not clear-cut. It is also evident that besides substance abuse and comorbidity, the majority of the population has been through various other experiences that are known to be crime promoters including significant rates of early school dropouts, childhood traumas, unemployment, poverty, family history of substance abuse, out of home care and disadvantaged neighbourhoods (Vogel, 2014). These factors confirm the interplay between risk factors that may contribute to criminal behaviour (Gorman & White, 1995). It is of concern that one of the greatest risks of future offending is a history of past offending (Gendreau et al., 1996) because this indicates that as the majority of the population is under 40 years, the possibility of recidivism, especially amongst dual-diagnosis inpatients[38], is high. However, despite all the complexities, international findings indicate that when the abuse of drugs subsides, crime also decreases (Esbec et al., 2015; Gottfredson et al., 2008). Therefore, the

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[38] Dual diagnosis inpatients might have a more difficult pathway to recovery

current therapeutic milieu that is geared to help inpatients to be more mentally stable and to attain sobriety from drugs should also have a positive effect on crime, if successful.

In summary, the above section indicates that the associations between the sample population and criminal offending are complex and interdependent on multiple factors. The study, confirmed that heavy drug use is statistically linked with crime; however, this relationship can also be founded on other important influences such as gender, serious mental illness, personality, childhood traumas and family background – all of which must not be ignored by health or criminal justice systems. The study, also verified that there is not a statistically significant relationship between serious mental illness and crime. Therefore, crimes (including violence and property crime that are committed by mentally ill people) are to be understood in the context of one's general situation including physical, psychological and social circumstances. Through such comprehensive appraisals, one would be in a better position to take appropriate decisions and plan effective care plans to facilitate recovery.

Further discussion regarding possibilities of improvement in treatment and service delivery for the study population, especially for those who suffer from serious mental illness and substance use disorder, is presented in the following section.

5.6 Improvements in service delivery

Both research methods applied in the present study portray a great demand on the service by substance users who present with a whole spectrum of symptoms and needs. Common presentations include mental instability, emotional and behavioural problems and chaotic lifestyles which are often linked to acute drug use. As regard hospital admissions, quantitative data indicates that in 2015/2016 the majority of substance users were already known to the hospital and had recurrent admissions over significant period of years. This is confirmed by qualitative data which presents more detail about the reasons of admissions, describes the

heterogeneity of the population, and verifies the occurrence of the revolving-door syndrome which indicates poor outcomes, high relapse rates and soaring costs on health services. Within this context, this section discusses possibilities for service improvements which are based on the suggestions of the interview participants.

Findings indicate that the population who is admitted in wards FDDU, MDDU and 8B consists of troubled individuals who are often dependent on illicit substances, unsettled and burdened by various difficulties such as multiple traumas, unemployment, broken relationships, debts, homelessness and pending court cases. Amongst them, there are individuals with more complex presentations including serious mental illness and personality disorders which make the clinical picture more challenging. Literature (Mueser et al., 2003) shows that it is important to identify the different components that contribute to the presenting problems. Through their descriptions of the population, it is evident that the interviewed participants are knowledgeable and attentive to the different factors that form the overall presentation of the inpatient. They also emphasized the importance of identifying symptoms of acute mental illness and/or acute drug use that would need to be treated for the individual to be able to start working on his/her goals. Nevertheless, due to the complexity of these cases and the varying reasons of their admissions, which might not necessarily require hospitalization, standardized assessments and screening tools can also be used to determine the best levels and type of care (SAMHSA, 1997). These include inpatient care or outpatient follow up and the allocation of the ward or the organization of community care.

As inpatients can be at different stages of recovery and there can be significant differences in their mental, psychological and behavioural states, the majority of the participants are of the opinion that the acutely mentally ill or those with severe dual diagnosis should not be in the same ward/area as others who are more stable. The current arrangements through MDDU, FDDU and 8B do not seem to be managing to attain the proposed system. In fact, interviewees

spoke clearly about the abuse that takes place in these wards towards those with severe dual diagnosis. In comparison to international scenarios, it seems that systems of care for persons with substance use disorders and dual diagnosis differ, even within same countries. However, it seems that the general practice in developed countries is that individuals whose primary diagnosis is serious mental illness but who are also substance users are admitted in psychiatric wards with other psychiatric patients. On the other hand, patients whose primary diagnosis is a substance related disorder are admitted into specialized ward/facilities for substance abusers (Berg et al., 2013; Opsal et al., 2011, 2013). Despite this, studies in America and Norway (Heslin, Elixhauser, & Steiner, 2015; Opsal, 2011) show that the dividing line between admissions for substance users and patients with comorbidity is not always clear-cut and it is often the case that individuals with substance use disorders only are hospitalized in acute psychiatric facilities. Therefore, it seems that the system in Malta is not so different from that of other countries except that in the local substance use wards one may find a wider range of substance users. These include substance users with serious mental illness and others who might not have plans for rehabilitation (Camilleri, 2016). These are admitted to these wards either because of being on methadone, or because of problematic drug abuse or due to lack of alternatives. This system might need to be revised because it is evident from the interviews that this arrangement is not therapeutic.

All participants explained that a significant percentage of the substance users who are admitted to Mt. Carmel Hospital, especially those who are dual diagnosis, are not managing to cope in the community and are resorting to hospital to fulfil their basic needs. In line with relevant literature (EMCDDA, 2016a; Shelter, 2007), participants emphasized the extensive needs and vulnerabilities of inpatients with dual diagnosis and the importance for continuation of care when the patient is discharged from the hospital. They specifically mentioned the need for intensive support and monitoring in the community. This can be managed by outreach services

whose staff would monitor the patients' daily intake of medication and other necessities of daily living with the premise of reducing hospitalization and possibly also imprisonment. Such community multidisciplinary services also known as Assertive Outreach or Assertive Community Treatment are internationally considered as an effective treatment model for persons with serious mental illness including those who also suffer from substance use disorders (Mueser et al., 2003; Clausen et al., 2016). Such services have also been found to be effective with "high-risk patients" amongst whom they resulted in a decrease in crime (Heilbrun and Griffin, 1993 in Hodgins, 1998, p. 33). Finally, community teams can also be effective in reaching out to resistant individuals who will be in need of help and to possible use the mental health law to engage them in treatment (Mueser et al. 2003). During the interviews, the use of the Mental Health Act was also mentioned as a possible tool to aid in the stabilization of patients with dual-diagnosis.

In certain situations, however, the needs of dual diagnosis patients may be more severe than what can be addressed by outreach services. As stated during the interviews, certain cases, require specialized residential facilities. A publication by Shelter (2007) which is a charitable organization that works against homelessness, confirms that housing arrangements for individuals with dual-diagnosis are very limited and that these individuals often encounter "two-fold discrimination" (p.1) when trying to access sheltered accommodation. The unavailability of suitable housing increases the risks of serious negative consequences including imprisonment or long-term hospitalization to contain the risks. To address this lacuna, one of the interviewees described the need for therapeutic communities "*that are less intense than a program*" for patients who are substance users and have "*a very vulnerable personality*". This type of setting is similar to the one proposed by Mueser et al., (2003) who define it as a residential or day program for individuals with dual-diagnosis who have possibly had recurrent and long-term admissions to psychiatric hospitals or prisons and who have not

been coping in the community despite various professional efforts. The program enables detoxified patients to follow a structured routine, to participate in groups and to live and re-integrate in the community through work and other social activities. Similar to drug rehabilitation programs, it adopts a philosophy of abstinence from drugs and alcohol; however, as the place is located in the community, the service users will be at a higher risk of using substances and relapsing. Such behaviours are tolerated as expected occurrence of the recovery process; however, the program is terminated if the service user does not show commitment or motivation to change his/her behaviour.

Another type of sheltered accommodation that was mentioned in the interviews consists of supervised long-term housing settlements within the community each of which accommodates a small group of individuals with dual-diagnosis. These placements serve as a follow-up or as an alternative to the above program as residents can also be referred directly from the community, hospital or prison as long as they are deemed fit to live in shared accommodation. In essence, this type of accommodation will serve as one's home and the residents will be able to continue living in it as much as needed and as long as they cooperate with the conditions of rent.

The lack and the need of community services for persons with dual diagnosis are undeniable. Against this background, one can appreciate the service that Mount Carmel Hospital is providing to this vulnerable population. In fact, in other countries such as the U.S. and the U.K, mental health and substance use services are often criticized for diverting these individuals between services because of being both ill-equipped to address the dual diagnosed individual's complex needs (Mueser et al, 2003; Shelter, 2007). As stated by the participants, our local psychiatric hospital does not refuse any service users who will be referred for an admission at any particular time. The majority of the participants also mentioned that at hospital, all aspects that are related to the presenting problems are addressed. These include both mental health

conditions and addictions. Such an approach indicates positive practice in line with international literature that emphasises the importance of integrative treatment for dual diagnosis (Drake et al.,2001).

However, due to the complexities and heterogeneity of the substance users who are admitted to Mt. Carmel Hospital, other substance use and criminal justice services also have an important role in the care plans and recovery processes of the service users. The need for better liaison and co-ordination with these services was mentioned indicating that the communication channels between services are poor. Although this was not stated by the majority it is still an area of concern most especially in relation to inpatients who are diagnosed with substance use disorders only who fall into the primary responsibility of substance use services and for other patients whose substance dependence is the primary impediment to their recovery (Horsfall et al., 2009). As is clearly depicted in the current study, the involvement of individuals with dual-diagnosis in the criminal justice system is also a frequent occurrence. However, this population is known to be in a more vulnerable position, more prone to stigma and less able to benefit from traditional treatments of addiction (Mueser et al., 2003). Evidence-based treatment and best practices for the treatment of offenders with co-occurring disorders are attributed to cross-disciplinary collaboration between professionals in the mental health sector, substance use services and the criminal justice system (Fisher, Silver, & Wolff, 2006). Ideally, specialized professionals who are trained in both substance abuse and mental health services will be available to work with offenders who suffer from serious mental illness and substance use disorders. These can contribute in the assessments of the severity of psychiatric and substance use disorders, in the formulation of comprehensive treatment plans and in the provision of on-going support in the various stages of the criminal justice process including at the time of discharge from the criminal service system (Chandler, Peters, Field, & Juliano-Bult, 2004).

