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**Co-morbidity of personality disorder, Axis I and trauma symptomatology.**

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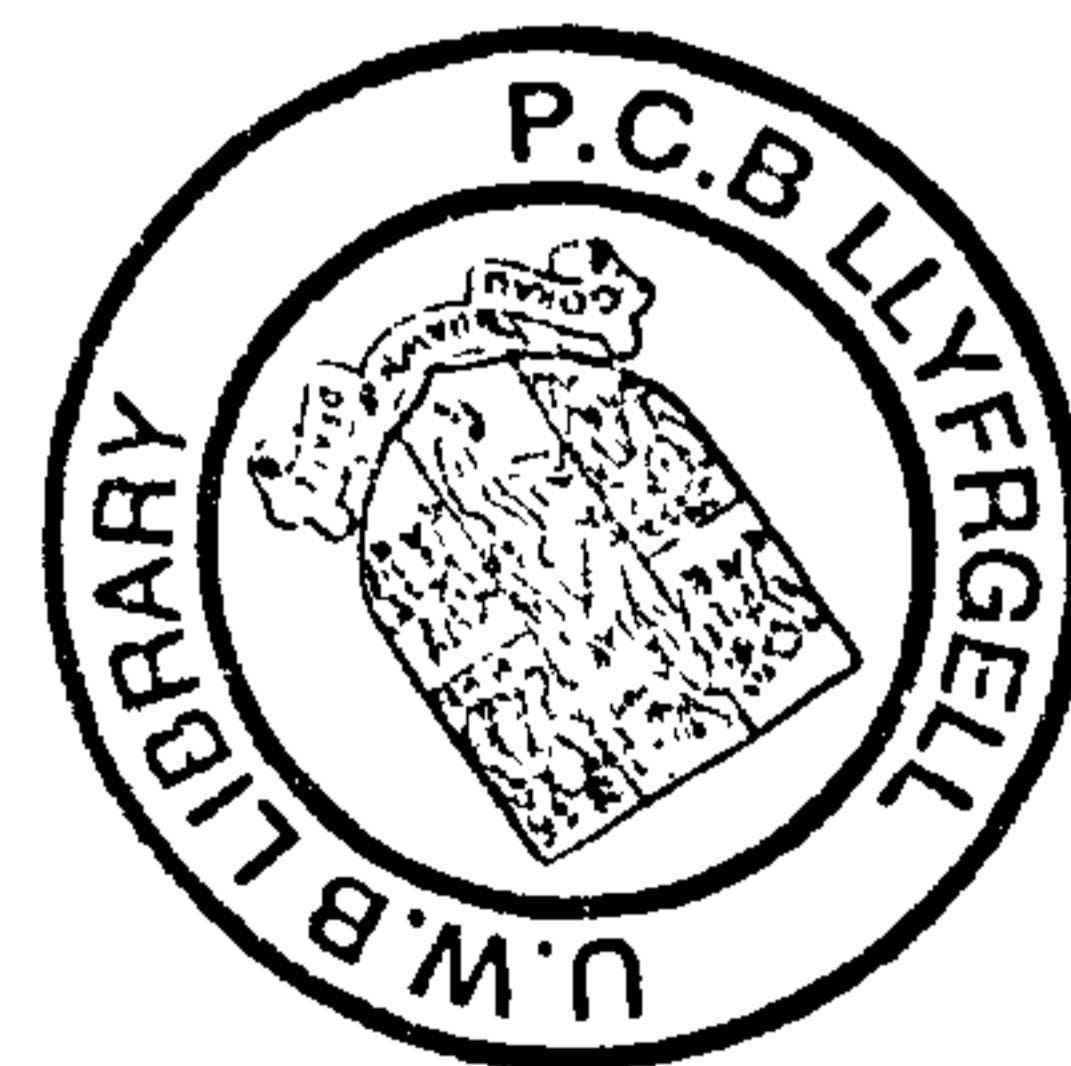
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LANCASHIRE CLINICAL PSYCHOLOGY COURSE  
(Affiliated to the University of Wales Bangor)

Co-morbidity of Personality Disorder, Axis I and Trauma  
Symptomatology

Andrew Holding

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Submitted in accordance with the requirements for the Doctorate of Clinical Psychology, 1999.

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## Abstract

This study was designed to identify the nature and prevalence of personality disorder within a secondary care day service and, in addition, to investigate the extent to which personality disorder was co-morbid with both Axis I and trauma symptomatology. A cross sectional survey design was used, and a total of 51 participants completed the Millon Clinical Multiaxial Inventory III, the Trauma Symptom Inventory and the SCL-90-R.

The results revealed that 55 per cent of the clinical population met the study's criteria for a personality disorder, a finding that is broadly line with previous research. When these data were collapsed into the three DSM IV personality clusters, 47 per cent met criteria for the Anxious-Fearful cluster, 22 per cent for the Dramatic-Erratic cluster and eight per cent for the Odd-Eccentric cluster.

The results disconfirmed the study's first hypothesis which predicted that participants meeting personality disorder criteria would have a greater level of Axis I symptomatology than other participants. This finding indicates that the two diagnostic Axes may be independent, suggesting that personality disordered individuals have an additional set of distinct needs which may not be addressed adequately by a symptom-focused approach.

The results supported the second hypothesis, demonstrating that participants with a personality disorder were significantly more likely to achieve caseness on the PTSD and Self-dysfunction TSI trauma scales. Of the three personality disorder clusters, only those in the Dramatic-Erratic group were found to be significantly more likely to achieve trauma caseness. These findings lend qualified support to previous research indicating that Borderline patients have particularly high levels of trauma history.

The methodological limitations are discussed, as are the implications for future research and clinical practice.

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**Co-morbidity of Personality Disorder, Axis I and Trauma  
Symptomatology**

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## 1.0. Introduction

For many individuals, a personality disorder constitutes a severe and enduring mental health problem; such clients being amongst the most complex and demanding whom therapists face. However, despite a rapidly growing interest in the area, relatively little is known about these disorders. This introduction will initially present a brief overview of the current literature and nomenclature, followed by a discussion of several salient issues in the field. The range and severity of personality disorder, the relationship with Axis I symptoms and the effects of trauma on development will be considered. Finally, the introduction will progress to a discussion of the current study.

### 1.1. Brief overview of the literature

The nature of personality disorder continues to be a matter of controversy. Nevertheless, by far the majority of the clinical and research literature follows the Axis II diagnostic system which was introduced in the Diagnostic and Statistical Manual-III (American Psychiatric Association, 1980) and has been retained in the subsequent revision.

A personality disorder is currently defined by DSM-IV (APA, 1994) as "an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture". These inflexible and pervasive patterns may be manifest in "cognition, affect, interpersonal functioning and impulse control" (p.630) and may lead to distress or impairment that cannot be better accounted for by another mental disorder.

The current system divides the personality disorders into ten discrete clinical and two research categories which, with the exception of antisocial personality disorder, are characterised by the development of patterns of behaviour in early adulthood. Formulated as 'personality coping strategies' these categories are broadly underpinned by Millon's prototypical evolutionary systems theory of personality (Millon, 1990; 1996), using a threefold polarity framework as a foundation (Millon, 1969).

Many individuals, however, exhibit traits that are not limited to a single personality disorder, and substantial overlaps have been consistently identified (Clark, 1992; Skodol et al., 1988). Hence, DSM-IV (APA, 1994) also describes three clusters of personality disorders which share common descriptive features. This clustering system is commonly used for research purposes (APA, 1994), although the evidence supporting this tripartite division is somewhat equivocal (Lenzenweger & Clarkin, 1996; Millon, 1996).

Cluster 'A', also known as the 'Odd-Eccentric' group, includes the Schizotypal, Paranoid and Schizoid types, and is characterised by a degree of social detachment and idiosyncratic behaviour. Cluster B, the 'Dramatic-Erratic' disorders, include the Borderline, Antisocial, Histrionic, and Narcissistic types; such individuals often appear emotional and unpredictable. Lastly, Cluster C, the 'Anxious-Fearful' disorders, include the Avoidant, Dependent, Passive-Aggressive and Obsessive-Compulsive, types, who are observed to be apprehensive and afraid.

Interpersonal style in particular has been recognised as a treatment difficulty with personality disordered clients. This applies both in terms of professionals' ability to engage seemingly hostile, passive and erratic individuals in meaningful therapeutic relationships, and also because of their tendency to 'split' the staff groups who are working with them (Benjamine, 1996).

Those diagnosed with personality disorders reportedly show resistance to most forms of psychotherapeutic treatments and until recently studies demonstrated generally poor outcomes within psychotherapy (Turkat & Maisto, 1985), and high rates of drop-out, from between 23 per cent to 67 per cent (Gunderson et al., 1989; Skodol et al., 1983). However, a small number of controlled studies taken together offer evidence indicating that some targeted forms of long term psychodynamic, interpersonal and dialectical behaviour therapy may be cost-effective with these patients (Gabbard et al., 1997). Psychotherapy is more likely to be helpful with patients with less severe symptoms who have a better quality of supportive interpersonal relationships (Higgitt & Fonagy, 1993).

Where studies have examined the impact of personality disorders on symptom orientated treatments of Axis I disorders there are indications that treatment effectiveness is usually reduced (Reich & Green, 1991; Reich & Vasile, 1993; Shea et al., 1992a). This is the case in particular with depression (Sullivan et al., 1994), panic,

anxiety, and also eating disorders (Tyrer et al., 1993a). Additionally, poorer outcomes have also been found for those presenting as psychiatric emergencies (Tyrer et al., 1994).

At the current time there is an increasing recognition of the considerable cost of 'revolving door' personality disordered clients to the NHS and other public services. Those in the dramatic-erratic cluster, in particular, tend to use a number of different services simultaneously (Tyrer et al., 1990). Additionally, there is also a high level of controversy concerning those patients with personality disorders who are "untreatable" under the mental health act, and how they should most effectively be managed.

Nevertheless, despite the recent increase in clinical focus, and targeting by services in line with government and local purchaser directives, research concerning the nature of the problem remains sparse. Relatively little basic information is known regarding the prevalence, distribution and severity of Axis II problems, making it difficult to estimate the level of need or to plan services for this group.

Additionally, there is relatively little research available concerning the aetiology of personality disorders, although a number of factors have been postulated, either in isolation, or as important components of bio-psychosocial models (Paris 1994; Tyrer, 1988). In addition to physiological and genetic aspects and attachment relationships ( Gunderson et al., 1980), several authors have recently come to regard the long-term effects of early traumatic events as a likely contributory determinant (Benjamin, 1996; Millon, 1993; Perry & Herman, 1993; van der Kolk et al., 1994).

An additional crucial issue which is related to aetiology, and has also yet to be addressed adequately, is the extent to which Axis II personality disorders are co-morbid with, or independent of, Axis I symptoms (Millon & Davis, 1996). It has been suggested that a causal link may exist between personality traits and a vulnerability to certain psychiatric illnesses, and that co-morbid Axis I and Axis II disorders may share common aetiological factors. The identification of co-morbid Axis I and trauma symptoms is also of particular pertinence to treatment approaches, since they may well influence treatment and predict course and outcome.

Given the issues discussed above, the current study has chosen to concentrate on developing an understanding of local prevalence levels of personality disorder, and

its link to both Axis I caseness and to patterns of trauma symptomatology. It is, therefore valuable to discuss these three themes in greater detail.

## 1.2. Range and severity of personality disorders within a local population

A review of epidemiological surveys by Weissman (1993), indicates that the lifetime prevalence of personality disorder in the general population is likely to range from between 10-15%. This approximation is supported by a recently completed two stage case identification study using both a screening procedure and follow-up interviews conducted by experienced clinicians (Lenzenweger, Loranger, Korfine, & Neff, 1995).

Estimates of prevalence within psychiatric populations have ranged from 34 per cent (Casey et al., 1984) to just under 50 per cent (Tyrer et al., 1991). However, these studies have tended to examine either global measures of personality disorder or specific disorders. To date, research in this country has not studied the prevalence of the entire range using a single taxonomic system within a secondary care population.

Additionally, there is evidence to suggest that professionals in primary and secondary care may under-identify Personality Disorder. Casey & Tyrer (1990), for instance, conducted a one-year prevalence study of psychiatric morbidity in two British group general practices. They found that personality disorder was diagnosed in 5.3 per cent of the population by a General Practitioner and in 5.6 per cent by a psychiatrist but this increased to 28 per cent when personality disorder was assessed using a structured interview.

