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A Review of the Prevalence Rates of Comorbid Personality Disorders and Substance Use Disorders at the Psychotherapy Unit at Tara Hospital.

Dr Laura N. Miller

CANDIDATE DECLARATION

I ***Laura Natasha Miller***, declare that this research report is my own work. It is being submitted for the degree of a ***Masters in Medicine (Psychiatry)*** at the University of the Witwatersrand, Johannesburg. It has not been submitted for any degree or examination at this or any other University.

The 26th day of September, 2016

DEDICATION

To my father, Percy Miller – for originally igniting my passion for medicine.

ABSTRACT

This study is a retrospective, descriptive study that involved a review of 85 patient files from the Psychotherapy Unit (Ward 4&5) at Tara Hospital, admitted between 01st January to 31st December 2012. The Psychotherapy Unit services patients with personality disorders, together with other comorbid disorders; and provides pharmacological and psychotherapeutic management to such individuals.

The study described and analysed demographics, personality traits and disorders, details of substance misuse, taking into account gender and comorbid axis 1 pathology. Options for referral to various substance use treatment facilities were considered, and presence of substance testing was also noted.

The majority of patients included in the study were predominantly young, single, unemployed and female. The most common axis II diagnosis was borderline personality disorder. 81% of the individuals included in the study had a comorbid axis 1 psychiatric pathology. Seventy-three percent of the study sample had a substance use disorder, with 33.9% meeting the criteria for substance dependence. There were significant differences observed between types of substances used and frequency, especially with regard to the different personality disorders. Also there was significant gender variability observed between the different personality disorder subtypes.

This study highlights the high frequency of comorbidity between individuals with personality disorders and substance use disorders, and other axis 1 pathology in general. It necessitates the need to conduct further research in this group, and consider the possibility of opening a dual diagnosis unit on site, to provide adequate treatment to such a vulnerable subgroup.

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INTRODUCTION

Individuals with personality disorders and/or personality disorder traits commonly have substance abuse disorders. The two disorders may share common traits, such as feelings of inadequacy, marked impulsivity and a tendency towards self-damaging or risky behaviour, which may increase the likelihood of developing either disorder[1].

Individuals with more than one psychiatric disorder often do not receive adequate care, as appropriate services and facilities are often unavailable. Also, information is limited with regards to how to treat such individuals. It is well known that substance misuse negatively impacts the brain – leading to impaired judgement, cognition, memory and learning, and poor behaviour control; which worsens with ongoing use. Treatment is therefore vital.

The hypothesis of this study was that there was a high incidence of alcohol and substance misuse disorders in patients with personality disorders. This study was a retrospective, descriptive study of patients admitted to the psychotherapy unit at Tara Hospital over a specific period of time. The number of individuals that were included (85) and met criteria for both/multiple disorders indicates that there is a growing need to screen and treat such individuals. The motivation for this study was to assess the need for a dual diagnosis unit on site. There is a need to treat such individuals in order to prevent a progression of further psychiatric symptoms and morbidity.

1) **LITERATURE REVIEW**

"The co-occurrence of substance misuse with other psychiatric disorders is increasingly recognised as a major public health problem. The term 'dual diagnosis' has been introduced to describe this phenomenon, but 'comorbidity' is used as an alternative term"[1]. Psychiatric comorbidity is defined as the presence, either simultaneously or in succession, of two or more specific disorders in an individual within a specified period[2]. Comorbidity is substantial in the general population[2].

Tara Hospital is a specialised psychiatric facility located in Sandton, Johannesburg. One of its highly specialised units is the Psychotherapy ward. Patients with personality disorders are admitted for a 6 - 8 week intensive psychotherapy program. Admission to the unit follows an outpatient assessment. Patients are screened for substance abuse disorders and are referred to drug treatment at centres elsewhere if the disorder is current. It is estimated that the Tara Psychotherapy Unit has a significant population of patients with personality disorders, with comorbid substance use disorders, that could benefit from the development of a dual diagnosis unit on site. Tara Hospital does not have a dual diagnosis unit nor are there any services available, in the surrounding catchment areas. The hospital is investigating introducing an outpatient dual diagnosis program.

1.1) MOTIVATION FOR THE STUDY

In South Africa, as in many other countries around the world, patients with comorbid mental illness and substance abuse disorders ("dually diagnosed" patients) have been a cause for concern, and often their needs are not met[1,3,4]. Mental disorders among South Africans often

go untreated, and efforts are clearly needed to improve access of those in need to existing mental health services. Eliminating deterrents to service utilisation, in particular stigma and inadequate referral systems between medical and mental health services, could help aid this problem[4]. Persons who have dual diagnosis use mental health and substance abuse treatment services more frequently, and their comorbidity has significant implications for service delivery[5, 6]. Low- and middle- income countries (including South Africa) spend less than 1% of their health budget on mental health[4]. Substance abuse and mental health treatment programmes are funded and managed separately, which may affect delivery of appropriate care. Rehabilitation centres and services generally fall under the domain of the department of Welfare and Social Services, and this contributes significantly to the fragmentation of services to mental health care users. The two treatment systems deal with individuals in different ways, and as resources in the public sector are scarce, each system tries to exclude individuals who are likely to require more resources, to fail in treatment, or cause disruption in programmes[5,7]. Studies have shown that South Africans seeking mental health care do not receive adequate care to meet treatment guideline standards, due to scarce resources[4]. Health service usage is disturbingly low among South Africans, with the vast majority of individuals with psychiatric disorders not receiving any form of treatment[4]. There is limited data on substance use in South Africa and other African countries[3, 8]. Most of the available data are from secondary sources such as police records, where documentation is poor, particularly in rural areas, which makes the information unreliable.

When dealing with comorbidity, it is frequently assumed that the substance use problems of psychiatric patients are less severe than those of patients in substance abuse treatment – in other words one illness takes priority over another[9]. Therefore, at some stage, certain aspects of both disorders are often overlooked. However it is important to keep in mind that patients

with comorbidity in the two types of treatment settings have overlapping symptoms. Neither illness can be ignored, and therefore some level of integrated treatment is necessary[10].

People with dual diagnosis often fall in-between the cracks of general psychiatry and specialist addiction services. Traditionally, addiction services are dedicated to 'clients' who want to be helped. Whereas general psychiatric services are obliged to treat all patients, even reluctant ones "detained" under the Mental Health Care Act. Furthermore, the limited availability of community care and rehabilitation facilities willing to admit mental health care users, adds to their troubles. Abou-Saleh described models with regards to the management of comorbidity: The serial treatment model involves management of the psychiatric disorder and substance misuse in separate settings and services[1]. The parallel treatment model involves the concurrent treatment of substance misuse and psychiatric disorder using different staff and settings. Both the above models have serious limitations for optimal treatment, with high rates of patient withdrawal[1]. The preferred model is integrated treatment. Here the same staff treats both disorders in the same setting, which it is estimated improves overall health and functioning of patients, and appears to be effective[1, 5, 11]. Watkins and Burnam found that despite the recommendations that individuals who have co-occurring disorders receive treatment for their mental health and substance use problems, only 8% received either integrated or parallel treatment, which highlights the obvious problems encountered with service delivery[5].

The UK Department of Health launched the "Dual Diagnosis Good Practice Guide" in 2002, in which the key message stated was that substance misuse occurs often rather than rarely

among people with severe mental health problems; and that the relationship between the two disorders is complex[17]. It went on to say that individuals with dual diagnosis require high quality, comprehensive and integrated care that should be delivered within the mainstream mental health services; and that integrated care by a single team delivers better outcomes than serial care[1]. Based on the review by Abou-Saleh, integrated psycho education group therapy for in-patients is effective in improving comorbidity[1]. Multiple other studies have all demonstrated the effectiveness of a dual diagnosis approach[1, 7]. Thus the advantage of the integrated treatment was evident in terms of symptom improvement and reduction in substance use. "It seems fair to state then that a dual diagnosis programme that integrates elements of both psychiatric treatment and substance misuse treatment at its core, as well as offering other personalised treatment modalities would be of benefit to all patients concerned, as well as easing economic burden. With a dual diagnosis approach, treatment is guided by a comprehensive assessment, and integrated treatment that matches patient's needs. It can be given in patient settings where the individual can be stabilised and assessed following detoxification, with staff holding a realistic and longitudinal view of treatment; taking into account different modalities of treatment such as motivational techniques to reduce substance use, multidisciplinary case management, medication supervision, urine drug screening, cognitive behavioural therapy and family interventions"[1]. This will all lead to improvement in substance misuse and quality of life[1].

Literature shows mental disorders to be significantly related to substance use disorders. These dual diagnoses are associated with severity and persistence of both mental and substance use disorders. Most people with dual diagnosis report their mental disorder occurred at an earlier age than their substance use disorder. "Some prospective studies confirm this temporal order, although significant predictive associations are reciprocal"[12]. Analyses suggest that some

primary mental disorders are markers and others are causal risk factors for secondary substance disorders[12]. Comorbid substance use is common amongst individuals with severe mental illness, and often these people suffer severe adverse consequences due to their substance use disorder. This is further confounded by the fact that traditional, separate services for individuals with dual diagnoses are ineffective. Dual diagnosis tends to be more common in those that are young, male, single, less educated, have a history of conduct disorder and family history of substance use disorder[13]. Research has shown that among people with serious mental illness, substance abuse is an underlying factor leading to violence and treatment non-compliance. Findings support the development of integrated treatment programmes that address both types of disorders[14]. Further research is needed on the organization and financing of dual diagnosis services, and on specific components of the integrated treatment model, such as family intervention. Newly emerging themes in the dual diagnoses literature includes concerns about the use of public funds for acquiring substances of abuse by persons receiving disability grants; and the vulnerability of psychiatric patients to HIV and other infectious diseases[14]. The introduction of the concept of the dual diagnosis in the late 1980's was important in focussing attention on problems related to substance use among patients with severe mental illness in the community. Efforts now need to be geared towards preventing substance abuse, as well as helping dual diagnosis patients to recover. This can only be achieved through effective dual diagnosis programmes combining mental health and substance abuse interventions that are tailored for the complex needs of the clients' comorbid disorders[15]. About 50% of individuals with severe mental disorders are affected by substance abuse, indicating that co-occurrence is common[15]. Comorbidity is so common according to Minkoff, that it should be expected rather than considered an exception[16].

Often the individual is excluded from one service because of the comorbid disorder, and is told to return when the other problem is under control. The goal of dual diagnosis intervention is recovery from two serious illnesses – that is, the individual learns to manage both illnesses[15]. Effective programmes enable clients to gain access to service and maintain needed relationships with a consistent programme over time, thereby reducing non-compliance rates[15]. Cumulative evidence from experimental research supports integrating outpatient mental health and substance abuse treatments into a single, cohesive package; and individualizes it to address personal factors and stage of motivation[17, 18].

1.2 RATES OF MENTAL ILLNESS COMORBID WITH VARIOUS SUBSTANCES

The rate of substance misuse in subjects with severe mental illness is high[7]. Substance misuse includes substance abuse and dependence. Both involve a maladaptive pattern of substance use leading to clinically significant impairment or distress, occurring within a twelve month period[19]. However the disorders differ in their more infinite finer details, as described in the Diagnostic and Statistical Manual of Mental disorders, Fifth Edition[19]. Estimates of more recent or current abuse for those with mental illness in community samples in the United States of America (USA) range from 20% to 40%. These rates are higher than those for the general population[7]. Surveys in the USA, United Kingdom (UK) and Sub-Saharan Africa have reported high rates of comorbidity, particularly substance misuse in people with serious mental illness. The overall prevalence of substance use in people affected with first episode psychosis is approximately double that in the general population of similar age[22]. Abou-Saleh documented prevalence rates of psychiatric disorders of 30% in alcohol dependence and 45% in drug dependence, compared with 12% prevalence in the non-dependent population[1]. Several epidemiological studies completed in the past two decades have documented high prevalence rates of serious mental disorders co-occurring with

substance use disorders, and have indicated that at least one half of the patients in psychiatric and substance use treatment have been diagnosed with comorbid psychiatric and substance use disorders[9]. Most studies use samples taken exclusively from either mental health treatment or substance abuse treatment settings, but it is clear that patients with co-occurring disorders are found in both systems[9]. Ten Sub-Saharan African countries are among the 22 in the world with the highest increase in per capita alcohol consumption; with cannabis widely used and heroin use increasing[3]. Alcohol remains the substance most often used by South Africans (38.7%)[8]. Recent reports by the World Health Organization and the United Nations Office on Drugs and Crime show that per capita consumption of alcohol and the cultivation, trade, and consumption of cannabis are increasing in most African countries, with an inevitable increase in health and social problems[3]. Despite these increases, there is a lack of resources and programmes to deal with the problem.

Comorbidity is greater in those meeting criteria for dependence of illicit drugs; and individuals with multiple dependencies experience the highest rates of psychiatric comorbidity[20]. Previous epidemiologic data suggests that of the individuals who have a current addictive disorder, almost half have a co-occurring mental disorder; and among individuals who have a current mental disorder – between 15% and 40% have a co-occurring addictive disorder. These studies further state that the temporal relationship between the disorders and the high proportion of primary lifetime conditions suggests that most are primary independent disorders – that is, one did not cause the other. Further implying that these people with co-occurring disorders will need treatment for both their mental illness and substance use problem[5]. Studies have shown that 45% of individuals with alcohol use disorders and 72% of individuals with drug use disorders had at least one co-occurring psychiatric disorder. The risk relationship appears to be reciprocal, with the presence of a psychiatric disorder predicting increasing risk of later substance use and vice versa[20]. It must

be kept in mind that the majority of patients may be unmotivated to change their substance use at the onset of treatment. Also, the patients symptoms might be a factor in the maintenance of substance use, and the drug and alcohol use might exacerbate the symptoms[7]. Addictive disorders are widespread in South Africa and other parts of Sub-Saharan Africa, and are on the increase. Alcohol remains the main psychoactive substance produced and consumed, and is associated with serious health and socioeconomic problems[3].

