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# Post-traumatic stress disorder caused in mentally disordered offenders by the committing of a serious violent or sexual offence

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**ABSTRACT** The aim of the study was to measure in a sample of mentally disordered offenders the frequency of post-traumatic stress disorder (PTSD) symptoms related to the committing of an offence and to consider what factors might be contributory to the onset and maintenance of these symptoms. The study was the first to investigate the incidence of PTSD in a primarily mentally ill population. A sample of 37 mentally disordered offenders was assessed for PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM III-R; American Psychiatric Association, 1987) and the Impact of Events Scale (IES; Horowitz, Wilner and Alvarez, 1979). Of this sample, 33% met diagnostic criteria for PTSD and 54% had significant PTSD symptomatology as indexed by the IES. The IES scores were greater in those who had committed violent offences than in those who had committed sexual offences, and in those who had an affective diagnosis. Frequency of PTSD symptoms was greater in those offenders who now felt regret for their actions. The high frequency of PTSD symptoms in this population may serve as a significant

stressor and may exacerbate co-morbid psychiatric illness and contribute to poor treatment response and relapse. Many mental illnesses are exacerbated by stress and the presence of untreated PTSD symptoms may serve to prevent treatment gains for the primary mental disorder. If risk of future dangerousness is associated with unstable mental state, as is often the case in a mentally disordered population, then the development of PTSD post-offence may serve to prolong or increase risk of harm to both self and others.

Keywords: post-traumatic stress disorder (PTSD), mentally disordered offenders, Impact of Events Scale (IES)

While post-traumatic stress disorder (PTSD) is most usually associated with being the victim of an event there is increasing evidence that PTSD can be caused by a person's own actions. For example, Manolias and Hyatt-Williams (1993) examined the incidence of PTSD in police officers who had been required to shoot people in the line of duty. They found that 12% of these police officers developed severe PTSD.

Harry and Resnick (1986) were the first to report PTSD as a direct consequence of committing homicide. They presented three cases in each of which someone had killed a person with whom he had a significant relationship and had done so during an altered mental state. Harry and Resnick identified a number of factors that may be important in the aetiology of PTSD following homicide. These were being young, having a chaotic childhood and a problematic developmental history, having a minimal criminal history, having a significant relationship with the victim, and being in an altered mental state at the time of the killing. The PTSD symptoms reported were directly linked to their respective homicides, including recurrent and intrusive memories of the killings, nightmares and flashbacks of the offence, guilt, intrusive thoughts triggered by external stimuli, and avoidance of activities that aroused recollections of the killing. Harry and Resnick conclude therefore that the killing itself constituted the traumatic event.

The factors proposed by Harry and Resnick to be important in the aetiology of PTSD were identified on the basis of a very small number of cases ( $n=3$ ). The conclusions must therefore be speculative. However, because of the potential relevance to clinicians working with forensic populations these findings need further corroboration in a much larger sample. Our study aimed to provide some of these data.

Kruppa, Hickey and Hubbard (1995) investigated whether PTSD could be caused by violent offending. They found high rates of both current (22%) and lifetime (32%) PTSD in people detained under the legal category of psychopathic disorder (Mental Health Act 1983). PTSD symptoms were associated both with offence-related and non-

offence-related traumatic events, and in half the cases the trauma associated with the PTSD symptoms was the index offence. The sample of female patients reported particularly high rates of lifetime diagnosis of PTSD (64%), twice that of even Vietnam veterans (31%) (Kulka, Schlenger, Fairbank, Hough, Jordan, Marmar and Weiss, 1990). This high rate is perhaps unsurprising in that this population were in the legal category of psychopathic disorder, meaning that they were all diagnosed with some form of personality disorder under DSM IV (American Psychiatric Association, 1994). The most common forms of personality disorder identified in psychiatric services are borderline personality disorder and anti-social personality disorder (ASPD). Although theoretical accounts of the aetiology of ASPD are unclear (Moran, 1999), it has been frequently suggested that borderline personality disorder constitutes a prolonged and severe form of PTSD, often arising out of childhood abuse (Brown and Anderson, 1991). Further, the incidence of borderline personality disorder is greater among women (Becker, 2000). Thus, the very large incidence of PTSD in the Kruppa *et al.* (1995) study may merely reflect the primary diagnosis of the offenders, as opposed to the effect of the index offence upon them.