Clearly, more information regarding the extent, form, and severity of personality disorders is required at a local level if clinical services and treatment planning are to be designed to meet the needs of this population.

## 1.3. Axis I symptoms

A variety of links have been previously documented between personality disorders and Axis I symptoms. For example, Swartz and colleagues (1990), examining borderline patients, found that a majority had also shown anxiety, depression, or substance abuse disorders within the previous year. Significant

associations have also been found between Axis II and generalised anxiety and alcohol use (Oldham, et al., 1995; Modestin et al., 1997), dysthymia, social phobia, agoraphobia (Alnaes & Torgersen, 1988) and bulimia (Yanovski et al., 1993). In addition, research by Casey (1989) suggests particularly high prevalence rates for people who attempt suicide (48-65%).

However, whilst these data strongly suggest that an individual can suffer from both Axis I and Axis II difficulties simultaneously, the degree to which Axis I caseness varies with the severity of a personality disorder remains unclear. It is therefore possible that personality pathology is not actually co-morbid with Axis I symptoms. Such independence may indicate that a clinical population generally consists of two separate groups, one whose problems are primarily Axis I in nature, and a second whose difficulties consist largely of Axis II symptoms. Knowing whether those with personality disorders are being referred primarily because of the impact of their Axis II difficulties (regardless of their diagnostic label) has important clinical implications, since it suggests that personality factors should be targeted as a priority in treatment.

If however, as seems more likely, there is a high level of co-morbid Axis I symptomatology, this indicates a situation involving more complex interactions. For example, it may be the case that high Axis I symptoms represent the primary difficulties, the treatment of which is attenuated due to the interference of Axis II problems. Alternatively, the presence of a personality disorder may be 'causal' in the development of Axis I symptoms, or conversely, a major psychiatric syndrome may facilitate the development of a personality disorder. It is also possible that there is no aetiologically relevant connection between a major syndrome and a co-morbid personality disorder.

Clearly this is speculative, and in order to address these issues in detail future research will need to draw on data from large samples (Clarkin & Lenzenweger, 1996). However, within the parameters of this exploratory pilot study, it is feasible to examine the extent to which personality disorders in particular clusters do or do not correlate with Axis I severity and, on the basis of this information, to consider the next level of questioning.

In addition, at a local level, it is also valuable to examine Axis I caseness levels across the non personality disordered participants as this could provide valuable information regarding the appropriateness of the referrals at the chosen sites.

#### 1.4. The effects of trauma on personality development

A number of authors have speculated that traumatic experiences may influence the development of working models or schemas and interpersonal strategies, giving rise to a chain of expectations, reactions and events that establish pervasive pathological trends (Benjamin, 1996; Millon, 1993; Perry & Herman, 1993; van der Kolk et al., 1994). However, it is only relatively recently that mainstream research and diagnostic systems have addressed childhood trauma. It is also salient to note the fact that most research has been focused on child sexual assault, and to a lesser extent physical and psychological abuse. There have been only a very few studies on the effects of physical catastrophe (van der Kolk, 1994).

A contemporary definition describes psychic trauma as the result of an individual being exposed to an overwhelming event resulting in helplessness in the face of intolerable danger, anxiety, and instinctual arousal (Eth & Pynoos, 1985). Clearly, such a definition encompasses a very heterogeneous group of events, whether physical, psychological, or social, which may give rise to trauma symptoms. The issue is complicated by the fact that such events are mediated by belief systems, and may therefore be evaluated very differently within particular societies or subcultures.

Each individual's experience will also vary due to the interaction of additional important variables such as social and familial support, external stresses and developmental level. Additionally, any specific traumatic experience (i.e. sexual abuse) cannot be considered to be a single isolated variable since it may occur in conjunction with other potentially traumatic factors such as physical assault, emotional abuse and neglect (Frude et al., 1990). Consequently the effects of trauma are extremely difficult to predict (Davenport et al., 1994), and it is generally recognised that it is not possible to distinguish the respective causal contributions of individual factors (Briere, 1988).

Although definitive data are clearly difficult to obtain, contemporary research and clinical experience have begun to document and consider not only the immediate

impacts of childhood trauma, but also their subsequent interference with normal human development over the long term. Theorists generally recognise that the effects are usually dynamic and interactive, as opposed to merely the expression of early trauma as it fluctuates over time (Browne & Finkelhor, 1986; Terr, 1991).

The initial reaction to events may involve the development of post-traumatic stress symptoms (Chu & Dill, 1990; Figley, 1985), painful affect, cognitive distortions such as dissociation (Ulman & Brothers, 1988) and coping behaviours intended to increase safety and/ or decrease painful affect. These responses are thought to occur in order to help the child accommodate to the trauma or the ongoing disturbed environment in which they find themselves. It is postulated that there may also be further consequences of the initial reactions and trauma related accommodations, which, if untreated, may lead to the disruption of personality development and normal maturation (Herman et al., 1989).

Hence, in common with adult victims, traumatised children experience significant psychological distress and dysfunction. Unlike adults, however, they are traumatised during critical periods of their lives when assumptions about self, others and the world are being established, their relations to their own internal states are structured, and when coping and affiliative skills are first developed.

It is valuable to consider several major types of psychological disturbance, all of which are frequently found in adolescents and adults who have been traumatised in childhood.

#### 1.4.1. PTSD

Firstly, immediate and enduring Post-traumatic Stress symptoms have been found to consistently occur in children and adults in response to highly distressing events (Briere et al., 1992; Craine et al., 1985; Figley, 1985; McLeer et al., 1988). Particularly prominent for child trauma survivors are PTSD-related intrusive symptoms such as flashbacks, and repetitive thoughts and memories; symptoms which may make it difficult to concentrate for any extended period of time or to have a non-distressing mental life (Fish-Murray et al., 1987). This may be exacerbated by accompanying extremes of under and over arousal which, it is thought, can also interfere with the capacity to assimilate and accommodate new information (van der



Kolk, 1987). In addition, van der Kolk (1986) has argued that flashbacks, being intrusive recollections of traumatic memories that are not integrated into an individual's personal narrative, may explain some of the psychotic episodes that are occasionally experienced by some personality disordered individuals.

#### 1.4.2. Cognitive distortions

Research has demonstrated that child trauma survivors commonly overestimate the amount of danger or adversity in the environment, underestimate their own self-efficacy and value, and are prone to attach magical explanations to events beyond their control (Green, 1983; Terr, 1983a). It has been suggested that these effects may lead to either an acceptance of abusive relationships and tendency to predict negative outcomes prematurely (Runtz & Briere, 1988), or in contrast, an extreme investment in control, possibly leading to an individualistic orientation and social isolation (Miller, 1984).

Various studies have also linked childhood trauma to cognitive effects such as guilt, low self-esteem, self-blame (Jehu, 1988; Jehu et al., 1985) and other dysfunctional attributions (Henschel et al., 1990; Runtz, 1987). Such negative self-evaluation can result from stigmatisation (Finkelhor & Browne, 1985), the message the victim receives from the abuser and social system, or from attempts to understand the reason for the traumatic event and resolve what Briere (1989) calls the Abuse Dichotomy.

Evidence also indicates that if children are traumatised, developmental delays may occur at all ages in intellectual, motor, social and emotional development (Alber & Cicchetti, 1984; Bowlby, 1973). Cicchetti & Rosen (1984) report that their most notable finding in traumatised children was the inflexibility of their organised schemata and structures across intellectual domains. This may partially explain the observation that traumatised, and in particular abused children, seem to 'split' their representations of self and others into all good and bad portions. It is likely that an abused child, fixated at an earlier pre-operational stage, perceives two different sides of him/herself or others as distinct individuals. Hence, without conservation, a super-ordinate self with multiple characteristics cannot function and allow a more sophisticated sense of internal cohesion.

### 1.4.3. Altered Emotionality

Several studies have demonstrated that depression is the most frequently identified symptom amongst children with trauma histories (Bagley & Ramsey, 1986; Elliot & Briere, 1992; Peters, 1984). Cognitive theorists such as Beck (1967, 1976) have linked dysphoric mood to negative cognitions developed during childhood, and Jehu (1988) has demonstrated that childhood sexual trauma is associated with a variety of abuse related negative thoughts and beliefs that, in turn, are associated with later depressive symptoms.

Since trauma is by definition threatening and disruptive, it is unsurprising that victims are also prone to feelings of fearfulness or anxiety, even well after the event/s have occurred. Experienced clinicians have reported that adults and adolescents with childhood histories of trauma often present with cognitive, classically conditioned, and somatic components of anxiety (Briere, 1992). Crucially, work by Bowlby (1969, 1973, 1988) and Ainsworth (1985) suggests that early childhood anxiety has significant impact on later emotional and interpersonal development. Early childhood trauma is likely to disrupt the secure parent-child relationship, leading to a mistrust of parental contact, thus interfering with the child's developing sense of security and belief in a safe, just world (Egeland & Erickson, 1987; Lamb et al., 1985).

Additionally, traumatised individuals frequently experience a decrease in their capacity to modulate and control anxious and aggressive feelings because they respond with hyper-arousal to emotional or sensory stimuli (see Van der Kolk & Kolb, 1987). Warding off such intensity of affect can therefore become a focal issue for many trauma victims, and this may partially explain why so many traumatised individuals medicate themselves with alcohol and drugs (Lacoursiere et al., 1980).

### 1.4.4. Dissociation

A number of studies also relate the onset of dissociative symptomatology to psychologically traumatic events, most notably to sexual, physical and psychological trauma that occurred in childhood (Brier & Runtz, 1988, 1990; Chu & Dill, 1990; Kluft, 1985).

Theorists such as van der Kolk (1984) suggest that dissociative states are one half of a 'bimodal response' to trauma in which psychic numbing, avoidance, and amnesia may alternate with, or occur simultaneously with, hyperactivity and hyperarousal. It is hypothesised that the dissociative states may function as a defence against post-traumatic distress in order to endure the overwhelming anxiety and pain associated with complete awareness (Putnam, 1985; Shengold, 1989). On the other hand, hyper-vigilance and hyper-arousal help the victimised child to escape further damage at times. However, this process may occur at the expense of fully integrative functioning (Putnam, 1985; Shengold, 1989), and if this bimodal pattern persists into adulthood it is likely to contribute to the deterioration of relationships with family members, friends, employers, and therapists. For example, apparent competence and stoicism may arouse excessive expectations, but these can then be disappointed if the individual becomes disorganised and unable to function.

#### 1.4.5. Impaired self-reference

It has been observed that individuals can suffer from the loss of an integrated sense of self, even after a single acute trauma (Elliot & Gabrielson-Cabush, 1990). Thus, clinicians have argued that trauma may interfere with the child's developing sense of self, disrupting her/his ability to refer to, and operate from, an internal awareness of personal existence that is stable across contexts, experiences, and affects (Bowlby, 1988; Cole & Putnam, 1992; McCann & Pearlman, 1990).

Without internal stability, an individual may be prone to identity confusion, boundary issues, and feelings of emptiness. This impairment may make it difficult for an individual to experience his/her internal states as separate from the behaviour of others, leading to an over-reliance on, and an associated fear of personal annihilation in the presence of abandonment (Briere, 1989). On the other hand, they may fail to understand or relate to other people independently of their own experiences or needs and have a tendency to become interpersonally isolated (Elliot & Gabrielson-Cabush, 1990).

#### 1.4.6. Re-traumatisation

In addition to experiencing persistent trauma symptoms from earlier events, research and clinical experience indicate that many traumatised children and adults expose themselves, seemingly compulsively, to situations reminiscent of their original trauma (Green, 1980; Horowitz et al., 1980; Terr, 1988). Studies indicate that a number of physiological mechanisms may play a role in this phenomenon. For example, individuals who have been exposed to highly stressful stimuli have been shown to develop long term potentiation of memory tracts that are reactivated at times of subsequent arousal. This form of state dependent learning explains how current stress may be experienced as a return of the trauma and may then cause the acting out of earlier behaviour patterns (Van der Kolk et al., 1985).

