Prevalence of personality disorders in persons with substance dependence and the related implications of this co-morbidity for diagnosis and treatment.

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Abstract

To assess the complex relationship between substance use disorders and personality disorders this study explored the prevalence of personality disorders in a sample of 324 people with substance use disorders at a substance abuse rehabilitation centre in Johannesburg. Subjects with personality disorders were compared to those without on a number of demographic variables. Previous admissions to treatment facilities and previous suicide attempts were also investigated. Data from previously administered clinical interviews was used. Data analyses included descriptive statistics and non-parametric one-way analysis of variance (Wilcoxen tests). Results showed that 11.11% (n=36) of the sample used in the study had co-morbid personality disorders, all of which were DSM-IV-TR axis II cluster B personality disorders. The most prevalent types of personality disorders were antisocial (n=12), borderline (n=10) and narcissistic (n=9). There were no major differences in demographic information between those with co-

morbid personality disorders and those without. A significant difference was found in mean number of suicide attempts and mean number of previous admission times between individuals with a co-morbid personality disorder and those without. It was concluded that the co-morbidity of a personality disorder in persons with substance dependence has a negative effect on the outcome of substance-related treatment and this co-morbidity and its effects requires further research.

Introduction

The main aim of this research was to assess the complex and generally poorly understood relationship between DSM axis II personality disorders and substance use disorders by determining the prevalence of personality disorders in a population of people with substance use disorders. While research on the subject of personality disorder/substance use disorder co-morbidity has increased recently (e.g. Bowden-Jones, Iqbal, Tyrer & Seivewright, 2004; Van Horn & Frank, 1998; Verheul, 2001), the association between the two disorders is complex and not yet fully understood (Gerstley, Alterman, McLellan, & Woody, 1990). Numerous studies have shown that the association is significant (e.g. Khantzian & Treece, 1985; Koenigsberg, Kaplan, Gilmore & Cooper, 1985; Kokkevi, Stefanis, Anastasopoulou and Kostogianni, 1998) and it is suggested that the co-morbidity of these disorders has serious implications for diagnosis and treatment (Verheul, 2001).There are currently no dual-diagnosis studies and statistics pertaining to South Africa and this study was thus an exploratory study aimed at producing preliminary data about this tendency. A further aim of this study was to assess the impact that co-morbid substance use disorders and personality disorders have on the outcomes of substance use disorder treatment. Better knowledge and understanding around the co-morbidity of the disorders could be helpful in improving diagnosis and treatment of these individuals.

Substance use disorders and personality disorders

According to the World Health Organisation's recent statistics there are globally 76.3 million people with alcohol use disorders (World Health Organisation [WHO], 2004) and at least 15.3 million people with drug use disorders (WHO, 2003). Substance-related disorders are found on axis I in the DSM-IV-TR and substance abuse is defined in the DSM-IV-TR as "a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances" (American Psychiatric Association [APA], 2000, p.198). A personality disorder is defined as "an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment." (APA, 2000, p. 685). These disorders are found on axis II. An individual with a co-morbid substance use disorder/personality disorder meets the diagnostic criteria for both disorders.

Prevalence of substance use/personality disorder co-morbidity

Prevalence research indicates that there is a higher prevalence of personality disorders within a population with substance use disorders when compared to the general population (Teplin *et al.*, 2004; Van Horn & Frank, 1998) and the majority of literature points to high rates of co-occurring DSM-IV personality disorders and substance use and dependence (e.g. Skodol *et al.,* 1999; Verheul, 2001). In populations with substance use disorders reported prevalence rates of co-morbid personality disorders range between 37% (Bowden-Jones, Iqbal, Tyrer, & Seivewright, 2004) and 71.7% (Van Horn & Frank, 1998), with many figures reported between these extremes (e.g..Khantzian & Treece, 1985, Nace *et al.* 1991, Skodol *et al.*, 1999). The discrepancies in the prevalence rates seen in the literature can be attributed to the differences in the type of assessments used (Mueser *et al.*, 1992), the population of study (psychiatric versus addiction populations, for example) (Miller & Fine, 1993), the main substance of abuse and the timing of the assessment (Kokkevi, *et al.,* 1998).