1.3) BURDEN OF SUBSTANCE MISUSE AND MENTAL ILLNESS ON SOCIETY

Comorbidity has major consequences. Individuals with co-occurring disorders have poorer treatment outcomes[5]. Subjects with comorbid disorders have higher service utilization rates than those with pure disorders[2]. Comorbidity has been linked to more severe symptoms, greater functional disability, longer illness course, more frequent hospital admissions, greater incidence of non compliance, delayed onset of symptom recovery, and higher rates of suicidality[2, 10, 21, 22]. This obviously has a negative impact on disease and economic burden, and healthcare overall. Thus, comorbidity represents an enormous public health problem. Comorbidity is also associated with increased risk of violence, and worse clinical and social outcome. The UK National Confidential Inquiry into Suicide and Homicide has reported substance misuse as a factor in over half of homicides and suicides by people with serious mental illness. Moreover, this group has been found to have high rates of criminality and blood-borne infections (including HIV, Hepatitis B and C)[1].

In South Africa, patterns of substance use have led to emerging problems such as HIV/AIDS, violence and marital disharmony within the home, poor family interaction, juvenile drinking in the home and delinquency, poor school attendance and performance, sexual problems,

underachievement, decreased work productivity, social dysfunction and homelessness, as well as financial and health problems. Often those most affected by alcohol head the household, resulting in social and economic problems in the family, poverty and child neglect[8]. It is also associated with poor treatment outcome and poor quality of life. Also, in a population where there is already a high prevalence of communicable diseases and increasing prevalence of noncommunicable diseases, such as diabetes and hypertension (and the complications thereof), life expectancy is lower, and access to health care is limited due to limited resources. National surveys and studies in the USA have mirrored the above findings[23]. This is significant as it renders a proportion of the population potentially unemployable and disabled; and continues to be a widespread and substantial public health concern. Treatment costs are also higher for those with a dual diagnosis, as compared to a person who has only one primary disorder[5].

In South Africa, a substantial proportion of the population are unemployed and homeless. Homeless people who have both mental illness and a diagnosis of substance abuse are an especially difficult population to treat, as their problems are numerous and severe. People with dual diagnosis spend more days homeless and report more involvement within the criminal justice system. They also have a lower subjective quality of life[24]. A study by Drake et al documented better treatment outcomes in this population with an integrated treatment approach[25]. It was also found that frequent contact with members of Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) was associated with a reduction in alcohol use[26]. Substance misuse is a major risk factor for violence and disturbed behaviour in patients with a major mental disorder. Men with a major mental illness are 2.5 times more likely to commit a crime than men without mental illness and those people with alcohol dependency are at an even greater risk[27].

1.4) ALCOHOL USE IN SUB-SAHARAN AFRICA

All Sub-Saharan African states are classified as developing or low-income countries. They have many languages, cultures and heritages, and are at different stages of economic development and political stability. Limited information on alcohol and illicit substance misuse exists in these areas for many reasons – mainly due to limited resources for research and opportunities for publication. However since the 1960's there has been rapid socioeconomic development and sociocultural changes across the African continent – resulting in rapid changes in the production, distribution and availability of alcohol, and the ways in which it is consumed. Also, European types of beverages and commercial production of new alcoholic drinks has been introduced, making it more widely and easily available. There has been a significant increase in alcohol consumption in Sub-Saharan Africa during the last 30 – 40 years. Uganda (one of the east african countries) has the highest per capita consumption of alcohol in the world[3].

The tendency to drink to intoxication on each drinking occasion has been noted in the World Health Organisation (WHO) global report under heavy episodic or binge drinking. It is stated in the report that several African countries have the highest rates of episodic heavy drinking, involving 52% of males and 40% of females in Nigeria[3]. In a community survey of adults in South Africa, it was found that alcohol abuse was the most prevalent lifetime health problem, affecting 11.4% of the population surveyed; of which 2.6% met the criteria for alcohol dependence[3].

Prenatal use of alcohol exposes children to potentially devastating consequences of this teratogen – manifesting as growth retardation, microcephaly, mental retardation, characteristic dysmorphic facial appearance, as well as possible behavioural and learning problems. Collectively this phenomenon is known as Fetal Alcohol Syndrome (FAS)[28]. A South African study by Viljoen et al found that mothers with Fetal Alcohol Syndrome children had started drinking alcohol at an earlier age, had higher rates of heavy alcohol use in their families, were recurrent drinkers, and were drinking before and during pregnancy[29]. This further highlights the negative consequences and burdens placed on society due to ongoing alcohol usage; as well as point out possible areas for intervention.

Where data is available, it shows that in all African communities, young males are more likely to drink alcohol than young females, alcohol use increases with age, and many believe the purpose of drinking is to get drunk. One study in Zimbabwe found that alcohol use was more prevalent among students with western cultural orientation than among those with traditional cultural orientation[30].

1.5) ILLICIT DRUG PROBLEMS IN AFRICA

Cannabis remains the most widely available illicit drug in Africa[3]. Production, trafficking and consumption of illicit drugs is prevalent in Cameroon, Ethiopia, Kenya, Zimbabwe, Cote d'Ivoire, Ghana and Senegal – but is most acute in South Africa and Nigeria. In all the above

listed countries, the most prevalent use of cocaine and heroin is in South Africa, with the least amount used in Ethiopia. The most common method of drug usage is by smoking, and is mainly confined to cities and townships. Methaqualone and LSD (Lysergic Acid Diethylamide) is widely used in South Africa[3]. Since 2004, methamphetamine has become the primary drug of abuse in the Western Cape of South Africa. The use of heroin has steadily increased and so has the use of methcathinone (CAT)[8].

The WHO and United Nations Drug Control Programme performed a study involving South Africa, Tanzania and Zambia. They elicited that substance use was common in all three countries, and that the main substances used were alcohol, tobacco, painkillers and cannabis. They concluded that use and trade in illicit substances was common and often supplements families' incomes[31]. A study carried out using university students as participants in Kenya found that lifetime use of alcohol was 84.2%, with cannabis use being 19.7%. 20% of students reported that they started using drugs in primary school[3]. Inhalant (volatile solvent) use is widespread among children and adolescents in Africa, especially those from the poorest economic backgrounds and broken families, those who have dropped out of school, are street children, or who are difficult to reach[3].

Cape Town, South Africa, continues to experience a dramatic increase in the use of crystal methamphetamine (known as Tik), which has become the primary substance of abuse there. Substance misuse is most prevalent among males in this area, with trends suggesting roughly a male female ratio of 8:2[8]. Also, the use of all drug types has increased in younger populations, with younger cohorts starting to use 'harder' drugs (such as cocaine, heroin and

nyoape) at a younger age[8.] Results from The South African Stress and Health Study found that high rates of substance misuse were associated with living in an urban setting, high unemployment rates, and not completing high school. The study also found that alcohol was the most common substance used[8].

In South Africa, literature has documented a relationship between drug use and criminal behaviour. In a study carried out on people who had been arrested and detained in 8 police stations in South Africa, results revealed high levels of drug use among those detained; and 45% of these individuals tested positive for either cannabis or mandrax[3]. Substance related problems in South Africa have increased dramatically over the past 10 years[8]. Such challenges faced include road traffic accidents, violence (including domestic violence) and severe crime committed under the influence of substances[8]. A Ugandan study found that women whose partners consumed alcohol before having sex faced a risk of domestic violence 5 times higher than that of those whose partners did not drink before having sex[3].

Mentally ill patients may initiate drug use to self-medicate psychiatric symptoms, or some may develop mental disorders as a result of drug use. However, the comorbid occurrence of mental and substance use disorders in patients may also be a coincidental finding. As discussed above, patients with psychiatric disorders have an increased incidence of substance use disorders when compared to the general population. A study done by Weich et al at Stikland Hospital in the Western Cape, South Africa, documented that a comorbid substance use disorder (abuse or dependence) was diagnosed in 51% of patients; and that substance use disorders are prevalent among psychiatric inpatients and contribute to their morbidity. It is

also noted that few patients had ever received any interventions for their substance use disorder prior to admission – such as psycheducation, detoxification or rehabilitation[32]. Another Cape Town based study demonstrated that South Africa has a particularly high lifetime prevalence of substance use disorders; with early age at onset. Thus providing a possible important target for the planning of local mental health services[33].

1.6) SUBSTANCE MISUSE AND PERSONALITY DISORDERS

Personality Disorders are highly prevalent co-morbid conditions among individuals addicted to substances[34]. Borderline personality disorder (BPD) and substance use disorders are two forms of psychological problems that are often diagnosed within the same person, and occur frequently. Borderline personality disorder diagnosis rarely occurs in isolation, and is often accompanied by a mood or substance use disorder diagnosis[35]. Substance use can contribute to problems of affective instability, impulsivity, and interpersonal problems (all features of borderline personality disorder). Also, individuals with borderline personality disorder might turn to substance use to 'self-medicate' the affective disturbance or to cope with feelings of emptiness or abandonement[35].

Substantial levels of impairment characterize borderline personality disorder. Individuals diagnosed are prone to attempt suicide, to seek out and utilize health care services, as well as to report significant levels of functional impairment. Rates of completed suicide for borderline personality disorder patients are estimated to be between 5 and 7%, and case-based studies indicate that borderline personality disorder is the most prevalent axis II diagnosis[36]. Also, borderline personality disorder appears to be an independent risk factor for suicidal behaviour over and above what can be accounted for by substance use disorders or other axis I psychopathology[35]. In a review of multiple studies that examined comorbid rates of

substance use disorders and borderline personality disorder diagnosed individuals, 57.4% of borderline personality disorder participants received a substance use disorder diagnosis; while 48.8% met criteria for an alcohol use disorder[35]. Thus indicating that substance use disorders are prevalent in those with borderline personality disorder diagnosis. It can be hypothesized that the personality traits of affective instability and impulsivity are central to the development of both borderline personality disorder and substance use disorder, and, thus can account for much of the comorbidity between these disorders. It has been documented that borderline personality disorder is diagnosed at higher rates among women in general clinical samples and among women with substance use disorders[35].

With regard to antisocial personality disorder, prevalence rates have been shown to be high with regards to specific substance use[37, 38]. It is noted in multiple studies that drug abuse remains highly and significantly associated with other substance use disorders and antisocial personality disorder[21]. Recent data supports the relationship between antisocial personality and violence, especially when substance abuse is also present[39, 40, 41].

According to a recent study by Fenton et al, antisocial personality disorders were significantly associated with persistent alcohol and cannabis use disorders. Narcissistic, schizoid and obsessive-compulsive personality disorders were less consistently associated with substance use disorder persistance[42]. The association of antisocial personality disorder and its childhood antecedent, conduct disorder, with the risk for occurrence of substance use disorders is well known. In cross sectional general population research, all ten DSM-IV personality disorders were shown to have strong association with alcohol dependence and drug abuse and dependence. Further, personality disorders, by definition, characterized by extended duration, are associated with considerable impairment in functioning among those with alcohol dependence compared with those without personality disorders. However, the

relationship of personality disorders other than antisocial to the persistence of substance use disorders has been studied far less[42].

In the above study, antisocial, borderline, narcissistic and schizotypal personality disorders were found to be associated with persistent alcohol dependence[42]. Also important to note is that many treated substance abusers with antisocial personality disorder have other personality disorders, and aspects of substance outcomes may differ between antisocial substance abuse patients with and without other personality disorders.

In an American study, the prevalence of narcissistic personality disorder among subjects with substance use disorders was 11.8%[43]. The prevalence of narcissistic personality disorder was significantly greater among men than women with alcohol use disorder and drug dependence. The prevalence of narcissistic personality disorder in the general population was 6.2%[43]. The rates of narcissistic personality disorder were generally greater among individuals who were separated, divorced or widowed[43]. Also significant was that they found that men with narcissistic personality disorder had higher rates of most substance use disorders and antisocial personality disorder, whereas women with narcissistic personality disorder generally had higher rates of major depressive disorder and anxiety disorders[43].

1.6.1) SUBSTANCE MISUSE WITH REGARD TO GENDER DIFFERENCES

Compared with women with borderline personality disorder, men with borderline personality disorder appear to have more lifetime substance abuse disorders and antisocial personality traits[44, 45]. Gender appears likely to influence the degree of the substance use disorder and borderline personality disorder comorbidity, as well as prominent symptoms and associated clinical problems. Multiple findings have indicated that men with comorbid borderline

personality disorder and substance use disorders are more likely than women to present with multiple versus single substance use disorders[35]. Overall rates of substance use are significantly higher for males than females (for all substances except sedatives and tranquilizers). However, patterns of use, abuse, or dependence among users differ by age group and drug[46].

According to a London based study by Farrell, significant gender differences were found in the levels of alcohol consumption, with more men likely to report heavy drinking than women. Conversely women were more likely to be abstainers or to be occasional drinkers of alcohol compared to men. Heavy drinking was more prevalent among men aged 25 – 34 years, where about 35 % were classed as heavy drinkers – compared with 15% of women. Also, 8% of men, and 2% of women were classified as alcohol dependent in this study. Men were also significantly more likely to have used an illegal or non-prescribed drug in the past[6].

Men who are younger, widowed/separated/divorced, of lower socioeconomic status, and living in urban areas are more likely to have antisocial syndromes and behaviour. In an American study virtually all associations between antisocial personality disorders and specific substance use disorders were positive and statistically significant[37]. Thus implying that comorbidity of specific substance disorders with antisocial personality disorders or syndromes is common, and more prevalent in the male gender. According to literature, not only are females much less likely to meet antisocial personality disorder diagnostic criteria, those that do are more likely to attribute their behaviour to substance use problems[47].