Experiments have also shown that exposure to situations reminiscent of a trauma consistently evokes an endogenous opioid response. This has psychoactive properties such as a tranquillising and antidepressant action, reducing feelings of anger, paranoia and inadequacy (van der Kolk 1983). Thus, re-exposure to stress may produce the same effect as temporary application of exogenous opioids, providing a similar relief from anxiety followed by withdrawal symptoms, perpetuating an addictive cycle (van der Kolk et al., 1985).

Additionally, childhood trauma seems to cause a long term vulnerability to excessive autonomic nervous system reactivity, and decreased ability to modulate strong affect states (Anisman et al., 1981; Van der Kolk et al., 1985). Consequently, people who are traumatised as children may require much higher activation of the endogenous opioid system for soothing. This could explain, in part, why childhood trauma is associated with subsequent self destructive behaviour such as self mutilation, sexual masochism and self starvation, since this may actually provide a relief and return to normality or self cohesiveness in the face of overwhelming anxiety (Herman & van der Kolk, 1987).

#### 1.4.7. Personality disorder and trauma: correlational studies

A consideration of the studies discussed above clearly suggests that the impact of trauma can be considerable, and persevering if untreated. It can also be seen how

such symptoms and adaptation to symptoms may be maintained or even escalate, and how they may also interact with personality functioning in a dynamic and compounding manner. In addition, the continuing presence of such symptoms may also partially explain some of the difficulties encountered by these traumatised individuals in therapy. PTSD symptoms, low expectations, poor insight, detachment, and the effects of dissociation are all likely to have complicating consequences for therapy (Loewenstein & Ross, 1992).

However, until longitudinal studies are able to examine the predictive value of observed infant differences with greater methodological thoroughness, the extent to which these and other factors may influence development is likely to remain difficult to measure with accuracy. Researchers would require multivariate studies in which all risk factors are assessed in the same patients, and their interactions considered in regression equations. Such research would have to consider biological, psychological, and social factors relating to development, and would inevitably prove to be complex and expensive.

There is, however, some evidence of the experience of trauma amongst personality disordered individuals, which is at least suggestive of such a relationship. Since the 1980s a number of studies have confirmed that Borderline individuals do tend to have been subjected to higher than normal levels of traumatic experiences in childhood and adolescence, and continue to have an increased level of trauma symptomatology. For example, Herman (1986) found that eight of 12 Borderline outpatients had reported a history of being abused as children or adolescents, and Stone (1981) reported that nine of 12 inpatients with a diagnosis of Borderline personality disorder had been victims of incest. Reinforcing these studies, Herman and colleagues (1989), found that of 21 subjects diagnosed as borderline, 71 per cent had been physically abused as children and 67 per cent had histories of childhood sexual abuse. Similarly, Briere and Zaidi's (1989) study reported that of 14 non-psychotic psychiatric patients with Borderline personality disorder or Borderline traits, 93 per cent disclosed sexual abuse before the age of 17.

More recently, a doctoral dissertation by Lobel (1990) indicates that women inpatients with a history of sexual abuse scored significantly higher on the Diagnostic Interview for Borderlines-Revised (DIB-R; Gunderson & Zanarini, 1983) than did

women with no molestation. Additionally, Ogata et al. (1990) reported that 71 per cent of 24 inpatients with borderline diagnoses were sexually abused as children.

Given the concordance of borderline characteristics with the known interpersonal effects of child abuse, and the over representation of abuse survivors among those diagnosed as Borderline, it appears possible that a primary disturbance underlying this specific diagnosis involves chronic reactions and accommodations to early childhood trauma. At the present time, however, no information is available regarding the presence of a variety of different forms of concurrently experienced trauma symptomatology across the broad range of personality disorders encountered. This is clearly important information for assessing the degree of need and for planning services.

#### 1.4.8. Clinical implications of trauma co-morbidity

Additionally, it remains important for clinical practice to define methods for accomplishing therapeutic change. Greater knowledge of the extent and form of trauma symptomatology amongst personality disordered clients may be particularly valuable in terms of comprehending an individual's emotional responses, and in the selection of appropriate intervention strategies.

Herman and van der Kolk (1994) have suggested that the validation and integration of trauma with some personality disordered clients is likely to be a precondition for restoration of an integrated self-identity and the development of an improved capacity for relationships with others. Additionally, research has demonstrated that abused Borderline sufferers do not generally perceive a connection between their current symptoms and the abusive experience in childhood. Therefore it may be helpful to include routine questioning about traumatic experiences during assessment, and again later when the psychotherapeutic alliance has been established (Brown & Anderson, 1991; Herman et al., 1989).

Such information may also have an impact upon the development of the psychological skill base of a variety of multidisciplinary staff working in secondary care. Recognition of trauma issues amongst particular patients may help staff to evaluate their interpersonal behaviour in a broader context and become more tolerant,

which in turn may facilitate a more constructive attitude towards the difficulties encountered and help avoid negative relationships and labelling.

There is also a growing body of evidence which suggests that behaviour relating to attachment, parenting, violence, and traumatic experiences may have trans-generational aspects (Adelman, 1995; Widom, 1989). If, as has been indicated by these studies, related beliefs, affect, and behaviours may be 'passed-on' to the children of traumatised individuals, then there are clearly important preventative issues that need to be addressed by mental health services.

Previous studies of trauma and personality disorder have tended to suffer from retrospective self-report designs. This is a particular problem given the client groups' compounding symptoms of dissociation, amnesia, possible confabulation/exaggeration, and the early age at which many of these influential experiences are alleged to have occurred. Additionally, such studies have examined the presence of trauma symptoms on the basis of only one or two general constructs (e.g. post-traumatic symptoms or avoidance), rather than generating a larger series of meaningful sub-scales.

### 1.5. The present study

This exploratory study aims to survey the prevalence, range and severity of personality pathology within a local secondary-care day service. The study will utilise the third edition of the Millon Clinical Multiaxial Inventory (MCMI-III; Millon, Millon & Davis, 1994) corresponding to the DSM system of categorisation. The measure parallels the ten clinical and two research (Depressive and Passive Aggressive) DSM-IV disorders, and also retains the Self-Defeating and Aggressive (sadistic) categories from the DSM-III-R. The author (Millon, 1994) regards these later categories as being of value, arguing that their exclusion from DSM-IV was due to political considerations rather than substantive clinical ones.

The DSM-IV research and DSM-III categories in the MCMI can also be rationally subsumed within the DSM clustering system for the purposes of the study; the Aggressive scale being classified as Dramatic-Erratic, and the Depressive, Self-Defeating and Passive Aggressive within the Anxious-Fearful cluster.

The study will also use the Trauma Symptom Inventory (TSI)(Briere, 1991) to examine in detail a broad range of trauma symptoms, their severity, and the way in which patterns of symptoms correlate with personality disorders. Clearly, the results from this measure will not directly identify an individual's trauma history since individuals may experience events in different ways (Elliot & Briere, 1992). Crucially however, the TSI is reportedly capable of validly distinguishing between symptoms reflecting the effect of PTSD and long-term accommodation to trauma.

Lastly, the SCL-90-R questionnaire (Derogatis, 1975) will be employed to examine the distribution of psychiatric symptoms within this population, and their association with personality disorder. These data will also be employed to identify whether personality characteristics correlating with trauma symptoms are significantly different from other mental health factors that contribute to psychological distress.

In addition, this study will also function as a pilot for a proposed multi-site survey of personality disorder prevalence and co-morbidity with trauma within the North-West region secondary care services. It is anticipated that the study will provide both provisional results as well as insights into the practical difficulties of conducting the research, such as levels of response rate and the suitability of the measures.



## 1.6. Aims

### 1.6.1. Primary Aims

- i) To identify the proportion of people attending a secondary care mental health day service who have a personality disorder, and accordingly, to examine the degree to which this is commensurate with previous estimates.
- ii) To establish to what degree the presence of a personality disorder is co-morbid with Axis I symptoms.
- iii) To establish to what degree the presence of a personality disorder is co-morbid with post traumatic or long-term adaptive trauma symptoms, independent of Axis I symptoms.

### 1.6.2. Secondary aims

- i) To briefly describe the distribution of Axis I symptoms amongst the total participant population.
- ii) To briefly describe the distribution of trauma symptoms amongst the total participant population.

### 1.6.3. Hypotheses

- i) Participants meeting personality disorder criteria will have a greater level of Axis I symptomatology than other participants.
- ii) Participants meeting personality disorder criteria will have a greater number of long term adaptive trauma symptoms than other participants, suggesting a history of repeated traumatic experiences to which the person has accommodated.

## 2.0. Method

### 2.1. Ethical Approval

An application to the relevant Local Health Authority Research Ethical Committee regarding this piece of research was submitted and subsequently ratified (approval letter in Appendix A).

### 2.2. Design

A cross sectional survey design was used. The relationships between variables were analysed using a correlational approach.

### 2.3. Participants

#### 2.3.1. Description of Participants

The data were drawn from the responses of 46 day-patients attending a local district hospital secondary care service, and five clients attending a community based day care resource center.

The day hospital functioned as a treatment center for inpatient and outpatient clients who had severe and enduring mental health problems, under the care of a consultant psychiatrist. Referrals were made via the consultant or their medical team, and each client was given an individual assessment with their locality co-worker (the nurse or occupational therapist who co-ordinated their care).

The day hospital's therapeutic focus was on productive group work, although clients may also have been provided with individual focused work towards attending groups or to compliment groups. Staff members set firm interpersonal boundaries and had clear expectations regarding consistency of attendance, engagement and socially appropriate behaviour. The community resource center, in contrast, offered ongoing maintenance and support, rather than intensive therapeutic work, for a similar secondary care client group. At the time of the study no standardized client monitoring or outcome measures were used at either of the sites.

Participants ranged in age from 18 to 61 years. Table 1 presents descriptive details of male and female participants attending the day hospital and community day care center.

Table 1. The frequency, percentage, age range, mean age and standard deviation of male and female participants.

Gender	N	%	Age Range	Mean Age	SD
Male	27	52.9	19 - 57	38	11.05
Female	24	47.1	18 - 61	37	11.35

A total of 235 individuals were initially approached to participate in the study. Of these, 18 (8 %) declined to participate in the study; all stated that they were either too distressed or busy to complete the questionnaires. Fifty-one participants returned their completed questionnaires before the final deadline, a participation rate of 23.5 per cent. Twenty individuals were excluded from the potential participant population. Criteria for exclusion from the research were as follows:

- i) Participants thought to be displaying psychotic symptoms as judged by the day unit staff and the investigator's clinical impressions.
- ii) Participants known to have a previous psychiatric diagnosis of psychosis.
- iii) Participants scoring at or above the recommended cut off on the 'psychoticism' scale of the SCL-90-R.
- iv) Participants recently or concurrently taking part in other research projects.

## 2.4. Measures

### 2.4.1. Millon Clinical Multiaxial Inventory (third edition) (MCMI-III; Millon, Millon & Davis, 1994) (Appendix B)

The Millon Clinical Multiaxial Inventory (third edition) (MCMI-III) by Millon, Millon and Davis (1994) is a 175 item, self-report personality disorder assessment instrument. The MCMI-III incorporates 24 clinical scales, each constructed as a operational measure of a syndrome derived from Millon's (1990) theory of personality and psychopathology. Included within these are 11 clinical

personality pattern scales (Schizoid, Avoidant, Depressive, Dependent, Histrionic, Narcissistic, Antisocial, Aggressive (Sadistic), Compulsive, Passive-Aggressive and self-defeating) and three severe personality pathology scales (Schizotypal, Borderline and Paranoid).

The questionnaire provides differential diagnostic cut off scores and ratings of subset scale severity, a score of 75 indicating the presence of a trait and 85 indicating a disorder. For the purposes of this study the presence of two personality scales scoring above 85 was utilised as a criterion to denote presence of a personality disorder. The questionnaire requires 20-30 minutes to complete, and also includes three severe syndrome scales, three modifying indices and a validity index. A computer-scoring programme was used to aid speed and reliability.

Several hundred clinicians and over 1000 North-American adult clinical clients participated in the test's development. The reliability and validity of the MCMI-III have been well demonstrated. The internal consistency for the clinical scales alpha coefficients exceeded 0.80 for 20 of the 26 scales. In terms of test-retest reliability the median stability coefficient was 0.91. The MCMI-III's validity was assessed by calculating correlations between the scale scores and clinical ratings and collateral test scores. The results indicated generally high correlations, all of which were beyond the 0.01 level of confidence.