Common types of personality disorders in individuals with substance use disorders

It has been found that DSM-IV-TR cluster B personality disorders (APA, 2000), especially antisocial personality disorder and borderline personality disorder, are the most common personality disorders within populations of patients with substance use disorders (Ross *et al.*, 2003; Verheul, 2001). It is commonly accepted that antisocial personality disorder occurs more frequently in men, while borderline personality disorder in seen more often in women (Van den Bosch, Verheul & van den Brink, 2001; Barlow & Durand, 1999). The high rates of co-morbidity of these two specific personality disorders is generally seen to be a consequence of several factors (Koenigsberg, *et al.*, 1995). It is possible that different disorders share a common etiology (including genetic and environmental factors) or pathophysiology (Gerstley *et al.*, 1990; Grilo *et al.*, 1997), and it has been suggested that the co-morbidity of borderline personality disorder and substance abuse could be accounted for by overlapping diagnostic criteria of the two problems (van den Bosch *et al.*, 2001). Substance use is also often viewed as a manifestation of core features of these disorders. Impulsivity in borderline personality disorder, for example is seen to lead to substance use (van den Bosch *et al.,* 2001), and substance use is often considered an antisocial behaviour in and of itself (Gerstley *et al.*, 1990). The distressing mental states commonly experienced with these personality disorders are also thought to prompt these individuals to seek an 'escape.' This is often done by means of psychoactive substances (Koenigsberg, *et al.*, 1995).

Models of etiology of substance use/personality disorder co-morbidity

Within some models, personality pathology has been considered the core etiological factor for addiction, while in other models, such as the classic disease model, personality is seen to play no role in addiction (Verheul, 2001). The most common models around the etiology of addiction are what Verheul (2001) calls the "bio-behavioural diathesis-stress models". These models emphasise the importance of the interaction between an individual's biological and psychological vulnerabilities, and the psychosocial circumstances of the individual, in the development and course of addiction. Thus

personality is seen as an important risk factor in addiction, but is by no means the only factor that plays a role (Verheul, 2001).

The specific relationship between substance use disorders and mental illness such as personality disorders is complex and not yet fully understood. There have been a number of theories around the exact nature of the co-morbidity, but no definite evidence exists for any one theory. Mueser, Drake and Wallach (1998) discuss 4 possible models to explain this co-morbidity; common factor models, secondary substance use disorder models, secondary psychiatric disorder models and bidirectional models.

Common factor models

Common factor models, propose that risk factors, such as genetics, which are common to both disorders may result in the high rates of co-morbidity between substance use disorders and severe mental illnesses (including personality disorders). In a US study Cadoret, Troughton, O'Gorman & Heywood (1986) found, for example, that alcohol problems in 1st-degree relatives of their sample were related to drug and alcohol abuse as well as antisocial personality in study participants. Biological antisocial backgrounds were related to both antisocial personality and alcohol abuse in the sample. This study suggests that common factors could play a role in the co-morbidity of substance use disorders and personality disorders.

Secondary substance use disorder models

Secondary substance use disorder models see severe mental illnesses as risk factors which increase an individual's susceptibility to developing a substance use disorder. Antisocial or impulsive traits (common in personality disorders) have been shown to be predictive of substance abuse (O'Boyle, 1993). People with personality disorders are seen to use substances for reasons related to the personality disorder, such as diminishing or managing symptoms, enhancing self-esteem, decreasing feelings of guilt, managing negative affect, and amplifying feelings of diminished individuality (Teplin *et al.*, 2004). It has even been suggested that addicts choose specific drugs for the reduction of specific symptoms of psychological problems (Khantzian, 1985). Patients have reported that the

calm, relaxed and 'normal' feelings they get from the anti-aggression and anti-rage action of some substances is what compels them to keep taking these substances (Khantzian, 1985). This makes sense in terms of the aggression and rage commonly seen in personality disorders such as antisocial personality disorder.

While many models suggest that substance use disorders in the mentally ill may be caused by this attempt to self medicate for the symptoms of the mental illness, Mueser *et al.* (1998) maintain that there is minimal support for this theory. In a co-morbidity study conducted by Van Horn & Frank (1998) people with substance dependence who were then also diagnosed with axis II personality disorders did not report using alcohol and drugs to manage symptoms and emotions any more than people diagnosed with only a substance dependence disorder.

Secondary psychiatric disorder
Secondary psychiatric disorder models propose that severe mental illnesses are triggered or worsened by substance use (Teplin *et al.*, 2004). Without the substance use, these illnesses would not otherwise develop. Studies have found that substance abuse can cause an earlier onset of certain mental illness, such as schizophrenia in people who are biologically vulnerable to the illness (Mueser *et al.*, 1998).

Bidirectional models
Bidirectional models assert that the vulnerability to either disorder is increased by the presence of the other disorder. While these models seem the most credible Mueser *et al.* (1998) feel that they have yet to be systematically examined.