Pollock (1999) investigated incidence of PTSD symptoms in a sample of 80 homicide perpetrators. Pollock found that 52% of the sample met DSM III-R criteria (American Psychiatric Association, 1987) for current PTSD, due both to their involvement in the homicide and to other life events. Of these cases 82% reported the homicide as a traumatic event and 70% described no other traumatic events in their histories that could have caused the PTSD symptomatology. Thus there appears to be a subgroup of people whose PTSD seems to have arisen from committing homicide. There are, however, a number of difficulties inherent in the study. First, the sample was not obtained from a random selection of homicide offenders, but was obtained via consecutive referrals to a clinical psychologist. Thus the sample was strongly biased towards those who were experiencing psychological difficulties. Second, 50% of the sample were diagnosed as primary and secondary psychopaths (Blackburn, 1979). A core characteristic of psychopathy is pathological lying (Hare, 1991). This group are unreliable historians and may well have reported the homicide as traumatic in order to expedite their progress through the prison system. Hence the incidence of PTSD reported might be falsely inflated.

There have been only two case-studies of PTSD as a consequence of offending in mentally disordered offenders. Interestingly, both cases refer to patients with a primary diagnosis of depression. Thomas, Adshead and Mezey (1994) report a case of a woman who killed her children in the

context of a psychotic depression. Following the offence her psychosis and depression continued but in response to the offence she also developed PTSD, characterized by flashbacks of the index offence and recurrent nightmares, particularly after exposure to any situation that reminded her of her children and their death. The authors also note that the co-morbidity between PTSD and depression appeared to delay recovery.

The second study (Rogers, Gray, Williams and Kitchiner, 2000) describes the outcome of behavioural treatment in a patient who developed PTSD as a consequence of killing her boss when clinically depressed. *In vivo* and imaginal exposure techniques were successful in treating the PTSD and this facilitated the full resolution of the primary mental illness (depression). Rogers *et al.* (2000) argued that when PTSD is co-morbid with another serious mental illness, PTSD may then act as a chronic stressor and relapse indicator. Thorough assessment of PTSD, and appropriate intervention, is therefore potentially important in a mentally disordered offender population. If the development of PTSD post-offence either acts as a relapse indicator or causes the primary mental illness to become treatment-resistant then PTSD will cause an increase in future risk of dangerousness.

The present report is the first to study the incidence of PTSD in a primarily mentally ill population. Harry and Resnick (1986) suggested that altered mental states are particularly important in the mediation of PTSD in offenders. One of their cases had paranoid schizophrenia, and interestingly no one has investigated PTSD in this patient group where we predict high rates of post-offence PTSD. People with paranoid schizophrenia also constitute a large proportion of those entering mental health services. As Harry and Resnick state: 'the identification of PTSD among "murderers" . . . may facilitate appropriate treatment, reduce increased risk of suicide, and allow these "prisoners" to begin rehabilitation more quickly'.

In a mentally disordered offender population, such treatment may also reduce risk of relapse given the known vulnerability of people with schizophrenia to stress, and the very real possibility that PTSD may act as a chronic stressor. We believe that PTSD symptoms related to offending are currently underdiagnosed in forensic mental health services and therefore no treatment for PTSD is given. Recognition of the incidence of PTSD will therefore allow appropriate treatment, which in turn could simultaneously improve our ability to manage and treat the underlying mental illness (Rogers *et al.*, 2000). We therefore set out to explore the frequency of PTSD symptoms in a group of mentally disordered offenders, and to consider what factors (feelings of remorse for their actions, nature of offence, relationship between the victim and the perpetrator) might be contributory to the onset and maintenance of PTSD.

## METHOD

### Participants

Participants were resident within medium secure hospitals in the UK. Admission criteria for these units meant that the participants had been convicted of serious criminal offences and, at the time of the offence or subsequently, were diagnosed as having serious mental disorders (mental illness or personality disorder). All current inpatients who were judged to be able to give informed consent by a clinical psychologist were approached to participate in the study. Patients were briefed of the nature of the study and made explicitly aware that their responses would have no impact upon their clinical care and that their clinical team would not be informed of their responses to either interview or psychometric measures. All results were kept confidential within the research team, with the proviso that if a patient was judged to be a significant current risk to either himself/herself or others then this information would be disclosed to the patient's responsible medical officer (RMO). No such disclosure was necessary. No incentives were provided for participation in the study.