#### 2.4.2. The Trauma Symptom Inventory (TSI) (Briere, 1991) (Appendix C)

The Trauma Symptom Inventory (TSI) by Briere (1991) is a 100 item self-report questionnaire designed to assess the impact of traumatic experience. The TSI provides ten clinical scales which measure the extent to which the respondent endorses ten different types of trauma related symptoms: Anxious Arousal, Depression, Anger/Irritability, Intrusive Experiences, Defensive Avoidance, Dissociation, Sexual Concerns, Dysfunctional Sexual Behaviour, Impaired Self-Reference and Tension Reduction Behaviour. These can, in turn, be subsumed under two broad categories of distress: Post-traumatic stress and Self-dysfunction.

The questionnaire includes three validity scales and takes approximately 20 minutes to complete. This study will apply the suggested T score cut off of 65 (1.5 deviations above the mean) for trauma scales to be considered clinically significant.

Eight hundred randomly chosen postal respondents, 200 university students, approximately 400 clinical clients and nearly 4000 U.S. Navy recruits participated in the test's development. The measure was found to have satisfactory levels of reliability and validity. Reliability coefficients for the TSI clinical scales ranged from 0.74 to 0.91 (mean = 0.86).

The test's construct validity was evaluated by discriminant function analyses which examined the relationship between TSI T scores and four types of traumatic experience - adult interpersonal violence, adult disaster, childhood interpersonal violence and childhood disaster. Both trauma types were significantly associated with elevated TSI scores at confidence levels beyond the 0.01 level.

Criterion validity was assessed using a known groups methodology. Firstly, 449 members of the general population sample were categorised as being PTSD positive or negative based upon Astin, and colleague's (1993) joint scoring of the Impact of Events Scale (IES) (Horowitz et al., 1979) and SCL-90-R. The TSI correctly predicted 92 per cent of PTSD positive cases and 91 per cent of negative cases. Secondly 105 psychiatric inpatients were independently assessed for the presence of Borderline Personality Disorder using DSM-III-R criteria. TSI scales correctly predicted 89 per cent of those receiving a Borderline diagnosis and 82 per cent of non-Borderlines.

#### 2.4.3. The SCL-90-R (Derogatis, 1975) (Appendix D)

The SCL-90-R by Derogatis (1975) is a 90 item, self report measure of psychiatric symptoms consisting of the following nine symptom constructs: i) Somatization, ii) Obsessive compulsive, iii) Interpersonal sensitivity, iv) Depression, v) Anxiety, vi) Hostility, vii) Phobic anxiety, viii) Paranoid ideation and ix) Psychoticism. The measure also provides a General Symptomatic Index of distress (GSI). A score of 63 or greater on either the GSI, or on any two of the clinical items indicates a positive diagnosis of psychological distress that may merit a psychiatric diagnosis (Derogatis et al., 1984).

The psychometric properties of the SCL-90-R have been well demonstrated (Derogatis, 1983). A computer-scoring programme was used to aid speed and reliability.

#### 2.4.4. Roch House Induction Client Questionnaire (Appendix E)

For the purposes of the study, demographic and social information was also obtained from the Roch House Induction Client Questionnaire. Participants reported on their sex, age, occupation, marital status, number of times married and ethnic group. In addition, similar details were also obtained from the Rose-Lee participants via a brief client interview. Demographic data relating to the sample can be found in the results section.

#### 2.5. Procedure

Potential participants at the hospital site were introduced to the study via a brief introductory letter (Appendix F). This was enclosed with their initial appointment letter inviting them to attend an hour-long introduction to the day centre.

Subsequently, the researcher addressed clients attending the induction group and explained the rationale of the study in greater detail. The voluntary and confidential nature of the research was stressed and adequate time was provided for questions. An information sheet was also supplied (Appendix G) to complement/augment the verbal explanation.

It was explained to the participants that they had the option of completing the questionnaires and consent form either immediately following the induction group, or whilst at home, these were then to be returned in a self addressed envelope. Instructions were provided, which specified completion of the measures during a single sitting in the following order: the SCL-90-R, the MCMI-III and finally the TSI. Lastly, participants were asked if they had any further questions and thanked for their participation. Demographic and social information was obtained from the day hospital Induction Client Questionnaire which was completed as a matter of course by all clients attending the induction group.

The specific term 'personality disorder' was not employed in the study description or the participant literature, as it was thought that the phrase had recently acquired unhelpful and erroneous associations due to its generally over-simplified use in the media.

Participants who had agreed to take part in the study, but had not returned their questionnaires over one month after the induction group, were followed-up via their day hospital key-worker. The key workers were asked during their regular client meetings to give these participants a single prompt to complete the forms and offer a second set of questionnaires should the first have been misplaced.

At the community site a brief introductory letter (Appendix H) was also sent to potential participants who had not been excluded following a prior consultation with staff. Clients were encouraged to inform a member of staff at the centre if they thought they might be willing to participate in the study or if they wanted additional information before deciding.

The researcher contacted those clients who expressed an interest and made appointments to meet them at the community centre either individually or in small groups. A similar procedural format to that at the day hospital was employed, although several brief demographic/social information questions were asked (Appendix I). The researcher provided follow-up directly via letters rather than through the mediation of a key-worker.

The researcher had worked clinically with a range of adult clients including those with trauma issues, and was sensitive to the possible stresses involved in completing the psychometric questionnaires. During the study no particular psychological difficulties related to the research were reported by participants, although provision had been arranged for appropriate referrals to be made to the clinical psychology service should the need have arisen.

The data collection began during September 1998 and continued for 20 weeks. Information gained from the participants during the study was anonymised. The questionnaires were kept in a locked filing cabinet and destroyed after use.

## 2.5. Statistics

The data were evaluated using frequencies, descriptive statistics, Pearson's Chi-square tests, Pearson's product moment correlations, Spearman's rho correlations and multiple regression analyses. The inferential statistics used two tailed tests, and the study utilized the 0.05 significance level. Significance levels of 0.05 to 0.1 were regarded as non-significant trends.

### 3.0. Results

#### 3.1. Descriptive Statistics

##### 3.1.1. MCMI-III data

The MCMI-III data were examined to identify the proportion of participants meeting the criteria for a personality disorder, the distribution of the clinical types and the extent to which these collapsed into tripartite cluster categories.

Of the total population 28 participants (55%) achieved personality disorder caseness by scoring above 85 on at least two clinical personality scales. For a detailed breakdown of MCMI-III clinical personality scale scores and caseness see Table 2 and figure 1.

Table 2: The mean, standard deviation, minimum and maximum scores and frequency of caseness for each MCMI-III personality disorder category (n=51)

Clinical Syndrome		Mean	SD	Min	Max	Caseness	%
1	Schizoid	69.94	20.99	0	110	9	18 %
2A	Avoidant	79.59	19.59	11	113	16	31 %
2B	Depressive	81.86	17.27	11	109	22	43 %
3	Dependent	77.39	17.07	40	99	21	41 %
4	Histrionic	29.71	20.80	0	83	0	0 %
5	Narcissistic	37.55	23.15	0	115	2	4 %
6A	Antisocial	55.76	21.44	0	89	1	2 %
6B	Aggressive	57.55	18.63	0	96	2	4 %
7	Compulsive	57.55	19.30	0	77	0	0 %
8A	Passive-Aggressive	66.65	21.66	13	100	9	18 %
8B	Self-Defeating	74.18	17.45	0	106	9	18 %
S	Schizotypal	65.18	10.48	37	85	1	2 %
C	Borderline	69.61	16.28	27	99	11	21 %
P	Paranoid	63.33	22.19	0	108	4	8 %

All but one of the participants reaching MCMI-III caseness met the criteria for inclusion in one or more of the three personality clusters (see Table 3); 17 participants (33%) met the criteria for one cluster, eight (16%) met the criteria for two clusters and two (4%) met the criteria for three clusters (see Table 4).

Twenty-four participants (47%) met the criteria for the Anxious-Fearful cluster, scoring at 85 or above on any two of the Avoidant, Depressive, Dependant, Passive-Aggressive, Compulsive or Self-Defeating clinical personality scales. Eleven



participants (22%) met the criteria for the Dramatic-Erratic cluster, scoring at 85 or above on the Borderline severe personality scale, or any two of the Borderline, Aggressive, Histrionic, Narcissistic, or Anti-social scales. Four participants (8%) met the criteria for the Odd-Eccentric cluster, scoring at 85 or above on the Paranoid or Schizotypal severe personality scales, or any two of the Paranoid, Schizotypal or Schizoid scales (see Table 3).

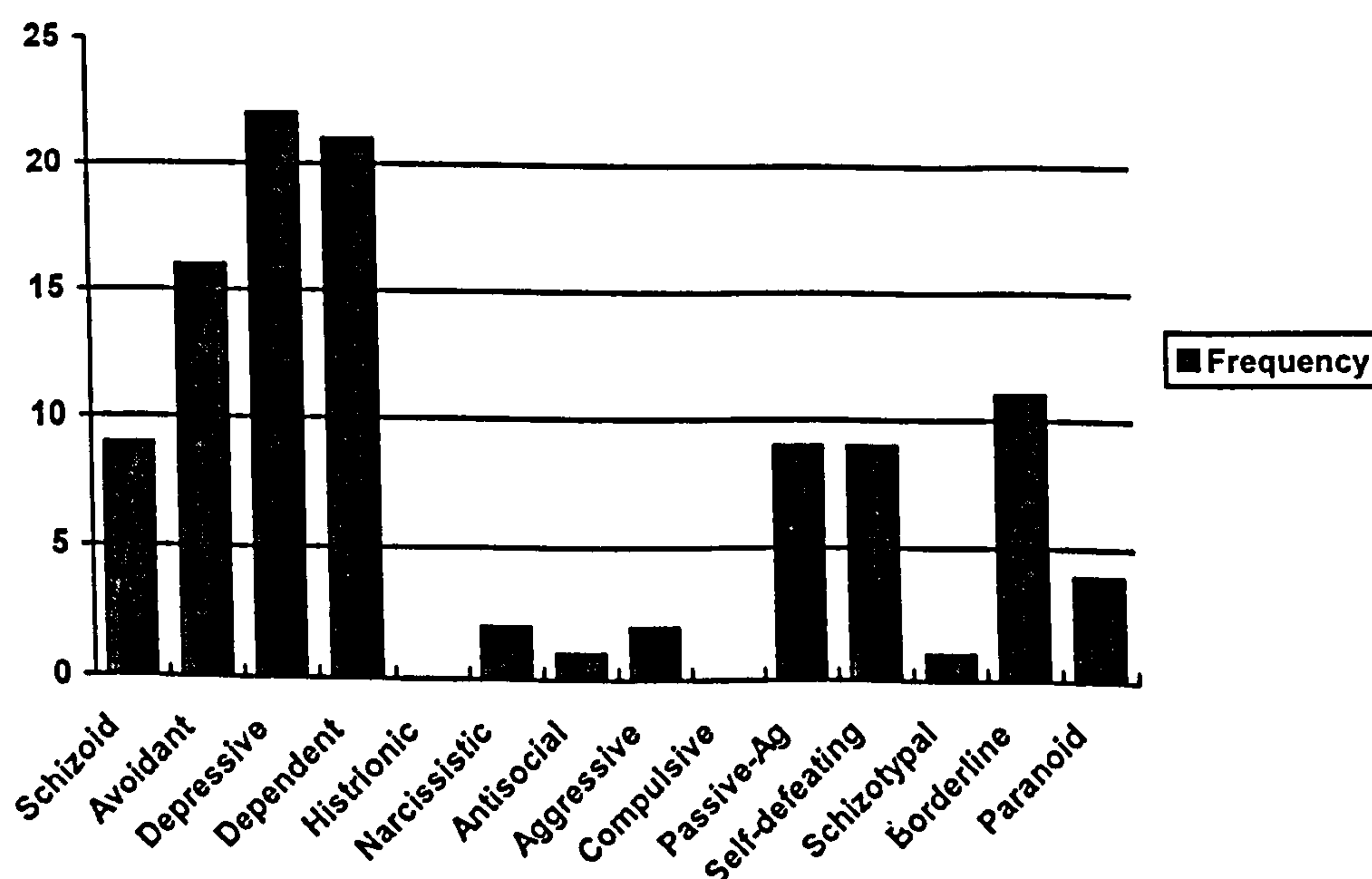
Table 3: The number of participants meeting the criteria for MCMII-III caseness and personality disorder cluster caseness (n=51)

Cluster	Frequency	%
MCMII caseness	28	55 %
MCMII caseness - no cluster	1	2 %
Cluster C (Anxious-Fearful)	24	47 %
Cluster B (Dramatic-Erratic)	11	22 %
Cluster A (Odd-Eccentric)	4	8 %

Table 4: The number of participants meeting the criteria for either zero, one, two or three MCMII-III personality disorder clusters (n=51).