In summary, the above section addresses possibilities of service improvements based on the suggestions of the interview participants in comparison to best practices that are internationally identified as leading factors in the treatment of persons with dual diagnosis. The discussion is constructed upon the current scenario of service provision for substance users at Mt. Carmel Hospital whose outcomes seem to be negatively impacted by the diverse needs and motives of the population and the lack of community resources. Positive practices that are already in place such as comprehensive assessments and integrative treatment for inpatients with dual diagnosis are acknowledged. However, these services need to be further supported by other specialized mental health services in the community which will enable continuation of care and enhance the quality of life of persons with dual diagnosis through the availability of assertive outreach, specialized rehabilitation programs and long-term supervised housing. Positive outcomes will also depend on the interventions and collaboration with other important key stakeholders mainly substance use services and the criminal justice system. Service integration between mental health, substance use and criminal justice services in parallel with continuous advancements in each field, will provide a promising future in relation to the recovery of individuals with dual diagnosis.

The final section provides an overall summary of the study's analysis by presenting the most salient arguments based on the results of both research methods.

5.7 Conclusion

This chapter provides an elaborate discussion and potential explanations to the findings in relation to the main themes of the literature review. Most of the results are comparable to international studies. These include the socio-demographic characteristics that are associated with dual-diagnosis (Mueser et al., 2003) mainly the male gender, high rates of early school dropout, long-term unemployment, living with parents and in disadvantaged neighbourhoods.

Other findings that support comorbidity models include results that show that harmful use of substances can trigger mental illness and that persons who suffer from mental illness are at risk of developing a substance use disorder. Such processes are further supported by statistical findings which indicate that individuals with serious mental illness and substance use disorders are more likely to have a family history of mental illness and negative childhood experiences. Prominent gender differences in studies related to comorbidity are also evident in this study with females who are also diagnosed with serious mental illness having higher rates of childhood trauma, family history of substance abuse and mood disorders.

Most of the findings that are related to psychiatric hospitalization and crime are also congruent with international studies. Findings that are linked with hospitalization include recurrent hospitalization amongst the population, a decrease in involuntary admissions during consequent admissions and higher rates of involuntary admissions amongst females. This study also verifies the significant relationship between problematic substance use and crime, the ambiguous relationship between mental illness and crime, the vulnerability of female substance users and the identification of comorbidity as a risk factor for a person with a serious mental illness to commit a criminal offence. Most of the participants' suggestions for service improvements are also in line with internationally established procedures for the treatment of serious mental illness and substance use disorders.

The current study also produces results that are particularly linked to our local context. Findings related to service provision indicate a significantly high rate of psychiatric inpatients who are diagnosed with a substance use disorder only, integrative treatment for all inpatients with comorbidity who are admitted to hospital and distinct lack of community resources for individuals who suffer from dual-diagnosis. Other important findings include a statistical relationship between cocaine, serious mental illness and lower frequency of criminal offending

and the possibility that Mt. Carmel Hospital is enabling the decriminalization of violent behaviour.

Following the above analysis, the next chapter will bring together the primary findings of the study which represent the main explanations to the research questions. It also provides proposals for service improvements and ideas for further research. It concludes with a brief analysis of the study's limitations.

Chapter 6: Conclusion

6.1 Introduction

The main purpose of this study was to identify potential relationships between serious mental illness, substance use disorders and crime amongst a cohort of heavy substance users who are also psychiatric inpatients. A detailed investigation of their case histories resulted in recognition of similarities and differences within separate categories of the population which when statistically compared established the presence of important risk factors and significant associations. Special focus was given to features of comorbidity (in particular, the combination of serious mental illness and substance use disorders) and to how such presentations may differ from other presentations with a diagnosis of substance use disorder only. The understanding of such complex manifestations was further enhanced through the input of experienced professionals whose participation complimented the statistical results with descriptive accounts of various connotations including processes of hospitalization and criminal risks. They also delivered various suggestions that would augur well for the improvement in service provision.

The next section reviews the main highlights of the research findings. This will be followed by recommendations for policy makers and for further research and an overview of the limitations.

6.2. Main findings

Data indicates that the population under study consists of substance dependent individuals, most of whom were already substance users when first admitted to the psychiatric hospital. On admission, the vast majority were found positive to hard drugs with a high percentage of poly-drug use. Despite such common factors, presentations vary substantially and the link between diagnosis and type of substance dependency is not statistically significant. However, it is evident that comorbidity is a frequent occurrence. This study cannot specify and quantify primary conditions; however, findings confirm that substance use disorders can lead to serious

mental illness and vice versa. In fact, the results suggest that the manifestation of any of the three elements under study can affect or trigger another. Their combinations are complex and are often further aggravated by other complications, including genetic disposition and environmental attributes that may contribute to the overall presentation and may also have an effect on one's prognosis.

This research confirms that inpatients who are also diagnosed with serious mental illness have a higher probability of having been sexually and physically abused and/or brought up in residential care, a higher possibility of having a psychiatric family history and a greater chance of long-term unemployment. Therefore, this cohort of inpatients have heightened risks of longstanding difficult life situations from a young age, which put them in vulnerable positions when compared to the general population. Female inpatients, irrespective of their diagnosis also have markedly high rates of lifetime hardships, including family history of substance abuse, sexual and physical abuse, early school drop-out and long-term unemployment. This indicates that overall females who are heavy substance users are more likely to have had traumatic histories and limited opportunities than their male counter parts.

It is evident that individuals with substance use disorders form a substantial part of the whole population at Mt. Carmel Hospital. The processes of their admissions differ; however, it is more likely that they are admitted involuntarily during their first admissions either through a court order, the Mental Health Act or CCF and have subsequent admissions on a voluntary basis. As explained by the interview participants the reasons behind voluntary admissions can vary and may not necessarily be based on a plan for treatment. Findings also indicate statistical differences in relation to the hospitalisation of inpatients who suffer from substance use disorders only and inpatients who also suffer from serious mental illness. The study shows that the latter cohort has a higher possibility of being admitted at an early age and of continuing to have admissions until late in life, indicating the chronicity of their conditions. This group of

inpatients is the most likely to be admitted due to aggressive behaviour and remain at higher risk of being readmitted because of suicidal attempts. It is also the largest cohort with involuntary admissions, which is partially attributed to their lack of insight into their conditions and their need of treatment. Female substance users who suffer from dual-diagnosis have the highest rates of involuntary admissions from all the population. This can either be due to strong resistance on their part or else that are more prone to be sectioned due to being perceived as being more vulnerable and at risk (Opsal, 2013).

Criminal involvement amongst the population is widespread as the majority of the population have a criminal history which is dominated by theft, drug related crimes and violence. The relationship between the type of substance dependency and crime is statistically significant with poly drug-use being identified as having the strongest association with crime. Qualitative data depicted criminal risk as a consequence of substance dependence. However, data also indicate that a significant proportion of the population has a strong background of social disadvantage such as early school drop-out rates, long-term unemployment, disadvantaged neighbourhoods and traumatic childhoods which can also have directly or indirectly contributed to their criminal involvement (Esbec & Echeburua, 2016). In fact, the study verifies the link between ESL, unemployment and crime indicating that a low level of education does not augur well for gainful employment and can be a crime promoter. On the other hand, childhood trauma can be a significant contributor to other negative conditions such as comorbidity that can also lead to crime.

Findings indicate that overall criminal offences committed by inpatients who are substance users only are not significantly different from crimes committed by inpatients who also suffer from serious mental illness. A potential reason behind this is that both categories are dependent on substances which have been confirmed as a major crime promoter. Data points towards certain tendencies such as higher rates of violent crimes amongst males, inpatients who suffer

from substance use disorders and other diagnosis and those who abuse cocaine. Inpatients who also suffer from mental illness have a lower probability of convicted crimes and are described as being at risk of exploitation by other hardened criminals; however, these findings cannot be generalized. Another significant result is that, with the exception of prostitution, females have the lowest rates of convicted crime. It is noteworthy that the rate of convicted violent crimes amongst both sexes is lower than the rates of aggressive behaviour on admissions. This may indicate that Mt. Carmel Hospital enables the decriminalising of violent behaviour especially amongst females and substance users who are also diagnosed with serious mental illness. Another finding shows that a relationship between serious mental illness and cocaine use results in a lower level of criminal involvement. The reasons behind this include the possibility that inpatients who also suffer from serious mental illness would not have been using cocaine for a long period of time, possibly because of them being more vulnerable to its negative effects or else because they would have the financial means to purchase the drug either through employment or through family members.

In summary, the scenario that is depicted in this research revolves around a population, which is liable to experience crises due to the inevitable repercussions of their problematic drug use. Acute crisis situations can trigger or be aggravated by mental instability and behavioural problems that require psychiatric treatment. In these circumstances, hospitalization may be necessary for effective outcomes. However, findings, most especially those resulting from qualitative data, demonstrate that the circumstances of the substance users who are admitted to Mt. Carmel Hospital may not always constitute a psychiatric crisis but at times may be the result of social problems such as inadequate housing, broken relationships, financial difficulties and court matters. Currently, these presentations are also being catered for at hospital due to lack of alternatives. Hospitalisation in these circumstances comes at an expense. It may not help the individual due to risks of institutionalisation, neither the other inpatients due to the

amalgamation of different presentations and it incurs huge service costs which could be spent in more effective resources and services in the community.

In other words, psychiatric hospitalization remains an important treatment setting for individuals with acute mental illness and substance use disorders. However, in accordance with the Mental Health Act 2012, treatment should be primarily provided in the community and "in the least restrictive manner" (p.6). For these principles to be followed Mt. Carmel Hospital needs to be one option amongst others, one loop in a chain of services that cater for the various needs of persons who suffer from mental disorders including substance users. Findings from this study point towards new policies and service concepts that can be applied in conjunction with current practices to facilitate seamless and comprehensive treatment for individuals who are substance dependent or who suffer from dual diagnosis. Within this context, the following section enlists recommendations based on the findings of this research and relevant literature, aiming towards improvements in service delivery.

6.3 Recommendations for policy makers

The study indicates that treatment of substance use disorders and mental illness is a complex matter because effective management goes beyond distinctive efforts to tackle presenting problems. As these can be extensive and far-reaching, successful outcomes depend on various social structures based on macro, meso and micro levels that will help to address the various needs that these individuals encounter at different times in their lives. Pursuant to this, the following section includes recommendations for policy makers and stake holders based on the findings of this study.