In the introduction we have raised the possibility that incidence of PTSD in offenders in previous studies may be inflated due to exaggeration of trauma symptoms by patients/prisoners. A possible motivation for this would be to expediate their progress through the hospital/prison system or to obtain preferential treatment or other secondary gain. In order to attempt to control for this in the current study, patients were made explicitly aware that participation in the research project would have no impact upon their clinical care. Thus, we would hope that there would be no reason to exaggerate, or indeed minimize, their reported PTSD symptomatology.

Of the 46 people approached, 37 agreed to participate. Not all participants were able to complete all components of the study due to levels of distress at discussing their index offence or to the severity of their mental illness symptoms (e.g. experiencing hallucinations during the clinical interview). The mean age of the sample was 35.0 years ( $SD = 12.4$ ; range = 17–66). There were 32 males and 5 females in the sample. The mean time since index offence was 1,399 days ( $SD = 2,787$ ; range 8–11,607).

All diagnoses were according to DSM III-R criteria (American Psychiatric Association, 1987). There were 24 patients who had schizophrenia (64.9%), 4 who had bipolar disorder (10.8%), 4 who had major depression (10.8%) and 5 who had personality disorder (13.5%; 2 borderline personality disorder, 2 anti-social personality disorder, and 1 schizoid personality disorder). All were receiving psychotropic medication. For the purpose of statistical analysis the offences were categorized into six groups: murder ( $n = 6$ ; 16.2%), other violent, non-sexual offences ( $n = 19$ ; 51.4%),

rape (n = 3; 8.1%), paedophilia (n = 5; 13.5%), arson (n = 3; 8.1%), and kidnapping (n = 1; 2.7%).

### **Procedure and materials**

Informed consent was obtained after participants had been given a detailed description of what would be involved in participation in the study and had had an opportunity to ask questions. In this description the participants were told that PTSD is a stress response to a traumatic event and informed that we were interested in whether people convicted of crimes show symptoms of PTSD. Participants were given no information as to the nature or type of symptoms associated with PTSD. The written consent form stated:

I, having had the purpose and procedures of this study fully explained to me, freely consent to participate in this project. I have been advised that I will be interviewed and asked to fill in 4 questionnaires and that this procedure should take no longer than 1 hour. I understand that I may withdraw from the study at any time without the need to justify my decision and that this will in no way affect my future treatment.

The consent form was signed and dated by the participant and witnessed by a professional within the hospital. All procedures were approved by the ethical committee of the local health authority for each of the three hospitals included in the study. All demographic and offence-related information was obtained from medical records and the legal depositions relating to the offence. Psychiatric diagnoses were obtained from medical records. All interviews were conducted by one of two clinical psychologists, both of whom were fully aware of the nature and purpose of the study.

### **Interview**

Participants were asked to describe the events surrounding their index offence (in order to evaluate if they met Criterion A of DSM III-R criteria for PTSD; American Psychiatric Association, 1987). Depositions were also used to evaluate whether the index offence met Criterion A. Participants varied dramatically in their ability to give this information. There were 27% who stated that they felt unable to talk about their index offence. These people were reassured and were told that the information would be obtained from the depositions.

A semi-structured interview then focused upon PTSD symptomatology relating to the offence (Criterion B, intrusive thoughts; Criterion C, avoidant symptoms; Criterion D, hyperarousal symptoms). Ten people

(27%) were too distressed to participate in the semi-structured interview. Our incidence rates for DSM III-R PTSD may therefore be an underestimate as the patients who were most distressed by events were excluded from this part of the study. These people were, however, able to participate in the questionnaire evaluation.

The interviewer also asked questions to elicit the participants' current feelings toward their offence/victim(s). This information was categorized as to whether the participant (1) expressed explicit remorse; or (2) stated that he or she felt justified in their actions (often on the basis of psychotic reasoning). For a proportion of people ( $n = 16$ , 43%) this classification was unclear and they were therefore excluded from analyses involving this variable.

### Questionnaire measures

Each participant completed the following psychometric scales: (1) the Impact of Events Scale (IES; Horowitz, Wilner and Alvarez, 1979); (2) the Beck Depression Inventory (BDI; Beck and Steer, 1987); and (3) the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch and Lushene, 1970).