Personality disorder or substance abuse as a 'maintaining factors' in the problem
Another possible explanation for the co-morbidity of personality disorders and substance abuse is the idea that either one of the problems acts as a 'maintaining factor' of the other. A comprehensive model of the causality of mental disorders (Marsella, 1982) suggests that the final presentation of a psychological problem is a function of formative

factors, precipitative factors, exacerbating factors, and maintaining factors. In the case of substance abuse/personality disorder co-morbidity each of these disorders could be seen to be the maintaining factor of the other disorder. A low level personality disorder may be exacerbated and then maintained by a substance use disorder, while a substance use disorder which is perhaps not severe on its own may be maintained, and even worsened by the presence of the personality disorder.

In his 2001 paper *Conceptualizing Addiction: Addiction as excessive appetite*, Orford speaks about addiction as an excessive appetite. He discusses addiction and appetite broadly, referring to varied forms such as gambling, binge eating, sex addiction and smoking. While these behaviours are all done in moderation by most people, people who become addicted can be seen to be lacking the controlling function that keeps 'appetite' in check. In the majority of people these behaviours are controlled and moderated, either by conformity and social means (such as laws), or else by 'deterrents' or the negative effects of the behaviour (for example the headaches and dizziness associated with excessive alcohol use).

Thus for most people "the evolution of appetitive behaviour to higher levels of consumption… [is] impeded" (p. 20). Orford suggests that many things may prevent the 'stop' mechanism from working and in the case of substance abuse/personality disorder co-morbidity it could be argued that the presence of the personality disorder serves to prevent constraint. People with personality disorders thus often among the minority of people who "indulge in appetitive behaviours to an extent that is so markedly deviant from the moderation or abstinence norms to which most of us adhere" (Orford, 2001, p. 20).

Implications of substance dependence/personality disorder co-morbidity
 The complications and problems associated with the co-morbidity of substance dependence and personality disorders are widely reported in the literature (for example Ball, 1998; Gerstley *et al.*, 1990; Van Horn & Frank, 1998, Verheul, 2001).
Implications for diagnosis

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The issue of diagnosis is a specifically complex and difficult one when substance use and personality disorders co-occur (Ross *et al.*, 1995). Identifying and distinguishing the effects of the chemical substances from the symptoms of the personality disorder is a major problem as substance use frequently exacerbates other symptoms of personality disorders (Gerstley *et al.*, 1990), and both over-diagnosis and under-diagnosis of personality disorders in substance abusers is common (Gerstley *et al.*, 1990; Ford, Giesler, Lassen, & Thomas, 1989). Reliable diagnosis is also affected by factors such as clinician bias, the lack of current standardised diagnostic criteria and methods for dual-diagnosis, and the wide use of self-report interviews in diagnosis of co-morbid substance use disorders and personality disorders. Because assessment and diagnosis are important factors in informed prognosis (Rounsaville, *et al.*, 1998) and effective treatment (Flynn *et al.* 1995; Mueser *et al.*, 1992) it is important to be aware of these difficulties in assessment commonly experienced in dually diagnosed patients.

Implications for treatment

There is general agreement in the literature that the occurrence of both personality disorders and substance use disorders in individuals complicates and impacts on the success of treatment for either problem (Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel., 2003; Mueser *et al.*, 1992; Ross, Dermatis, Levounis, & Galanter, 2003). Dually diagnosed individuals have shown to be resistant to entering treatment, less compliant with treatment and more prone to disruptive behaviour within treatment settings (Frank & Van Horn, 1998). They also tend to have a greater early drop out rate, poorer treatment outcomes and higher relapse rates than those without personality disorders (Compton *et al.*, 2003; Teplin *et al.*, 2004, Verheul, 2001). The use of pharmacotherapy in the treatment of psychiatric syndromes, including personality disorders, in dually-diagnosed patients is also problematic (Mueser, *et al.*, 1992) as the addiction potential of many psychiatric drugs is high.

Possible treatment solutions

Much of the existing literature suggests that comprehensive treatment programmes which are specially designed to treat the full range of problems found in co-morbid personality

and substance use disorders, may help in reducing personality disorder symptoms while also improving treatment outcomes and decreasing chances of relapse (Flynn, *et al.*, 1995).

Method

Data for this study was drawn from existing clinical interviews done over a two year period by a qualified psychologist with inpatients at a substance dependence rehabilitation centre in Johannesburg. The clinical interviews were administered to all new patients shortly after admission and a structured psychological assessment interview schedule with 40 items was used. The schedule includes items regarding demographic information, history of the presenting problem, personal history, mental status and multiaxial diagnosis. The interviews lasted for one hour each and included diagnoses based on the five DSM-IV (APA, 1994) axes and the diagnosis of personality disorders within the sample was thus based on the DSM-IV (APA, 1994) criteria for such disorders. The initial sample included 353 participants, but of these 29 were excluded from the final sample of 324. As DSM personality disorders are not routinely diagnosed in children or young adolescents (Koenigsberg, Kaplan, Gilmore & Cooper, 1985), 3 participants 16-years-old or younger were excluded from the study sample. In some cases Axis II diagnosis was deferred by the interviewer and these 26 records were also excluded from the sample.