Recent literature shows that prevalence of narcissistic personality disorder is 6.2%, with rates greater for men (7.7%) than women (4.8%). An inverse relationship of narcissistic personality disorder with age is also observed[43]. Narcissistic personality disorder is associated

with considerable disability among men, whose rates exceed those of women. In a study by Stinson and Dawson, rates of alcohol abuse and dependence, and any other drug use disorder, was greater among men with narcissistic personality disorder than among women with narcissistic personality disorder; whereas women with narcissistic personality disorder had greater rates of mood and anxiety disorders (except panic disorder without agoraphobia and social phobia). In the total sample, prevalence of narcissistic personality disorder among subjects with substance use disorders was 8.8%[43].

With regard to other personality disorders, men with narcissistic personality disorder were significantly more likely than women with narcissistic personality disorder to have antisocial personality disorder, whereas women with narcissistic personality disorder were significantly more likely than men with narcissistic personality disorder to have borderline personality disorder[43].

Substance abuse and dependence may reflect attempts on the part of men with narcissistic personality disorder not only to re-establish or maintain grandiosity, but also to defend against the negative affect accompanying dysthymia that often accompanies aging and life's inevitable limitations. Together, this suggests a propensity of men with narcissistic personality disorder of self-medicating to maintain a sense of omnipotence and grandiosity, to protect a fragile self-esteem, and to ameliorate feelings of depression, guilt, and worthlessness associated with dysthymia[48]. Also noted in literature has been a strong association between dependent personality disorder and drug dependence among men[49].

1.6.2) ALCOHOL MISUSE AND PERSONALITY DISORDERS

It remains difficult to accurately define the relationship between personality disorders and alcohol dependence. The reported prevalence of personality disorders in alcoholics ranges from as low as 22 – 40% [50]. In a study by Escheburua et al, of the alcohol dependent sample, 44.3% showed at least one personality disorder. Obsessive-compulsive personality disorder was most prevalent (12%), followed by antisocial, paranoid and dependent personality disorders (7% each), narcissistic (6.3%) and finally borderline and histrionic personality disorders (5.1% each). The most frequently diagnosed personality disorders among the non-addicted patients were obsessive-compulsive personality disorder (9.2%), dependent personality disorder (6.1%), followed by paranoid personality disorder (4.2%). With respect to the three clusters of personality disorders, the presence of cluster B and C was higher among the alcoholic group[24]. Also, the high rate of comorbidity with personality disorders is different from and much higher in alcohol dependence than in any other Axis I mental disorder[50]. The above study also noted some preliminary conclusions, namely that obsessive-compulsive, histrionic, schizoid and antisocial personality disorders are more frequently found in alcoholic women; whereas dependence is more frequently found in alcohol-dependent men[50]. Results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) has found that twelve month alcohol dependence was significantly associated with only two axis II disorders, namely histrionic and antisocial personality disorders[51]. Findings from this study are consistent with previous studies which have documented that men are at greater risk of alcohol use disorders than women[51]. Dependence is clearly associated with increased rates of psychiatric disorders. It is mandatory that all clinicians assessing individuals with alcohol dependence screen for other psychiatric disorders too[6].

1.6.3) ALCOHOL ABUSE AND DEPENDENCE

Alcohol abuse and dependence is highly prevalent and disabling. Disability increases steadily and significantly with alcohol dependence severity. Alcohol dependence shows strong, significant associations with all other substance and psychiatric disorders; indicating that alcohol dependence remains highly comorbid with other disorders[51]. In a group of 900 HIV positive individuals studied in South Africa, depression was the most common psychiatric disorder, followed closely by alcohol abuse disorder. Thus highlighting its prevalence as a challenge in the general population, and in smaller subgroups[52].

A study by Hasin et al highlights that borderline personality disorder is a robust predictor of the persistence of alcohol use disorders[42]. Persistent alcohol dependence can also be predicted by narcissistic personality disorder[42]. A prospective study performed suggested that narcissistic personality traits predicted problem drinking during medical training[53].

An American study showed that among individuals with a current alcohol use disorder, 28.6% had at least one personality disorder, whereas 47.7% of these with a current drug use disorder had at least one personality disorder. Further, 16.4% of individuals with at least one personality disorder had a current alcohol use disorder[49]. Associations between personality disorders and alcohol use disorders were overwhelmingly positive and significant[49]. Overall, alcohol use disorders were most strongly related to antisocial, histrionic and dependent personality disorders.

1.6.4) CANNABIS USE

Cannabis is the most widely used illicit drug globally. Its use appears to be increasing in developed and developing countries. One in six adolescents who use cannabis in developed countries will develop dependence. Dependence carries an underappreciated risk; and is

associated with the use of other illicit drugs, which may lead to mood and psychotic disorders[54]. Three personality disorders have been found to predict persistent cannabis use disorders, namely antisocial, borderline and schizotypal personality disorder[42].

In conclusion, most of the South African and African literature focuses on prevalence of substance use disorders, but not much attention is paid to the impact of personality disorders or other axis 1 pathology on the above, and the interaction thereof. It would appear that research is lacking with regards to substance misuse and personality disorders in the South African context.

HYPOTHESIS

The hypothesis of the current study is that there is a high incidence of alcohol and substance use disorders in patients with personality disorders. This high prevalence necessitates a growing need to provide adequate psychiatric services for these comorbid patients, in the form of a dual diagnosis unit.

The objectives of the study were as follows:

1. To establish the rates of alcohol abuse and dependence in people with personality disorders admitted to the Tara Hospital Psychotherapy Unit.
2. To determine the rate of comorbid substance abuse and personality disorders in patients admitted to the Psychotherapy Unit at Tara Hospital.
3. To research if there are differences in the rates of abuse and dependence for the various substance use disorders.

4 To research gender differences in the rate of comorbid substance use disorders in patients admitted to the unit.

5 To research if there are gender differences in the choice of substances of abuse.

2) METHODS

This study is a retrospective, descriptive study that involved a review of patient files from the Psychotherapy Unit (Ward 4&5) at Tara Hospital, over a 12 month period. Tara Hospital is located in Sandton, Johannesburg, and caters for the population in Northern Johannesburg and surrounding areas. The facility is a tertiary hospital, and is a specialised psychiatric institution. Ward 4&5 has a psychiatric registrar that rotates every 6 months as part of their required training; as well as a full multidisciplinary team, psychologists, occupational therapists, psychiatric nurses and a consultant psychiatrist.

To accomplish the detailed literature review, resources were obtained by performing extensive searches in the Google scholar, PubMed, Cochrane library and Up To Date databases.

The study population comprised all files of patients who were admitted to the Psychotherapy Unit at Tara Hospital from 01st January to 31st December 2012. This sample included people who have an Axis II personality disorder diagnosis. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition describes a personality disorder as an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individuals' culture, is pervasive and inflexible, has an onset in adolescence or early

adulthood, and leads to stress or impairment[19]. The different personality disorders are: Paranoid, Schizoid, Schizotypal, Antisocial, Borderline, Histrionic, Narcissistic, Avoidant, Dependent, and Obsessive-Compulsive. The discharge summary book from the Psychotherapy Unit was used to ensure that all patients that entered the unit during the study period were included. Information was predominantly drawn from discharge summaries available in the patient's files, as well as additional clinical notes available in patient files if necessary. There were 85 patients included in the study sample. Information for 1 patient was unavailable, as the file was missing.

2.1) INCLUSION CRITERIA:

- The study sample included all individuals over the age of 18, with an Axis II personality disorder, that were admitted to the unit between 01st January 2012 and 31st December 2012. The sample could include patients with illicit, legal and/or over-the-counter substance abuse/dependence.

2.2) EXCLUSION CRITERIA:

- There were no exclusion criteria.

2.3) DATA COLLECTION

The investigator identified and accessed the clinical files from the Tara Psychotherapy Unit and records department manually. Relevant data was extracted from these files. All data collection took place on the premises of Tara Hospital and no records were taken off the premises. Each file was allocated a number so that it remained confidential. Each participants file had a detailed discharge summary in it that was completed upon leaving the ward or

completing the programme, with all relevant information available. All assessments of files by the researcher were done at the unit, and all diagnosis were made according to DSM-IV-TR criteria. Data collection sheets were used to aid the collection process (see Appendix: Data collection sheet). From the clinical files, the following information was obtained:

- Demographic details (including exact age, gender, relationship/marital status, highest level of education, employment status and socioeconomic level).
- Presence or absence of Axis I diagnosis, including details if present.
- Presence of Axis II diagnosis, and specific personality disorder or traits present.
- Substance use disorder, if present (including whether abuse or dependence or both was present).
- Specific substance/s used.
- Whether any referral to a substance use agency or equivalent was made in the past (e.g. SANCA, AA, NA).
- Any record of confirmation of substance testing.
    - Noted if done in blood or urine.
    - Recorded as ‘positive’, ‘negative’ or ‘not done’.

2.4) ETHICAL CONSIDERATIONS

Consent from Tara Hospital CEO, Clinical Head and Research Committee were obtained for data collection from the file records. The Human Research and Ethics Committee of the

Witwatersrand University approved the study on the 24/01/2014, certificate clearance number M130917. In addition, informed consent from the patients and their families was not required as the names of the patients in the study remained anonymous.

2.5) DATA ANALYSIS

Data was captured on a Microsoft Excel spread sheet. Data analysis was carried out using SAS. (SAS Institute Inc., *SAS Software, version 9.3 for Windows,* Cary, NC, USA: SAS Institute Inc. (2002-2010)). Between-group tests were conducted as follows:

The X^2 test was used to assess the relationships between categorical variables. Fisher's exact test was used for 2 x 2 tables or where the requirements for the X^2 test could not be met. The strength of the associations was measured by Cramer's V and the phi coefficient respectively. The following scale of interpretation was used:

0.50 and above = high/strong association

0.30 to 0.49 = moderate association

0.10 to 0.29 = weak association

Below 0.10 = little if any association

The 5% significance level was used throughout, unless specified otherwise.

In other words, p-values <0.05 indicate significant results.

3) RESULTS

3.1) DEMOGRAPHIC FACTORS

A total of 87 patients were admitted to the unit during the study period. 85 patients were included in the study – as 2 patient files were missing. The mean age of the patients was 33.6 years (standard deviation 8.4 years). The ages of patients ranged from 21 – 54 years old, with a median age of 33 years. The patients were predominantly young, with 75% of participants being below the age of 40 years. There were no patients in the 18 – 19 year old age group. The biggest grouping of participants (40%) was found in the 20 – 29 year old age group. Only 3.5 % of participants were found in the 50 – 59 year age group. This is represented below in *figure 3.1.1.*

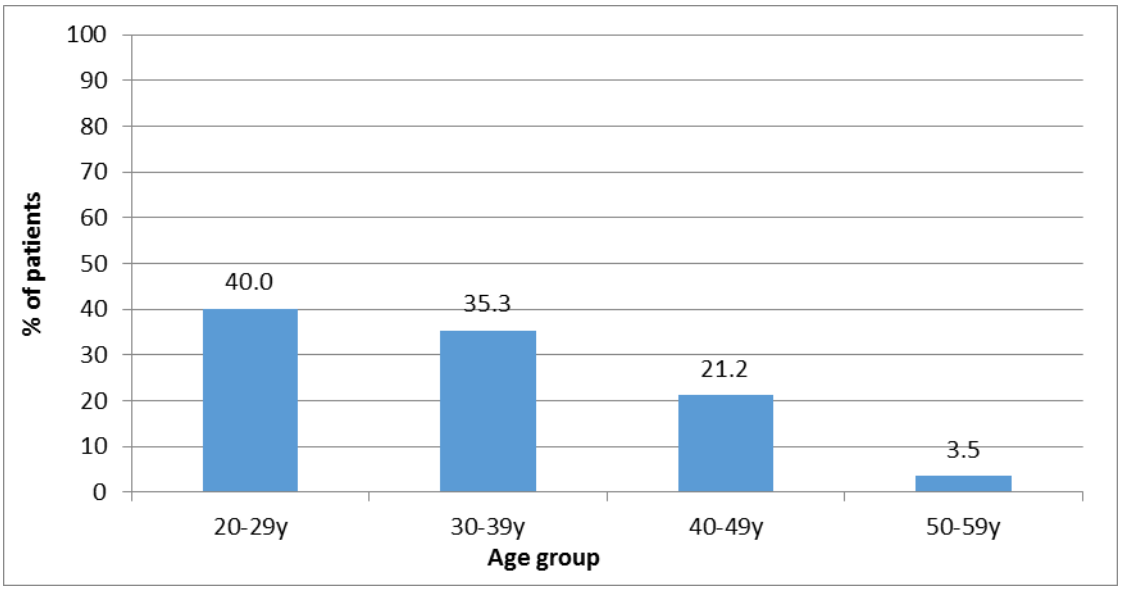


Figure 3.1.1: Distribution of age %

Twenty two percent of the patients were male. Patients were predominantly single (55.3%), with 16.5% currently divorced at time of admission. Fifteen percent were married, and 12.9%

were attached or in a relationship at the time of admission to the unit, as represented in *figure 3.1.2.*

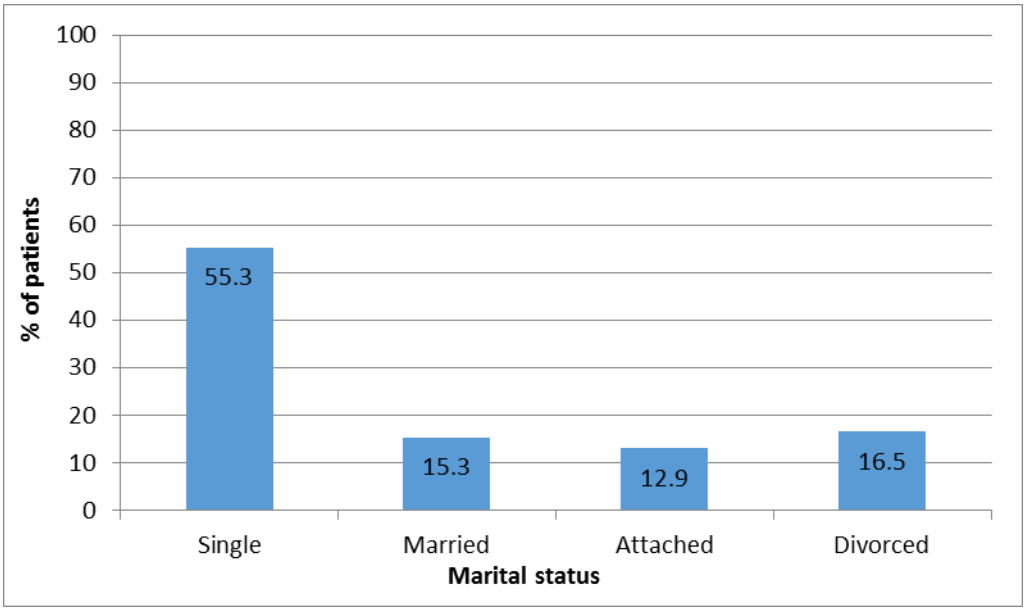


Figure 3.1.2: Relationship status %

In terms of highest level of education attained, 65.9% of the patients had some form of secondary education (see *figure 3.1.3*). Only 5.9% of patients had a primary school education, with 28% of patients having obtained a tertiary level education in the past. Only 19% of patients were employed at the time of admission.