## RESULTS

### Incidence of DSM III-R PTSD

In 33% (9/27) of the population the criteria for PTSD were met. When evaluating each symptom cluster within DSM III-R we found that 56% (15/27) met Criterion B (intrusive symptoms) and 56% (15/27) met Criterion C (avoidant symptoms), while 59% (16/27) met Criterion D (hyperarousal symptoms). Thus there were high rates of individual symptom clusters with no type of symptom being more prevalent than the others.

### Impact of Events Scale (IES)

The IES scale has two benefits when compared with DSM III-R diagnosis. First, all of our sample completed the questionnaire, even if they were unable to discuss the trauma and related symptoms with the interviewer. Second, the IES gives a continuous measure of frequency of intrusive and avoidant PTSD symptoms.<sup>1</sup> The advantage of obtaining a continuous measure is that we can evaluate the presence of sub-clinical PTSD.

Mean IES score was 25.8 (SD = 21.4). This compares with a mean score of 6.9 (SD = 6.8) in the general population,<sup>2</sup> and 35.3 (SD = 22.6) in a population of people attending a stress clinic (Horowitz *et al.*, 1979). Using the

conventional criterion of two standard deviations greater than the normative mean total score for assessment of significant presence of PTSD symptoms, 20 patients (54%) would be regarded as having significant symptomatology. By the same methods 17 patients (46%) had significant intrusive symptomatology and 18 patients (49%) had significant avoidant symptoms.<sup>3</sup>

Although the IES cannot be used as a single validating criterion for the diagnosis of PTSD, there was a strong relationship between number of symptoms as reported on the DSM III-R interview and IES score ( $r = 0.83$ ,  $p < 0.001$ ). Therefore, because (1) there is a strong relationship between DSM III-R symptoms and IES scores, (2) IES allows a continuous measure of PTSD, and (3) all patients were able to complete IES, all further analyses are based upon IES scores alone.

As expected there was a strong relationship between total IES score and the score on Beck's Depression Inventory ( $r = 0.63$ ,  $p < 0.001$ ), and both the state ( $r = 0.50$ ,  $p < 0.01$ ) and trait ( $r = 0.58$ ,  $p < 0.001$ ) scales of the State-Trait Anxiety Inventory.

### Demographic variables

There was no effect of age on IES score. Mean IES scores for males (25.9,  $sem = 3.6$ ) and females (25.2,  $sem = 13.0$ ) did not differ significantly. Due to the small number of females in our sample we were not able to assess any differential effects of gender upon other variables (e.g. diagnosis). We therefore analysed the data for males alone and for the combined male and female populations. In all cases the pattern of results was in close accord (perhaps unsurprisingly due to the large male majority) and hence only those from the combined analyses are presented.

### Effects of diagnosis

Figure 1 depicts mean IES scores as a function of diagnosis. There was a significant effect of diagnosis on total IES score ( $F(3,33) = 4.47$ ,  $p < 0.01$ ). Due to small numbers in some of the diagnostic categories the effect was further investigated by a comparison between all patients with an affective component to their diagnosis (i.e. those diagnosed with bipolar disorder or a major depressive episode) and those with no affective component. The mean IES scores for those patients with (42.8;  $sem = 7.0$ ) and without (20.3;  $sem = 3.6$ ) an affective disorder were significantly different ( $F(1,35) = 9.19$ ,  $p < 0.005$ ).

### Nature of the offence

Figure 2 depicts mean IES scores as a function of the index offence. We specifically hypothesized that people who had killed would show greater