No of clusters	Frequency	%
0 Clusters	24	47 %
1 Cluster	17	33 %
2 Clusters	8	16 %
3 Clusters	2	4 %
Total	51	100 %

Figure 1: The frequency of caseness for each MCMII-III personality disorder category (n=51)



### 3.1.2. SCL-90-R data

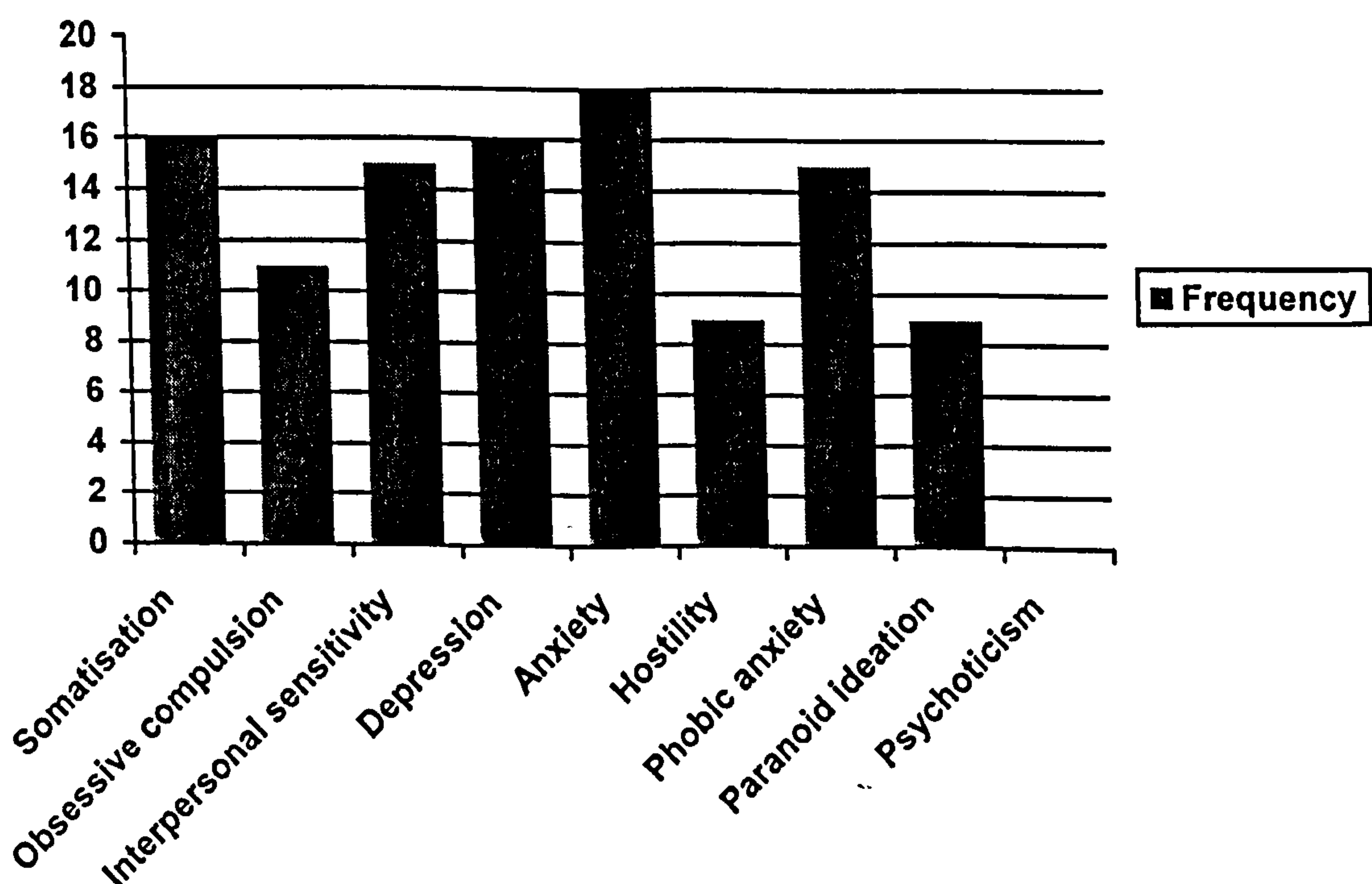
The SCL-90-R data was examined to briefly describe the distribution of Axis I symptoms and caseness amongst (1) the total participant population, (2) those meeting MCMI-III caseness, and (3) those not meeting MCMI-III caseness.

Of the 47 participants completing the SCL-90-R, 25 (53.2%) achieved caseness by scoring above 63 on at least two clinical scales or above 63 on the GSI score. For a detailed breakdown of the SCL-90-R clinical scale scores and caseness see Table 5 and Figure 2.

Table 5. The mean, standard deviation, minimum and maximum scores and frequency of caseness for each SCL-90-R clinical category ( $n=47$  (4 missing cases)).

SCL-90-R Clinical Scales	Mean	SD	Min	Max	Caseness	%
Somatization	57.60	7.86	33	76	16	34 %
Obsessive Compulsive	55.87	11.80	2	74	11	23 %
Interpersonal Sensitivity	55.51	12.34	0	73	15	32 %
Depression	57.60	7.86	43	74	16	34 %
Anxiety	55.34	12.75	0	72	18	38 %
Hostility	51.87	14.72	0	76	9	19 %
Phobic Anxiety	56.72	18.68	0	81	15	32 %
Paranoid Ideation	56.91	9.50	36	73	9	19 %
Psychoticism	53.04	7.12	40	62	0	0 %
General Severity Index	58.38	10.01	39	73	16	34 %
SCL-90-R caseness	N/A	N/A	N/A	N/A	25	53%

Figure 2: The frequency of caseness for each SCL-90-R clinical category ( $n=47$  (4 missing cases))



Of the 26 participants completing the SCL-90-R and meeting MCMI-III caseness, 15 (57%) achieved SCL-90-R caseness. For a detailed breakdown of the SCL-90-R clinical scale scores and caseness see Table 6.

Table 6: The mean, standard deviation, minimum and maximum scores and frequency of caseness of each SCL-90-R clinical category for participants meeting MCMI-III caseness ( $n=26$  (2 missing cases)).

SCL-90-R Clinical Scales	Mean	SD	Min	Max	Caseness	%
Somatization	60.77	11.09	33	76	12	46%
Obsessive Compulsive	57.15	14.15	2	69	8	31%
Interpersonal Sensitivity	59.23	8.36	46	73	11	42%
Depression	60.42	6.71	48	74	10	38%
Anxiety	58.73	9.85	37	71	12	46%
Hostility	54.88	10.71	35	76	7	27%
Phobic Anxiety	60.92	17.98	0	81	13	50%
Paranoid Ideation	55.12	9.83	36	73	7	27%
Psychoticism	55.46	6.44	41	63	0	0%
General Severity Index	61.77	10.19	42	78	13	50%
SCL-90-R caseness	N/A	N/A	N/A	N/A	15	57%

Of the 21 participants completing the SCL-90-R and not meeting MCMI-III caseness, 10 (47%) achieved caseness on the SCL-90-R. For a detailed breakdown of the SCL-90-R clinical scale scores and caseness see Table 7.

Table 7: The mean, standard deviation, minimum and maximum scores and frequency of caseness of each SCL-90-R clinical category for participants not meeting MCMI-III caseness ( $n=21$  (2 missing cases)).

SCL-90-R Clinical Scales	Mean	SD	Min	Max	Caseness	%
Somatization	57.05	8.71	43	73	8	39%
Obsessive Compulsive	54.57	8.27	42	74	4	20%
Interpersonal Sensitivity	51.10	15.05	0	73	5	24%
Depression	54.10	7.91	43	68	6	29%
Anxiety	51.10	14.77	9	72	5	24%
Hostility	48.00	18.14	9	76	2	10%
Phobic Anxiety	51.52	18.65	9	81	2	10%
Paranoid Ideation	50.19	8.53	39	72	2	10%
Psychoticism	50.05	6.92	40	61	0	0%
General Severity Index	54.19	8.22	39	73	4	20%
SCL-90-R caseness	N/A	N/A	N/A	N/A	10	47%

### 3.1.3. TSI data

The scores from the TSI questionnaires were examined to identify the distribution of the clinical sub-scales and the proportion of participants meeting the criteria for the PTSD and Self-dysfunction trauma categories.

Twenty-nine participants (57%) met the criteria for the PTSD trauma scale, scoring at 65 or above on any two of the Intrusive-Experiences, Dissociation or Defensive-Avoidance clinical TSI sub-scales. Twenty participants (40%) met the criteria for the Self-dysfunction trauma scale, scoring at 65 or above on any two of the Tension Reduction Behaviour, Dysfunctional Sexual Behaviour or Impaired Self Reference clinical TSI sub-scales (Table 9). For a detailed breakdown of TSI clinical scale scores and caseness see Table 8 and Figure 3.

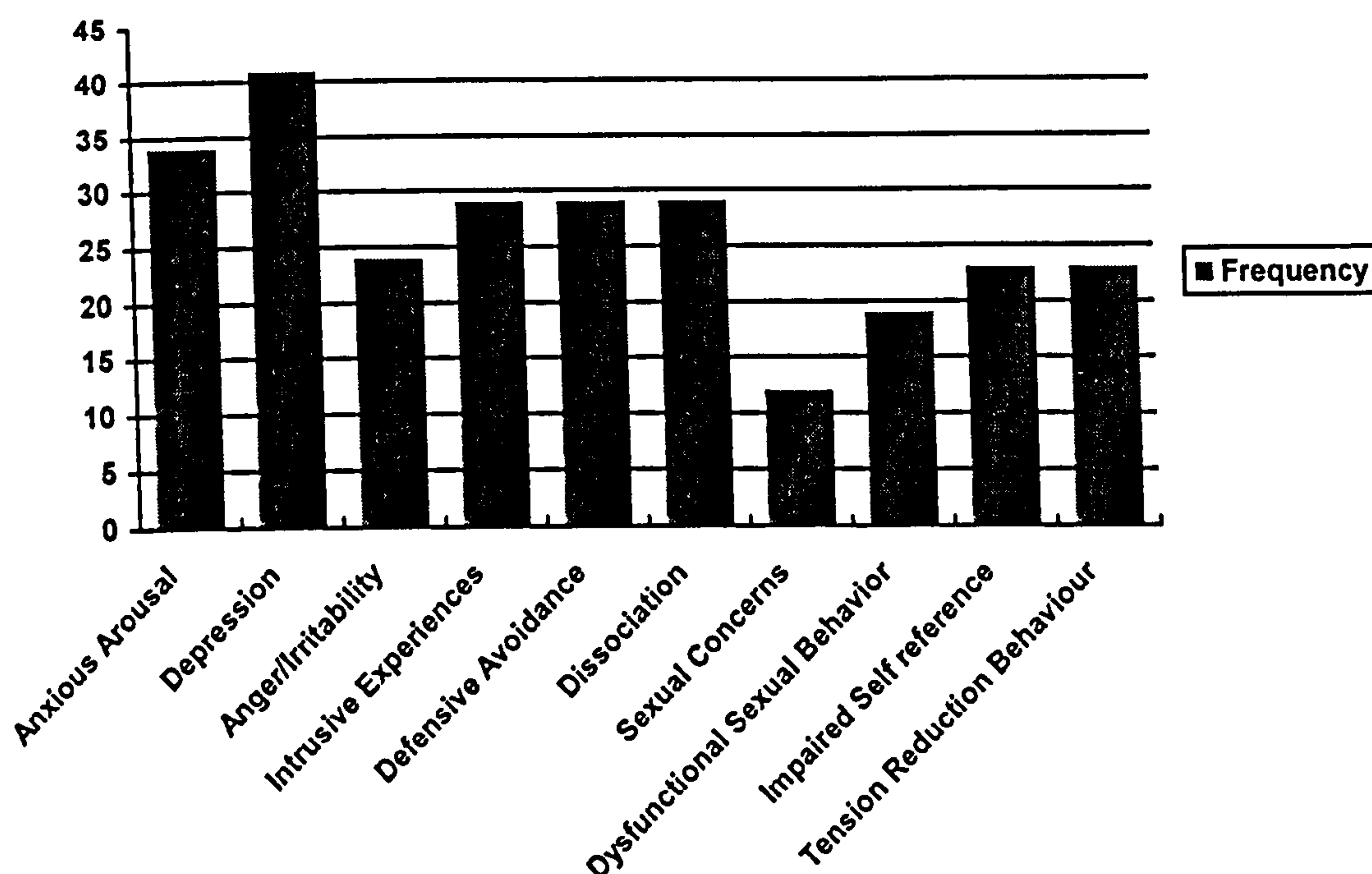
Table 8: The mean, standard deviation, minimum and maximum scores and frequency of caseness for each TSI clinical sub-scale (n=51)

