

ORIGINAL ARTICLE

Post-traumatic stress disorder: symptom profiles in men and women

Ben Green

Department of Psychiatry, University of Liverpool, UK

Address for correspondence: Dr Ben Green, Consultant Psychiatrist and Honorary Senior Lecturer, University of Liverpool Department of Psychiatry, Royal Liverpool University Hospital, Liverpool, L69 3GA, UK. Tel: +44 (0)151 706 4149; Fax: +44 (0)151706 3765; email: bengreen@liverpool.ac.uk

Key words: Gender – Post-traumatic stress disorder (PTSD) – Psychopathology – Symptom frequency – Symptom profiles

SUMMARY

Objective: To investigate the symptom frequencies of a relatively large sample of post-traumatic stress disorder (PTSD) sufferers and compare male and female symptom profiles.

Research design and methods: A total of 103 consecutive attendees at a clinic for PTSD were examined using a checklist of DSM-IV PTSD characteristics. The presence and absence of all symptoms was evaluated in a research interview. Some additional symptoms were also routinely asked about, such as mood lability, substance use, sex drive or libido. Symptom profiles of male and female sufferers of PTSD were compared using the chi-squared statistical test.

Main outcome measures: Structured interview using checklist of DSM-IV PTSD characteristics.

Results: Certain symptoms were present in more than 30% of sufferers. Symptom frequencies

for anxiety, insomnia, distressing and recurrent dreams, flashback imagery and intrusive thoughts, irritability, poor concentration, avoidance behaviour and detachment all reached frequencies above 70%. Some symptoms (such as inability to recall parts of the trauma and restricted affect) occurred in no more than 35% of sufferers.

Conclusions: Men are significantly more likely than women to suffer with irritability ($p < 0.05$) and to use alcohol to excess ($p < 0.05$). Symptoms tend to follow an acute stress reaction, occur early and persist for many months. A case is made for restricting the diagnosis to the most prevalent symptoms and for including some often overlooked symptoms in the diagnostic guidelines, namely low mood, mood lability, and impaired libido.

Introduction

Post-traumatic stress disorder (PTSD) may affect some 2–3% of the general population at any one time^{1,2}. It is a relatively commonplace mental disorder, more prevalent than schizophrenia (0.5%), but less prevalent than major depression (5–10%). It is also relatively persistent, lasting a year or more. Severe cases of PTSD may be extremely long-lasting, once established. Survivors of war trauma in World War II combat veterans from the Pacific arena (some of whom had been Japanese prisoners of war), when interviewed in

the 1990s had high prevalence rates for PTSD³. Among the prisoner of war survivors, 70% fulfilled the criteria for a current diagnosis and 78% for a lifetime diagnosis of PTSD, compared to 18% and 29%, respectively, of the combat veterans.

PTSD therefore accounts for considerable morbidity within the population and deserves greater research scrutiny.

PTSD as a disorder or entity has been variously recognised through the years, but has only relatively recently been characterised in terms of criteria in classifications systems such as the DSM.

This paper seeks to examine symptom profiles in over 100 cases of PTSD. Relatively few studies have considered this. The current study was designed to look at well-recognised PTSD symptoms, co-morbid symptoms and some less well-recognised symptoms.

Methods

A total of 103 consecutive attendees at a clinic for PTSD (65 males and 38 females) were examined using a checklist of DSM-IV PTSD characteristics. The presence and absence of all symptoms were evaluated in a research interview. Some additional symptoms were also routinely asked about, such as mood lability, substance use, sex drive or libido. The interviews were conducted by the author and lasted over an hour each. Information was tabulated and investigated using chi-squared function of the SPSS statistical package.

Results

The groups consisted of 65 men and 38 women. The average age of both groups combined was 41.89 years.

Causes of PTSD

Over half of the cases were secondary to a motor vehicle accident (MVA, 56.3%), about a third (35%) were secondary to personal assault, including rape, gun and knife attacks). About a tenth (8.7%) were secondary to other causes including near fatal occupational traumas such as falls through a factory roof, electrocution, traumatic loss of eye and gas explosions.