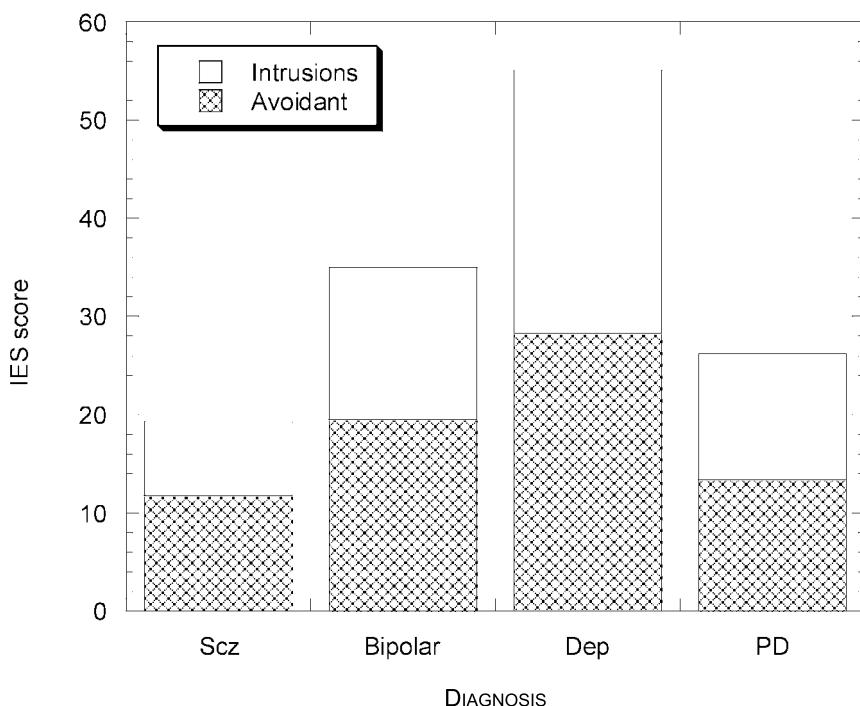


Figure 1 Mean total IES score is plotted for each diagnostic category. The two sub-scales of the total IES scores are indicated by the open (intrusions) and shaded (avoidant) regions

PTSD symptomatology than those who had committed serious violent offences but which had not resulted in death. A one-way analysis of variance comparing the murder group with the violent group showed a marginally significant effect on total IES ( $F(1,23)=2.43$ ,  $p=0.065$ ). A similar comparison on intrusive symptoms was significant ( $F(1,23)=2.96$ ,  $p < 0.05$ ) while that of avoidant symptoms was not ( $F(1,23)=1.41$ ,  $p > 0.1$ ).

Most sexual offences are, at least to a certain extent, desired by the offender and many may be planned. On the other hand, many violent offences by mentally disordered patients are impulsive acts. Although this distinction is obviously speculative, we hypothesized that violent offences may be more likely to be experienced as traumatic. We compared levels of PTSD symptomatology in those whose offences were sexual (rape and paedophilia groups) with those whose offences were violent (murder and violence groups). A one-way analysis of variance supported this hypothesis by showing marginally significant effects on total IES (sexual = 16.0; sem = 4.8, violent = 29.9; sem = 4.6;  $F(1,31)=2.60$ ,  $p=0.058$ ).

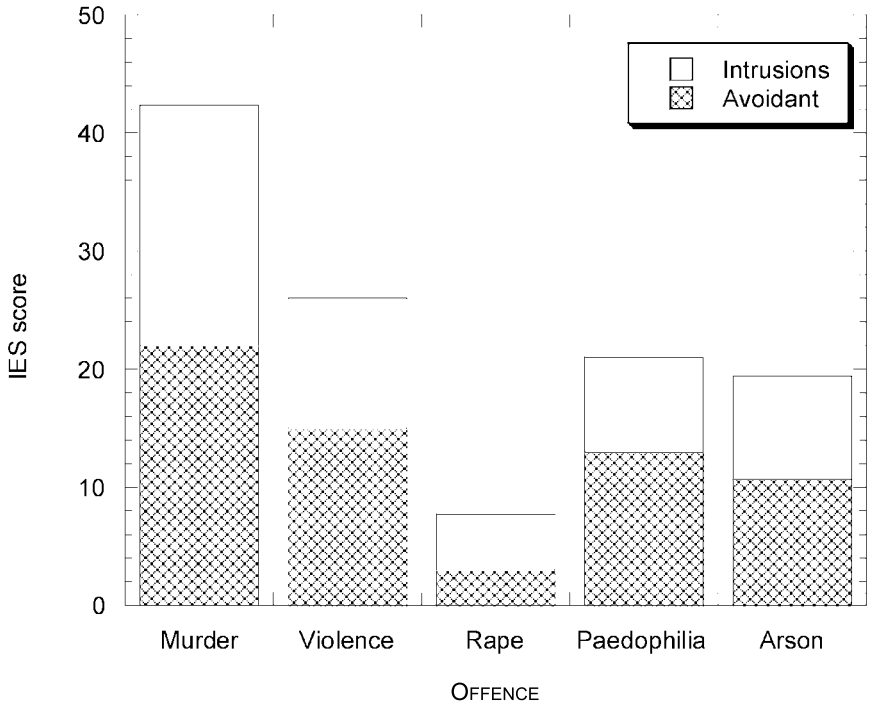


Figure 2 Mean total IES score is plotted for the various index offence categories. The two sub-scales of the total IES scores are indicated by the open (intrusions) and shaded (avoidant) regions