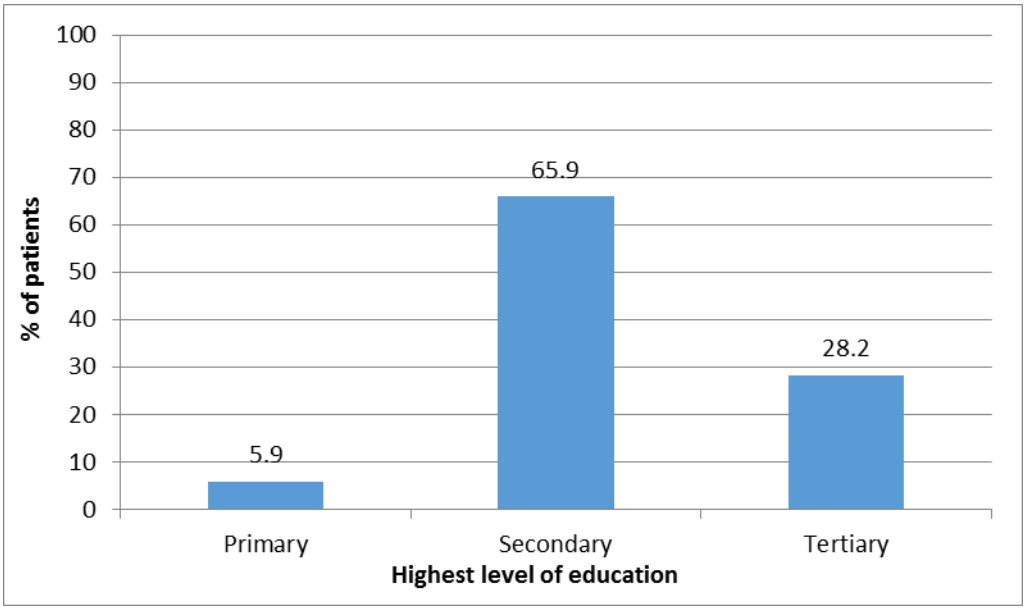


Figure 3.1.3: Highest level of education %

With regards to socioeconomic status, patients were classified into the following groups based on their income per annum. The H0 category is reserved for those who are on pensions or grants, and who receive all services free of charge. Individuals in the H1 category earn an income of less than R36000 per annum, with individuals in H3 category earning an income of greater or equal to R72000 per annum. The majority of patients were classified within the H1 group (68.2%). Ten percent were classified in the H2 category, with 11.8% classified in the H3 group. Refer to *figure 3.1.4.* The H3 group is generally reserved for those who are on private medical aid schemes; with the H1 category commonly covering those who are destitute and unable to pay for admission themselves.

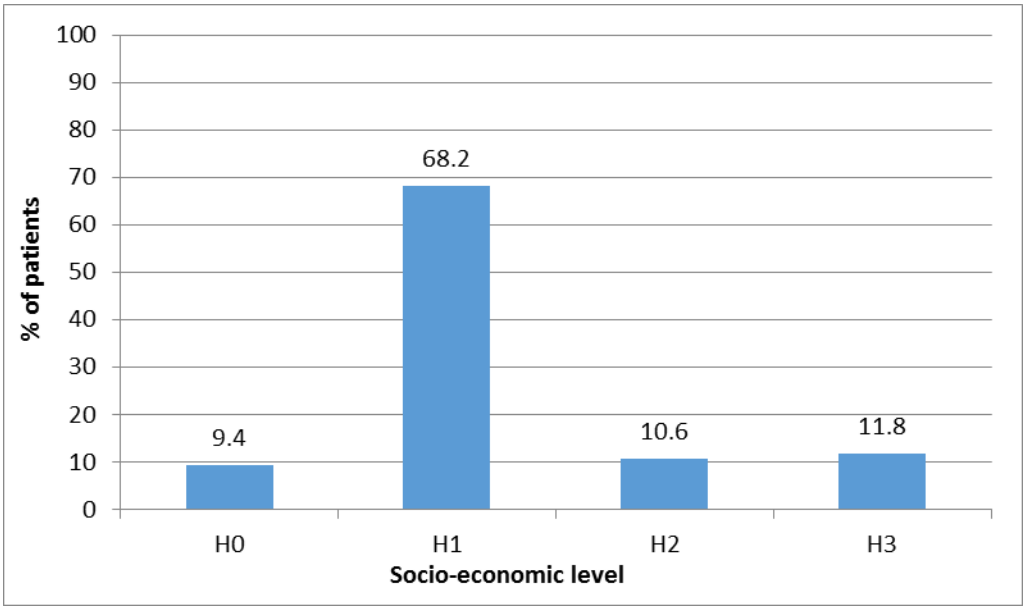


Figure 3.1.4: Socio-economic level %

3.2) AXIS II DIAGNOSIS

All patients included in the study had an axis II personality disorder/ traits diagnosis. Sixty-seven percent of the patients were found to have an axis II disorder, while 16.5% were found to have two axis II personality disorders. *Figure 3.2.1.* represents this information diagrammatically. Note that 16.5% of patients were found not to have an axis II personality disorder, however these individuals were found to have personality disorder traits (see *figure 3.2.2.).* Thirty-four percent of patients were found to have only one personality trait on axis II. Two percent of individuals were found to have three axis II personality traits. As discussed, some patients were found to have more than one axis II diagnosis (see *figure 3.2.3.*). The most common axis II diagnosis was borderline personality disorder (61%). The diagnosis of the various personality disorders was based on clinical interviews, mental state examinations, interactions observed and noted in the ward files; and a variety of group,

individual and specialized psychotherapy tests and techniques. Diagnostic criteria using DSM-IV TR was adhered to. The distinction between personality traits and disorders has been emphasized in order to draw parallels (and differences) between those individuals that may share traits within a cluster (for example: some clusters may be impulsive and reward seeking, and may therefore influence their substance intake).

