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Post-Traumatic Stress Disorder and Civil Violence in Northern Ireland

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The case records of 499 victims of civil and terrorist violence were examined, and the presence or absence of post-traumatic stress disorder (PTSD) and associated features recorded. The results support the face, and predictive, validities of PTSD. 'Acting as if the event were reoccurring' and 'survivor guilt' seemed not to be characteristic symptoms, and the homogeneity of the emotional state in PTSD was questionable. Only marital disharmony and suicidal behaviour were associated complications. PTSD seemed to be found in a wide range of stressors, but the danger in over-reliance on results from combat veterans is emphasised.

The syndrome of post-traumatic stress disorder (PTSD) has been operationally defined in the DSM–III (American Psychiatric Association, 1980). Its essential feature is the development of characteristic symptoms following a psychologically traumatic event. Four criteria must be fulfilled.

Criterion A is the "existence of a recognisable stressor that would evoke significant symptoms of distress in almost everyone".

Criterion B is the re-experiencing of the trauma as evidenced by at least one of:

1. recurrent and intrusive recollections of the event
2. recurrent dreams of the event
3. suddenly acting or feeling as if the traumatic event were reoccurring because of an association with an environmental or ideational stimulus. This last symptom is described as a dissociative-like state, said to be rare.

Criterion C is the numbing of responsiveness to, or reduced involvement with, the external world, beginning some time after the trauma, as shown by at least one of:

1. markedly diminished interest in one or more significant activities
2. feeling of detachment or estrangement from others
3. constricted affect.

This group of symptoms is also referred to in the DSM–III as "psychic numbing" or "emotional anaesthesia".

Criterion D consists of a miscellany of symptoms, at least two of which must be present. They are:

1. hyperalertness or exaggerated startle response
2. sleep disturbance
3. guilt about surviving when others have not or about behaviour required for survival
4. memory impairment or trouble in concentrating
5. avoidance of activities that arouse recollection of the traumatic event
6. intensification of symptoms by exposure to events that symbolise or resemble the traumatic event.

In addition, it is said that the symptoms of anxiety or depression sufficient to qualify for a diagnosis of anxiety or depressive disorder may be present. Explosions of aggressive behaviour with little or no provocation are an associated feature, especially in war veterans. Another associated feature is said to be impulsive behaviour of a non-violent type, such as sudden absences, trips, or changes in lifestyle. Among the complications of PTSD reported by the DSM–III are interference with interpersonal relationships, such as marriage or family life, suicidal actions, and substance abuse.

The concept of PTSD grew from literature on stress reaction over many years (Archibald & Tuddenham, 1965; Chodoff, 1963; Horowitz *et al*, 1980). The characteristic clinical symptoms, associated features, and complications had all been described before; the particular contribution of the DSM–III was that it provided strict criteria. One result of this is that workers can now easily communicate about their findings on reactions to stress. For clinicians who use the ICD–9 (World Health Organization, 1978) as their diagnostic glossary, there is no comparable category.

There is now a large body of research on PTSD. Although at first there was a concentration of data from Vietnam veteran groups, recently there has been an increase of work on PTSD in other settings (Wilkinson, 1983). This work has provided many challenges for the concept of PTSD, particularly in three regards.

1. Sub-division of PTSD

In work that predated the publication of the DSM–III, and which is still widely referred to in the literature on PTSD, Horowitz (1976) described post-traumatic reactions in terms of two mental states: one of intrusion, characterised by intrusive repetitive thoughts, sleep disturbance including nightmares, hypervigilance, and pangs of strong emotion, and one of denial characterised by inattention, amnesia, constriction of thought processes, and emotional numbing. Laufer *et al* (1984) have used this model in their work. They linked exposure to combat, and witnessing abusive violence to denial symptoms. They stated on the basis of this work that "PTSD may not be the comprehensive phenomenon specified in the DSM–III" and that "PTSD may be a disorder in which one of the two descriptions dominate the clinical picture". This should stimulate research into the clinical features of PTSD following types of stress other than war combat.