Case Vignettes

A 45-year-old police officer was called to an incident at a family residence where a man on amphetamines had gone berserk. The man had threatened his wife and child with a samurai sword and ran into the street where he threatened unarmed police officers. As the officers tried to escape in a police car the assailant ran up to the vehicle and pierced the windscreen with the sword, narrowly missing one police officer.

A 23-year-old woman was giving birth and had delivered a healthy infant girl. There was a problem with a retained placenta, however. A junior midwife tried gentle traction to remove the placenta. The patient experienced considerable discomfort and pain. Some minutes later the senior midwife tried the same technique, with considerably more traction. The patient

experienced much pain. A resident junior obstetrician was called and arrived half an hour later. Despite the protestations of the patient that she was in agony the doctor tried further traction, which did not work. The doctor then tried manual removal by passing her hand into the patient's uterus and attempting to scrape the adherent placenta away from the uterine wall. No anaesthetic was given. The procedure lasted several minutes until the complaints of patient and spouse were listened to and more senior medical help summoned.

A 50-year-old driver on a busy motorway noted smoke issuing from his new car's bonnet. He drove over to an emergency refuge. Smoke billowed out. He thought he could see a flickering flame near the windscreen end of the bonnet and decided to evacuate the car. However, the car's onboard computer system had been involved in the fire and the door locks went into spasm, flicking locked and unlocked at a high frequency. The driver assumed he would be burnt alive. He timed his attempt to open the door in synchrony with the locked/unlocked sequence and managed to flip the handle just as the door unlocked and before it self-locked again. He fell out of the car, scrambled to his feet and ran down the motorway as the car was engulfed in flames and the petrol tank exploded.

Predisposing Causes

Twenty-one subjects (20.4%) had a family history of affective or other psychiatric disorder; four (3.9%) disclosed childhood sexual abuse and 12 (11.6%) had a past psychiatric history. A history of an acute stress reaction or disorder was obtained in 90 patients (87.4%).

Course and Previous Treatment of PTSD

The mean length of time separating the original trauma and the research interview was 27.16 months. Most patients had suffered an acute stress reaction immediately following the trauma. Only 18 (17.5%) had delayed onset using DSM-IV criteria.

Symptom Frequencies

The frequencies of symptoms from the DSM-IV checklist of PTSD symptoms are presented for the whole group in Table 1.

The additional questions about mood, lability of mood, libido, alcohol and tobacco use and organic amnesia yielded symptom frequencies as documented in Table 2.

Table 1. Frequencies of DSM-IV symptoms in 103 patients with PTSD

Symptom	Frequency (n = 103)
Insomnia	98 (95%)
Anxiety at reminder cues	96 (93%)
Intrusive thoughts, images, sounds and sensations	94 (91%)
Irritability	93 (91%)
Poor concentration	93 (90%)
Diminished interest in significant activities	88 (85%)
Recurrent dreams of the trauma	86 (83%)
Avoidance of activities or places associated with the trauma	85 (83%)
Foreshortening of expectations about the future	80 (78%)
Detachment from others	78 (76%)
Avoidance of thinking or conversing about the trauma	75 (72.8%)
Poor appetite	69 (67%)
Hypervigilance	55 (53%)
Startle reactions	46 (45%)
Acting or feeling as if the event was recurring	37 (36%)
Restricted affect	32 (31%)
Inability to recall parts of the trauma (not secondary to loss of consciousness or organic amnesia)	19 (18%)

Table 2. Frequencies of other symptoms in 103 patients with PTSD

Symptom	Frequency (n = 103)
Low mood	73 (71%)
Absent or low libido	71 (69%)
Mood lability	52 (50%)
Alcohol usage increase	37 (36%)
Tobacco usage increase	30 (29%)
Organic amnesia (secondary to head trauma)	16 (16%)

Male and Female Symptom Profiles

Symptom frequencies of all the above symptoms were calculated for males and females. By and large these did not differ significantly between the sexes.

There was a trend for males to be more likely to suffer organic amnesia, and also to have hypervigilance. There was a trend for females to report childhood sexual abuse more often than men.