- Early intervention services for vulnerable children and their families and enforcement of integrative policies which promote children's well-being.

- Continuation of care when the child at risk enters adolescence and early adulthood; a period which is known to be the most critical for the manifestation of substance abuse, mental health problems and delinquency. Interventions related to education and employment, healthy relationships, treatment compliance and life skills are vital.

- Formal working protocols which will encompass and standardize definitions and procedures in the treatment of persons with dual diagnosis or substance use disorders. These will encompass intra/inter-agency practices including referral systems and policies related to safety measures, patients' rights and regulations and key performance indicators.

- Standardized pre- admission assessments to be used by GPs, crisis or admission teams in order to evaluate risks and guide service users accordingly. This service will act as a gatekeeping measure while still safeguarding the service users' well-being.

- Screening tools will also be beneficial if used by the Criminal Justice System in order to early detect substance use disorders and mental health symptoms and to refer accordingly.

- Integrative treatment for dual diagnosed patients at different levels of care including inpatient, outpatient and community services which will be linked together as part of an overall program.

- Intensive inpatient or outpatient treatment including cognitive behavioural therapy is required for high risk offenders in order to help them address their criminogenic thinking.

- Assertive outreach teams that will provide intensive support for persons with severe mental illness and substance use disorders in the community. Such teams will be composed of specialized clinicians with different professional backgrounds who will provide their services by reaching out to service users in their homes.

- Day and residential rehabilitation programs in the community that will possibly be run by NGOs for persons with dual-diagnosis. Such programs will be flexible to accommodate the complex needs of the service users while retaining structure and regulations.

- Long term supervised and subsidised housing settlements for persons with dual-diagnosis that will serve as a follow-up or as an alternative to rehabilitation programs. These can also be managed by NGOs.

- 24-hour helpline that will support, guide and refer individuals undergoing crisis situations related to mental health and substance abuse.

- Emergency shelters which will also be available for active substance users unless they provide serious risk to themselves or others.

- Transitory residences for substance users that will provide supported environments for the service users when discharged from hospital or from drug rehabilitation programs.

- Vocational opportunities for the employment of persons with mental and substance use problems who might also have a forensic history are highly required. An evidence-

based model that can be applied in Malta, is the "Individual Placement and Support" (IPS) model which identifies vocational rehabilitation as an essential part of treatment.

- Working alliance with relatives and family interventions when it is deemed appropriate. Joint working with families serves multiple purposes including information gathering, psycho-education and support. It can also facilitate goal achievement.

Besides the above-mentioned recommendations, which are primarily based on service provision by the professionals to the patients, the findings of the study also point towards other practices and initiatives which are important to ensure good practices on different levels.

- Regular supervision for professionals involved to assure competent and ethical practice and to provide support. Continuous professional development (CPD) opportunities are also essential in order to have specialized and trained staff in both mental health and substance use disorders.

- Systems of inter-agency collaboration and joint working in order to prevent compartmental and disjointed efforts that often result in duplication of work, extra costs and partial interventions that fail to reach overall objectives. An initiative that will enable a better working system between these sectors is the appointment of a mental health professional on the Drugs Offenders Rehabilitation Board (DORB).

- Advancement in mental health, substance abuse and criminal justice services should be sustained by national efforts to combat stigma. Strategies shall target policies and conventions amongst public and private institutions to eradicate discriminatory practices against people with mental and substance use disorders. The media and

educational interventions in schools shall continue to be utilized as main strategies to remove unfounded fears and false beliefs and to increase public knowledge .

- Formal research initiatives related to dual diagnosis of mental illness and substance use disorders should be implemented. These will enable better understanding of the conditions and their impact, and study the application of evidence-based practices in Malta. Ideas for further research are presented in more detail in the following section.

6.4 Recommendations for future research

- To study individuals who were at risk of substance use disorders, mental disorders and crime but who managed to overcome these risks. To investigate possible protective factors that led to positive outcomes.

- To hold in-depth studies with individuals who suffer from dual-diagnosis and their families to better understand the processes of their conditions including aspects related to their criminal involvement.

- To study psychiatric inpatients who are also substance users, (mostly users of cannabis and synthetic drugs) who are admitted in other wards at MCH to identify any differences especially in relation to mental illness and crime.

- To examine different components related to dual diagnosis and the efficacy of varying interventions such as integrated treatment models, family interventions, employment strategies and housing approaches.

- To measure the outcomes of current hospitalization treatment and services offered by substance use agencies and the criminal justice system, in order to establish good practices and identify areas for improvement.

- To conduct further studies related to the heterogeneity of the population possibly focusing on particular cohorts such as individuals having triple diagnosis which might also include learning disability or life threatening conditions such as AIDS, dual diagnosed individuals who are still adolescents or who are elderly and gender differences including sex differences in opportunities for initial drug use.

- To continue compiling the new database that was formed in this study in order for health care providers to monitor the patterns of psychiatric admissions by substance users and to also facilitate further research related to the same population.

The next section deals with a reflective recount of the possible overall limitations in the study.

6.5 The limitations of the study

This study has attempted to investigate the complex topic of dual-diagnosis which is a new research subject for Malta. It encompassed a wide perspective which incorporated both quantitative and qualitative research in order to help identify common presentations and risk factors of this population. As stated previously quantitative data is dependent on retrospective data which may have various shortcomings. It is also not detailed enough to include important processes such as the period when the in-patient was convicted of a criminal offence and the care history, psychiatric symptoms or substance use previous to first admission. Such information would have permitted a better understanding of the associations between serious mental illness, substance use disorders and crime. In retrospect, although qualitative research

was not the primary research method, the interview questions would have provided more backing to quantitative data if they had been more detailed. This would have enhanced the validity of the study.

Data related to criminal history does not depict the real extent of criminal offences as it is based on convicted crimes.   Unreported criminal acts[39] were sparingly included in case files, therefore they could not be incorporated in the study except for unreported prostitution which was quite frequently indicated. As the link between substance use disorders and other mental illnesses can be complicated and unclear, it is also possible that the given diagnosis on discharge (especially after short admissions) does not always represent the totality of one's psychiatric conditions. The researcher tried to counteract such limitation by being careful to search for any other significant diagnosis given in previous admissions.

Although the sample size is representative of the study population, it is important to note that the population that is included in this study only represent those who are admitted at MDDU, FDDU and 8B at Mt. Carmel Hospital. It does not represent all substance users who are admitted to Mt. Carmel Hospital because patients who are dependent on marijuana only or synthetic drugs and who are not on methadone are generally admitted in other wards and so they are not included in the study. This is a considerable limitation because research shows that there is a significant association between marijuana or synthetic drugs and psychosis (EMCDDA, 2016, Roberto et al., 2016) and therefore these cases would have also been relevant to this study.

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[39] also known as dark figure of crime

6.6. Conclusion

The study clarifies that the links between substance use disorders, serious mental illness and crime are neither unidirectional nor absolute. Often, these elements are intertwined and their combinations can lead to adverse consequences that badly affect one's functional levels and well-being, disrupt relationships and social harmony and lead to high costs on health, social and legal services. Considering, that substance abuse in our Maltese Islands continues to be a significant problem, (EMCDDA, 2017; Formosa, 2017), reports of comorbidity and related crimes amongst both sexes continue to be a pressing reality.

By providing a snapshot of possible predispositions, presentations and perpetuating factors of the population's main problems and their potential associations, it is evident that individuals who suffer from serious mental illness and substance use disorders are susceptible to enduring hardship and prejudice and often require the interventions of the professionals to attain the most basic of needs. This signifies the important role of social agents in favour of the well-being, rehabilitation and possible recovery of individuals with substance use disorders and mental illness.

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Appendices

Appendix A: Consent for Research

Date

Address

Sir/Madam,

Re. Consent for research

I am currently reading for Masters by research in Criminology at the University of Malta under the supervision of Dr. J. Formosa Pace.

My dissertation, "Understanding the potential relationships between serious mental illness, substance use disorders and crime among psychiatric inpatients" will seek to compare individual characteristics and forensic histories in substance users who are admitted to Mt. Carmel Hospital with those who are also diagnosed with serious mental disorders. The main purpose of the study will be to identify if there are any differences between the two cohorts and any particular patterns of crime. It is also expected that the results would elicit important denominators that might also help in providing better treatment to these vulnerable individuals.

The research study is based on a 2-phase approach. First, I plan to collect data through a retrospective case note review of those individuals who were admitted to Dual Diagnosis wards at Mount Carmel Hospital during 2015 and 2016. This method will enable me to gather profile date of individuals with concurrent disorders in Malta and to analyze and compare important variables within this population. Secondarily, I would like to carry out qualitative interviews with six professionals working at Mt. Carmel Hospital in order to get an expert opinion about the subject. These include 2 psychiatrists, 1 social worker, 1 psychologist and 2 nurses.

In view of the above, I would highly appreciate if you will support my study and grant me the permissions for access to medical files and to interview the professionals. It is pertinent to note that, in adherence to the Data Protection Act, all patients and interviewees will be coded to prevent identification and to disable storage of personal details.

Should you require further information, please contact me on my email: miriam.agius@gov.mt or my supervisor on email: janice.formosa-pace@um.edu.mt

I would like to thank you in advance for your interest and support.

Kind Regards,

Yours sincerely,

_____   _____

Miriam Agius   Dr. J. Formosa Pace

Student   Supervisor

Appendix B: Recruitment letter

Date

Address

Dear _____

Re. Invite for participation in a research study

I am currently reading for Masters by research in Criminology at the University of Malta under the supervision of Dr. J. Formosa Pace.

My dissertation, "Understanding the potential relationships between serious mental illness, substance use disorders and crime amongst psychiatric inpatients" will seek to compare individual characteristics and forensic histories of substance abusers who are admitted to Mt. Carmel Hospital with those who are also diagnosed with severe mental disorders. The main purpose of the study will be to identify if there are any differences between the two cohorts and any particular patterns of crime. It is also expected that the results would also enable the formulation of suitable recommendations that will possibly augur well to the well-being of individuals with dual diagnosis.