2. Concurrent psychiatric illness

The diagnosis of PTSD does not preclude the diagnosis of concurrent psychiatric illness. The most common concurrent diagnoses have been of depressive states, anxiety states, substance abuse, and character pathology or personality disorder. In particular, the links between depression and PTSD are very strong. Many of the characteristic symptoms of PTSD may also be those of depressive illness. There are a variety of figures for the frequency for which depression can be diagnosed in the presence of PTSD, e.g. 41% (Davidson *et al*, 1985), 72% (Sierles *et al*, 1983) and 100% (Birkheimer *et al*, 1985). In a recent detailed study of the clinical features of PTSD and other findings in alcoholic male Vietnam veterans, Van Kampen *et al* (1986), besides confirming the strong link between PTSD and depression, questioned the validity of feelings of detachment from others and constricted affect as being characteristic symptoms of PTSD. This questions the homogeneity of the emotional state in PTSD, since the DSM–III manual refers to "emotional anaesthesia" or "psychic numbing", and there is increasing evidence in the literature of the importance of depressed mood. Furthermore, the work of Van Kampen *et al* (1986), reviewing the literature and commenting on their findings, also questions the validity of survival guilt and memory and concentration difficulties as characteristic symptoms.

3. Associated features and complications

Work carried out since the publication of the DSM–III shows conflicting results with problems with interpretation. There have been four studies using DSM–III criteria; only two (Atkinson *et al*, 1982; Boman, 1985) have used a control group to separate the effects of exposure to combat *per se* from the specific effects of the syndrome. In two uncontrolled studies (Escobar *et al*, 1983; Sierles *et al*, 1983), both of Vietnam veterans, high rates of impulsive violence, suicide attempts, antisocial behaviour, and alcohol and drug abuse have been noted. In the controlled study by Atkinson *et al*, American Vietnam veterans with PTSD had no significantly greater rate of violent outbursts or non-violent impulsive behaviour than veterans without PTSD. Similarly, Boman examined Australian Vietnam veterans, and compared a group with severe combat experience who developed PTSD with comrades without combat experience and without PTSD. He found no significant difference in the post-combat incidence of alcohol abuse, drug abuse, impulsive violence, suicide attempts, or marital disruption, separation, or divorce.

Recently, Van Putten & Yager (1984) questioned the specificity of the relationship between post-combat difficulties and PTSD, pointing out that even within a military population, the subsample exposed to heavy combat is itself biased. In looking further at the question of the specificity of the relationship between PTSD and its reported complications and associated features, it would be important to examine data from populations other than male Vietnam veterans.

Purpose of study

This study examined for the presence of PTSD in a population of victims of civil and terrorist violence, recorded the frequency of its characteristic symptoms and certain associated features and complications, including the diagnosis of depression, and looked for evidence of the validity of PTSD as a diagnosis.

Method

The population studied had all been referred to and examined by one of the team (PSC) for medico-legal assessment between January 1979 and December 1984. The inclusion criteria were that each individual had to be aged 16 or over at the time of the incident and to be seeking compensation under the Criminal Injuries (Northern Ireland) Order 1977 for an injury resulting from an act of civil violence. Victims of common or sexual assault were excluded. In total, there were 499 consecutive referrals of such victims of civil violence.

All available medical case-notes were studied by the five research team members. A comprehensive symptom checklist including the characteristic and associated symptoms of PTSD (American Psychiatric Association, 1980) was used, and subjected to computer analysis, which identified those with or without PTSD. The research team studied all case-notes and reached a consensus conclusion as to whether a symptom was present or had been recorded at any stage by any clinician, irrespective of duration or severity of the symptom. DSM-III gives no guideline or minimum threshold for the recognition of such symptoms. Invariably, there was at least one report (by PSC) that provided a full psychiatric history and examination of mental state, together with a detailed list of all symptoms reported following the incident, irrespective of whether or not they had cleared by the interview date. Other reports, psychiatric, medical, and surgical, were also analysed. The clinical data available to us also disclosed an ICD-9 diagnosis, named or implied, made by PSC, gave an account of the duration of the syndrome, and included details of any psychiatric treatment in the interval between the incident and the final examination. The interval between the incident and final psychiatric examination varied. In 319 cases this interval was 1 year or longer, in 105 cases, 6 months to 1 year, in 46 cases, 3–6 months, and in 29 cases, less than 3 months.