Clinical Sub-scales	Mean	SD	Min	Max	Caseness	%
Anxious Arousal (AA)	67.57	10.62	43	90	34	67 %
Depression (D)	72.53	8.30	47	83	41	80 %
Anger/Irritability (AI)	61.43	11.53	37	87	24	47 %
Intrusive Experiences (IE)	65.24	11.89	42	93	29	57 %
Defensive Avoidance (DA)	64.90	10.26	42	89	29	57 %
Dissociation (DIS)	66.73	12.22	41	89	29	57 %
Sexual concerns (SC)	55.43	10.01	42	82	12	24 %
Dysfunctional Sexual Bhr (DSB)	57.82	14.93	44	87	19	37 %
Impaired Self Reference (ISR)	64.41	8.17	47	80	23	45 %
Tension Reduction Bhr (TRB)	64.76	12.16	46	88	23	45 %

Table 9: The number of participants meeting the criteria for the TSI PTSD and Self-dysfunction scales (n=51)

Trauma	Number	Percentage
PTSD only	15	29.4 %
Self-dysfunction only	6	11.8 %
Both PTSD & Self-dysfunction	14	27.4 %
No trauma	16	31.4 %
Total	51	100 %

Figure 3: The frequency of caseness for each TSI clinical scale (n=51)



### 3.2. Inferential statistics

A series of analyses were conducted to explore the relationships between personality disorder, personality disorder clusters, Axis I and trauma symptoms. Initially, correlational tests were conducted to examine the internal relationships of the trauma scales and personality disorder clusters, in order to identify whether they could be regarded as separate constructs. Following this, Chi squared tests were employed to focus on participant caseness. Thirdly, relationships between the constructs were examined using correlational tests and partial correlations. A Multiple regression analysis was then employed to examine the predictive value of the associations identified. Finally, the relationship between these variables and participants' age and gender was explored.

### 3.2.1. Internal correlations

A Pearson's product moment correlation was used to examine the relationship between the two TSI trauma scales, PTSD and Self-dysfunction. A non-significant positive correlation was found between the PTSD and Self-dysfunction scores ( $r=0.24$ ,  $n=51$ ,  $p<0.1$ ). A partial correlation was also used to examine the relationship between the two TSI trauma scales, PTSD and Self-dysfunction, whilst controlling for GSI scores. No significant relationship was found between the trauma scale scores ( $r=0.01$ ,  $n=47$ ,  $p>0.05$ ) (Appendix K, Tables 23 & 24).

Pearson's product moment correlations were used to examine relationships between the three MCMI-III personality disorder cluster scores, Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric. A significant positive correlation was found between the Anxious-Fearful and Odd-Eccentric cluster scores ( $r=0.30$ ,  $n=51$ ,  $p<0.05$ ). No significant relationship was found between the Anxious-Fearful and Dramatic-Erratic clusters ( $r=0.15$ ,  $n=51$ ,  $p>0.05$ ) or the Dramatic-Erratic and Odd-Eccentric clusters ( $r=0.20$ ,  $n=51$ ,  $p>0.05$ ).

Partial correlations were also used to examine relationships between the three MCMI-III personality clusters whilst controlling for GSI scores. No significant correlations were found between the three clusters, although a non-significant positive correlation was found between the Anxious-Fearful and Odd-Eccentric cluster scores ( $r=0.28$ ,  $n=47$ ,  $p<0.1$ ) (Appendix K, Tables 24 & 25).

### 3.3. Chi squared tests

Chi-squared tests were used to examine relationships between the number of participants who scored at the caseness level on the SCL-90-R and the number achieving caseness on the MCMI, and in the Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric clusters. However, no significant associations were found between the numbers of participants achieving SCL-90-R caseness and the number of participants achieving caseness on the MCMI-III or in the Anxious-Fearful, Dramatic-Erratic or Odd-Eccentric clusters (see Table 10).

Table 10. Chi squared: SCL-90-R caseness by MCMI-III cluster (n=47)

MCMI-III Cluster	SCL-90-R caseness	
	X <sup>2</sup>	p
Anxious-Fearful	1.82	0.18
Dramatic-Erratic	0.06	0.81
Odd-Eccentric	0.84	0.35
MCMI caseness	1.63	0.20

In addition, Chi-squared tests were used to examine relationships between the number of participants who scored at the caseness level on the SCL-90-R and the number achieving caseness on either of the two TSI trauma scales of PTSD and Self-dysfunction (see Table 11). A non-significant trend was found between SCL-90-R caseness and PTSD caseness. Participants achieving SCL-90-R caseness were more likely to reach PTSD caseness than would be expected by chance ( $X^2= 3.42$ ,  $df= 1$ ,  $p<0.1$ ). No associations were found between the numbers of participants achieving SCL-90-R caseness and the number of participants achieving caseness in the Self-dysfunction category.

Table 11. Chi-squared: SCL-90-R caseness by TSI category (n=47)

Trauma Scale	SCL-90-R caseness	
	X <sup>2</sup>	p
PTSD	3.42	0.06
Self-dysfunction	0.43	0.51

Chi-squared tests were used to examine relationships between the number of participants who scored at the caseness level on either of the two trauma scales PTSD and Self-dysfunction and the number achieving criteria for caseness on the MCMI and in the Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric clusters (Table 12).

Participants achieving PTSD caseness on the TSI were significantly more likely to achieve caseness on the MCMI ( $X^2= 5.37$ ,  $df=1$ ,  $p<0.05$ ) and in the Dramatic-Erratic cluster ( $X^2= 6.62$ ,  $df=1$ ,  $p<0.01$ ) than would be expected by chance. A non-significant trend was found between PTSD caseness and the Anxious-Fearful cluster ( $X^2=3.61$ ,  $df=1$ ,  $p<0.1$ ). No significant associations were found between the numbers of participants achieving PTSD caseness and the number of participants achieving caseness in the Odd-Eccentric cluster.

Participants achieving Self-dysfunction caseness on the TSI were significantly more likely to achieve caseness on the MCMI -III ( $X^2= 8.37$ ,  $df=1$ ,  $p<0.01$ ) and in the Dramatic-Erratic cluster ( $X^2= 10.90$ ,  $df=1$ ,  $p<0.01$ ) than would be expected by chance. No significant associations were found between the numbers of participants achieving Self-dysfunction caseness and the number of participants achieving caseness in the Anxious-Fearful cluster or the Odd-Eccentric cluster.

Table 12. Chi squared: PTSD/Self-dysfunction caseness (TSI) by MCMI-III Cluster (n=51)

MCMI-III Cluster	PTSD		Self-dysfunction	
	X <sup>2</sup>	p	X <sup>2</sup>	p
Anxious-Fearful	3.61	0.06	2.21	0.14
Dramatic-Erratic	6.62	0.01	10.90	0.00
Odd-Eccentric	3.03	0.11	2.33	0.28
MCMI caseness	5.37	0.02	8.37	0.01

#### 3.4. Correlational tests

Pearson's product moment correlations were used to examine relationships between SCL-90-R GSI scores and the Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric cluster scores (see Table 13). The SCL-90-R GSI scores were significantly positively correlated with the Odd-Eccentric category scores ( $r=0.55$ ,  $n=47$ ,  $p<0.01$ ). The SCL-90-R GSI scores were not correlated with the Anxious-Fearful scores ( $r=0.13$ ,  $n=47$ ,  $p>0.05$ ), or the Dramatic-Erratic scores ( $r=0.13$ ,  $n=47$ ,  $p>0.05$ ).

Table 13. Bivariate correlations: GSI by personality disorder cluster (n=47)

MCMI-III Cluster	GSI	
	r	p
Anxious-Fearful	0.13	0.39
Dramatic-Erratic	0.13	0.38
Odd-Eccentric	0.55	0.00

Pearson's product moment correlations were also used to examine correlations between the SCL-90-R GSI scores and the PTSD and Self-dysfunction TSI trauma



scales. The SCL-90-R GSI scores were significantly positively correlated with both the PTSD category trauma scores ( $r=0.53$ ,  $n=47$ ,  $p<0.01$ ) and the Self-dysfunction category trauma scores ( $r=0.30$ ,  $n=47$ ,  $p<0.05$ ) (see Table 14).

Table 14. Bivariate correlations: GSI by TSI trauma category ( $n=47$ )

Trauma Scale	GSI	
	r	p
PTSD	0.53	0.00
Self-dysfunction	0.30	0.04

Pearson's product moment correlations were also used to examine relationships between the PTSD and Self-dysfunction trauma scale scores and the Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric clusters (see Table 15).

The PTSD scale scores were significantly positively correlated with the Dramatic-Erratic ( $r=0.31$ ,  $n=51$ ,  $p<0.05$ ) and Odd-Eccentric category scores ( $r=0.28$ ,  $n=51$ ,  $p<0.05$ ). The PTSD scores were not correlated with the Anxious-Fearful cluster scores. The Self-dysfunction scores were significantly positively correlated with the Dramatic-Erratic ( $r=0.52$ ,  $n=51$ ,  $p<0.01$ ) and Odd-Eccentric category scores ( $r=0.36$ ,  $n=51$ ,  $p<0.05$ ). The Self-dysfunction scores were not correlated with the Anxious-Fearful cluster scores.

Table 15. Bivariate correlations: PTSD & Self-dysfunction scores by MCMI-III Cluster scores ( $n=51$ )

MCMI-III Cluster	PTSD		Self-dysfunction	
	r	p	r	p
Anxious-Fearful	0.01	0.96	0.09	0.49
Dramatic-Erratic	0.31	0.03	0.52	0.00
Odd-Eccentric	0.28	0.04	0.36	0.01

Partial correlations were also used to examine the relationships between PTSD and Self-dysfunction trauma scale scores and the Anxious-Fearful, Dramatic-Erratic and Odd-Eccentric clusters, whilst controlling for SCL-90-R GSI scores (see Table 16).

A non-significant positive correlation was found between PTSD scores and the Dramatic-Erratic cluster scores ( $r=0.28$ ,  $n=47$ ,  $p<0.1$ ). The PTSD scores were not correlated with the Anxious-Fearful or Odd-Eccentric cluster scores. The Self-dysfunction scale scores were significantly positively correlated with the Dramatic-Erratic ( $r=0.52$ ,  $n=47$ ,  $p<0.01$ ) scores. A non-significant positive correlation was found between the Self-dysfunction scores and the Odd-Eccentric cluster scores ( $r=0.27$ ,  $n=47$ ,  $p<0.1$ ). The Self-dysfunction scores were not correlated with the Anxious-Fearful cluster scores.

Table 16. Partial correlations: PTSD & Self-dysfunction scores by MCMI-III Cluster scores, controlling for GSI ( $n=47$ )

MCMI-III Cluster	PTSD		Self-dysfunction	
	r	p	r	p
Anxious-Fearful	-0.09	0.54	0.06	0.71
Dramatic-Erratic	0.28	0.06	0.52	0.00
Odd-Eccentric	0.01	0.94	0.27	0.07

### 3.5. Regressions

Multiple regression analyses were used to examine the predictive value of trauma on the Dramatic-Erratic cluster scores after controlling for Axis I and the other Axis II disorders (see Table 17). Hence, the GSI scores were the first variable entered into the equation, followed by the Anxious-Fearful and Odd-Eccentric cluster scores, and lastly the PTSD and Self-dysfunction scores.