As part of the research process, I will be conducting semi-structured interviews with various professionals. The aim of the interviews is to get a professional opinion about the subject with the premise of eliciting ideas of how to improve treatment provision.

You have been chosen to participate in this study because of your specialized knowledge and experience in working with individuals with comorbidity. The interviews will consist of 5 questions and will take about 30 - 40 minutes to complete. Although the name of the organization will be published, your identity will be kept anonymous. Please note that a copy of the dissertation will be available for your perusal at Mt. Carmel Hospital.

It would be greatly appreciated if you would accept this invitation because your participation will provide an important and valued contribution.

For any further information please contact me on miriam.agius@gov.mt. You can also contact my supervisor on janice.formosa-pace@um.edu.mt.

Kind Regards,

Yours Sincerely,

_____   _____

Miriam Agius   Dr. J. Formosa Pace

Student   Supervisor

Appendix C: Informed Consent Form

I, _____, volunteer to take part in the research study "Understanding the potential relationships between serious mental illness, substance use disorders and crime amongst psychiatric inpatients" which is being carried out by Miriam Agius as part of her Masters in Criminology.

- My participation in this interview is voluntary and I may decline to answer any question or stop the interview at any time and for any reason. If I withdraw from the interview, any recorded material will be immediately destroyed.
- I confirm that I have read and understand the information sheet about this research study and the researcher has answered any queries to my satisfaction.
- My name will not be identified in the study and my participation will remain confidential. I understand that because the name of my work organization will be published this might not guarantee complete anonymity
- There will be no deception in the data collection process.
- I approve of the audio-taping of the interview. I am able to review the recording at any stage and make changes as required.

      ☐ YES   ☐ NO

- I give consent to notes being taken during the interview. I may to ask to see them at any time and make changes as required.

      ☐ YES   ☐ NO

- All recorded material will be kept in a secure place and will be destroyed two years after the interview.
- I am informed that I can share any further queries or opinions about this study with the researcher on miriam.agius.02@um.edu.mt or with her supervisor Dr. J. Formosa Pace on janice.formosa-pace@um.edu.mt.

I hereby sign in agreement to the above.

Participant's name: _____

Participant's signature: _____   Date:_____
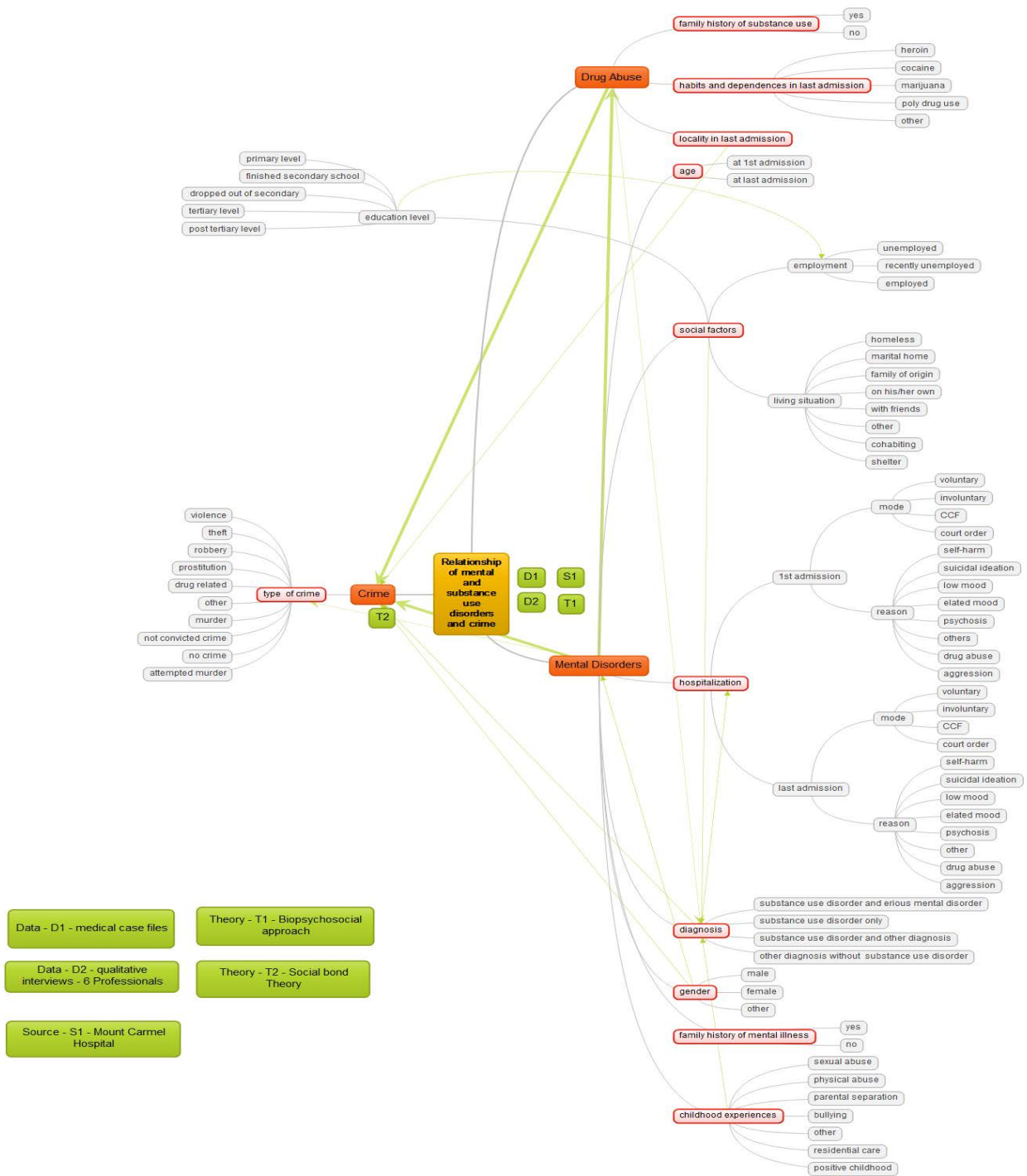
Researcher's name: _____

Researcher's signature: _____   Date:_____

Supervisor's name:_____

Supervisor's signature: _____   Date: _____

Appendix D: Mind Map

Appendix E: Retrospective Review Form

1. **Study I.D.**	_____	

2. **Gender**		
Male	1	
Female	2	
Other	3	

3. **Age in first admission**		
Less than 18	1	
19 – 29	2	
30 – 39	3	
40 – 49	4	
Over 50	5	

4. **Reason/s of referral for first admission**		
4a. Suicidal ideation	1	
4b. Suicidal attempt	2	
4c. Elated mood	3	
4d. Depressed mood	4	
4e. Drug abuse	5	
4f. Psychosis	6	
4g. Homelessness	7	
4h. Aggression	8	
4i. Other	9	

5. **Mode of first admission**		
Voluntary	1	
Involuntary	2	
CCF	3	
Court mandated	4	
CCJP	5	

6. **Locality in last admission**											
Attard	1	Balzan	2	Birkirkara	3	Birzebbuga	4	Bormla	5	Dingli	6
Fgura	7	Floriana	8	Ghawdex	9	Gharghur	10	Ghaxaq	11	Gzira	12
Hamrun	13	Iklin	14	Isla	15	Kalkara	16	Kirkop	17	Lija	18
Marsa	19	M'Scala	20	M'Xlokk	21	Mellieha	22	Mgarr	23	Mosta	24
Mqabba	25	Msida	26	Mtarfa	27	Naxxar	28	Paola	29	Pembroke	30
Pieta	31	Qormi	32	Qrendi	33	Rabat	34	Safi	35	S. Giljan	36
S.Gwann	37	SPB	38	St. Lucija	39	St. Venera	40	Siggiewi	41	Sliema	42
Ta Xbiex	43	Tarxien	44	Valletta	45	Xghajra	46	Zabbar	47	Zebbug	48
Birgu	49	Zejtun	50	Zurrieq	51	Swieqi	52	Not indicated	99		

7. **Age in last admission**		
Less than 18	1	
19 – 29	2	
30 – 39	3	
40 – 49	4	
Over 50	5	
Not applicable	6	

8. **Reason of referral for last admission**		
8a. Suicidal ideation	1	
8b. Suicidal attempt	2	
8c. Low mood	3	
8d. Elated mood	4	

8e. Drug abuse	5
8f. Psychosis	6
8g. Homelessness	7
8h. Aggression	8
8i. Other	9

9. Mode of last admission	
Voluntary	1
Involuntary	2
CCF	3
Court mandated	4
CCJP	5

10. Family history of substance use including harmful use of alcohol	
Yes	1
No	2
Not indicated	99

11. Family history of mental illness	
Yes	1
No	2
Not indicated	99

12. Childhood Experiences	
12a. Sexual abuse	1
12b. Physical abuse	2
12c. Residential care	3
12d. Parental separation	4
12e. Bullying	5
12f. Other	6
12g. Positive Childhood	7
12h. Not indicated	99

13. Level of education	
Primary level	1
Finished Secondary level	2
Dropped out in Secondary	3
Tertiary level	4
Post-tertiary level	5
Not indicated	99

14. Occupation	
Employed	1
Long-term unemployment	2
Recently unemployed	3
Not indicated	99

15. Living situation in last admission	
Marital home	1
Family of origin	2
Co-habiting	3
Friends	4
On one's own	5
Homeless	6
Shelter	7
Other	8
Not indicated	99

16. Habits & dependencies in last admission	
Poly drug use	1
Heroin	2
Cocaine	3
Marijuana	4

Other	5
Not indicated	99

17. Criminal history

17a. No crime	0
17b.Theft	1
17c. Robbery	2
17d. Attempted murder	3
17e. Prostitution	4
17f. Drug related	5
17g. Violence	6
17h. Other	7
17i. Crime not specified[40]	8
17j. Not convicted- prostitution	9
- 17k.Not convicted- theft	10
17l. Not convicted- other	11
17m. Murder	12
17n. Not indicated	99

18.   Diagnosis

Substance related Disorder (F11- F19)	1
Substance related disorder and Schizophrenia (F20)	2
Substance related disorder and Bipolar Disorder (F31)	3
Substance related disorder and Schizoaffective Disorder (F25)	4
Substance induced psychosis (F19.15, 19.25)	5
Substance related disorder and Major Depressive Disorder (F32, F33)	6
	7
Substance related disorder and other diagnosis	8
Other diagnosis without substance related disorder	99
Not indicated	