A basic database was drawn up by the original researcher containing basic information obtained during the interviews. From the raw interview data the current researcher entered into the database the variables 'previous treatment', 'presence of personality disorder', 'type of personality disorder' (where applicable), 'number of suicide attempts', 'self-harm' and 'legal issues.' Demographic data were assessed using descriptive statistics namely means, standard deviations and one-way frequencies. The differences in mean number of treatment admissions and mean number of suicide attempts between the group with, and the group without personality disorders, was explored using a non-parametric one-way analysis of variance (ANOVA) namely the Wilcoxon two independent sample test.

Results

Among the total sample of 324 participants, 202 (62.4%) were male and 122 (37.7%) female. The range of age at the time of interview within the sample was between 17 and 66 years-old, and the mean age at the time of interview was 31.9 years (SD=11.2). 61% of the sample were unmarried, 24.4% were engaged or married and 14.6% were divorced or widowed. 23.9% had an education level of below matric (including subjects who had completed O-levels), 42.5% had matric or A-levels, and 33.6% had some form of tertiary education.

Of the 324 person sample 11.1% or 36 individuals were diagnosed with at least one personality disorder [PD].

		Personality Disorder Absent		Personality Disorder Present	
		n	%	*N*	%
Total sample		288	88.89	36	11.11
Gender	Male	178	61.8	24	66.7
	Female	110	38.2	12	33.3
Marital status	Married/ engaged	76	26.5	3	8.3
	Divorced/ widowed	43	15	4	11.1
	Single	168	58.5	29	80.6
Education level	Below Matric	64	22.7	12	33.3
	Matric	124	44	11	30.6
	Tertiary	94	33.3	13	36.1
Self harm	Present	44	15.3	8	22.2
	Absent	244	84.7	28	77.8
Legal issues	Present	162	56.3	28	77.8
	Absent	126	43.7	8	22.2
		Mean	Std dev	Mean	Std dev
Age at time of interview		32.17	11.38	29.7	8.00
Previous admissions		1.06	1.72	2.86	2.82
Number of suicide attempts		0.63	1.04	1.28	1.75

Table 1: Differences between subjects with PDs and those without.

From table 1 it can be seen that the mean number of suicide attempts and mean number of previous admissions were both higher for the group with PDs. Figure 3 shows the means plot for number of suicide attempts by the presence or absence of a PD. The mean number of suicide attempts for the group without PDs was 0.63 with a standard deviation of 1.04. The group with PDs had a mean of 1.28 and a standard deviation of 1.75.

The mean number of previous admissions for the group without PDs was 1.06 with a standard deviation of 1.72. The group with PDs had a mean of 2.86 and a standard deviation of 2.82, as shown.

The hypotheses that the group with co-morbid PDs would have a significantly higher mean number of suicide attempts as well as a significantly higher mean number of admissions than the group without PDs was tested using a non-parametric one-way analysis of variance (ANOVA) namely the Wilcoxon two independent sample test.

A significance level of $\alpha = 0.05$ was used. For mean number of admissions $p < 0.0001$ and for the mean number of suicides $p = 0.0071$. In both cases the p-value is less than α and we can thus reject both null hypotheses and accept both alternate hypotheses. This indicates that both of these differences in means are significant.

Discussion

What is the prevalence of personality disorders in populations of people with substance use disorders?

This study found that 11.11% of individuals with substance abuse problems had co-morbid personality disorders. While the prevalence of personality disorders in this sample is lower than most prevalence rates found in the literature (e.g. Kokkevi *et al.*, 1998; Rounsaville, *et al.*, 1998) this could be due to a number of reasons. Mueser *et al.*, (1992) suggest that differences in the type of assessments used lead to differences in prevalence rates. Timing of the assessment could also be a factor that affects prevalence rates (Kokkevi, *et al.*, 1998). The personality disorder diagnosis in this study is only based on one one-hour clinical interview done shortly after admission to the treatment facility, where interviewer judgment led to diagnosis. Considering that the interviewer deferred 26 personality diagnoses in the initial sample suggests that these diagnoses are not easy to make with the given time constraint and lack of extensive information. Using a number of sources of information as well as different methods of diagnosis may yield different prevalence results. Doing the interview before admission or once treatment has been ongoing for some time may also affect prevalence rates.

The population of study is also seen to influence prevalence rates, as does the main substance of abuse (Kokkevi *et al.*, 1998). Psychiatric versus addiction populations, for example have been seen to produce differing prevalence rates (Miller & Fine, 1993). This study was done on a substance abuse population with varying substances of abuse. Further studies involving other populations may produce different rates of personality disorder/substance use disorder co-morbidity.