Details of population

Of the sample, 264 (53%) were women and 235 (47%) were men, with the mean age at the time of the incident of 37.3 years (s.d. = 13.43). 318 (63.7%) were married, 132 (26.5%) were single, 19 (3.8%) were separated or divorced, 6 (1.2%) were widowed and 24 (4.8%) were stable cohabitees. Two hundred and seventy (54.2%) were employed or students, 80 (16.1%) were unemployed, 19 (3.8%) were receiving sickness/invalidity benefit, 22 (4.4%) were retired, and 107 (21.5%) were housewives. Eighty-seven (17.4%) were considered to be at special risk because of their occupations, 20 being soldiers and 41 being policemen. There was no significant sex difference in age. Significantly more men than women were employed, students, or at special occupational risk. Significantly more women than men were widowed. Otherwise there were no sex differences in the data outlined above.

Thirty-three (6.6%) had consulted with a psychiatrist prior to the criminal injury and for some unrelated reason, as had 44 (8.8%) who had consulted with their general practitioner for psychiatric treatment prior to an unrelated criminal injury. There was a family history of psychiatric illness of any type in a first-degree relative in 82 (16.4%). Thirty-nine (7.8%) reported having experienced a previous psychiatric disorder due to a prior incident of civil violence. Eighteen victims (3.6%) had a past criminal record. Apart from all those with a past criminal record being male, there were no other differences between the sexes on these measures.

Types of incidents

All incidents were clearly related to the civil violence in Northern Ireland, and all were significantly threatening.

TABLE I

Percentage frequency of characteristic symptoms of post-traumatic stress disorder (PTSD)

Item	*PTSD present (n = 116)*	*PTSD absent (n = 383)*
Recognisable stressor	100.0	100.0
Recurrent intrusive recollections	84.5	46.5
Recurrent dreams	52.6	33.9
Acting or feeling 'as if'	0	1.0
Markedly diminished interest	98.3	13.3
Detachment or estrangement	10.3	1.6
Constricted affect	12.9	2.3
Hyperalertness or exaggerated startle response	66.4	53.3
Sleep disturbance	96.3	84.6
Survivor guilt	6.9	1.3
Concentration or memory impairment	37.9	18.3
Avoidance of trigger stimuli	53.4	36.3
Intensification by exposure	77.6	55.9

In 90 (18%) cases, the victims survived an assassination attempt. In 34 (6.8%) cases the incident had been a violent personal assault, such as a 'knee-capping', where the victim was a selected target. In 75 (15%) cases the subject was held captive, usually within his own house, by terrorists. There were 57 (11.4%) incidents where the subject had been the victim of personally directed threats, usually involving a firearm, but without physical injury. For 191 (38.3%) subjects, they witnessed a violent incident in which they or a significant key figure was at personal risk of injury, and 52 (10.4%) subjects witnessed a violent incident in which there was no such risk. Injuries were sustained by 141 (28.3%), 11 (2.2%) suffering a concussional injury, and 5 (1%), permanent brain or spinal damage. In 31 victims (6.2%), there was a loss of a limb or impaired limb function, and in 27 patients (5.6%), there was conspicuous and disfiguring scarring. Eighty-five subjects (17%) had witnessed someone being killed in the incident. In 58 (11.6%) cases, the fatality was of a colleague or close friend.