Forensic new

Yes (criminal history)	1
No (no criminal history)	2

Diagnosis new

Serious mental illness and substance use disorder	1
Substance use disorder only	2
Substance use disorder and other diagnosis	3

Childhood new

Yes (childhood trauma)	1
No (no childhood trauma)	2

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[40] Indication of a criminal history but crime not specified

Appendix F: Database Sample

sex	age 1	Reason1	Mode 1	Age 2	Reason2	Mode 2	F.H. of Drug abuse	F.H. of Mental illness	Childhood	Level of Education	Work	Living situation	Habits	Crime	Diagnosis
M	19-29	Drugs	Vol..	19-29	Drugs low mood	Vol..	No	Yes	Bullying	Drop out - secondary	Long term unem...	Family of origin	Heroin	Theft Drug related	Substance use only
M	19-29	Drugs Homeless	Vol..	19-29	Drugs	Vol..	Yes	No	Parental separation	Finish sec	Long term unem..	Marital home	Heroin	Theft	Substance and other diagnosis
F	30-39	Drugs Low mood	Vol...	40-49	Drugs	Vol..	Yes	Yes	Sexual/ Physical abuse/ other	Finish sec	Long term unem.	On one's own	Heroin	Theft Prostitu-tion	Substance and other diagnosis
M	30-39	Drugs Suicidal ideation	Vol..	30-39	Drugs	Vol..	No	No	Positive	Finish sec	Long term unem..	Family of origin	Poly drug use	Drug related other	Substance use only
M	19-29	Drugs Aggression S.attempt	CCF	40-49	Drugs Psychosis	Vol..	Yes	Yes	Sexual/ physical abuse residential	Finish sec	Long term unem..	On one's own	Poly drug use	Murder	Substance use and schizophre-nia
F	19-29	Drugs	Vol...	/	/	/	No	No	Sexual abuse	Finish sec	Emplo-yed	Family of origin	cocaine	No crime	Substance and other diagnosis
F	19-29	Drugs	CCF	30-39	Drugs	Vol..	Yes	No	Sexual/ physical abuse	Drop out-secondary	Long term unem...	On one's own	Heroin	Theft n.conv prostit.-	Substance and other diagnosis
M	30-39	Drugs Psychosis Aggression	Invol.	≥50	Drugs Psychosis	Invol.	Nil of note	Nil of note	Positive	Tertiary level	Long term unem...	On one's own	Poly drug use	No crime	Drug induced psychosis
M	19-29	Drugs Aggression	Invol.	40-49	Drugs Psychosis	Vol..	Yes	No	Physical abuse	Drop out-secondary	Long term	Family of origin	cocaine	Murder Attempt Violence	Substance use only
M	39-39	Drugs Low mood	Vol.	40-49	Drugs Suicidal Attempt	Vol..	No	Yes	Physical abuse Residential Parental Separation	Primary level	Recent Unem-ployme nt	Marital home	Poly-drug use	Drug related	Substance use and bipolar disorder

Appendix G: Qualitative Interviews – English/Maltese

1. Do you think that there are any significant differences among psychiatric inpatients who suffer from substance abuse disorders? Explain.

2. In your experience what are the pathways that lead persons with comorbidity to be admitted to Mt. Carmel Hospital?

3. Should service provision make a distinction between substance abusers who are also diagnosed with severe mental disorders and those who are not so diagnosed?

4. In your opinion what can lead a person with comorbid diagnosis to commit criminal offences? Do you think that there is a connection between particular psychiatric disorders and crime?

5. In the context of current changes in the mental health settings, what are your ideas about the future treatment of persons with serious mental disorders and substance abuse disorders?

_____

1. Taħseb li jista' jkun hemm differenzi sinifikanti f'persuni li għandhom il-problema tad-droga u li huma pazjenti fl-isptar Monte Karmeli? Jekk jogħġbok spjega x'jistgħu jkunu d-differenzi bejniethom.

2. Mill-esperjenza tiegħek x'inhuma l-fatturi li jistgħu jwasslu lil dawn il-persuni biex jidħlu fl-Isptar Monte Karmeli?

3. Taħseb li s-servizzi li jiġu offruti għandhom ikunu l-istess jew differenti għal dawk il-persuni taħt il-problema tad-droga u għal dawk li jbatu wkoll minn mard mental serju? Jekk jogħġbok agħti r-raġunijiet tiegħek.

4. Fl-opinjoni tiegħek x'inhuma l-proċessi li jinfluwenzaw lill-persuna taħt il-problema tad-droga u mard mentali biex twettaq atti kriminali? Taħseb li jista' jkun hemm xi konnessjoni bejn mard mentali partikolari u l-kriminalità li titwettaq?

5. Fil-kuntest ta' tibdil u avvanzi fis-settur tal-mard mentali, x'inhuma l-ideat tiegħek rigward żviluppi li jistgħu jsiru fit-trattament ta' persuni li għandhom problema tad-drogi u mard mentali serju?

Appendix H: Tables in detail

Table 4.17: Locality in last admission

Southern Harbour District			Northern Harbour District		
Locality	**Frequency**	**Valid Percent**	**Locality**	**Frequency**	**Valid Percent**
Bormla	25	12.3	Birkirkara	6	3.0
Birgu	1	0.5	Gzira	5	2.5
Fgura	4	2.0	Hamrun	9	4.4
Floriana	1	.5	Msida	3	1.5
Isla	8	3.9	Pembroke	2	1.0
Kalkara	4	2.0	Pieta	1	.5
Marsa	5	2.5	Qormi	11	5.4
Paola	7	3.4	San Giljan	7	3.4
Santa Lucija	2	1.0	San Gwann	4	2.0
Tarxien	3	1.5	Santa Venera	6	3.0
Valletta	11	5.4	Sliema	8	3.9
Xghajra	1	.5	Swieqi	2	1.0
Zabbar	5	2.5			
South Eastern District			Western District		
Birzebbuga	3	1.5	Zebbug	7	3.4
Ghaxaq	1	.5	Rabat	2	1.0
Marsaskala	3	1.5	Iklin	1	.5
Kirkop	2	1.0	Siggiewi	1	.5
Zejtun	4	2.0			
Zurrieq	2	1.0			
Northern District			Gozo and Comino		
Mosta	1	.5	Ghawdex	2	1.0
Naxxar	2	1.0			
San Pawl il-Bahar	9	4.4			
No fixed address	22	10.8			
Total	**203**	**100.0**			

Table 4.18: Detailed cross-tabulation between criminal history and type of dependency

Criminal History		Type of Dependency					Total
		Poly drug use	Heroin	Cocaine	Marijuana	Other	
No crime	Count	10	9	10	2	2	33
	% within habits	8.3%	22.5%	40.0%	50.0%	33.3%	
Theft	Count	58	13	7	2	2	82
	% within habits	48.3%	32.5%	28.0%	50.0%	33.3%	
Robbery	Count	9	3	1	0	0	13
	% within habits	7.5%	7.5%	4.0%	0.0%	0.0%	
Attempted murder	Count	3	0	2	0	0	5
	% within habits	2.5%	0.0%	8.0%	0.0%	0.0%	
Prostitution	Count	5	2	1	0	0	8
	% within habits	4.2%	5.0%	4.0%	0.0%	0.0%	
Drug related	Count	46	17	6	0	2	71
	% within habits	38.3%	42.5%	24.0%	0.0%	33.3%	
Violence	Count	21	6	7	1	1	36
	% within habits	17.5%	15.0%	28.0%	25.0%	16.7%	
Other	Count	23	5	2	1	0	31
	% within habits	19.2%	12.5%	8.0%	25.0%	0.0%	
Crime not specified	Count	3	2	1	0	0	6
	% within habits	2.5%	5.0%	4.0%	0.0%	0.0%	
Not convicted-prostitution	Count	9	3	0	0	0	12
	% within habits	7.5%	7.5%	0.0%	0.0%	0.0%	
Murder	Count	2	0	0	0	0	2
	% within habits	1.7%	0.0%	0.0%	0.0%	0.0%	
Total	Count	120	40	25	4	6	195

Table 4.19: Cross-tabulation between diagnosis and type of dependency and criminal history

Type of dependency				Criminal history	
				Yes	No
Poly drug use	Diagnosis	Serious mental illness	Count	28	3
			% within diagnosis_new	90.3%	9.7%
		Substance use only	Count	48	4
			% within diagnosis_new	92.3%	7.7%
		Substance use and other diagnoses	Count	32	3
			% within diagnosis_new	91.4%	8.6%
	Total		Count	108	10
			% within diagnosis_new	91.5%	8.5%
Heroin	Diagnosis	Serious mental illness	Count	6	1
			% within diagnosis_new	85.7%	14.3%
		Substance use only	Count	16	7
			% within diagnosis_new	69.6%	30.4%
		Substance use and other diagnoses	Count	9	1
			% within diagnosis_new	90.0%	10.0%
	Total		Count	31	9
			% within diagnosis_new	77.5%	22.5%
Cocaine	Diagnosis	Serious mental illness	Count	1	6
			% within diagnosis_new	14.3%	85.7%
		Substance use only	Count	8	1
			% within diagnosis_new	88.9%	11.1%
		Substance use and other diagnosis	Count	6	3
			% within diagnosis_new	66.7%	33.3%
	Total		Count	15	10
			% within diagnosis_new	60.0%	40.0%
Marijuana	Diagnosis	Serious mental illness	Count	1	1
			% within diagnosis_new	50.0%	50.0%
		Substance use only	Count	0	1
			% within diagnosis_new	0.0%	100.0%
		Substance use and other diagnoses	Count	1	0
			% within diagnosis_new	100.0%	0.0%
	Total		Count	2	2
			% within diagnosis_new	50.0%	50.0%