The proximity of the offender to the victim at the time of the index offence might be a contributory factor to the development of PTSD. Unfortunately (for the purpose of this analysis) nearly all the index offences of our sample used methods that brought the offender into close contact with the victim. This pattern of close proximity to the victim is typical for a UK sample, as the most common method of attack is by stabbing or hitting. This contrasts with the offender population in the USA where the most common form of attack is by firearm (Chu and Sorenson, 1996). These differences may lead to a different prevalence of PTSD symptoms in the two different cultures if indeed there is an effect of proximity to victim upon PTSD aetiology.

With regard to the victim of the index offence, we postulated that PTSD might be exacerbated by the closeness of the relationship between the offender and the victim. We classified the relationship between victim and offender as close, acquaintance, or stranger. Figure 3 illustrates these results. Analysis of variance showed no significant differences between the groups.

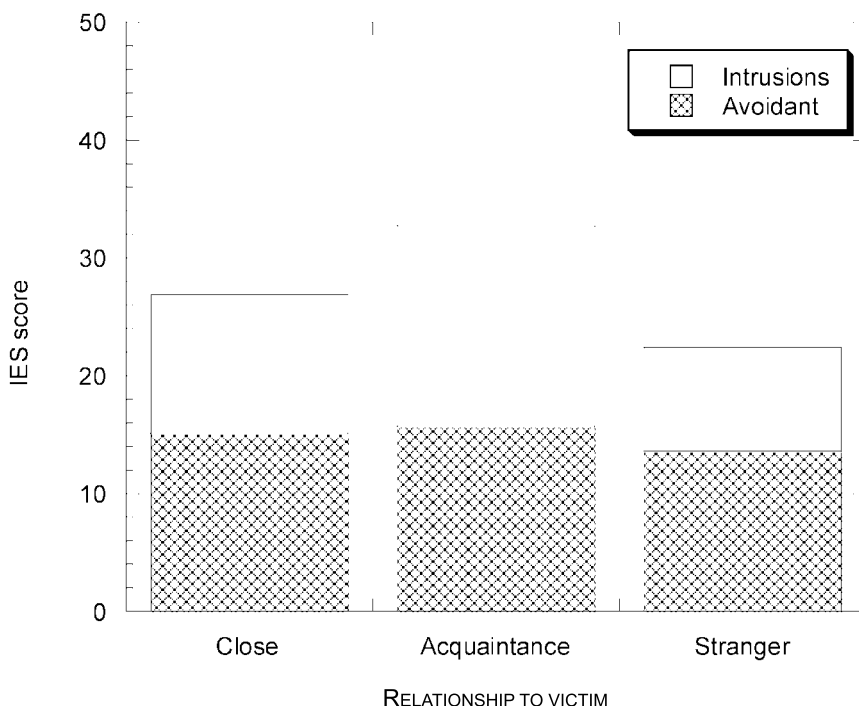


Figure 3 Mean total IES score is plotted as a function of the relationship between the offender and the victim. The two sub-scales of the total IES scores are indicated by the open (intrusions) and shaded (avoidant) regions

### Factors since the offence

The symptoms of PTSD often dissipate as a function of time since the event (Rothbaum, Foa, Murdock, Riggs and Walsh, 1992). Surprisingly we found that there was no significant correlation between total number of IES symptoms and time since offence (Spearman's rho;  $r = -0.15$ ,  $p > 0.1$ ). However, further analysis showed that there was a significant relationship between the number of intrusive symptoms ( $r = -0.28$ ,  $p < 0.05$ ), but not of avoidant symptoms ( $r = -0.05$ ,  $p > 0.1$ ), and time since offence. Thus, intrusive symptoms have a tendency to decline over time.