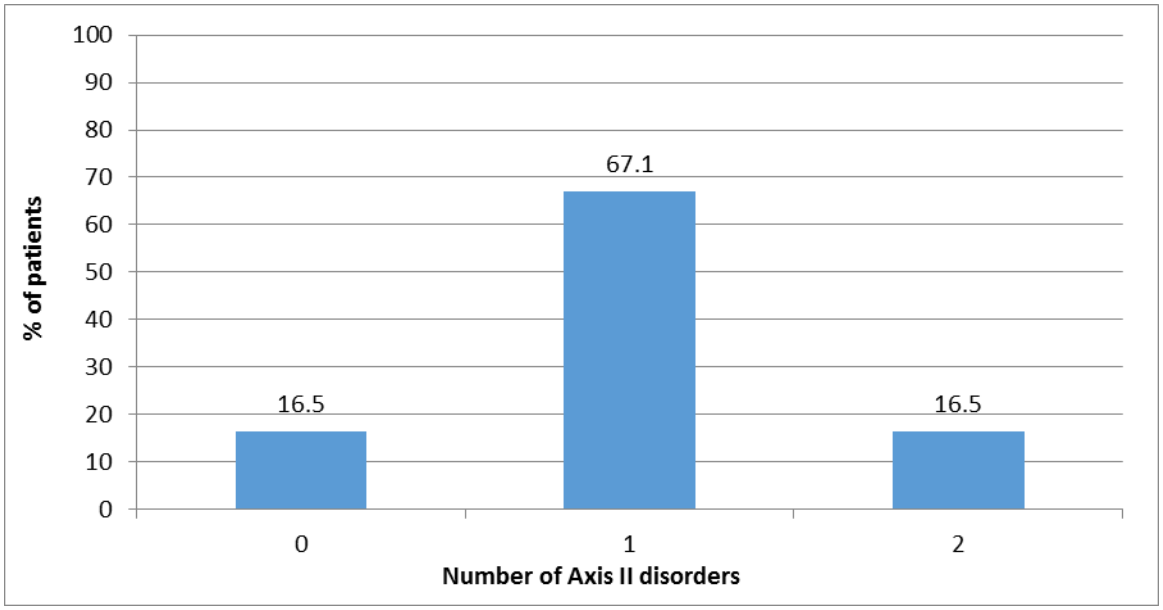


Figure 3.2.1: Axis II Personality Disorders %

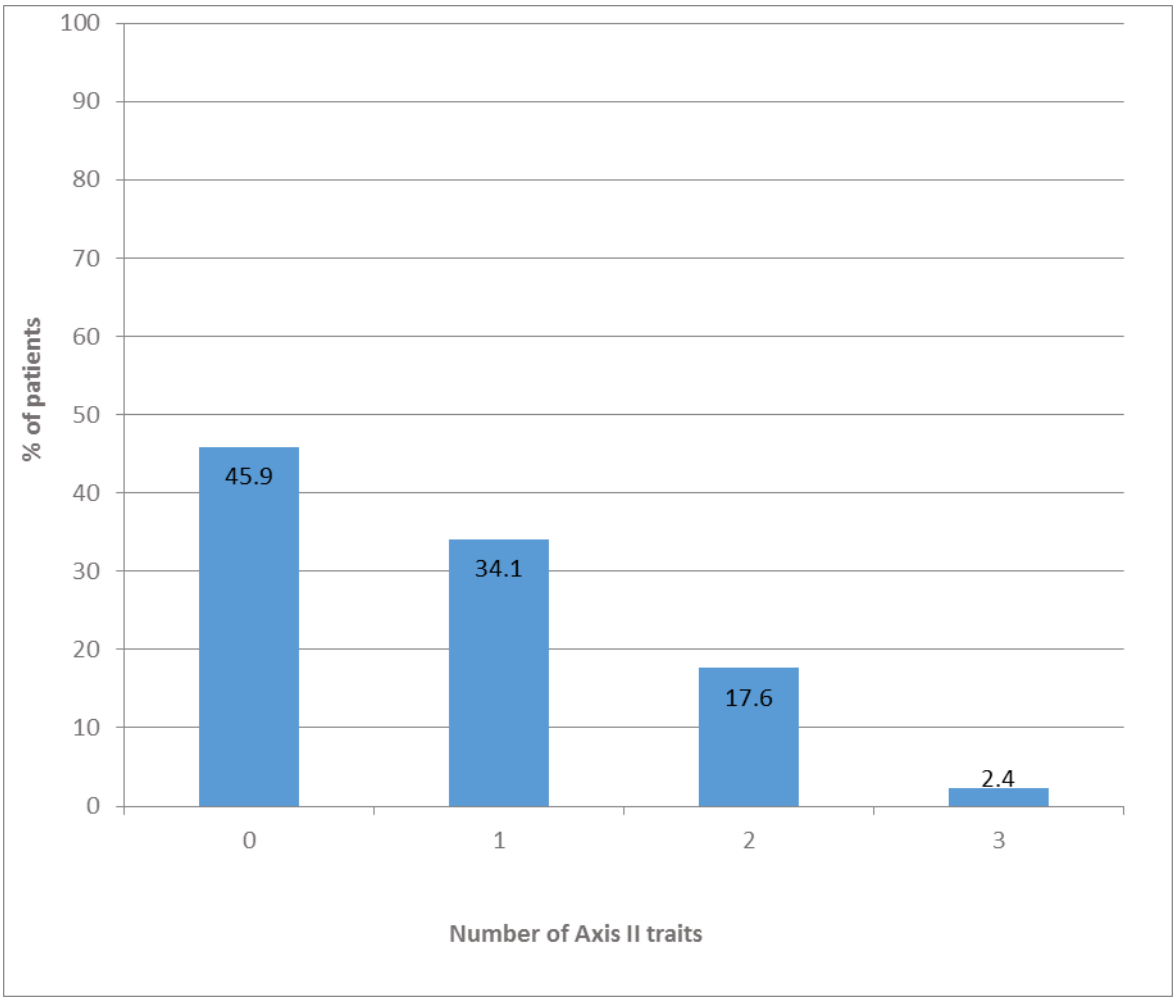


Figure 3.2.2: Axis II Personality Traits %

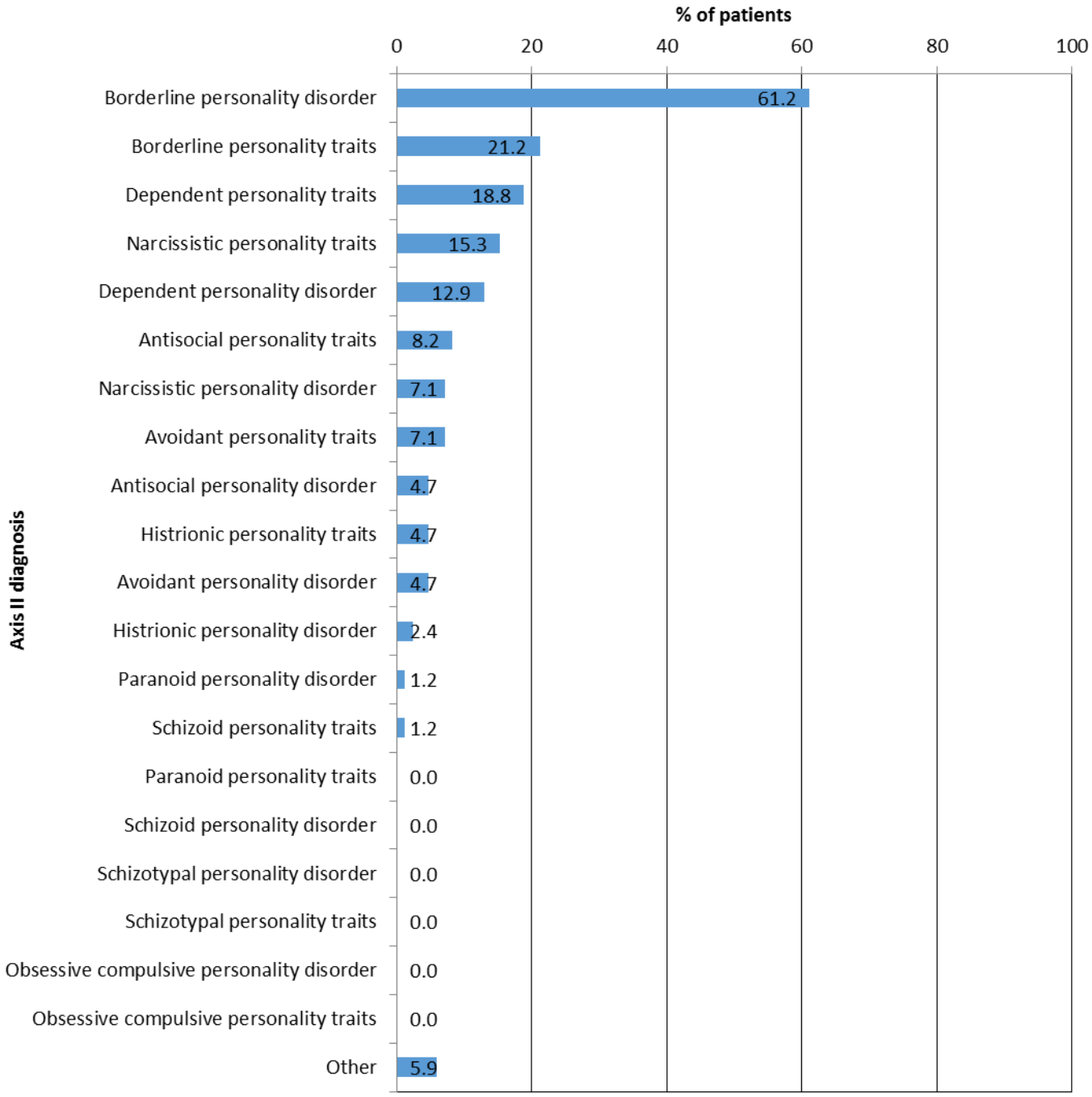


Figure 3.2.3: Axis II diagnosis %

3.3) AXIS I DISORDERS

Sixty-nine of the 85 patients included in the study (81%) had an axis I psychiatric diagnosis according to DSM-IV. Of those 69 patients with an axis I diagnosis, 62% had one disorder, while 32% had two disorders. Less than 10% of patients had three or four diagnosis respectively. See *figure 3.3.1.* below.

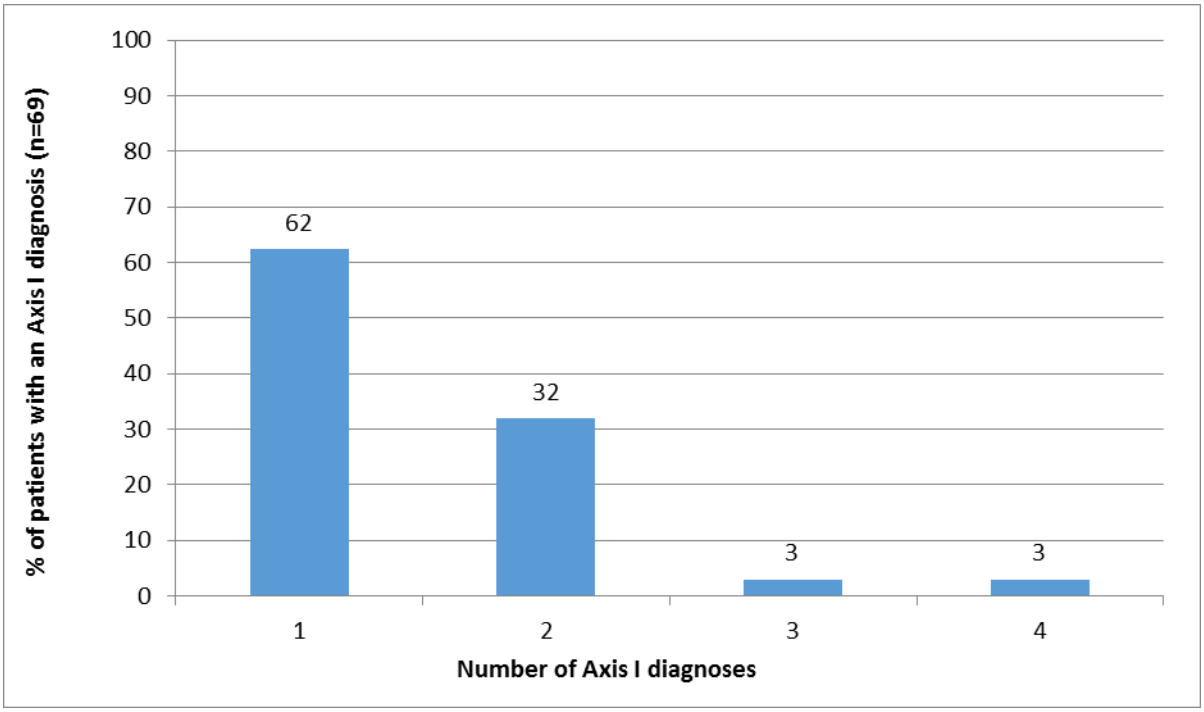


Figure 3.3.1: Axis I diagnosis %

The proportion of patients with each specific disorder is depicted below (*figure 3.3.2*). Note that the percentages do not sum up to 100%, since some patients had more than one disorder.

The most common axis I disorder encountered was major depressive disorder (24.6%). Dysthymia and generalised anxiety disorder was found to be 17.4% respectively. Ten percent of patients had a substance induced mood disorder, 13% had a diagnosis of bipolar disorder I; with 4.3% of patients having a diagnosis of adjustment disorder, bipolar disorder II or post-traumatic stress disorder. Three percent of individuals in the study had conversion disorder, as well as somatoform disorder, and exhibited malingering behaviour respectively. The subset of patients admitted did not include any individuals with sleep or cognitive disorders.

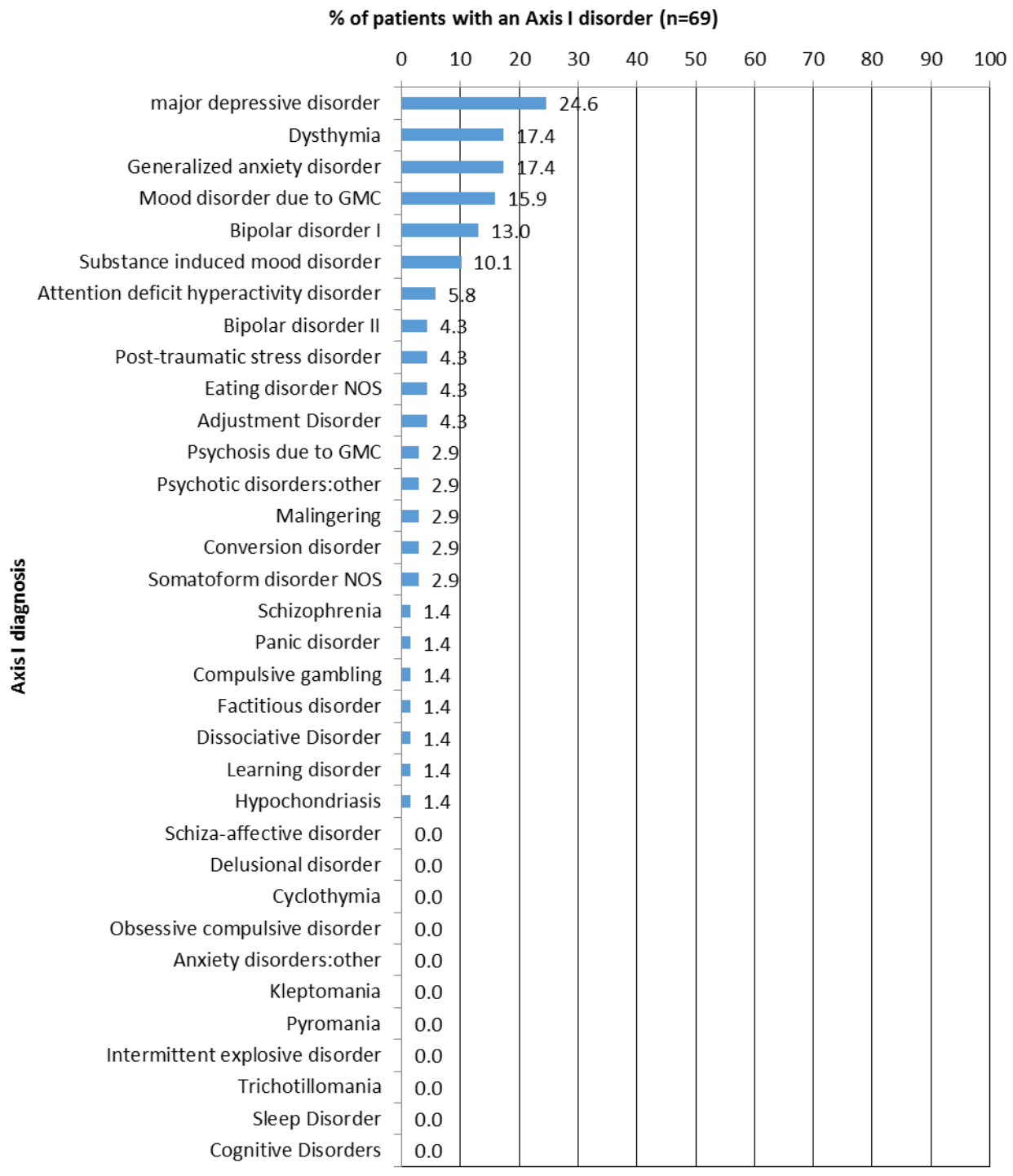


Figure 3.3.2: Specific axis I diagnosis %

Key:

- NOS = not otherwise specified
- GMC = general medical condition

3.4 SUBSTANCE USE DISORDERS

62 of the 85 patients (72.9%) were found to have a substance use disorder (95% confidence interval: 63.5%-82.4%). This information was unavailable for 1 patient. Of the 62 patients who had a substance use disorder, 47 of these patients (75.8%) met the criteria for substance abuse (95% confidence interval: 65.2-86.5%). Alternatively, of the full study group of 84 patients (information for 1 patient is missing), 56.0% (47 of the 84 patients) had substance abuse (95% confidence interval: 45.3-66.6%). Of the 62 patients who had a substance use disorder, 33.9% met the criteria for substance dependence (95% confidence interval: 22.1-45.7%). Alternatively, of the full study group of 84 patients, 21 of these individuals (25%) had substance dependence (95% confidence interval: 15.7-24.3%). Diagnosis was based on clinical interviews, mental state examinations, and was based on DSM-IV criteria. According to patient files, a substance screening test was not done on all patients on admission – this may have been due to patients admitting to substance use, poor note taking or poor ward management.

Of the 62 patients who had a substance use disorder, 9.7% (6 of the 62 patients) had both substance abuse and dependence (95% confidence interval: 2.3-17.0%), while 66.1% (41 of the 62 patients) had substance abuse only (95% confidence interval: 54.4-77.9%), and 24.2% (15 of the 62 patients) had substance dependence only (95% confidence interval: 13.5-34.9%).

Alternatively, of the study group of 84 patients, 7.1% (6 of the 84 patients) had both substance abuse and dependence (95% confidence interval: 1.6-12.7%), while 48.8% (41 of the 84 patients) had substance abuse only (95% confidence interval: 38.1-59.5%). Eighteen

percent (15 of the 84 patients) had substance dependence only (95% confidence interval: 9.7-26.1%).

In terms of the number of substances used, of the 62 patients with a substance use disorder, 42% used one substance, while in other cases up to 6 substances were used (refer to *figure 3.4.1.*). Twenty-four percent of patients used two substances, while 5% of patients used 6 substances. Fifteen percent of patients used four substances. Of the 62 patients with a substance use disorder, 11% had polysubstance abuse.