Figure 4.9: Cross-tabulation between age in first admission, diagnosis and gender
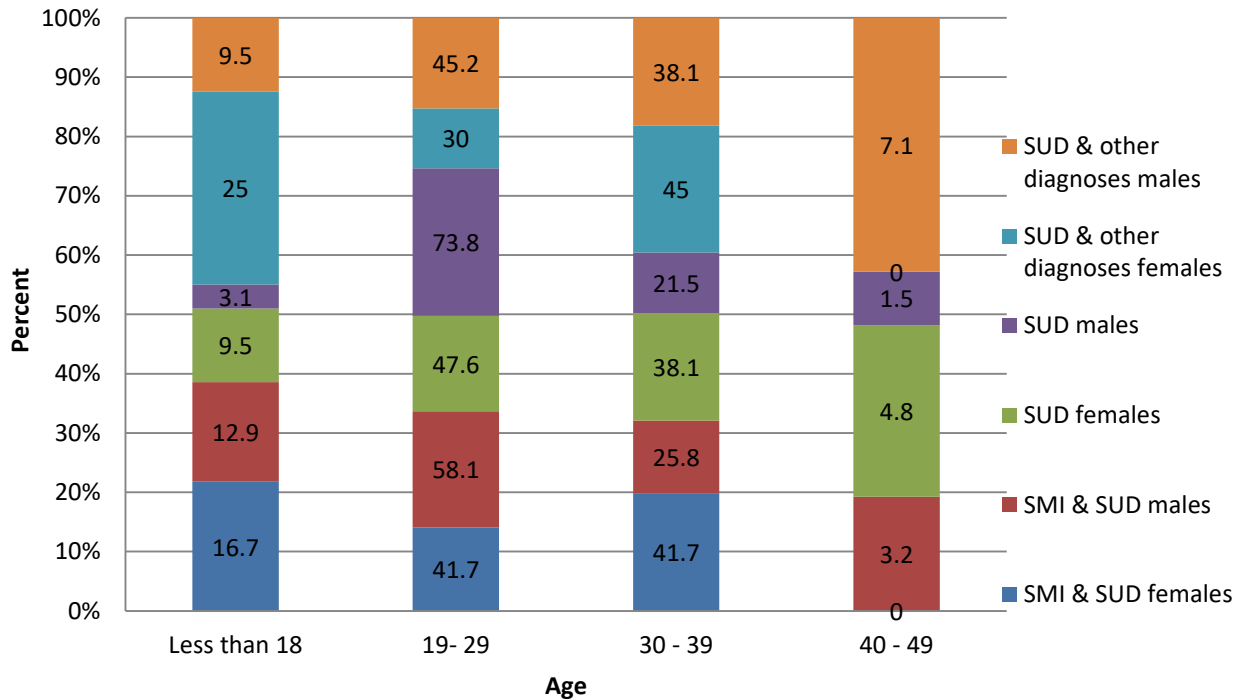
Figure 4.10: Cross-tabulation between age in last admission, diagnosis and gender
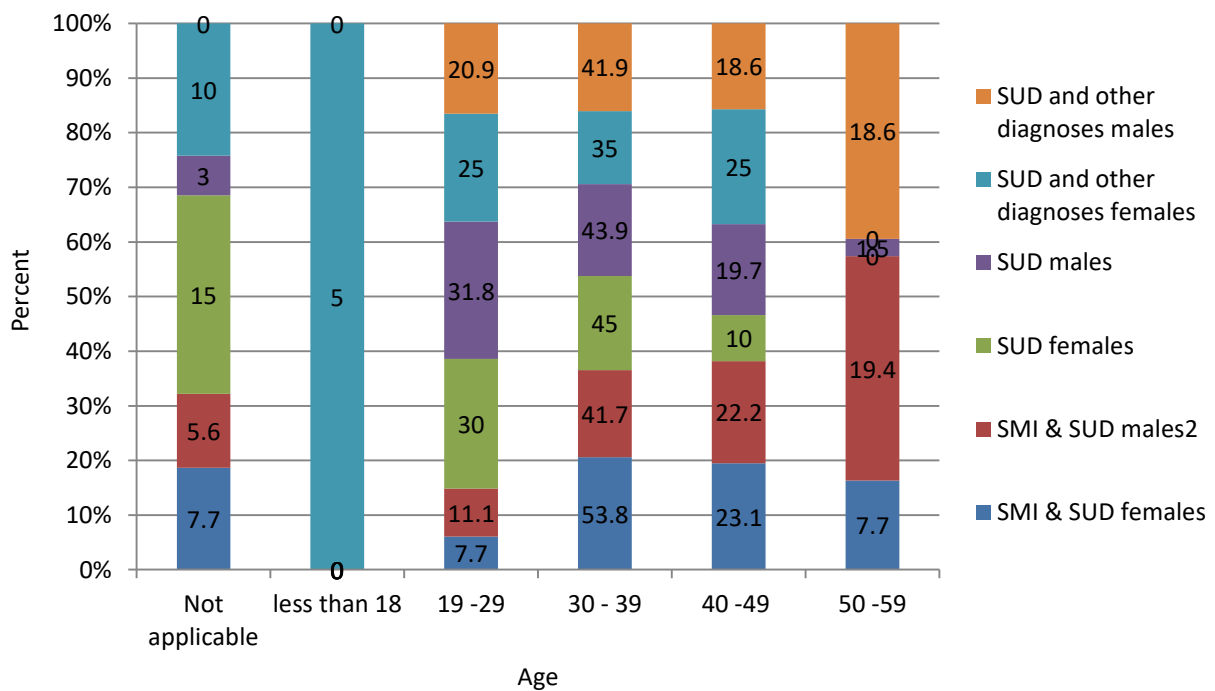
Figure 4.11: Cross-tabulation between mode of first admission, diagnosis and gender
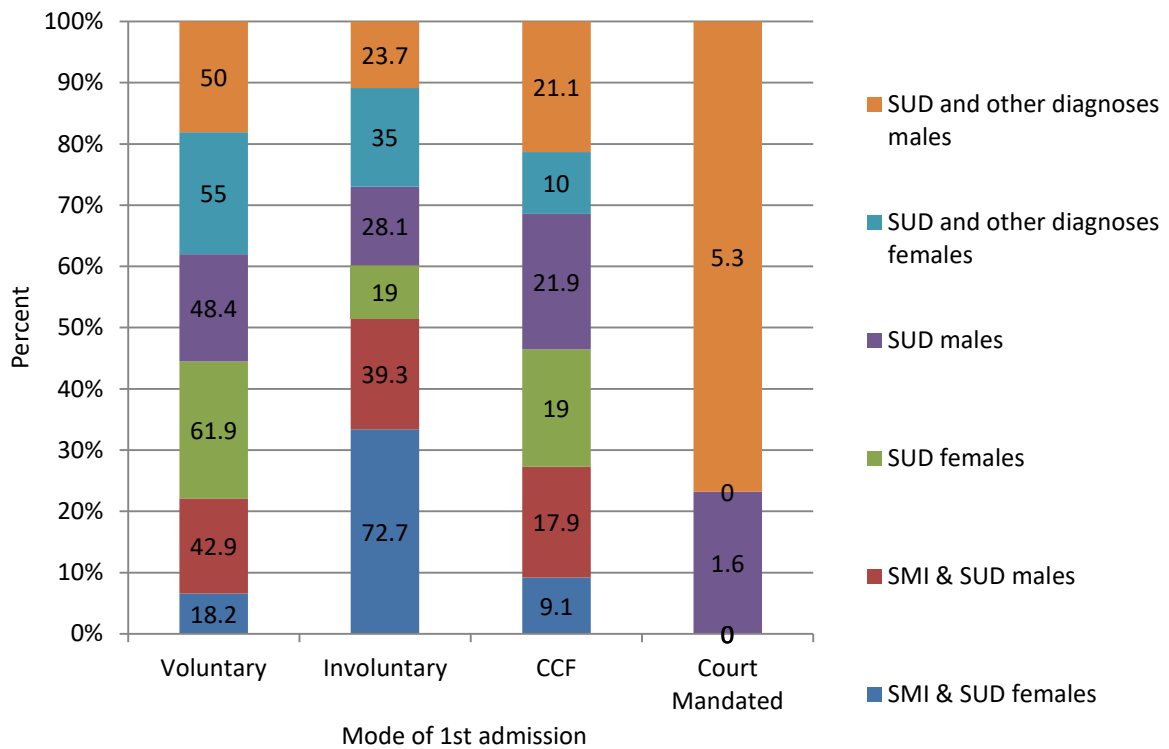