TABLE II

Percentage frequency of features associated with post-traumatic stress disorder (PTSD)

	PTSD present (n = 110)	*PTSD absent (n = 383)*	
Explosive outbursts	6.0	4.2	$\chi^2 = 0.34$; NS
Impulsive behaviour	0	1.6	$\chi^2 = 0.76$; NS
Substance abuse	7.8	8.6	$\chi^2 = 0.01$; NS
Attempted suicide	4.3	1.0	$\chi^2 = 3.67$; $0.05 < P < 0.1$
	(n = 80)	*(n = 270)*	
Disharmony	46.3	23.3	$\chi^2 = 18.92$; $P < 0.001$

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Results

Of the total group of 499 studied, 116 (23.2%) had PTSD. The percentage frequency of characteristic symptoms in the groups with and without PTSD is given in Table I. Results from both men and women are combined in this and subsequent tables. There were no significant differences between the sexes for the frequency of individual characteristic symptoms.

Table II shows the percentage frequency of associated features and complications. There was no difference between the sexes in the frequency of explosions of aggressive behaviour or non-violent impulsive behaviour. Significantly more men than women, whether or not they had PTSD, had an increase in alcohol or drug abuse, but for neither sex was there a statistically significant association with the presence of PTSD. Data on disharmony in marital or other close sexual relationships was only available in 350 of the group. There was no difference between the sexes in the frequency of disharmony, and the relationship between disharmony and the PTSD held for both sexes.

Table III shows that there was a statistically significant relationship between PTSD and longer duration of the syndrome. The 3-month duration was chosen because of the time interval between the incident and the final examination; if a 6-month interval had been chosen, then some cases would have been unclassifiable, as for these, although examinations were carried out at 3 months, there had been no re-examinations at 6 months. The association between PTSD and the duration of the syndrome beyond 3 months, the need for psychiatric treatment, and the diagnosis of an ICD-9 depressive syndrome was significant for both sexes considered separately. There was no statistical difference between the sexes on these indices.

TABLE III

Association between post-traumatic stress disorder (PTSD) and duration of syndrome, need for psychiatric treatment and diagnosis of an ICD-9 depressive syndrome

	Frequency (%)		
	PTSD present (n = 116)	*PTSD absent (n = 383)*	
Syndrome lasting longer than 3 months	92.2	74.7	χ^2 22.46; $P<0.001$
Consultation with psychiatrist (other than medico-legal)	44.8	21.7	χ^2 23.0; $P<0.001$
Diagnosis of an ICD-9 depressive syndrome	34.5	11.7	χ^2 30.9; $P<0.001$

Discussion

This study is the first known to us to examine for PTSD after incidents of civil and terrorist violence. It also records a larger sample than is the case in many other studies that record individual symptom frequencies. It differs strikingly from much other work in being of a mixed-sex population.

One major issue with this type of work is that of reliability. To minimise individual observer error, the research team reviewed the notes jointly. Because of this, tests of interrater reliability were not possible. Because of the individual nature of the various histories (all subjects were identified in the case-notes, and many of the histories had unique features), it was felt that test–retest reliability could not be measured. While case control studies are notoriously unreliable, we do argue that, since in every case a full documented history and examination by one single psychiatrist was available to us, then information variance might have been reduced. With regard to the diagnosis and clinical features, the use of the DSM-III manual and its explicit criteria, and the fact that no minimum threshold is laid down, keeps criterion variance to a minimum. While we were aware that scales were available in the assessment of PTSD (Blanchard *et al*, 1982; Friedman *et al*, 1986), these were not available to us at the time the patients were seen. In any case, the use of such scales in a litigant population leads to a high risk of suggestion and overreporting. Despite the above, many of our most interesting findings reflected the low frequency of certain symptoms. Also, other than the recorded frequency of PTSD, comparisons were of subpopulations assessed the same way, so that any overreporting may have acted equally between the two groups. The use of litigants or people who otherwise gain financially from the declaration of symptoms is common in research on post-traumatic reactions (Atkinson *et al*, 1982; Lifton & Olson, 1976).