It is always possible that prevalence of personality disorders in substance abuser in South Africa is different to the prevalence found in other countries. Further research would help to clarify this point.

What types of personality disorders are most prevalent in populations of people with substance use disorders?

In line with the literature all diagnosed personality disorders were DSM-IV-TR cluster B personality disorders. In many similar studies cluster A and C personality disorders do occur just less frequently than cluster B (Frank & Van Horn, 1998; Kokkevi, *et al.,* 1998; Rounsaville, *et al.*, 1998). It was, therefore, significant that *only* cluster B personality disorders were present in this sample.
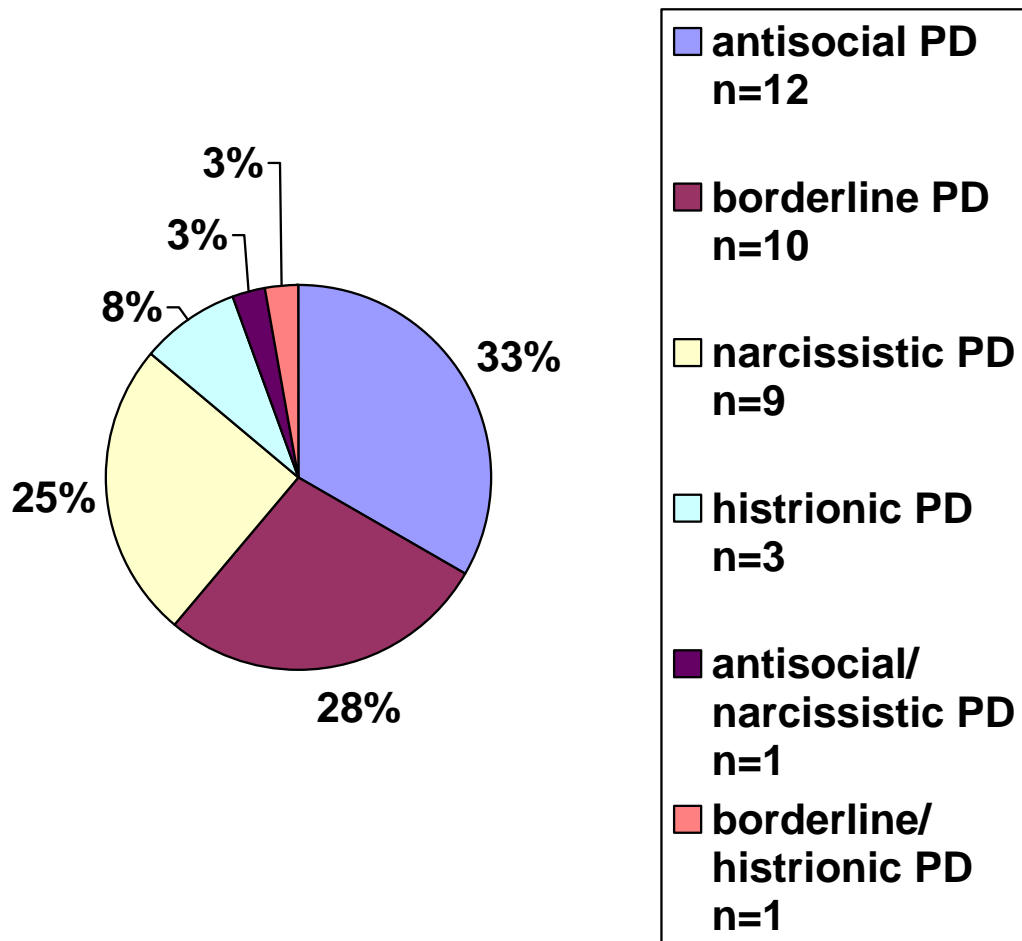
Figure 1: Prevalence of the different types of PDs present in the sample.

Interesting to note was the relatively high number of individuals with narcissistic personality disorder (n=9) in the PD group, only one less than individuals with borderline personality disorder. Narcissistic personality disorder does not feature prominently in most of the literature on personality disorders in samples with substance abuse disorders. Khantzian & Treece (1985) found only 8.3% of their sample met criteria for the disorder. Kokkevi *et al.* (1998) report that 11.6% of their sample met narcissistic personality disorder diagnostic criteria, while Rounsaville *et al.* (1998) do not report any specific findings of the disorder.

Also of interest is the fact that all of these narcissistic individuals were male and single. 77.8% of them had tertiary education and an equal number had legal issues. 9 individuals is a small group to draw conclusions from but the trends are worth noting.