Figure 4.12: Cross-tabulation between mode of last admission, diagnosis and gender
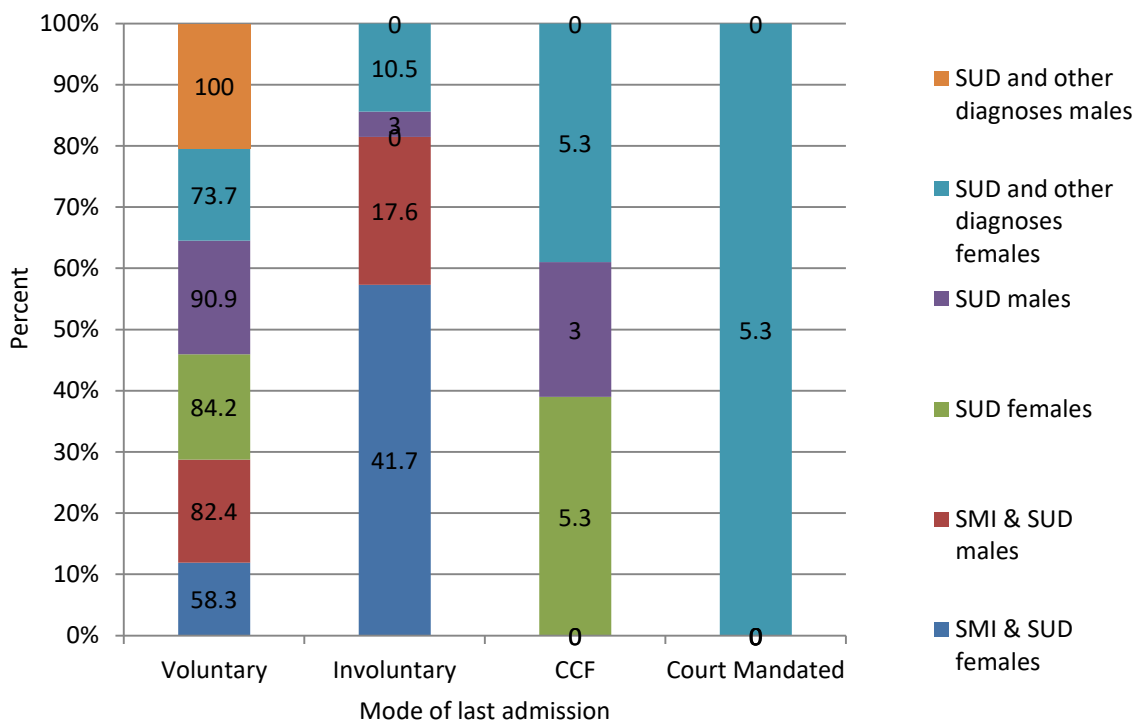
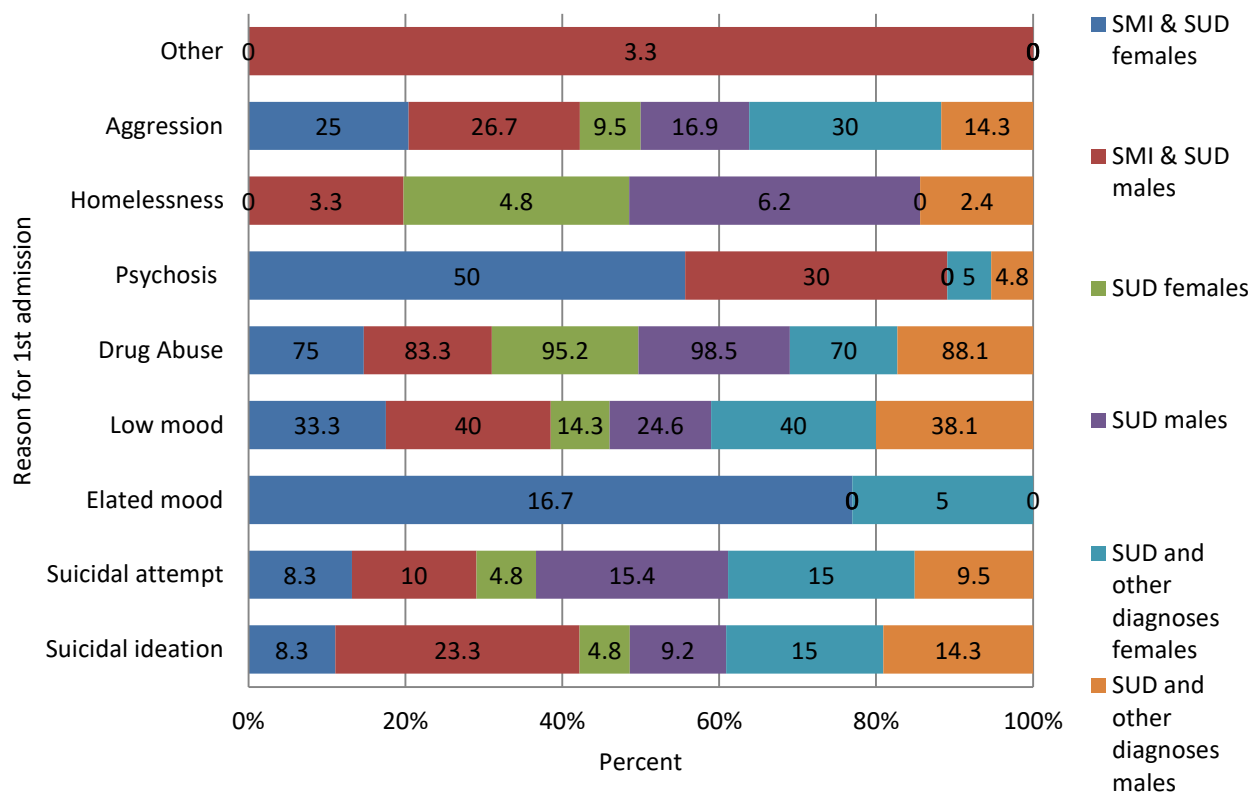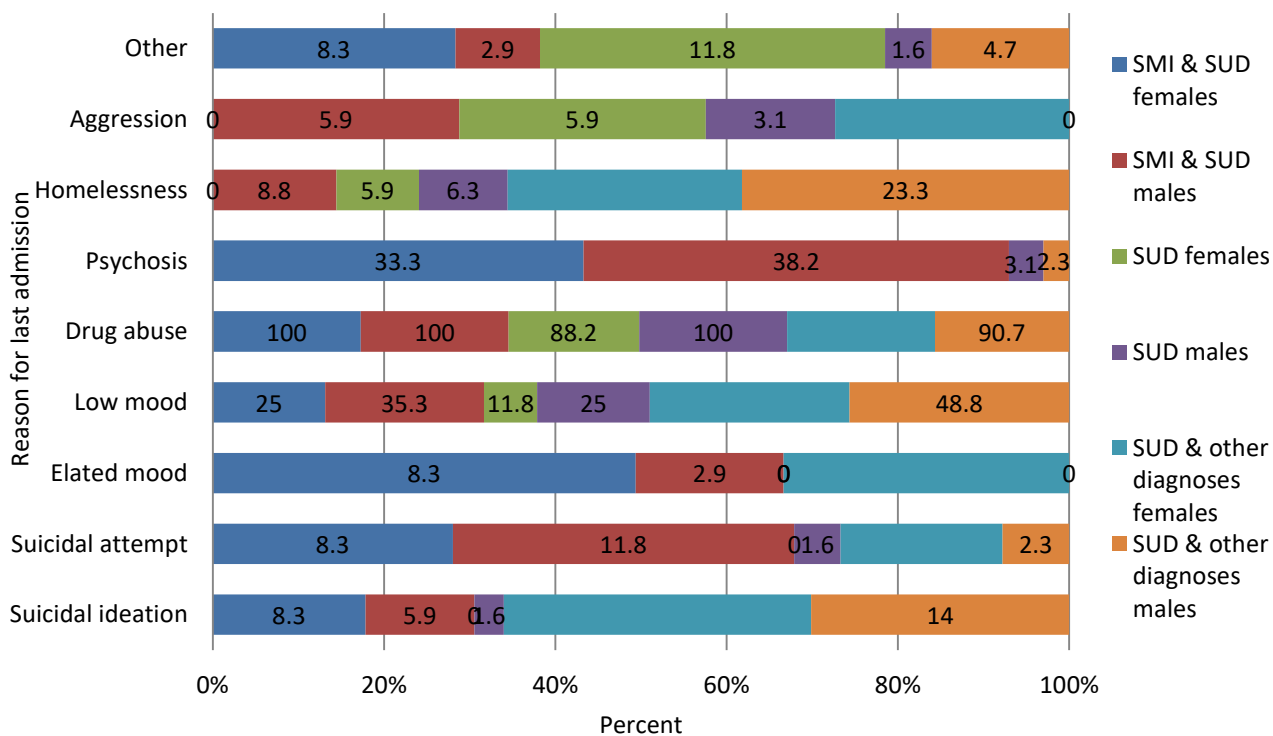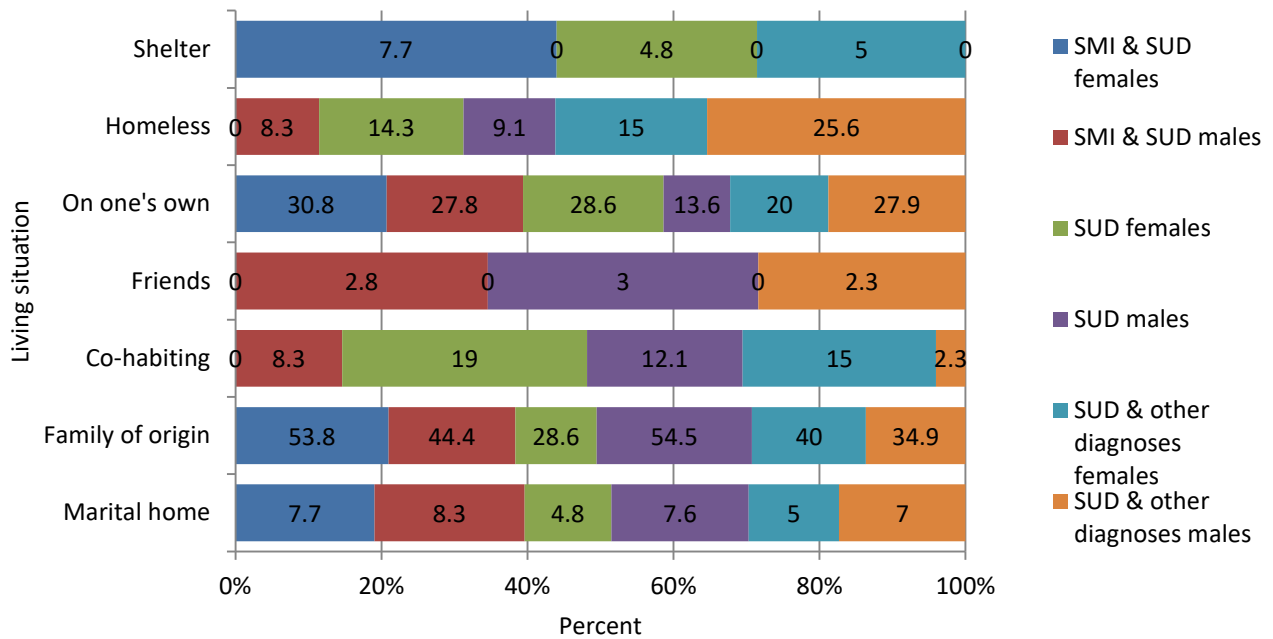**Figure 4.13: Cross-tabulation between reason in first admission, diagnosis and gender**

Figure 4.14: Cross-tabulation between reason for last admission, diagnosis and gender