Finally, the follow-up time in our study was variable. A prolonged latency period for the development of the full range of characteristic symptoms, or a long time interval necessary before associated features and complications develop, were unavoidable hazards in this study. However, there was significant difference in duration of follow-up time between the group with PTSD and the group without the syndrome.

The validity of diagnosis was considered with particular relevance to the DSM-III by Spitzer & Williams (1985). They describe in turn the face, descriptive, predictive, and construct validities. The face validity of the diagnosis may be questioned if

PTSD consists of two distinct syndromes, even though, as pointed out by Spitzer & Williams, complete homogeneity is not necessary. Face validity would be enhanced if PTSD were found after a wide range of severe stressors. The high frequency of the diagnosis of concurrent depressive illness and the low frequency of some characteristic symptoms, reported in the introduction, question the descriptive validity of the syndrome. There is little evidence on predictive validity or the construct validity of PTSD. As 23.2% of our sample had PTSD, this syndrome can be identified in a mixed-sex population subject to acts of civil violence. This extends the range of stressors which can elicit the syndrome, and offers support to its face validity.

With respect to individual symptom frequencies, it is clear that symptoms linked to overarousal – startle reactions and sleep disturbance – were very common. This is to be expected, as they are a universal finding in the aftermath of severe stress. Intrusive imagery and, to a lesser extent, nightmares were common. These symptoms, together with the phenomenon of 'intensification by exposure', reflect a strong link between the symptoms and the stressful incident. This is acknowledged in the DSM–III, but has gained less emphasis in ICD–9 manual definitions. 'Intensification by exposure' was frequently the most persistent symptom. 'Suddenly acting or feeling as if the event were reoccurring' was not found in any of our cases of PTSD. This is a conspicuous and distressing symptom, so undereporting is unlikely. Equally, it is difficult to see how it could have been misinterpreted. It is said by the DSM–III to be rare and that "such states have been reported in combat veterans". The infrequency of survivor guilt would be expected from the nature of the incidents. In both cases, the frequency seemed to be low because of the type of stress, even though the stress was severe enough to fulfil the first criterion of PTSD. Once the stressor criterion has been fulfilled, the symptoms should be, as far as possible, independent of the special characteristics of the stress. Otherwise, usefulness of PTSD as a universally applicable syndrome is weakened. For this reason, we question the validity of these two symptoms, and suggest they belong more appropriately as associated features.

The relative infrequency of feelings of detachment or estrangement from others, or constricted affect, was, we believe, in part consistent with the work of Laufer *et al* (1985), whose model subdivides post-traumatic symptoms into symptoms of re-experiencing, and symptoms of denial, and subdivides combat stress. They link symptoms of re-experiencing with either simple combat exposure, or witnessing acts of abusive violence, while denial symptoms are associated primarily with participation in acts of abusive violence. The trauma to which our population was subject is clearly more like the former, so this model should predict a high frequency of re-experiencing symptoms and a low frequency of denial symptoms.

Laufer *et al* (1985) studied 251 Vietnam war veterans, who differed clearly from our group, in that they were all Americans (183 Whites and 68 Blacks), and all male. They were chiefly from middle-income families, and were in their late 20s or early 30s at the time of the interview, although the war had been over for at least 5 years at the time of the study (Laufer *et al*, 1981). This group was different demographically from our sample, therefore, in terms of country of origin, sex ratio, and age at the time of stress. The re-experiencing symptoms described by Laufer *et al* (1985) included intrusive thoughts, dreams or nightmares, insomnia, and startle reaction. They were all frequent in our study. The denial symptoms included loss of interest, emotional detachment, constriction of affect, concentration difficulties, and phobic avoidance. They were predicted to be low in frequency, as we found for emotional detachment and constriction of affect. The very high frequency of loss of interest was not predicted by this model. These three symptoms together make up Criterion C of PTSD which is "diminished responsiveness to the external world usually referred to as 'psychic numbing' or 'emotional anaesthesia'" (DSM–III). While loss of interest may be caused by this mood state, it may also be caused by depressed mood, which, as shown by the high frequency of an ICD–9 depressive diagnosis, was common in our sample with PTSD. As shown in our results, there was a significant association between the diagnosis of PTSD and the diagnosis of an ICD–9 depressive syndrome.