The variables of self-harm and legal issues were included in this study because of their associations with borderline personality disorder and antisocial personality disorder respectively. Self harm is often indicative of borderline personality disorder (Barlow & Durand, 1999), while, because of the traits of impulsivity and lack of conscience common in people with antisocial personality disorder, instances of breaking the law are common in these individuals (Barlow & Durand, 1999).

		No PD	Antisocial PD	Borderline PD	Narcissistic PD	Histrionic PD
		%	%	%	%	%
% of total sample		88.88	3.7	3.1	2.8	0.92
Gender	Male	61.8	100	10	100	0
	Female	38.2	0	90	0	100
Marital status	Married/ engaged	26.5	8.3	20	0	0
	Divorced/ widowed	15	8.3	10	0	66.7
	Single	58.5	83.3	70	100	33.3
Education level	Below Matric	22.7	66.7	30	11.1	0
	Matric	44	16.7	50	11.1	66.7
	Tertiary	33.3	16.7	20	77.8	33.3
Self harm	Present	15.28	33.3	30	11.1	0
	Absent	84.72	66.7	70	88.9	100
Legal issues	Present	56.3	100	60	77.8	33.3
	Absent	43.7	0	40	22.2	66.7
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age at time of interview		32.2 (11.4)	26.1 (6.2)	27.8 (7.5)	31.8 (3.9)	46.0 (8.9)
Previous admissions		1.06 (1.7)	3.92 (3.6)	2.5 (2.8)	2.9 (2.0)	1.0 (1.0)
Number of suicide attempts		0.63 (1.0)	0.75 (0.97)	2.7 (2.6)	0.9 (0.8)	0 (0)

Table 2: Variable differences by PD type.

As expected from the literature all twelve of the individuals with antisocial personality were male and all had legal issues. Correspondingly, 90% of the individuals with borderline personality disorder were female, but only 30% reported self-harm. This may be attributable to the fact that the interview was only one hour long and that the interviewer was a stranger to the individual. Individuals may have not been willing to admit to a behaviour that is generally viewed as 'social unacceptable.' The high mean number of suicide attempts (2.7) in the borderline PD group was noteworthy though, compared to means 0.63 in the group without PDs; 0.75 in the antisocial PD groups and 0.89 in the narcissistic PD group.

It is worth mentioning that 66.7% of individuals with antisocial personality disorder had an education level in the 'below matric' category, while 77.8% of the individuals with narcissistic disorder had some form of tertiary education. Narcissistic individuals "have an unreasonable sense of self importance…[and] tend to use or exploit others for their own interests" (Barlow & Durand, 1999, p. 396). Being arrogant they tend to set high standards for themselves and are thus often successful. This could explain why the average education level in this group is high. Antisocial individuals on the other hand "do as they please, violating social norms and expectations without the slightest sense of guilt or regret" (Barlow & Durand, 1999), perhaps explaining why they generally have low levels of education. The small sizes of these groups must be taken into consideration however.

In looking at populations of people with substance use disorders only, and those with co-morbid personality disorders, are there patterns of relationship with regard to demographic status?

Looking at table 1 it is evident that there was not a big difference in mean age at time of interview between the PD group (29.7; std dev=8.00) and the non-PD group (32.17; std dev=11.38). Gender differences were also very similar with 66.67% of the PD group and 61.8% of the non-PD group being male.

		No PD	Antisocial PD	Borderline PD	Narcissistic PD	Histrionic PD
		%	%	%	%	%
% of total sample		88.88	3.7	3.1	2.8	0.92
Gender	Male	61.8	100	10	100	0
	Female	38.2	0	90	0	100
Marital status	Married/ engaged	26.5	8.3	20	0	0
	Divorced/ widowed	15	8.3	10	0	66.7
	Single	58.5	83.3	70	100	33.3
Education level	Below Matric	22.7	66.7	30	11.1	0
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Legal issues	Present	56.3	100	60	77.8	33.3
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		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age at time of interview		32.2 (11.4)	26.1 (6.2)	27.8 (7.5)	31.8 (3.9)	46.0 (8.9)
Previous admissions		1.06 (1.7)	3.92 (3.6)	2.5 (2.8)	2.9 (2.0)	1.0 (1.0)
Number of suicide attempts		0.63 (1.0)	0.75 (0.97)	2.7 (2.6)	0.9 (0.8)	0 (0)

Table 2: Variable differences by PD type.

Looking at the non-PD group with regards to marital status; 58.5% were single, 26.5 % were married or engaged and 14.98% were divorced or widowed. The group with co-morbid PDs were less likely to be married with 82.6% being single. Only 8.3% were married or engaged, and 11.1% divorced or widowed. All 9 of the individuals with narcissistic PD and 10 of the 12 individuals with antisocial PD were single, perhaps reflecting the difficult interpersonal relationships that individuals with these specific types of PDs tend to experience (Barlow & Durand, 1999).