Figure 4.15: Cross-tabulation between living situation, diagnosis and gender

Figure 4.18: Cross-tabulation between childhood experiences, diagnoses and gender
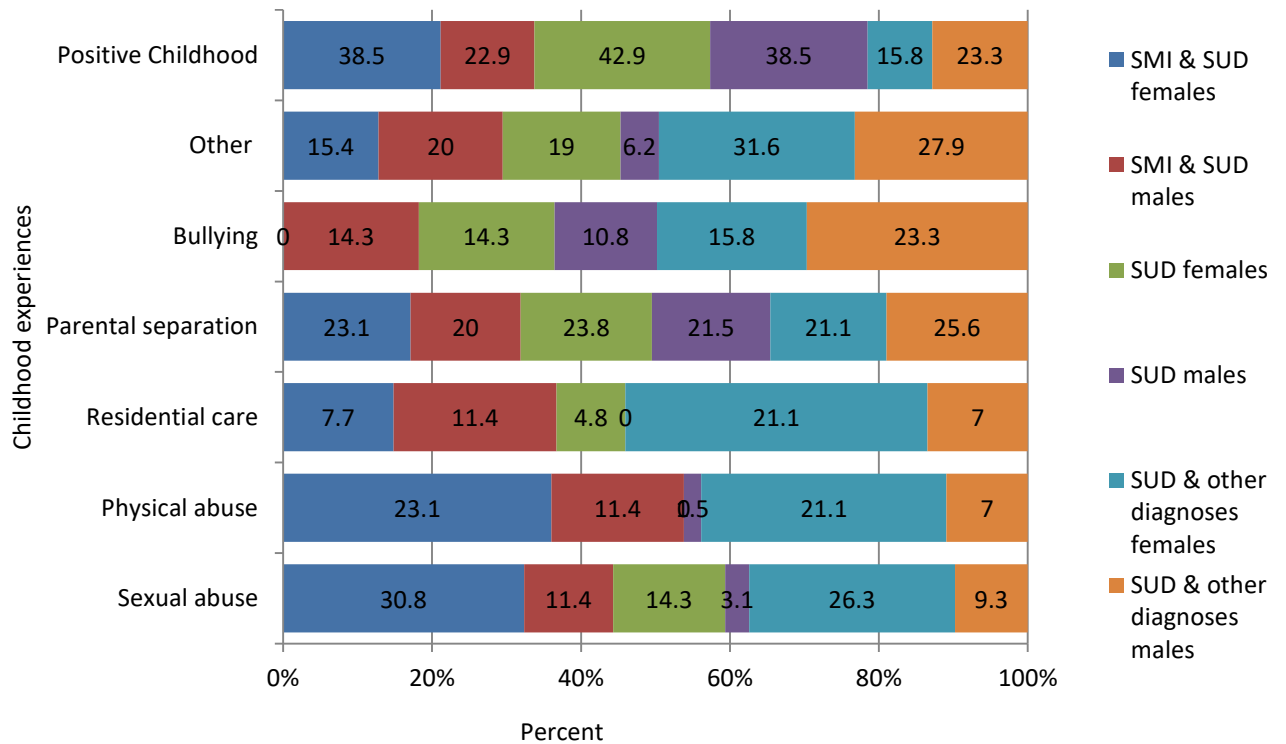
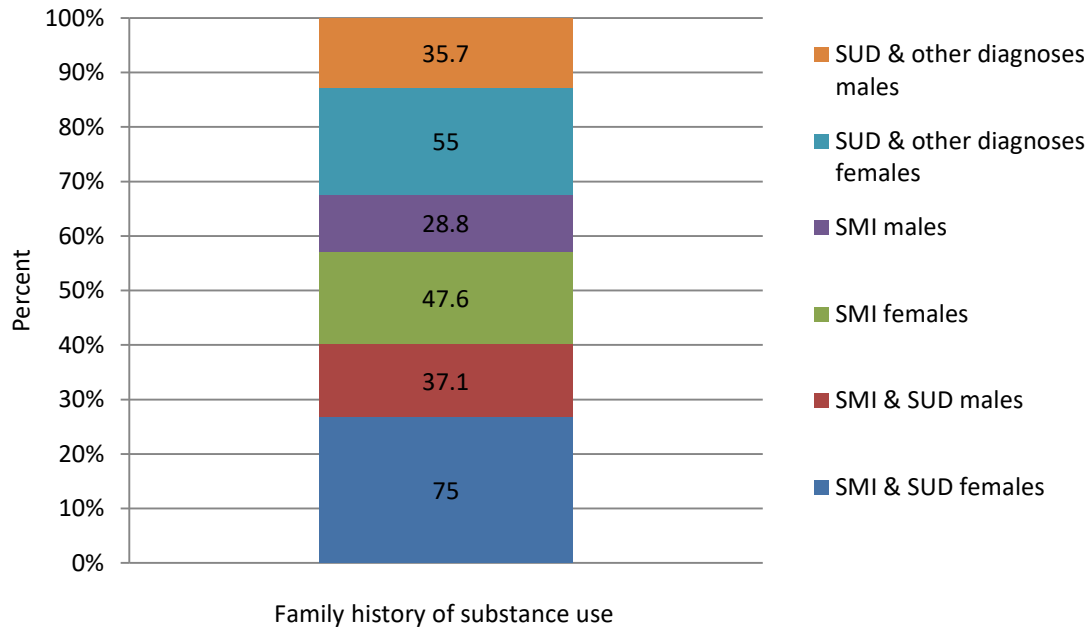**Figure 4.16: Cross-tabulation between family history of substance use, diagnosis and gender**

Figure 4.17: Cross-tabulation between family history of mental illness, diagnosis and gender
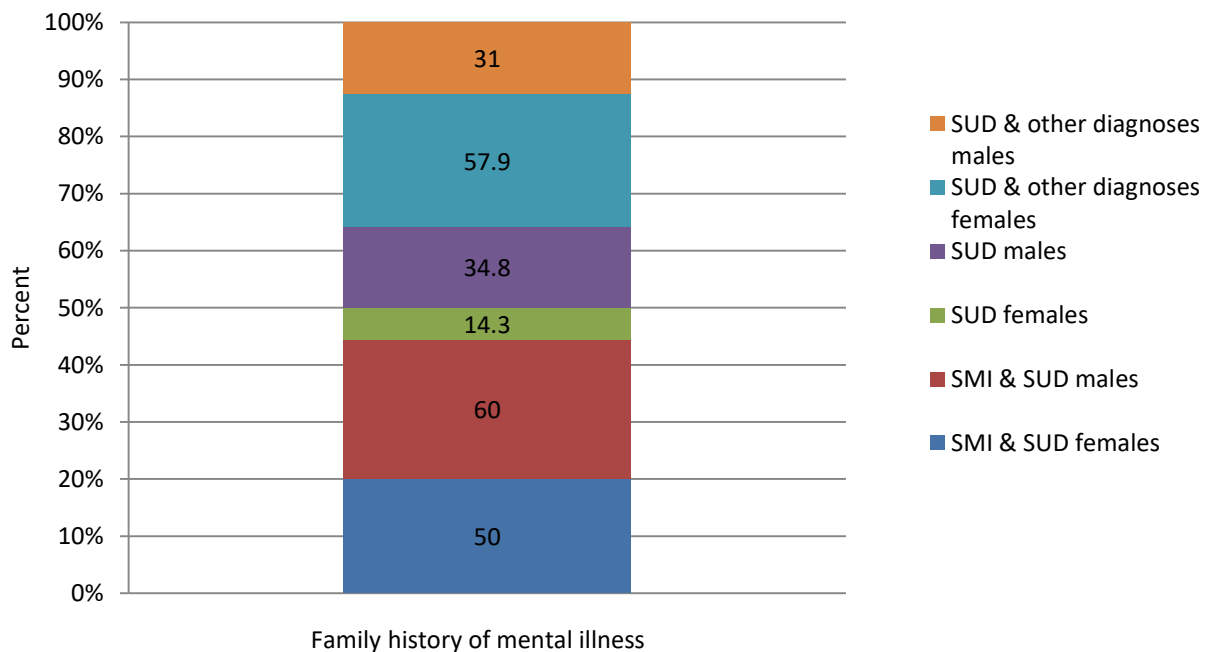
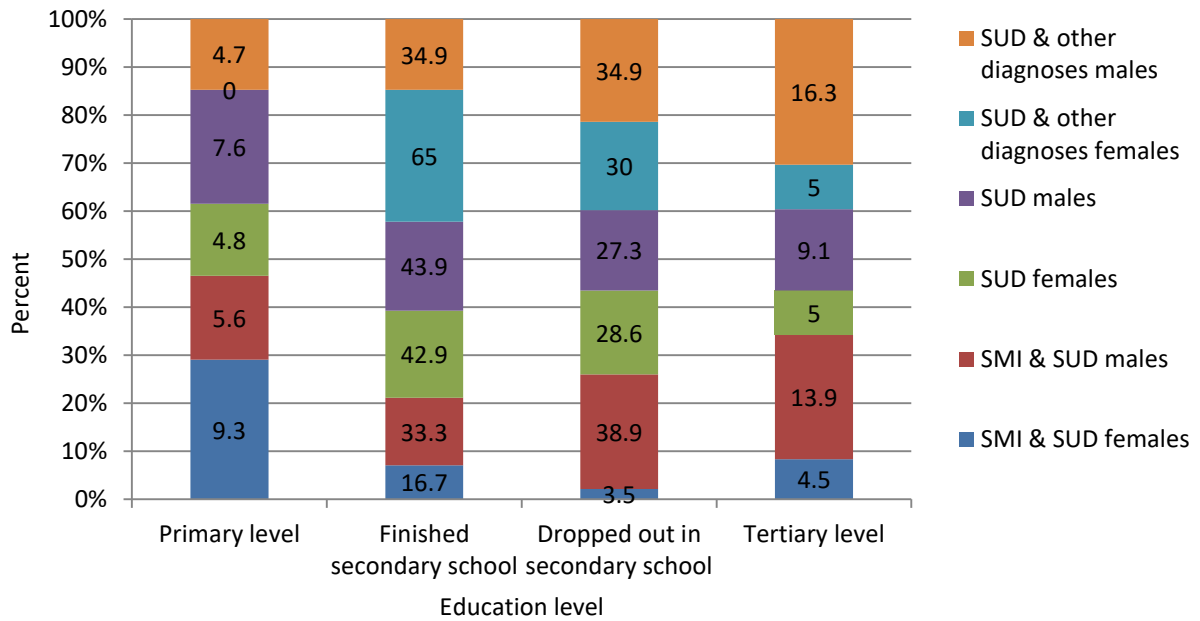**Figure 4.19: Cross-tabulation between education level, diagnosis and gender**

Figure 4.20: Cross-tabulation between occupation, diagnosis and gender