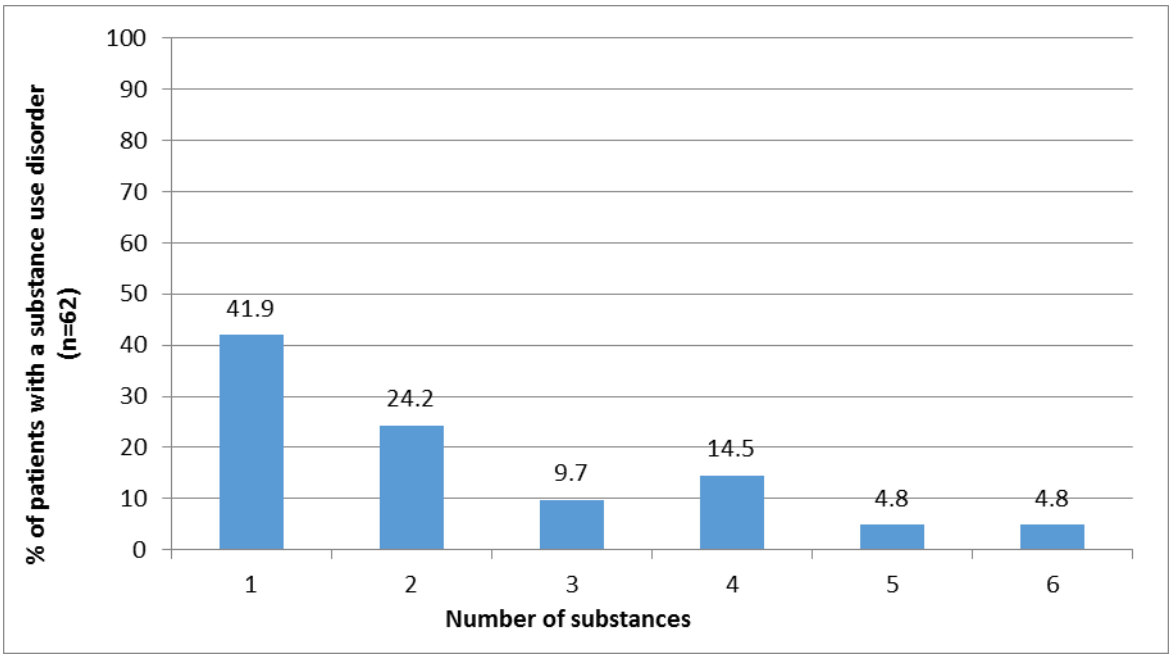


Figure 3.4.1: Number of substances used %

The proportion of patients using each substance is shown below in *figure 3.4.2.* Note that the percentages do not sum to 100%, since some patients used more than one substance. The

most common substances used were alcohol, at 58%; and cannabis, at 45%. Cocaine use was found to be 26% in the patient group, with nyoape use accounting for 2%. Benzodiazepine use accounted for 24%, and methamphetamine made up 23% in the patient group.

In terms of alcohol use, of the 62 patients who had a substance use disorder, 36 of the 62 patients (58.1%) used alcohol (95% confidence interval: 45.8- 70.4%). Alternatively, of the full study group of 84 patients, 42.9% (36 of the 84 patients) had an alcohol use disorder (95% confidence interval: 32.3-53.4%).

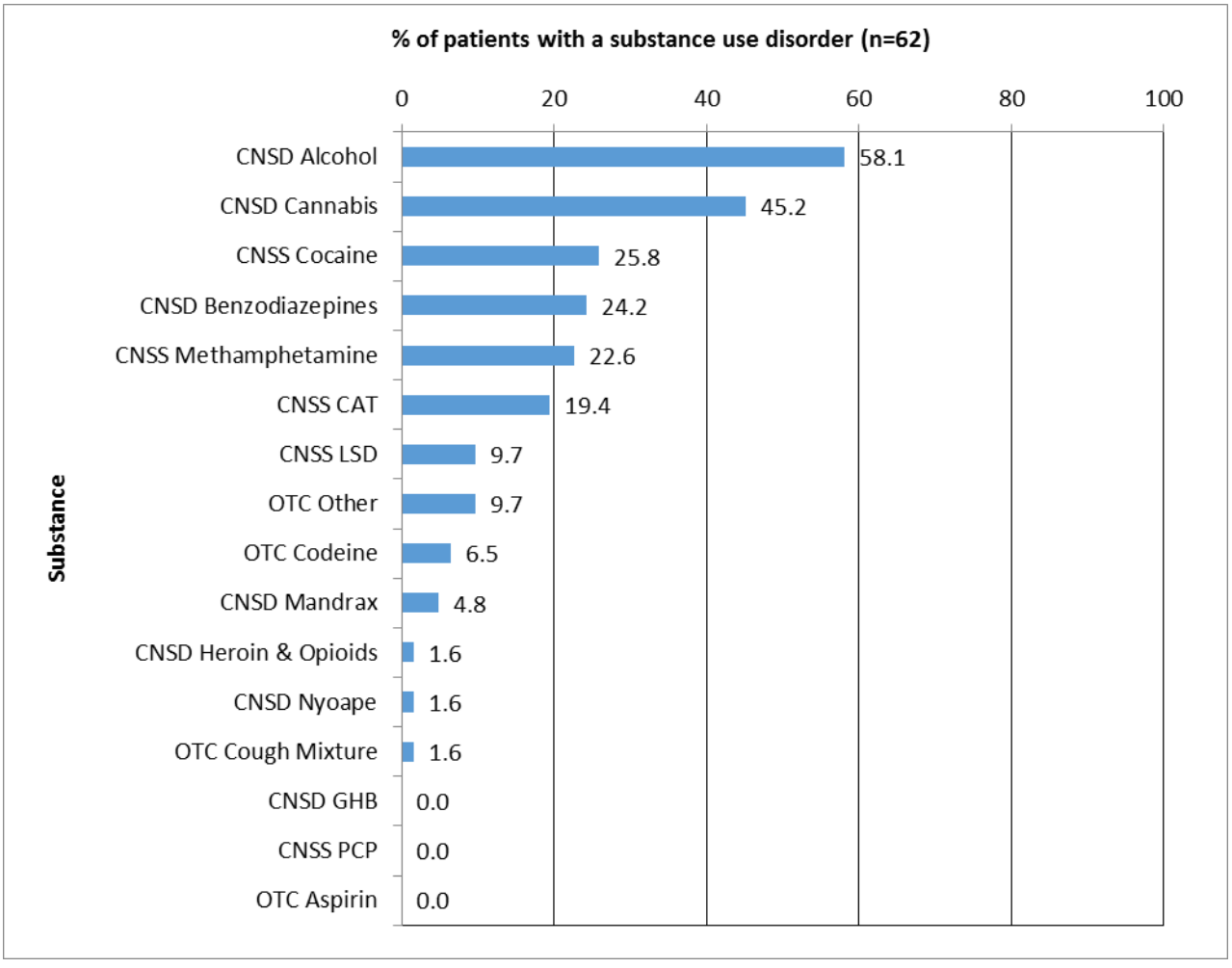


Figure 3.4.2: Specific substances used %

Key: CNSD = central nervous system depressant

- CNSS = central nervous system stimulant
- OTC = over the counter (medication)
- GHB = gamma-Hydroxybutyric acid
- PCP = phencyclidine
- LSD = lysergic acid diethylamide
- CAT = methcathinone

3.5) SUBSTANCE TESTING

Only two patients out of the study group (2.4%) underwent substance testing. Both of these patients underwent urine testing, and not blood testing. One result was positive, and one was negative. Both had substance abuse (not dependence) disorders. Further analysis is meaningless due to the small group size.

3.6) SUBSTANCE USE REFERRAL

Substance use referral information was not recorded in the files in 32% of cases, so this information is of very limited use and the results should be interpreted with caution. Eighteen percent of the study group were referred, all of whom had a substance use disorder.

For the 15 patients who were referred, the referral institutions are shown below in *figure 3.6.1*. Note that the percentages do not sum to 100%, since some patients were referred to more than one institution. Forty-seven percent of those referred were sent to AA (Alcoholics Anonymous). It was not noted or recorded in the files anywhere that any of the patients were referred to NA (Narcotics Anonymous). Of the patients referred, 20% were done so to various rehabilitation facilities. Forty-seven were referred to other facilities.

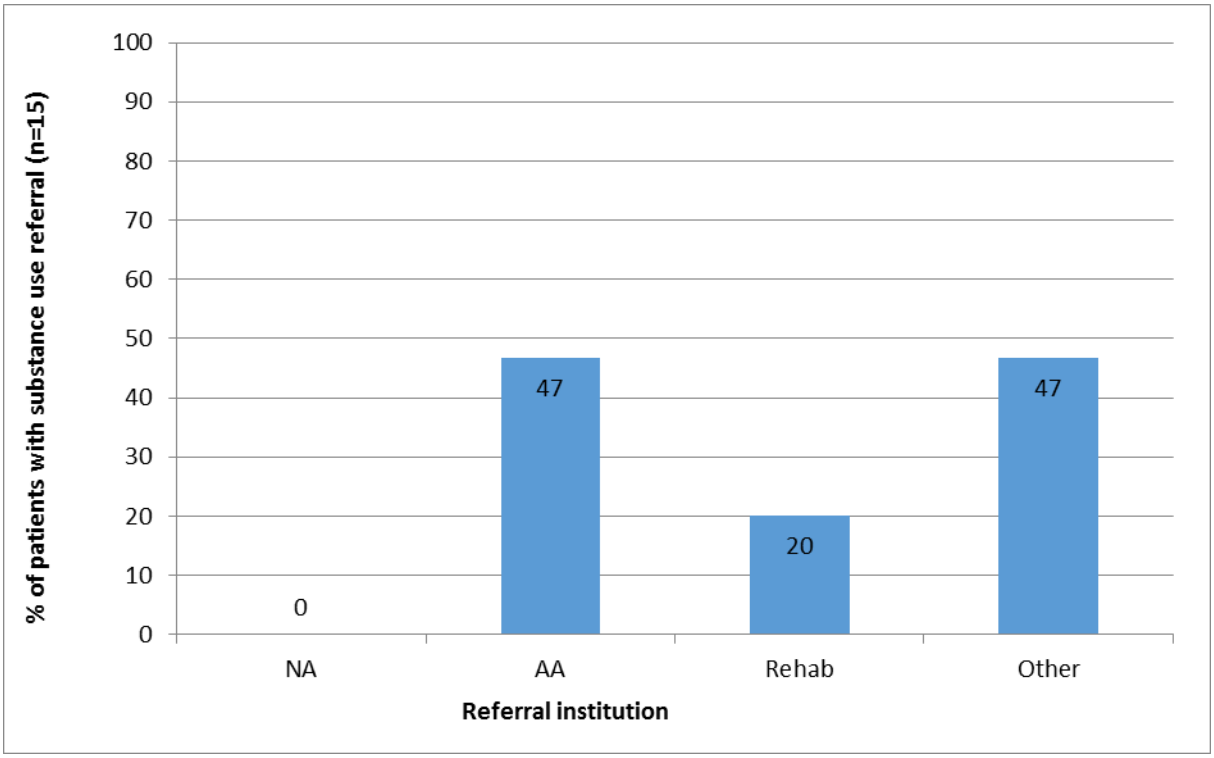


Figure 3.6.1: Referral institutions %

3.7) SUBSTANCE USE DISORDERS WITH REGARDS TO AXIS I AND AXIS II DIAGNOSIS

The following significant differences were found within the data set:

With regards to axis II diagnosis, there was a lower proportion of patients with narcissistic traits amongst those with a substance use disorder (10%) than amongst those without a substance use disorder (32%) (p=0.034; phi coefficient=0.27; weak association).

There was a lower proportion of patients with dependent traits amongst those with a substance use disorder (13%) than amongst those without a substance use disorder (36%) (p=0.026; phi coefficient=0.27; weak association).

With regards to axis I diagnosis, within the 68 patients with an axis I diagnosis, there was a lower proportion of patients with an adjustment disorder amongst those with a substance use disorder (0%) than amongst those without a substance use disorder (15%) (p=0.023; phi coefficient=0.33; moderate association).

The mean age of patients with substance dependence was 36.8 years. The mean age for patients with substance dependence was higher than that of patients without substance dependence (mean 31.7y; sd=7.0y). The effect size was moderate (Cohen's d=0.66).

There was a significant, moderate, association between the number of axis II traits and substance dependence (p=0.018; Cramer's V=0.38). There was a higher proportion of patients with one or more axis II traits amongst those with substance dependence, compared to those who did not have substance dependence (see *figure 3.7.1*). Fifty-seven percent of patients with substance dependence had one axis II trait, compared to 24.4% of patients without substance dependence that had one axis II trait. Similarly, 4.8% of patients with substance dependence had 3 axis II traits, compared with 2.4% of patients without substance dependence that had three axis II traits.

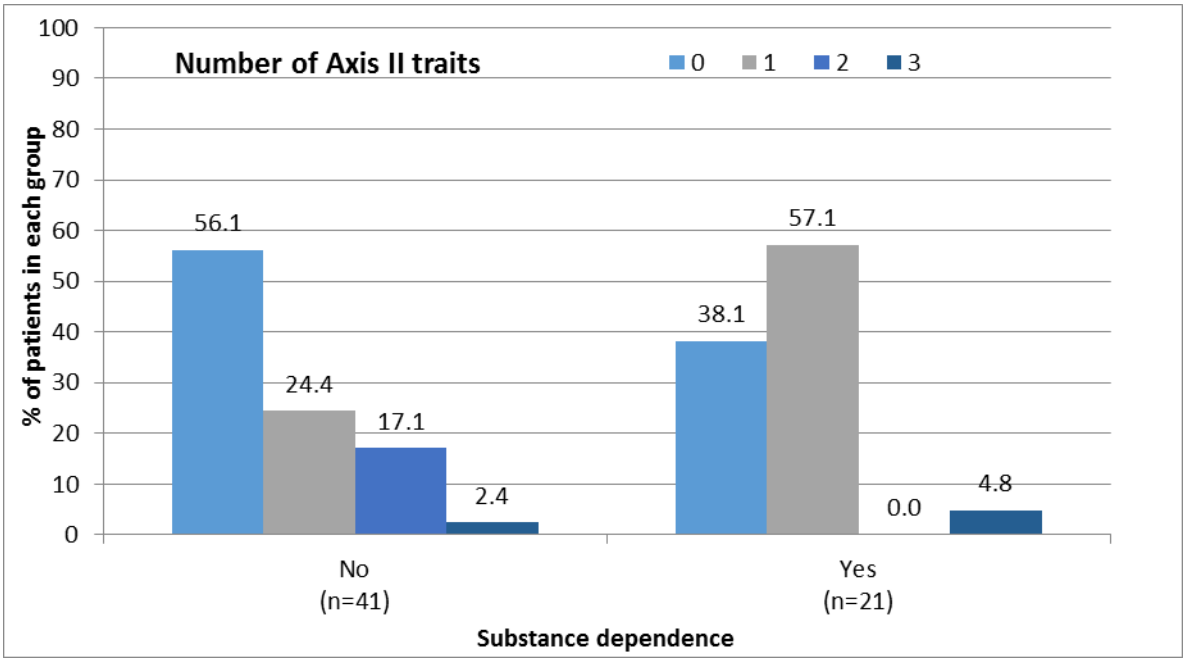


Figure 3.7.1: Association between Axis II traits

With regards to substances used, there was a higher proportion of patients using benzodiazepines amongst those with substance dependence (43%) than amongst those without substance dependence (15%) (p=0.026; phi coefficient=0.31; moderate association).