The majority of both the PD and the non-PD group had an education level of at least matric (77.3% in non-PD group; 66.65% in PD groups). In the South African context this relatively high education level and it could be accounted for by the treatment setting. The treatment facility is in a fairly affluent area of Johannesburg and treatment is paid for privately by patients. The majority of patients would thus have had the opportunity to further their educations.

Therefore it seems that demographically the only major difference between the group with co-morbid PDs and those without occurs with regards to marital status. Kokkevi *et al.* (1998) report finding no significant differences in demographic characteristics (age, gender, education) between subjects with and without PDs. Van Horn & Frank (1998) found differences in age, education level and marital status but not in gender between PD and non-PD groups. Nace *et al.* (1991) found no significant differences in gender or race between groups, but report significant differences with regards to age, education level and marital status. Both Van Horn & Frank (1998) and Nace *et al.* (1991) report that individuals with personality disorders were less likely to be married than those without.

The presence of legal issues was high in the non-PD group with the majority (56.25%) of individuals reporting some form of legal issue. In the PD group however this trend was even more prominent with 77.78% of individuals reporting legal issues. The fact that all those with antisocial personality disorder (n=12) had legal issues contributed to the high prevalence of legal issues in the PD group.

Reports of self-harm were also more prevalent in the PD group. 22.22% of individuals in this group reported self-harm, while 15.28% in the non PD group show the trend. As previously mentioned reports of self-harm may be affected by the interview context.

Is there a significant difference in mean number of previous treatment admission times between substance abusers with and without personality disorders? Is there a significant difference in mean number of suicide attempts between substance abusers with and without personality disorders?

The focus on assessing the differences in previous treatment admissions and suicide attempts was to explore whether or not a co-morbid personality disorder will affect the outcome of substance-related treatment. It was assumed that the greater the number of previous treatment admissions and suicide attempts, the less successful previous treatment was. The primary hypothesis was that in the sample of people with substance use disorders those with co-morbid personality disorders would have a greater mean number of previous admissions to treatment and a greater mean number of suicide attempts. While no causal conclusions could be drawn given the non-experimental design of the study, the study aimed, however, to subsequently conclude that the presence of a personality disorder had a negative effect on substance-related treatment outcome.

Similar ranges for number of suicide attempts (0-8 for no personality disorder group, and 0-9 for personality disorder group) and number of previous admissions (0-11 for both groups) can be seen, however the means for these variables differ significantly according to the data analysis. In both cases the PD group has a significantly higher mean than the non-PD group. The variables of suicide attempts and previous admissions to treatment were included in the study to explore whether or not a co-morbid personality disorder affects the outcomes of treatment. It was assumed that the greater the number of previous treatment admissions and suicide attempts, the less successful previous treatment had been. Subsequently the significant differences in means for these two variables suggest

that a co-morbid PD is associated with a negative affect on treatment outcomes. As the study was a non-experimental one, however, no causal conclusions can be drawn.

Although some studies show that co-morbidity has no affect on treatment outcomes (Clopton *et al.*, 1993, cited in Ruegg & Frances, 1995), the findings of this study are in line with the majority of the literature which suggests that a co-morbid personality disorder has a negative effect on prognosis and treatment outcome (Compton *et al.*, 2003; Frank & Van Horn, 1998; Teplin *et al.*, 2004, Verheul, 2001).

This notion has important implications for the treatment of 'dual-diagnosis' individuals, suggesting that a uniform approach to substance abuse treatment may be inadequate for people with co-morbid personality disorders

Limitations

 A key theoretical limitation of this study is the basic underlying assumption of the existence of personality disorders as 'entities'. One of the major critiques of the DSM approach to diagnosis is that, while it is meant to be an atheoretical, "purely descriptive" classification system, some see it as embodying a very specific theory around psychopathology, namely that of the existence of "syndromes with unity" (Poland *et al.*, 1994). "Syndromes with unity" are "clusters of associated clinical attributes that exhibit such dynamic characteristics as typical course, outcome, and responsiveness to treatment, and that are related to underlying pathological conditions and etiological factors of development" (Poland *et al.*, 1994, p. 241). There is on-going debate as to how much credibility this universalist view holds (Swartz, 2002).