Two other reasons may explain the low frequency of emotional detachment and constriction of affect. Firstly, people with these symptoms may not present seeking compensation, although this would only be a problem if the symptoms of emotional withdrawal were present in the absence of symptoms of over-arousal or re-experiencing. Secondly, these symptoms might not have been enquired or reported on. We would argue that they would be conspicuous clinically even if not directly complained of. Our conclusion is that the high frequency of loss of interest is due to the frequency of the emotional state of depression rather than to the defence mechanism of denial. Criterion C in the PTSD seems to identify two emotional states; one of "psychic numbing or emotional anaesthesia" and the other of depression, which is the more common emotional state in our

study. The high frequency of concentration difficulty and phobic avoidance is also consistent with our conclusion that depressive mood accounts for the apparently high frequency of some denial symptoms.

We failed to find an association between the syndrome of PTSD and explosive outbursts or non-violent impulsive behaviour. Their absence may be due to observer error, although this is unlikely, since they are liable to be conspicuous. Our study differed from others, in that it was not a study of war veterans, so that the type of stress differed qualitatively. Secondly, our population was of mixed sex, with a low frequency of previous criminal record. Both of these factors may have influenced findings in other studies (Escobar *et al*, 1983). The condition of PTSD as reported in other studies might have been more severe and therefore more likely to have a strong influence on other types of behaviour. Since the DSM-III gives no guidelines for symptom severity or frequency, we were unable to test this. Finally, many of those with PTSD (34.5%) had received psychiatric treatment. We tentatively suggest that prompt psychiatric treatment may have led to a reduction in frequency of impulsive non-violent behaviour and explosive outbursts, although other complications were not similarly prevented.

The low frequency of alcohol or drug abuse is unlikely to be simply due to underreporting. Psychiatrists in Northern Ireland are sensitive to the risks of alcohol abuse, while abuse of other drugs is rare anyhow. Reasons for the low rates and absence of association may be the mixed sex and relatively high mean age of the studied population. Combat exposure of itself may have a direct link with substance abuse, irrespective of the presence of post-traumatic symptoms, or the prescription of psychotropic medication may reduce the incidence of self-medication with alcohol or illicit drugs.

The low frequency and weak association between PTSD and suicidal behaviour seems at first surprisng because of the high frequency of depression and the relatively high mean age of our group compared with those of war-veteran studies. However, the evidence is against an increase in the frequency of attempted or completed suicide during civil violence, and the effects of an individual's depressed mental state may be balanced by those social factors particular to civil violence that militate against suicidal acts (Loughrey & Curran, 1987).

Ours is the first study to identify a specific significant relationship between the presence of PTSD and marital difficulties. We were careful to record only those difficulties that had arisen since the incident. It is possible that an unsupportive relationship itself can cause an abnormally severe or prolonged reaction (Tarsh & Royston, 1985). We were not able to test the direction of this relationship.

The association between the presence of PTSD and the longer duration of the syndrome would support the predictive validity of this diagnosis. The data on entry into treatment also supports the predictive validity of PTSD, especially since PTSD is not a diagnosis in common use in Northern Ireland, and therefore would not of itself be used as a criterion for entry into psychiatric treatment in such a way that would make the reasoning behind this test of predictive validity circular.

Conclusions

Our results show that PTSD can be identified in a population stressed by civil violence. We question whether some characteristic features and associated features and complications are too dependent on the special kind of population studied or on the special kind of stress. The validity of most of the characteristic symptoms is accepted, although the emotional state identified using the diagnostic criteria may not be homogeneous. Our findings give face validity to the concept of PTSD, and the association between the diagnosis of PTSD and entry into treatment and the longer duration of the syndrome offer evidence in support of the predictive validity of PTSD.

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