There were two significant differences found using chi-squared tests. Men were significantly more likely to increase their consumption of alcohol. A total of 28 men (out of 65) reported increased use of alcohol compared to nine (out of 38) women. This gives a chi-squared *p*-value of < 0.05 with one degree of freedom. Of the 65 men, 62 reported increased irritability compared to (31 out of 38) women. This gave a *p*-value of < 0.05 with one degree of freedom.

Discussion

Roszell *et al.* performed a comparable study of 116 military veterans⁴. Using DSM-III-R criteria the majority of symptoms attained a greater than 50%

frequency except flashbacks, psychogenic amnesia, and sense of foreshortened future. This would appear to concur with the present study's mainly civilian sample, except for the sense of a foreshortened future, which attained a 78% frequency in this study.

Symptom profiles of male and female sufferers of PTSD were compared in this study. Men were significantly more likely than women to suffer with irritability and to use alcohol to excess. This has important implications for physical health and for professionals who analyse offending behaviour or provide forensic reports. This finding echoes work by Zlotnick *et al.* who found that men with PTSD in general psychiatric practice were more likely to meet criteria for a substance use disorder and for antisocial personality disorder⁵. Zlotnick *et al.*'s other finding that women with PTSD were likely to quote sexual trauma as a cause and to have a higher frequency of re-experiencing type symptoms were not replicated in this sample. (However, as noted, women were more likely to complain of childhood abuse.) Zlotnick *et al.* concluded that, as in this study, men and women had fairly comparable clinical symptom profiles.

There was otherwise a broad similarity in the relative frequency of symptoms amongst males and females. This broad similarity in symptom profiles between males and females also seems to occur in military cases of PTSD⁶. This finding is not universal and some authors have found differences between male and female presentations, particularly with regard to dissociative-type symptoms, which in Fullerton *et al.*'s study, women appeared to be more susceptible⁷. Maes *et al.* found that women were more likely to have re-experiencing symptoms and arousal symptoms⁸. Maes' study, however, included fewer than 40 people with PTSD. Its

findings are not replicated in the current study, which has a larger number of subjects with PTSD.

A case could be made for retaining the association between the diagnosis and the most prevalent symptoms and perhaps dropping some of the less-frequently experienced symptoms – such as difficulty recalling detail (18%) and restricted affect (31%). A case could also be made for including some frequently occurring apparent symptoms (e.g. low mood and reduced libido) and often overlooked symptoms in the diagnostic guidelines (such as mood lability). Many would argue for two discrete diagnoses – PTSD which accounts for such problems as anxiety at reminder cues, nightmares, and depression, which accounts for problems such as low mood and reduced libido. The latter argument is made by those in favour of the concept of co-morbidity.

Co-morbidity with PTSD has been recognised in earlier studies, prompting others to contemplate whether PTSD is a discrete diagnostic entity. Up to 50% of PTSD patients have co-morbid diagnoses⁹. Some authors have even questioned whether PTSD exists at all¹⁰. Roszell *et al.* and others found that mood disorders, psychoactive substance abuse disorders and anxiety disorders commonly co-existed with PTSD in military veterans^{4,11}. This study found similarly increased use of cigarettes and alcohol and very high rates of lowered mood in a civilian population with PTSD.

The argument is in some ways a philosophical one, but the single origin of the symptoms can be ascribed to the trauma itself, and one may argue that it makes more sense to link a trauma to a single disorder or syndrome than to two separate disorders. This would widen the concept of PTSD to include affective disorder. Leaving the philosophical argument aside, it is clear that PTSD may have considerably more to tell us clinically about the genesis of depression than psychiatrists have generally inferred to date.

The frequency of previous acute stress disorder was high (87%), lending some further credence to the predictive value of this factor for later PTSD¹². Other authors have found that acute stress disorder predicted 83% of the PTSD group¹³. Koren *et al.* also found a good predictive value for symptoms within the first week being associated with PTSD at 1 year¹⁴.