The Dramatic-Erratic cluster scores were significantly positively associated with both the PTSD ( $F=2.06$ ,  $p<0.05$ ) and Self-dysfunction ( $F=3.83$ ,  $p<0.01$ ) category scores. The Dramatic-Erratic cluster scores were not significantly associated with the GSI, Anxious-Fearful, or Odd-Eccentric cluster scores. The regression equation accounted for 31 per cent of the variance in Dramatic-Erratic cluster scores.

Table 17. Summary of multiple regression analysis involving predictors of Dramatic-Erratic cluster scores ( $n= 51$ )

Predictor variable	Beta	F	p
GSI	-0.23	-1.41	0.17
Anxious-Fearful cluster	-0.18	-1.43	0.16
Odd-Eccentric cluster	0.13	0.87	0.39
PTSD	0.29	2.06	0.04
Self-dysfunction	0.51	3.83	0.00

Total  $R^2 = 0.31$

### 3.6. Dramatic-Erratic cluster and Self-dysfunction sub-scales

The study also attempted to investigate the nature of the association between trauma and the Dramatic-Erratic cluster in greater detail. Spearman's Rho correlations were used to examine relationships between the Dramatic-Erratic cluster scores and the Impaired Self Reference, Tension Reduction Behaviour and Disturbed Sexual Behaviour sub-scale scores comprising the Self-dysfunction trauma scale.

The Dramatic-Erratic cluster scores were significantly positively correlated with the TRB ( $r=0.61$ ,  $n=51$ ,  $p<0.01$ ) and DSB category scores ( $r=0.43$ ,  $n=51$ ,  $p<0.01$ ). The Dramatic-Erratic cluster scores were not correlated with the ISR category scores (Table 18).

Table 18. Bivariate correlations: Dramatic-Erratic cluster by Self-dysfunction Sub-scales ( $n=51$ )

MCMI-III Cluster	ISR		TRB		DSB	
	r	p	r	p	r	p
Dramatic-Erratic	0.04	0.76	0.61	0.00	0.43	0.00

Partial correlations were also used to examine the relationship between Dramatic-Erratic cluster scores and the ISR, TRB and TRB sub-scale scores whilst controlling for SCL-90-R GSI scores. The Dramatic-Erratic cluster scores were significantly positively correlated with the TRB ( $r=0.57$ ,  $n=47$ ,  $p<0.01$ ) and DSB category scores ( $r=0.44$ ,  $n=47$ ,  $p<0.01$ ). The Dramatic-Erratic cluster scores were not correlated with the ISR category scores (Table 19).

Table 19. Partial correlations: Dramatic-Erratic cluster by Self-dysfunction sub-scales, controlling for GSI (N=47).

MCMI-III Cluster	ISR		TRB		DSB	
	r	p	r	p	r	p
Dramatic-Erratic cluster	0.13	0.93	0.57	0.00	0.44	0.00

### 3.7. Participant gender

The analysis also attempted to investigate previous findings linking gender to personality cluster. Chi-squared tests were used to examine relationships between participant gender and the number of participants achieving caseness level on the MCMI-III, the MCMI-III clusters, the trauma scales and the SCL-90-R. (Table 20). No significant associations were found between participant gender and these variables.

Table 20. Chi squared: Participant gender by TSI caseness, MCMI-III caseness & GSI caseness (n=47)

Variable caseness	Gender	
	X <sup>2</sup>	p
Anxious-Fearful	0.07	0.78
Dramatic-Erratic	0.32	0.57
Odd-Eccentric	1.85	0.17
MCMI-III	0.00	0.92
PTSD	0.13	0.74
Self-dysfunction	0.11	0.74
SCL-90-R	0.30	0.86

### 3.8. Participant age

The analysis also explored whether participant age was related to the study's major variables. Partial correlations were used to examine relationships between participant age and the MCMI-III cluster scores and the TSI scale scores, whilst

controlling for SCL-90-R GSI scores. Participant age was significantly negatively correlated with the Odd-Eccentric cluster ( $r=-0.31$ ,  $n=47$ ,  $p<0.05$ ) and the Self-dysfunction trauma category scores ( $r=-0.36$ ,  $n=47$ ,  $p<0.05$ ). Participant age was not significantly correlated with the Anxious-Fearful or Dramatic-Erratic scores, nor were the PTSD scale scores (Table 21).

Table 21. Partial correlations: Participant age by TSI scales and MCMI-III cluster scores, controlling for GSI ( $n=47$ )

Variable	AGE	
	r	p
Anxious-Fearful	-0.16	0.28
Dramatic-Erratic	-0.21	0.16
Odd-Eccentric	-0.31	0.04
PTSD	0.21	0.17
Self-dysfunction	-0.36	0.02

To complete this analysis, a Pearson's product moment correlation was used to examine the relationship between participant age and the SCL-90-R GSI scores. However, no significant correlation was found between these variables (Table 22).

Table 22. Bivariate correlation: Participants age by GSI scores ( $n=47$ )

	AGE	
	r	p
GSI	0.05	0.76

## 4.0. Discussion

### 4.1. Primary aim (i)

The first aim of the study was to identify the proportion of people attending a secondary care mental health day service who have a personality disorder, and accordingly, to examine the degree to which this is commensurate with previous estimates.

The results revealed a fairly high rate of personality disorder (55%) within the clinical population as measured by the MCMI-III. This would seem to be broadly in line with the findings of other studies that have examined the incidence of personality pathology in secondary care samples (Tyrer et al., 1991).

The clinical personality scales most commonly experienced at caseness level consisted of the Depressive (43%), Dependent (41%) and Avoidant (31%) scales, followed by the Borderline (21%), Schizoid (18%), Passive-Aggressive (18%) and Self-Defeating (18%) categories. The remaining personality classifications were attained by less than 10 per cent of the population. It is difficult to place these results in an appropriate context since previous studies have not examined the full range of these disorders within a comparable population. However, this distributive pattern was broadly consistent with the past clinical observations of psychologists and staff working in the day hospital.

When these results were collapsed into the three DSM-IV personality disorder clusters, 47 per cent of the overall population met the study's criteria for the Anxious-Fearful cluster, 22 per cent for the Dramatic-Erratic cluster and eight per cent for the Odd-Eccentric. There was some overlap amongst these groupings, as 16 per cent of the participants were placed in two clusters and four per cent in three clusters.

When GSI scores were controlled for, none of the three cluster scores were found to be significantly correlated with each other, although a non-significant positive correlation was found between the Anxious-Fearful and the Odd-Eccentric clusters ( $r=0.28$ ,  $p<0.1$ ). This analysis would seem to indicate that, for the purposes of the present study, the three personality disorder clusters might be legitimately regarded as an independent item; thus tentatively supporting the tripartite cluster system. However, a degree of caution ought to be exercised when interpreting

correlations involving the Anxious-Fearful cluster, since the variable's skewness and kurtosis lie outside the recommended optimal range of plus two to minus two (being -3.50 and 3.46 respectively).

In evaluating these results it should be borne in mind that the categories as assessed by the MCMI-III included the two research disorders from the appendix of DSM-IV, and the Self-Defeating and Aggressive (sadistic) groups included in DSM-III. A strict adherence to the current DSM-IV nomenclature would have excluded these categories, however, since they are routinely used by some clinicians and researchers (Millon, 1996) it was thought to be appropriate to include their results for exploratory purposes.

Conclusions from these data must also be drawn somewhat tentatively due to the relatively low participation rate, and the exclusion of individuals displaying a high number of psychotic symptoms. These factors may have led to an underestimation of the number and severity of personality disorders in this population, particularly those reporting schizotypal features.

Additionally, the results need be considered in the context of the particular service provided, and ethos within the chosen sites. Within the day hospital in particular, there is a therapeutic focus on productive group work, and consequently staff members set firm interpersonal boundaries and have clear expectations regarding consistency of attendance, engagement and socially appropriate behaviour. Whilst such an approach is unlikely to make itself felt to clients prior to induction, many referrers will be aware of these principles and may be more likely to refer clients whom they consider to be appropriate.

Despite these qualifications, the results are strongly suggestive that a personality disorder is a commonly experienced difficulty amongst this population. Most strikingly, nearly half of those assessed met the criteria for the Anxious-Fearful cluster, and more than one in five for the Dramatic-Erratic group. This, therefore, would seem to indicate the necessity for regular systematized assessment, and for the development of specialist multidisciplinary services to be built around the needs of these individuals.

However, in order for such provision to be warranted, further clarification is needed to establish the extent to which these personality issues, as identified by the MCMI-III, reflect problematic functioning. It may be valuable for studies to further

examine a variety of indices, including the number of times such clients are referred, the chronicity of their difficulties, the nature of their interpersonal relationships, and how they fare during the course of their treatments.

#### 4.2. Primary aim (ii)

The second aim of the study was to establish to what degree the presence of a personality disorder is co-morbid with Axis I symptoms.

The results confirmed that individuals can suffer from both Axis I and II symptoms simultaneously, although, somewhat surprisingly, this was a fairly weak relationship since only 57 per cent of those with a personality disorder also reached SCL-90-R caseness.

There were not found to be any significant associations between participants meeting the criteria for a personality disorder and also reaching SCL-90-R caseness. This disconfirms the hypothesis that 'participants meeting personality disorder criteria will have a greater level of axis 1 symptomatology than other participants. Nor were there found to be any significant associations between participants meeting the criteria for any of the three personality disorder clusters and those also attaining SCL-90-R caseness.

A significant positive correlation was found between Odd-Eccentric cluster scores and SCL-90-R GSI scores ( $r=0.55$ ,  $p<0.01$ ); although there were no significant correlations between GSI scores and Anxious-Fearful or Dramatic-Erratic cluster scores. However, it is uncertain as to how much can be determined from this result, as very few participants met the caseness level for the Odd-Eccentric cluster.

The result that personality pathology and Axis I symptoms are not associated receives support from previous observations that changes in anxiety and depression do not correspond significantly with changes in the number of DSM-III-R personality disorder criteria met at two points in time (Loranger et al., 1991; Loranger & Lenzenweger, 1995). This finding, permitting as it does the conceptual de-coupling of the two Axes, suggests important implications for clinical assessment, treatment and future research.

Initially, given that Axis I symptoms do not help to identify clients with characterological problems, the introduction of a standardized form of assessment



which is not reliant on Axis I symptoms seems warranted. Additionally, further work could usefully examine the extent to which recently proposed outcome measures such as the Clinical Outcomes in Routine Evaluation System (CORE; CORE System Group, 1998) are able to identify these problems, and changes in their severity.

Further, if the two Axes of presenting problems are actually causally independent, many of those with a personality disorder may be being referred to services primarily as a result of their personality problems rather than their Axis I symptoms. The fact that 43 percent of those achieving Axis II caseness do not achieve Axis I caseness is suggestive that this is so. Such results reinforce the proposal that these individuals have different needs and should be addressed by specialist services.

However, it remains unclear as to how clinicians might identify whether, if present, it is Axis I or Axis II symptoms that should be given clinical priority. Additionally, despite the lack of true co-morbidity, it remains possible, as indicated by previous research (Reich & Vasile, 1993; Shea et al., 1992), that the presence of Axis II symptoms may influence the chronicity and treatment efficacy of Axis I symptoms, or potentially visa versa. These questions reinforce the necessity for a greater understanding of the interactive effects of a personality disorder on functioning over the long term.

#### 4.3. Secondary aim (i)

The first of the two secondary aims was to briefly describe the distribution of Axis I symptoms amongst the total participant population.

The results revealed that approximately 53 per cent of the population achieved Axis I caseness as measured by the SCL-90-R. The clinical scales most commonly scoring at caseness level consisted of the Anxiety (38%), Depression (34%), Somatisation (34%), Phobic Anxiety (32%) and Interpersonal Sensitivity (32%) scales, followed by the Obsessive Compulsive (23%), Hostility (19%), and Paranoid Ideation (19%) categories.