3.8) GENDER DIFFERENCES

With regards to axis II diagnosis, in the patient sample there was a lower proportion of females with antisocial traits (3%) than males (26%) (p=0.005; phi coefficient=0.35; moderate association). In terms of substances used, there was a higher proportion of males using alcohol (94%) than females (46%) (p<0.0001; phi coefficient=0.43; moderate association). Also, it was found that there was a higher proportion of females using cannabis (54%) than males (19%) (p=0.019; phi coefficient=0.31; moderate association). There was a

higher proportion of females using benzodiazepines (28%) than males (13%). Also noted is a relative difference between cocaine use between males and females in the sample group, with females using cocaine (28%) at a higher proportion than males (19%). Thirteen percent of females used LSD, whereas no males in the sample were recorded as using LSD. There was no use of GHB, aspirin or PCP in the study population. Two percent of females used nyoape, whereas no males used in the study sample. The results were the same for heroin and opioids. A higher proportion of females were using methamphetamines (24%) than males (19%). 19% of males used CAT compared to 20% of females. Values were close with regards to codeine use, with female use at 7%, and male at 6%. Similarly, the proportion of males (6%) using mandrax/methaqualone was similar to females (4%). A slightly higher proportion of females (11%) used a wider variety of other substances, than males (6%).

4) DISCUSSION

This study is a retrospective review of patients 18 years and older admitted to the psychotherapy unit at Tara Hospital, with comorbid personality disorders and substance use disorders. To our knowledge there is no such study documented that has focussed on this subgroup in South Africa and the continent of Africa. There are international longitudinal studies, but none that take into account the various challenges and demands encountered in a South African context by the unique profile of patients presenting at Tara Hospital; or address and study the relevant pertinent substances among this subgroup of individuals.

The hypotheses of this study was that the incidence of alcohol and substance use disorders in patients with comorbid personality disorders would be high. If found to be true, this high prevalence would add further evidence to necessitate the need to provide adequate psychiatric services for comorbid patients, in the form of a dual diagnosis unit, which Tara Hospital currently does not have.

DEMOGRAPHIC FACTORS

Eighty-five patients met inclusion criteria for the study. However only 84 patients were included in the study, as 1 patient file could not be found. The mean age of the patients was 33.6 years, but the biggest grouping of patients was found in the 20 – 29 year old age group. Ages of patients ranged from 21 – 54 years, with a median age of 33 years. In this current study the majority of patients were young, predominantly below the age of 40. An international study done in 2008 found that borderline personality disorder was inversely related to age, with the decline in rates occurring after the age of 44 years[44]. These findings were also consistent with a 10 year longitudinal follow up study of inpatients with borderline personality disorder[55]. Patients with borderline personality disorder and other personality

disorders are more likely to present for admission when in crisis – which is usually during periods of stress.

Patients admitted to the unit were predominantly single, divorced, unemployed and of low income status. A high percentage (65.9%) of these individuals had obtained some form of secondary education. Rates of borderline personality disorder have been noted in research to be significantly greater in those that are separated, divorced, widowed, and among those with low income and education[44, 56]. The fact that a high percentage of our study population obtained a secondary level education and are now unemployed, displays the chronic, debilitating and cyclical nature of such personality disorders, and associated mental illness.

These results have demonstrated that individuals with personality disorders have a high frequency of unemployment, unstable and poor relationships, and present with low income. These unstable relationships lead them to have multiple failed relationships. The results further depict that there is an adult population that requires psychiatric intervention, and thus emphasis should be placed on the need to expand services to cater to this specific group. The current study is consistent with such findings.

AXIS II DIAGNOSIS

Sixty-seven percent of the patients were found to have an axis II disorder, while 16.5% were found to have 2 axis II personality disorders. Individuals could have a combination of one or more personality disorders or traits. Some patients just had personality disorder traits – which means they had some symptoms of the personality disorder, but did not have enough criteria to reach a diagnosis of the personality disorder. Having more than 1 personality disorder

diagnosis is common. There were no patients in the sample with schizoid, schizotypal or obsessive-compulsive personality disorder; or paranoid and schizotypal traits. The most common axis II diagnosis found in our study was borderline personality disorder, which is in keeping with most literature[44]. In an American study by Grant et al, findings reported were that the most prevalent personality disorders in a general population sample was obsessive-compulsive disorder, followed by paranoid, antisocial, schizoid, and then dependent personality disorder[57]. However it must be noted that this sample differed substantially in that it was not performed on an inpatient sample, and therefore the patient sample demographics may have differed socially and culturally. Also the patient's presentation and symptoms may have differed between an inpatient and outpatient setting.

AXIS I DISORDERS

Eighty-one percent of all patients had an axis I diagnosis (other than a substance use disorder). Sixty-two percent had one axis 1 disorder. Literature supports the strong and significant association between having an axis II diagnosis (especially borderline personality disorder) and other axis I disorders[44].

The most common axis I disorder was major depressive disorder at 24.6%, followed by dysthymia and generalised anxiety disorder at 17.4% respectively. A high percentage (13%) of total study patients also met criteria for bipolar disorder I. This could be due to the overlap in symptoms between bipolar 1 disorder and borderline personality disorder (impulsivity, affective instability). This study findings that personality disorders are most associated with affective and anxiety disorders is mirrored by previous literature[56]. In a study by Hasin et al looking at major depressive disorder, over 40% of participants had an anxiety disorder and over 30% had a personality disorder – demonstrating the strong association between the

various disorders[58]. All personality disorders assessed in the above literature had strong associations with major depressive disorder[58].

SUBSTANCE USE DISORDERS

One of the aims of the study was to determine the rate of comorbid substance abuse in those with personality disorders admitted to the psychotherapy unit at Tara Hospital. 72.9% of the study population were found to have a substance use disorder. Of those, a greater majority had substance abuse than substance dependence. A certain percentage presented with both substance abuse and dependence, which could have been for multiple substances.

Previous studies note that the rate and prevalence of personality disorders were greater among individuals with any drug abuse or dependence; or dependence on alcohol[49]. All specific personality disorders have been found to be strongly and consistently related to any alcohol use disorder[49]. More specifically, borderline personality disorder has been found to be a predictor of the persistence of alcohol and cannabis use disorders[42]. It is well documented that comorbidity among those with personality disorders and chronic users of alcohol, cannabis and nicotine is common[42]. Of significance in literature is that substance or alcohol abuse and dependence is steadily and significantly associated with lower social and emotional functioning and quality of life, greater disability over time, as well as increase in stressful life conditions – which will subsequently increase the risk for other psychiatric disorder (such as major depressive disorder)[12, 23, 51]. There is an overlap in prevalence between alcohol and drug dependence and general psychiatric comorbidity in general[6].

The majority of patients used only 1 substance (42%). However some had polysubstance abuse. Comorbid substance use disorders are common amongst psychiatric inpatients and contributes to their morbidity[32]. The most common substance used was alcohol (58%), followed by cannabis (45%). This is in keeping with national and international literature on substance use. A study performed in the United Kingdom found that 80% of all participants had reported heavy consumption of alcohol in the 12 months preceding the study. Cannabis was the most commonly used drug in that area (5%) indicating that although it still retains its addictive popular nature, perhaps the consumption was less due to the demographic subset of patients[6]. Stimulants and hallucinogens followed at 1% each[6]. This was a large outpatient national survey involving over 15000 private households in Great Britain that were interviewed individually.

Studies done in South Africa demonstrate that alcohol remains the substance most often used by the general population (38.7%), followed by cannabis use at 8.3%, which is in keeping with prior annual data from the World Drug Report. According to the South African Stress and Health Study, use of other drugs, including methamphetamine use, followed – which possibly might reflect an underestimation of drug use trends[8, 32]. In this study population it is useful to note that alcohol and cannabis were widely available, easily accessible, and relatively affordable when compared with other substances of abuse. Data collected from psychiatric inpatients at Stikland Hospital in the Western Cape of South Africa showed that comorbidity and violence were often the norm, and that cannabis and methamphetamine was often their preferred drug of choice[32].

In this study benzodiazepine use accounted for 24% of substances consumed. This is quite a high percentage but is possibly expected in a subset of individuals with a high rate of anxiety

disorders, sleep disorders, other psychiatric manifestations and possible comorbid dependent personality traits/disorders, thereby increasing the potential and possible opportunity for abuse. Methamphetamine use accounted for 22.6% of users in the current study. The abuse of methamphetamine is highly prevalent in the Western Cape of South Africa, and is the preferred drug of choice for patients in substance treatment programmes there[8, 32]. Heroin and opioid use accounted for 1.6%. Injection drug use populations are known to engage in high risk sexual behaviours, and have the potential to provide a significant contribution to the spread of HIV/Aids[59]. Twenty-six percent of individuals in the current study had a cocaine use disorder. In general, treatment admissions related to cocaine use in the general population have increased over time, but the current rate of increase appears to be much higher in the Eastern Cape region of South Africa than in Gauteng and Cape Town[60]. The category "OTC Other" included various analgesics which were readily available to patients without a doctor's prescription.

South Africas largest population, Black Africans, appear to have the lowest prevalence rates of illegal drugs usage other than cannabis. Even for cannabis, however, prevalence rates of cannabis use among black Africans is lower than in whites and coloureds[61]. Of increasing concern is that the age for initiation of drug use appears to be decreasing[61.] Cannabis users are often considered significantly less dangerous than someone who uses alcohol. Studies in South Africa have demonstrated that alcohol and cannabis are often considered 'softer' drugs (as compared to methamphetamine or heroin), which may further negatively impact the vicious cycle of alcohol-related injuries and crimes[62].

SUBSTANCE TESTING

Only 2.4% of the population sample underwent substance testing. This could possibly be due to the fact that the patients themselves admitted to using the various substances at the time of admission, and therefore testing was deemed unnecessary. The psychotherapy unit at Tara is a voluntary unit, and therefore no admission is forced. However, confirmation to ascertain the exact number of substances used by each individual and therefore correctly determine the presence/absence of polysubstance abuse would require testing to confirm such a diagnosis. It is improbable to assume that the individuals that were not tested were completely honest and reliable with regards to their substance use. This could be a possible limitation of the study. Also, in rare cases, urine and blood testing may produce unreliable results. For example: certain antibiotics can produce false-positive results for heroin and/or cocaine; or patients may knowingly switch urine specimens[63]. Therefore it is best in certain situations to rely on clinical judgement and examination. It is not policy of the psychotherapy unit to not test for substances.

SUBSTANCE USE REFERRAL

In this instance poor record keeping in patient files meant that only 32% of cases had information recorded regarding substance use referral. Eighteen percent of individuals had been referred to various referral facilities, sometimes more than one. Of note is that no individual was referred to Narcotics Anonymous. This may be due to the fact that Narcotics Anonymous meetings are held at Tara on a regular basis (however no mention was made of this in the patients discharge summaries). Twenty percent of those referred, were done so to various rehabilitation facilities – such as the dual diagnosis unit at Sterkfontein Hospital in Krugersdorp, Zamani at Chris Hani Baragwaneth Hospital in Soweto, or various other drug

rehabilitation facilities. Forty-seven percent were referred to other facilities such as Gamblers Anonymous, Child Welfare Societies, and various individual and group support therapy.

In a study done on known psychiatric patients with substance use disorders at a hospital in Western Cape, South Africa, it was discovered that few patients had documented evidence of any prior interventions for their substance use disorders. It was discovered that only 3% had received prior psycho-education, 0.7% had received detoxification in the past, 0.7% had been to outpatient rehabilitation, and 3% had attended inpatient rehabilitation[32]. This study, together with the current study, highlights that not enough attention is paid to the comorbid treatment and rehabilitation of such individuals; which goes on to contribute to the increasing health burden. Few patients are receiving adequate interventions for their comorbid problem. If not offered the opportunity of rehabilitation services, many are not aware of how to proceed to get help. Studies conducted among treatment centres in Gauteng province in South Africa between 2003 and 2004 found that they didn't provide gender sensitive and focussed treatment programmes, which were accessible[64]. A Cape Town study performed in 2014 showed that a large proportion of the study sample of substance users recognized that they needed treatment, and were willing to receive treatment, yet close to half the sample were unaware of where they could obtain treatment - indicating substantial unmet treatmet needs among young women from disadvantaged communities[65]. So it can be hypothesized that there are deficits in the system with regards to the referrals availability of treatment facilities, with barriers to access help. People are also more likely to seek treatment if it has been suggested to them[66]. This is particularly important with regards to personality disorder patients, where often part of the pathology may involve not accepting responsibility or taking actions to solve the problems. Individuals with borderline personality disorder are likely to seek out and utilize health care services, but it is unlikely that they will accept responsibility or their role in the problem[18].