Finally, we investigated whether the offender's current view of his or her offending behaviour towards the victim (deserved vs. not deserved) was predictive of PTSD symptomatology. All the offenders in our group committed their crimes in the context of having a serious mental disorder. At the time of the PTSD evaluation some patients remained psychotic and tended therefore still to feel that their victim(s) deserved their fate, while others had been successfully treated. Of those patients in remission, some

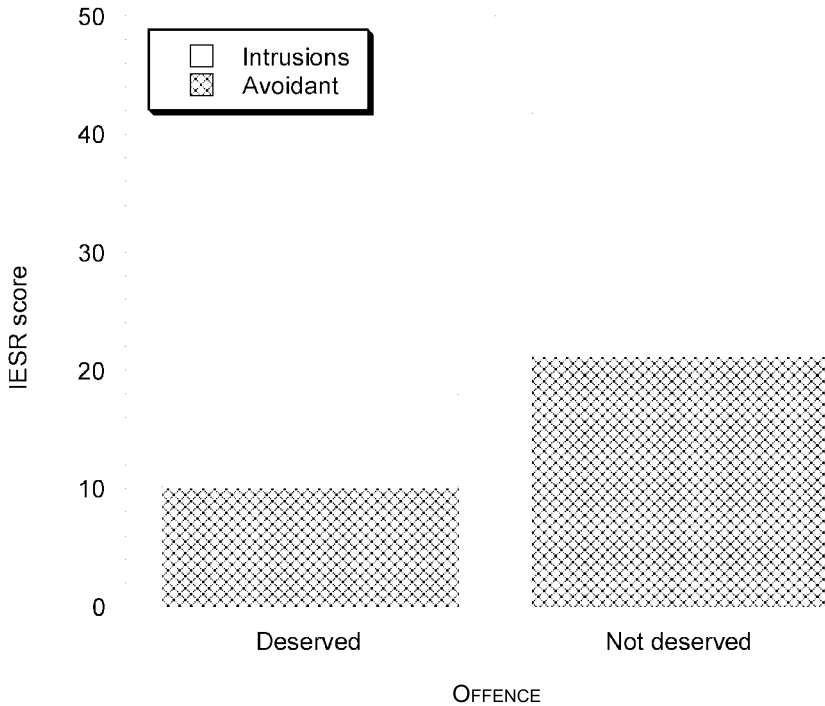


Figure 4 Mean total IES score is plotted for those who believed their victim(s) deserved the assault and for those who believed they did not. The two sub-scales of the total IES scores are indicated by the open (intrusions) and shaded (avoidant) regions

now believed that their victims did not deserve the assault. Others, however, believed their actions still to be justified even though this was *not* based upon any psychotic reasoning (e.g. one patient stabbed a policeman when psychotic but when in remission still stated that the police had ‘continually harassed’ him and therefore deserved everything they got). ANOVA showed greater scores (total IES; [F(1,19)=7.10, p < 0.01]; intrusive [F(1,19)=7.34, p < 0.01]; avoidant [F(1,19)=5.34, p < 0.05]) for those that now believed that their victims did not deserve the assault.

### Regression analysis

Two variables were found to be significantly associated with total IES symptoms, namely whether the offender’s mental disorder had an affective component and whether he or she still believed their victims deserved their fate (deserved vs not deserved). These variables were therefore entered into a linear

regression analysis with the IES scores. It resulted in 44% of the total variance of the IES scores being accounted for by both factors ( $R=0.66$ ) with the overall model being significant ( $F(2,18)=6.99$ ,  $p < 0.01$ ). For both the affective variable ( $\beta = 0.41$ ,  $t = 2.30$ ,  $p < 0.05$ ) and the deserved/not deserved variable ( $\beta = -0.48$ ,  $t = -2.73$ ,  $p < 0.05$ ) the regression equation was found to be significant. This indicates that both these variables account for a significant amount of the variance of PTSD symptoms as measured by the IES.

## DISCUSSION

The present study is the first investigation of the incidence of PTSD as a consequence of violent and sexual offending in a primarily mentally ill population. The study was inspired by case-studies (Harry and Resnick, 1986) of offenders who had developed PTSD after committing homicide. All three cases involved young men with chaotic childhoods, problematic developmental histories, minimal criminal histories, a significant relationship with their victim, and an altered mental state at the time of the killing. It was therefore suggested that these factors might be important in the development of PTSD symptoms post-homicide. Our results provide partial support for these hypotheses. First, and perhaps most importantly, we have found very high rates of PTSD in mentally disordered offenders, with a third of our sample meeting DSM III-R criteria for PTSD, and over half showing significant PTSD symptomatology. These findings support the hypothesis that offenders with altered mental states are vulnerable to developing PTSD as a consequence of their offence.