Generally, these results were thought to be consistent with staff observation and experience, although the Somatisation levels were somewhat higher than anticipated. It may be speculated that the frequency of Somatisation caseness may reflect the fact that some participants have difficulty recognizing the effects of

psychological disturbance and have a tendency to attribute these to physical symptoms.

Interestingly, the results also indicated that 11 (22%) of the participants did not meet the criteria for either Axis I or Axis II caseness. The presence of this group suggests that either the measures used did not identify their difficulties, or that there are a fairly substantial number of individuals who are accessing services, but do not have an identifiable level of mental health problems. If the latter of these possibilities applies, it does not necessarily indicate that these participants do not have legitimate needs, but rather that they may be more effectively and efficiently addressed by alternative services at primary care level. Clearly this issue warrants further investigation.

#### 4.4. Primary aim (iii)

The third focus of the study aimed to establish to what degree the presence of a personality disorder is co-morbid with post traumatic or long-term adaptive trauma symptoms.

The study revealed a high rate of trauma symptomatology (68%) within the clinical population as measured by the TSI. Approximately 57 per cent of the participants met the criteria for the PTSD scale, whereas 40 per cent met the criteria for the Self-dysfunction scale. Again, it is not possible to consider these results in the context of previous research given the paucity of studies examining such symptoms within comparable populations.

Some overlap amongst the two trauma scales was discovered since 27 per cent of the participants of the total population achieved caseness in both categories. However, when controlling for GSI scores, the two trauma scale scores were not found to be significantly correlated with each other, indicating that for the purposes of this study, they could be regarded as independent items.

The results demonstrated that participants achieving personality disorder caseness were found to be significantly more likely to achieve caseness on both the PTSD ( $X^2= 5.37$ ,  $df= 1$ ,  $p<0.05$ ) and the Self-dysfunction ( $X^2= 8.37$ ,  $df= 1$ ,  $p<0.01$ ) trauma scales. Thus, the findings support the hypothesis that 'participants meeting

personality disorder criteria will have a greater number of long term adaptive trauma symptoms than other participants'.

Of the three personality disorder clusters, only those achieving Dramatic-Erratic caseness were found to be significantly more likely to achieve caseness on the PTSD ( $X^2= 6.62$ ,  $df= 1$ ,  $p<0.01$ ) and the Self-dysfunction ( $X^2= 10.90$ ,  $df= 1$ ,  $p<0.01$ ) trauma scales. In addition, a non-significant trend was found between PTSD caseness and the Anxious-Fearful cluster, with participants achieving PTSD caseness being more likely to achieve caseness in the Anxious-Fearful group ( $X^2=3.61$ ,  $df= 1$ ,  $p<0.1$ ).

Controlling for GSI scores, Self-dysfunction scale scores were significantly positively correlated with Dramatic-Erratic ( $r=0.52$ ,  $p<0.01$ ) cluster scores and a non-significant positive correlation was found between PTSD scores and Dramatic-Erratic cluster scores ( $r=0.28$ ,  $p<0.1$ ). PTSD and Self-dysfunction scale scores were not correlated with Anxious-Fearful or Odd-Eccentric cluster scores, although a non-significant positive correlation was found between Self-dysfunction scores and Odd-Eccentric cluster scores ( $r=0.27$ ,  $p<0.1$ ).

Dramatic-Erratic cluster scores were also found to be predicted by the trauma scales, being significantly positively associated with both PTSD ( $F=2.06$ ,  $p<0.05$ ) and Self-dysfunction ( $F=3.83$ ,  $p<0.01$ ). Dramatic-Erratic cluster scores were not significantly associated with the GSI, Anxious-Fearful, or Odd-Eccentric cluster scores.

Collectively, these results can be regarded as providing strong evidence to support the conclusion that participants in the Dramatic-Erratic cluster have higher levels of both Self-dysfunction and PTSD trauma symptoms, a relationship which is, crucially, independent of Axis I symptomology.

#### 4.5. Self-dysfunction data

The link between the Dramatic-Erratic cluster and the Self-dysfunction trauma scale would, as discussed in the introduction, suggest that these individuals have a history of repeated traumatic experiences to which they have accommodated. Additionally, since all the participants reaching caseness in the Dramatic-Erratic cluster reached the cut-off on the Borderline clinical scale, the results are broadly

consistent with the previous finding that Borderline patients have greater levels of trauma history (Herman et al., 1989; Briere & Zaidi's, 1989).

However, after examining these findings in greater detail there are several reasons for regarding these results with caution. The Dramatic-Erratic cluster scores, controlled for GSI scores, were found to be significantly positively correlated with two of the trauma sub-scales that comprise the Self-dysfunction scale, Tension Reduction Behaviour ( $r=0.57$ ,  $p<0.01$ ) and Disturbed Sexual Behaviour ( $r=0.44$ ,  $p<0.01$ ), but not correlated with the Impaired Self Reference category scores.

It should not be surprising that those in this cluster engage in Tension Reduction Behaviour and Disturbed Sexual Behaviour, given the high Borderline scores. However, the fact that Impaired Self Reference, a crucial concept for the Self-dysfunction scale is not correlated is a matter of some concern, particularly given the fact that the TSI's construct validity was established by the means of a known groups methodology with borderline patients. It is possible therefore, that the Self-dysfunction scale is actually measuring characteristics that are essentially Borderline in nature.

The question as to whether there is in fact a genuine, possibly causal, co-morbidity between these variables, or merely a tautological flaw in the TSI scale, cannot be conclusively answered within the parameters of this study. A visual comparison of the questions comprising the Self-dysfunction scale in the TSI and the Borderline scale of the MCMI-III indicates that the questions only rarely match in an obvious manner (Appendix L). However, it still remains possible that they are tapping a fundamentally identical phenomenon. Hence, whilst the Self-dysfunction scale was drawn up as a result of previous research and the author's considerable clinical experience, and whilst the results can be seen in the context of previous findings of trauma co-morbidity, considerable caution needs to be exercised in interpreting these findings. Additionally, as a consequence of these concerns, the use of the TSI as a research tool for the proposed larger multi-site study cannot be uncritically endorsed; rather a measure of PTSD and a self-report trauma history may be required as alternatives.

#### 4.6. PTSD data

Even if there is some doubt as to the validity/usefulness of the Self-dysfunction data, the identified relationship between the Dramatic-Erratic cluster and PTSD symptoms has certain clinical implications and provokes a number of intriguing questions.

For instance, it is possible, as previous research has demonstrated (Briere, et al., 1992; McLeer et al., 1988), that such individuals may continue to experience PTSD trauma symptoms that have been present from an early age. If confirmed, this would indicate that there is likely to be a causal link between the cluster and childhood trauma, supporting the position of a number of theorists (Perry & Herman, 1993; van der Kolk et al., 1994). On the other hand, the findings may result from the fact that individuals in the cluster are more likely to experience or precipitate particular threatening life events, or alternatively they may have a particular vulnerability to interpreting certain circumstances as being traumatic. It is unlikely, however, that the findings are purely a matter of over-reporting on the part of these individuals as has been suggested in critiques of previous studies (Paris & Zweig-Frank, 1992), given the lack of association with Axis I symptoms.

Nevertheless, regardless of the theoretical uncertainty, the high level of PTSD symptoms amongst this group is clearly a major issue which may cause a great deal of distress and interfere with therapy. Hence, its proper recognition and subsequent treatment is a matter of great importance. Chu & Dill (1990), for instance, argue that acknowledging the reality of a trauma is crucial in allowing staff and clients to understand their responses as efforts to cope. Research seems to support this position, indicating that patients whose trauma is recognised and treated will improve at greater rates (Kluft, 1984). Studies have also suggested that such treatment is associated with significant reductions in health care costs, through a reduced need for inpatient care (Ross & Dua, 1993).

Additionally, as suggested in the introduction, the presence of PTSD symptoms may explain a number of previously noted Borderline characteristics such as poor affect regulation, intrusive thoughts, dissociation, splitting, attempts to manage under and over arousal etc.

#### 4.7. Secondary aim (ii)

The focus of the second secondary aim was to briefly describe the distribution of trauma symptoms amongst the total participant population.

The results revealed fairly high rates of trauma symptomatology on both the PTSD (57%) and Self-dysfunction (40%) scales of the TSI, indicating that trauma was a common problem in the study's population. Given the frequency of these symptoms, and the fact that as previously discussed, trauma is an important problem requiring therapeutic intervention, routine and specialist identification would seem to be warranted.

Interestingly, the analysis also revealed that trauma was Associated with axis I symptoms; SCL-90-R GSI scores being significantly positively correlated with both the PTSD category trauma scores ( $r=0.53$ ,  $p<0.01$ ) and the dysfunction category scores ( $r=0.30$ ,  $p<0.05$ ). Once again, the nature of any possible causal relationship between these variables remains unclear, though future research may elucidate this further. However, the fact that trauma and Axis I were related, whilst personality pathology was only linked to trauma, also supports the idea that personality disorder reflects a distinct and separate variable, which may need to be independently accommodated (Millon, 1996).

#### 4.8. Age and gender

No significant associations were found between gender and the number of participants achieving caseness level on the MCMI-III, its clusters, the trauma scales or the SCL-90-R. This finding was initially surprising since several previous reported studies have tended to associate women with higher levels of trauma symptomatology and borderline status (Herman et al., 1989). However, the small number of individuals meeting the criteria for the Dramatic-Erratic cluster may explain the result.

Participants' age was found to be significantly negatively correlated with the Odd-Eccentric cluster ( $r= -0.31$ ,  $p<0.05$ ) and the Self-dysfunction trauma category scores ( $r=-0.36$ ,  $p<0.05$ ). Participants' age was not significantly correlated with the Anxious-Fearful or Impulsive-Avoidant cluster scores, or the PTSD scores.

These findings indicate that those in the Odd-Eccentric cluster may experience a greater degree of symptom intensity in early adulthood. This reinforces the idea that the cluster is an independent grouping, and that there may be a biological component in its etiology (McGuffin & Thapar, 1992; Depue, 1996). Future research could examine whether particular biological variables interact with age related stressors, such as identity formation in early adulthood, to influence personality development, as has been proposed in the onset and development of Schizophrenia (Gottesman et al., 1982).

## 5.0. Conclusion

In conclusion, despite the qualifications cited, this study has generated a number of potentially consequential findings.

Firstly, the results revealed high rates of personality disorder, with approximately half of those assessed meeting the criteria for the Anxious-Fearful cluster, a fifth for the Dramatic-Erratic cluster and less than a tenth Odd-Eccentric. There was a fairly minor degree of overlap amongst these groupings, and they seem to be largely separate categories.

Contrary to expectations, those with a personality disorder were no more likely than other participants to meet Axis I caseness, indicating that the two diagnostic dimensions may be independent. This suggests that many individuals have an additional set of distinct needs which may not be addressed adequately by a symptom-focused approach.

High levels of trauma symptomatology were measured amongst the entire population and these were positively associated with the presence of a personality disorder independent of Axis I. When examined further, trauma was associated with only the Dramatic-Erratic cluster, thus seeming to add support to previous research linking the presence of a trauma history with the diagnosis of a Borderline personality. However, a detailed assessment indicates that there is a question mark regarding the tautological nature of the Self-dysfunction trauma scale.

Considered together, these findings strongly infer the necessity for the regular assessment of both personality disorder and trauma within secondary care services,

and for the development of specialist multidisciplinary services, particularly for those in the Anxious-Fearful and Dramatic-Erratic clusters.

The results from this study would also suggest that a number of variables associated with particular clusters should be examined further. The PTSD symptoms' association with the Borderline group suggests that trauma plays an important role in this disorder, and the association between participants' age and the Odd-Eccentric cluster may be indicative of a causal relationship.

The co-morbidity findings of this study could be usefully replicated with larger samples, as the currently proposed multi-site study intends to attempt. Such work would allow a more detailed evaluation of the possible co-morbidity between individual personality disorders, specific Axis I symptoms and trauma. However, ultimately, longitudinal work is required to begin to tease out these complex aetiological factors with greater certainty, and to further clarify the conceptual issues regarding the construction of categories.

Greater understanding is also needed with respect to the intra-personal and interpersonal impacts of the various personality disorders at both the clinical and sub-clinical levels. Research could examine the degree of distress and dysfunction experienced by these individuals, those around them, and their possible effects on Axis I treatment efficacy. Assessment and outcome tools related to this work also require further development and evaluation.



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