SUBSTANCE USE DISORDERS WITH REGARDS TO AXIS I AND II DIAGNOSIS

In this study it was found that narcissistic personality disorder traits was more prevalent amongst those without a substance use disorder (32%). In other words, it was found there was a weak association between narcissistic traits and substance use disorders (10%).

Literature has found that narcissistic personality disorder is significantly associated with drug dependence, except for alcohol abuse. Other studies have found the prevalence of substance use among respondents with narcissistic personality disorder to be around 60%[43]. It is noted that substance abuse and dependence may reflect attempts on part of men with narcissistic personality disorder to re-establish or maintain grandiosity, by behaviour, to defend oneself against negative affect, ageing and life's inevitable limitations[43]. Perhaps, in our current study, the prevalence of narcissistic traits is so low due to the large percentage of the study sample being female. It has been documented that higher rates of narcissistic personality disorder are found among men than among women[43]. In contrast other studies have documented that narcissistic, schizoid and obsessive-compulsive personality disorders have been less consistently associated with substance use disorder persistence[42]. A study by Hasin et al found that antisocial, borderline and schizotypal personality disorders significantly and robustly predicted the persistence of substance use disorders[42]. These findings suggest merit in replication and further investigation of the above relationships. Evidence linking narcissistic personality disorders with substance use disorders remains mixed when more recent clinical studies are considered[43].

In the current study it was found that individuals with dependent personality disorder traits had a weaker association with a substance use disorder (13%), compared to those without

(36%). In other words, dependent personality disorder traits was found to be more prevalent in those without a substance use disorder. A study by Escheburua found that certain personality disorders were more frequent in alcoholic women; and that dependent traits were more frequent in alcohol-dependent men[50]. Once again this could account partly for the lower number of individuals presenting with dependent personality disorder traits in our study. Twenty-two percent of the current study population were male.

As previously mentioned, of the 62 patients that had a substance use disorder, 58.1% used alcohol. Whereas 42.9% of the study population of 84 individuals had some kind of alcohol use. The most common axis II personality disorder was borderline personality disorder. Studies have documented that substance use disorders increase the chronicity of borderline personality disorder, and that borderline personality disorder increases the chronicity of substance use disorders. Research investigating the relationships between personality and alcohol sensitivity has documented that there is an association between the trait of impulsivity/disinhibition and the stress-reducing properties of alcohol [35,67]. Also individual differences in reactions to alcohol have been shown to prospectively predict alcohol problems[67]. Impulsivity/disinhibition is a central feature of borderline personality disorder, and may influence an individual's decision to use substances. Impulsivity serves as a risk factor for both borderline personality disorder and substance use disorders, especially alcohol use disorders[35]. Thus the pharmacological properties of alcohol may provide some temporary relief, and there seems to be a general tendency to attempt to deal with negative affective states with substances[35]. Certain personality disorders share common traits of engaging in behaviours that are potentially risky and self-damaging. Alcohol abuse in itself is a predictor of risky sexual behaviour[68]. The combination of such a personality disorder, and a substance use disorder is especially problematic and dangerous.

As with recent literature, the current study also documented that the prevalence of specific personality disorders was greater among respondents with dependence on alcohol and/or drugs[49]. Individuals with antisocial personality disorder tend to be impulsive, seductive, superficially seeking excitement, reckless and can be manipulative[49]. There is a strong relationship observed between antisocial personality disorder and traits, and substance use disorders; which was also demonstrated in this current study[42, 49]. Also, there is a strong association between most personality disorders and substance use disorders, and this is generally consistent[49].

In light of such extensive comorbidity between personality disorders and substance use disorders, it appears there is great value in further assessing personality disorder and substance use disorder patients, which could guide treatment planning. Such patients can be expected to require treatment that is more extensive, of longer duration and more individualized. With this in mind, the concept of a dual diagnosis unit might hold promise for future recovery of comorbid individuals.

The current study also revealed evidence that there was a higher proportion of patients with one or more axis II traits amongst those with substance dependence, compared to those without. Comorbidity among personality disorders with regards to the number of traits or personality disorder diagnosis is common[42].

GENDER DIFFERENCES

More males were found to have antisocial traits in our study. It is well known and understood that males are generally more antisocial than females, and exhibit more antisocial traits and

behaviours[37, 69]. Females are less likely to meet criteria for antisocial personality diagnostic criteria, and those that do are more likely to attribute their behaviour to substance use problems[47].

Impulsive behaviours considered most relevant to borderline personality disorder (for example: suicidal gestures) and substance use disorders (for example: aggression, violence towards others), respectively, may reflect gender differences in prevalence rates for each disorder. Specifically, higher rates of substance use disorders are observed among men, and men are more likely to commit aggressive acts aimed at others. Most existing studies suggest that borderline personality disorder is more commonly diagnosed in women, who are more likely to make suicidal gestures[35]. These gender differences in the typology of impulsive acts may reflect the influence of culture or a biologically mediated mechanism.

There was a higher proportion of females using cannabis and benzodiazepines, but more males using alcohol in the study population. Females were found to use cocaine at a higher proportion than males, as well as LSD and nyoape (but in small amounts). This was the same for heroin, opioids and methamphetamines – with a higher proportion of females using than males in the current study. Figures were similar with regards to use for both genders for codeine, CAT and mandrax. According to the South African Stress and Health Study, gender was found to be the most significant indicator of substance use, with males generally 8 – 9 times more likely than females to become users of all drug types (except for extra-medical drugs and over the counter preparations). Thus indicating that males had a considerably higher prevalence of substance use compared with females[3, 8]. Gender thus appears likely to influence the degree of substance use disorder, as well as borderline personality disorder comorbidity; and prominent symptoms and associated clinical problems. Borderline

personality disorder has been documented to be diagnosed at higher rates among women in clinical samples with substance use disorders[35].

5) LIMITATIONS

Although the sample size of individuals with personality disorders in the study was sizeable, a larger sample size would have been beneficial in making the results more generalizable to a larger general population. Basically no research could be sourced in South Africa on this specific topic, emphasizing the need for research in this comorbid population.

This study was a retrospective review of file records, and information used was therefore highly reliant on entries and diagnosis made by other clinicians and mental health professionals. Due to human error, there was a file that was missing, and some information that was not recorded in files. Files that were missing made the sample size even smaller. The patients were also assessed by a number of different clinicians and mental health professionals, and there was no use of a uniform diagnostic tool documented in the file as part of the initial assessment. The diagnosis of each patient was clinically based and this may have resulted in diagnosis being missed or misinterpreted in some instances. As previously mentioned, very few patients in the study sample were tested for substances in the psychotherapy unit. This bases the assessment of patients solely on subjective reports. Also the small number of male patients may have made the gender specific questions problematic. It may be the reason that the percentage of men in the study using substances was lower than that of women. Another limitation may have been the selection criteria used to admit patients to the programme. Due to scarce resources, it may be that only patients with a good prognosis get selected to the unit.

As Tara Hospital is situated in the northern suburbs of Johannesburg, it is possible to assume that the study population was of a more affluent class, with possible over-representation of white and highly educated patients compared to the rest of South Africa's population. It is difficult to generalise the results of this study to the rest of the population.

6) CONCLUSION

This study highlights the comorbidity between personality disorders and substance use disorders in the general population. It necessitates the need to conduct further research on this topic. The evidence suggests that individuals with various personality disorders present with a high prevalence of comorbid substance use disorders, and highlights the growing need to provide adequate psychiatric services to this vulnerable population – in the form of a dual diagnosis unit. The current study may be viewed as a pilot study for larger audits that cater to similar study populations. General practitioners, psychiatrists and all mental health professionals need to be aware of the high prevalence of substance use disorders among those with personality disorders; as well as how and when to refer, and ensuring management of both illnesses. Currently in most settings, there are no or minimal facilities available to adequately address both the comorbid personality disorder and substance use disorder of such individuals. The implementation of a dual diagnosis unit on site at Tara Hospital would adequately address both the above pathology, and may decrease morbidity. More research and intervention programs should ideally target this subgroup of individuals, as substance use is on the increase and is a major public health problem, with many individuals using multiple substances. Substance use disorders are prevalent among those with personality disorders, and impact negatively on the patients' wellbeing, and add to the burden of service delivery. However, few patients receive interventions or are referred for their comorbid problems. This

retrospective review heightens the awareness of psychopathology in those with personality disorders, and as a result could emphasize the need for research, education and development of psychiatric services for such a population.

7)APPENDIX A: DATA COLLECTION SHEET

APPENDIX ONE

Data collection sheet

NUMBER: _____

1. **Demographic details**

1.1.Age in years:

18 – 20	
20 – 30	
30 – 40	
40 – 50	
50 - 60	
60 - 70	

1.2.Gender:

Male	Female	Not recorded

1.3.Marital status:

Single	Married	Attached	Divorced	Not recorded

1.4.Highest level of education:

Primary	Secondary	Tertiary	Not recorded

1.5.Employment:

Yes	No	Not recorded

14

1.6. Socioeconomic level:

H0	
H1	
H2	
H3	

2. Diagnosis

2.1. Axis II diagnosis present:

Yes	No	Not recorded

2.1.2. If Personality disorder/traits present, specify diagnosis:

Cluster A	
Paranoid Personality Disorder	
Schizoid Personality Disorder	
Schizotypal Personality Disorder	

Cluster B	
Antisocial Personality Disorder	
Borderline Personality Disorder	
Histrionic Personality Disorder	
Narcissistic Personality Disorder	

Cluster C	
Avoidant Personality Disorder	
Dependent Personality Disorder	
Obsessive-Compulsive Personality Disorder	

2.2. Axis I diagnosis present:

Yes	No	Not recorded

2.2.1. If yes, specify diagnosis:

Schizophrenia or other Psychotic Disorder	
Specify type: Schizophrenia	
Schizo-affective disorder	
Delusional disorder	
Psychosis due to GMC	
Other	

Mood Disorder	
Specify type: Bipolar Disorder type I	
Bipolar Disorder type II	
Major Depressive Disorder	
Dysthymia	
Cyclothymia	
Mood disorder due to GMC	
Other	

Anxiety Disorder	
Specify type: OCD	
GAD	
PTSD	
Panic disorder	
Other	

Impulse Control Disorder	
Specify type: Kleptomania	
Pyromania	
Compulsive gambling	

Intermittent Explosive disorder	
Trichotillomania	
Factitious Disorder	
Malingering	
Dissociative Disorder	
Sleep Disorder	
Cognitive Disorders	
Other	

3. Substance use

3.1 Substance use disorder present:

Yes	No

3.2. If yes, specify type:

Abuse	Dependence	Not recorded

3.3. Specify substance used:

CNS Depressants	
Alcohol	
Cannabis	
Benzodiazepines	
GHB	
Mandrax (Methaqualone)	
Heroin and Opioids	
Nyoape	

CNS Stimulants	
Cocaine	
PCP/Phencyclidine	
CAT	
Methamphetamine (includes Tik, Ritalin)	
LSD	

OTC preparations:	
Codeine	
Aspirin	
Cough mixture	
Other	
Other	

4. Substance testing

4.1. Substance confirmation testing performed:

Yes	No	Not recorded

If yes (in 4.1), performed in:

Urine	Blood

4.2.Results of testing:

Urine testing: Positive	
Negative	
Not recorded	

Blood testing: Positive	
Negative	
Not recorded	

5. Referral to substance use agency:

Yes	No	Not recorded

If yes to above, specify:

NA	
AA	
Rehabilitation facility	
Other	

8) APPENDIX B:ETHICS CLEARANCE CERTIFICATE

R14/49 Dr Laura Natasha Miller

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M130917

NAME: (Principal Investigator)	Dr Laura Natasha Miller
DEPARTMENT:	Neurosciences - Division of Psychiatry Tara Hospital, Sandton, Johannesburg, Gauteng, South Africa
PROJECT TITLE:	A Review of the Prevalence Rates of Comorbid Personality Disorders and Alcohol use Disorders at the Psychotherapy Unit at Tara Hospital
DATE CONSIDERED:	27/09/2013
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr M Motlana
APPROVED BY:	Professor PE Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	24/01/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.**

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

9) APPENDIX C: APPROVAL OF PROTOCOL

Postgraduate Office, Faculty of Health Sciences
Wits Medical School, 7 York Road, PARKTOWN, 2193, Johannesburg • Tel: (011) 717 2000 • Fax: (011) 717 2119

APPOINTMENT OF SUPERVISOR/S OFRESEARCH REPORT, DISSERTATION OR THESIS

Motivation / Reason for Appointment: Dr Motlana is based at Tara Hospital and wishes to investigate the prevalence rates of substance use disorders at the hospital. The hospital plans to introduce a dual diagnosis outpatient programme in future. The researcher expressed an interest in the topic and requested Dr Motlana to supervise her study.

Recommendation of Division / Department / School:

Student Surname and Initials: L N MILLER Student Number: 0203545E

Degree: MMed Psychiatry Div / Dept / School: Department of neurosciences, Division of Psychiatry

Title: A Review of the prevalence rates of comorbid Personality Disorders and Alcohol Use Disorders at the Psychotherapy Unit at Tara Hospital.

Supervisor 1: DR L. Mashadi Motlana

Supervisor Qualifications: MBBCh(Wits) DMH(S.A.) Mmed(Psych) UP FC(Psych) SA

Supervisor Department: Psychiatry

Supervisor Telephone: 011 535 3276 E-mail: Mashadi.Motlana@wits.ac.za

Supervisor 2:

Supervisor Qualifications:

Supervisor Department:

Supervisor Telephone: E-mail:

Student Signature: **Supervisor 1** Signature

Supervisor 2 Signature:

RECOMMENDATION BY HEAD OF DIVISION / DEPARTMENT / SCHOOL:

(Surname and Initials) (Signature) 11/09/13 (Date)

APPROVAL BY ASSESSOR GROUP: (On behalf of the FGSC) (Signature) 11/9/2013 (Date)

FOR CIRCULATION TO THE FGSC

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