In addition to this much of the DSM diagnostic criteria for personality disorders are based on the identification of personality 'traits' such as aggression or impulsivity, and this in itself can be problematic. Personality traits can be defined as "underlying dispositions or characteristics that initiate and direct behaviour… [they] are typically inferred from overt behaviour or self-report measures" (Hjelle & Ziegler, 1992). The notion of personality traits has been heavily criticised with many critics believing that people's behaviour does

not actually exhibit trait-like stability over time, situation and circumstance (Mischel, 1968; Phares, 1991). Other critics have asserted that traits "reflect nothing more than labels for behaviours we believe go together" (Hjelle & Ziegler, 1992, p. 263). Thus traits can be seen as representative of stereotypes of personality characteristics that we group together rather than reflective of actual behavioural consistencies (Hjelle & Ziegler, 1992).

In his 1968 book *Personality and Assessment,* Walter Mischel intensively reviewed years of empirical personality research and concluded that "with the possible exception of intelligence, highly generalized behavioural consistencies have not been demonstrated, and the concept of personality traits as broad response predispositions is thus untenable" (p.146). He goes on to suggest that if personality traits are so inconsistent they may be very inadequate ways of describing individuals and explaining human behavior. This idea questions the existence of personality disorders and indeed the very concept of personality itself, especially when based on a DSM understanding of these concepts (Peele, 1990).

The implication that the concept of a personality disorder is questionable in and of itself thus suggests that the assumption in this study of the existence of personality disorders (and personality) as entities, may be problematic and theoretically unsound. Further limitations of this study focus on the methodology employed.

As previously discussed diagnostic bias and misdiagnosis is a common problem with substance use disorders and personality disorders (Ford, 1989; Claassen *et al.*, 1997). Diagnoses of personality disorders in this study were determined using interview schedules based on the DSM-IV-TR criteria for these disorders. The interview schedule was used without having been formally assessed for reliability in the setting. While structured, the interview schedule is dependent upon the interpretation and judgment of the interviewer and thus interviewer bias could affect the validity and reliability of the data. The reliability and validity of self-reported data is also questionable as patients may be prone to give selective responses to questions. Without external validation it is

impossible to assess the reliability of self-reported information and thus the fact that diagnosis is based on only one source of information (self-report interview) could limit the reliability of the data and diagnoses. The interviews only lasted one hour each and this may not have been long enough to gather important information on which to base diagnoses. People may be disinclined to admit to some behaviour and may be dishonest if they are interviewed by a stranger for a short time.

As the sample is important in prevalence research the big sample size is a positive feature of this study. However, the composition of the sample may limit the implications of the findings. The sample was drawn from a group of individuals at the same private rehabilitation centre in an affluent urban area. It was thus more than likely made up of mainly middle to upper class, urban subjects. Studies done in rural areas or in diverse treatment settings (such as public hospitals) may yield distinctive results.

The data analysis used in this study also presents possible limitations. Unfortunately no information was collected pertaining to the time lapsed since first treatment. If included in the data analysis the time since first treatment may act as a confounding variable and this could affect the investigation of previous treatments. The group comparisons around demographic information are limited in that they were not tested for significance. Future research could aim to find significant differences in demographic information between substance abusers with and without co-morbid personality disorders.

The non-experimental research design and the use of non-parametric statistical tests in this study leads to a relatively low statistical power. This means that the results of the study are not as conclusive as would have been desired. However, as the primary purpose of this research study was exploratory, this is not considered a fundamental limitation.

Recommendations
This study was intended as a descriptive investigation into the co-morbidity of personality disorders in individuals with substance use disorders. It has provided preliminary data and an initial exploration of the prevalence of personality disorders in

persons with substance use disorders and the implications of the co-morbidity in South Africa. It has particularly highlighted the need for further research in this area, specifically within the South African context.

This study did not include any race variables. With South Africa being such an ethnically diverse country, further studies which take race and ethnicity into account may be worthwhile. Establishing whether or not race plays any role in the co-morbidity of personality disorders in individuals with substance use disorders could be interesting and useful.

Also conducting further studies in different contexts and settings within South Africa could be helpful in establishing the generalisability of the current studies' findings. It would be interesting, for example to consider rural versus urban populations, or populations in less affluent treatment settings or state hospitals. Studies done using more than one source of information for the basis of assessment and more than one diagnostic method may ensure that diagnoses are more valid and reliable.

Conclusion

In spite of the limitations of this study the co-morbidity of personality disorders in substance abuse populations is evidently a relevant issue, warranting more consideration than it currently receives. The study provides a starting point in comparing groups of individuals with and without co-morbid personality disorders in populations with substance use disorders. As the differences in means between the PD group and the non-PD group were significant for both suicide attempts and previous admission times, the current study provides evidence to suggest that the co-morbidity of personality disorders and substance use disorders does impact negatively on the outcome of treatment for substance abuse. Further research around the co-morbidity of substance use disorders and personality disorders is clearly needed in South Africa.

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