We found no support for the notion that PTSD symptomatology would be more prevalent in young offenders, or that the presence of a significant relationship between the offender and the victim is of importance in the development of PTSD. We examined the incidence of PTSD across a range of offences. Perhaps not surprisingly we did indeed find that those convicted of murder or manslaughter showed marginally more PTSD symptomatology than those convicted of other violent offences. We also found that those who had committed violent offences (including murder and manslaughter) had greater PTSD symptomatology than those convicted of sexual offences. Based upon clinical experience, we suggest that a greater proportion of violent offences, compared with sexual offences, are impulsive and it may be this variable that mediates subsequent PTSD symptoms. While the present findings support the differential severity of PTSD symptoms in violent and sexual offenders, we believe that a better analysis might be to compare offenders who had planned their crime with those who had acted on impulse (both violent and sexual). Unfortunately, this analysis was outside the scope of the present study, but is clearly an important hypothesis to be addressed.

We also considered a number of other variables that might be associated with the onset and/or maintenance of PTSD symptoms in offenders. Somewhat surprisingly there was only a small trend towards a reduction in frequency of intrusive symptoms with increasing time from the index offence. Frequency of avoidant symptoms and total IES score did not change over time. Indeed, it has been shown in victims of assault (Foa and Riggs, 1995) that spontaneous decreases in PTSD occur only during the first few weeks, with little improvement thereafter. Our results confirm that untreated PTSD symptoms can be extremely long-lived, and reinforce the need for the identification of such symptoms so that appropriate treatment for PTSD can be initiated.

Primary psychiatric diagnosis was found to be a strong indicator of PTSD in offenders. Specifically, those offenders who had an affective component to their diagnosis exhibited more PTSD symptoms than those without such a diagnosis. There is a well-known association between the presence of PTSD and depression in the non-offending population. This has usually been interpreted as PTSD symptoms leading to the depressive illness. However, the present data indicate that having a pre-existing affective illness at the time of the traumatic event may predispose the individual to developing PTSD. Thus, there may be an interaction between PTSD and depression, such that each serves to exacerbate the other, hence forming a self-sustaining feedback loop.

We evaluated whether an offender's current opinion of his or her actions upon the victim (deserved/not deserved) was related to frequency of PTSD symptoms. We found that those who now judged that their actions were not justified had significantly more PTSD symptoms than those who still believed their victims deserved their fate. It seems plausible that the offenders who now believe that their victims did not deserve the assault may feel guilt and shame. Previous research has shown that shame and guilt are often associated with the onset of PTSD symptomatology (Andrews, Brewin, Rose and Kirk, 2000). The presence of feelings of shame and guilt about the offence might lead to an increased vulnerability to developing PTSD post-offence and it would be important to include measures of these variables in future research.

One important clinical implication of this research is that offending behaviour work, focusing as it does upon the offender's taking responsibility for his or her actions and the effects of the offence upon the victim, may increase the individual's vulnerability to developing PTSD as a consequence of the offence. This may be due to the offender's developing an understanding that their victim(s) did not deserve the assault and to his or her undergoing associated feelings of shame and guilt. Indeed, a single case-study (Rogers *et al.*, 2000) has found delayed onset PTSD in a perpetrator of

manslaughter with a severe depressive illness. The onset of PTSD appears to have been associated with engagement in offending behaviour work.

Finally, the high incidence of PTSD in mentally disordered offenders is potentially of immense clinical importance. The symptoms of PTSD can function as a chronic stressor (as the individual repeatedly relives the trauma via flashbacks, dreams and intrusive memories and invests a lot of effort in avoidance). Many mental illnesses are exacerbated by stress (e.g. schizophrenia; see Nuechterlein and Dawson, 1984; or depression; see McQuaid, Monroe, Roberts, Kupfer and Frank, 2000). Thus, the presence of untreated PTSD in mentally disordered offenders may serve to prevent treatment gains for the primary mental disorder or lead to relapse following remission. If we can identify, and successfully treat, PTSD in people with co-morbid mental disorder then we may have far greater success in both initial treatment and long-term outcome of the primary psychiatric diagnosis. This will be important not only for the individual patient, but also for the safety of society as a whole.

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## NOTES

- 1 The IES does not include ratings for hyperarousal symptoms. In this study this is seen as an advantage as many of the patient population may have presented with symptoms of hyperarousal due to their primary diagnosis as opposed to PTSD symptoms, leading to overestimates of PTSD symptomatology.
- 2 We used the normative data for males given that the majority of our patients were males (86%). In addition, classifying the females on the basis of the female normative data did not change any of their classifications.
- 3 As note 2 above.

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