Limitations of this study include the use of a possibly biased sample in that these were people primarily referred for clinical and medico-legal assessments. Blaszczyński *et al.* have condemned this methodology, preferring non-selected research samples¹⁵. The preferred methodology would involve a prospective follow-up of a large and complete set of trauma survivors or a sizeable and representatively-drawn population sample. If the incidence of PTSD is only 5% in, say, motor vehicle accident (MVA) survivors, then to find 100 cases of PTSD would require a costly

psychiatric and psychological follow-up over several years of at least 2000 or more survivors. This is possible, but would require national or international collaborative funding. Until this is funding is available, such studies as this one still have merit and real-world or heuristic validity, and may help sharpen the hypotheses for larger studies.

Conclusions

Men with PTSD are significantly more likely than women with PTSD to suffer with symptoms of irritability ($p < 0.05$) and to use alcohol to excess ($p < 0.05$). The diagnosis of PTSD tends to follow an acute stress reaction or disorder. Symptoms of PTSD have an early onset (although this is not exclusively so) and tend to persist for many months. The case has been made for restricting the diagnosis to the most frequent symptoms and for including some often overlooked symptoms in the diagnostic guidelines, namely low mood, mood lability and reduced sex drive.

References

1. Ohayon MM, Shapiro CM. Sleep disturbances and psychiatric disorders associated with PTSD in the general population. *Compr Psychiatry* 2000;41(6):469-78
2. Davidson JR, Tharwani HM, Connor KM. Davidson Trauma Scale (DTS): normative scores in the general population and effect sizes in placebo-controlled SSRI trials. *Depress Anxiety* 2002;15(2):75-8
3. Sutker PB, Allain AN Jr, Winstead DK. Psychopathology and psychiatric diagnoses of World War II Pacific theater prisoner of war survivors and combat veterans. *Am J Psychiatry* 1993;150(2):240-5
4. Roszell DK, McFall ME, Malas KL. Frequency of symptoms and concurrent psychiatric disorder in Vietnam veterans with chronic PTSD. *Hosp Community Psychiatry* 1991;42(3):293-6
5. Zlotnick C, Zimmerman M, Wolfsdorf BA, Mattia JJ. Gender differences in patients with posttraumatic stress disorder in a general psychiatric practice. *Am J Psychiatry* 2001;158(11):1923-5
6. Pereira A. Combat trauma and the diagnosis of post-traumatic stress disorder in female and male veterans. *Mil Med* 2002;167(1):23-7
7. Fullerton CS, Ursano RJ, Epstein RS, Crowley B, Vance K, Kao TC, Dougall A, Baum A. Gender differences in posttraumatic stress disorder after motor vehicle accidents. *Am J Psychiatry* 2001;158(9):1486-91
8. Maes M, Delmeire L, Schotte C, Janca A, Creten T, Mylle J, Struyf A, Pison G, Rousseeuw PJ. Epidemiologic and phenomenological aspects of post-traumatic stress disorder: DSM-III-R diagnosis and diagnostic criteria not validated. *Psychiatry Res* 1998;81(2):179-93
9. Kozaric-Kovacic D, Kocijan-Hercigonja D. Assessment of post-traumatic stress disorder and comorbidity. *Mil Med* 2001;166(8):677-80
10. Sparr LF. Post-traumatic stress disorder. Does it exist? *Neurol Clin* 1995;13(2):413-29

11. Hyer L, Stanger E, Boudewyns P. The interaction of posttraumatic stress disorder and depression among older combat veterans. *J Clin Psychol* 1999;55(9):1073-83
12. Mellman TA, David D, Bustamante V, Fins AI, Esposito K. Predictors of post-traumatic stress disorder following severe injury. *Depress Anxiety* 2001;14(4):226-31
13. Brewin CR, Andrews B, Rose S, Kirk M. Acute stress disorder and posttraumatic stress disorder in victims of violent crime. *Am J Psychiatry* 1999;156(3):360-6
14. Koren D, Arnon I, Klein E. Acute stress response and posttraumatic stress disorder in traffic accident victims: a one-year prospective, follow-up study. *Am J Psychiatry* 1999;156(3):367-73
15. Blaszczyński A, Gordon K, Silove D, Sloane D, Hillman K, Panasetis P. Psychiatric morbidity following motor vehicle accidents: a review of methodological issues. *Compr Psychiatry* 1998;39(3):111-21

CrossRef links are available in the online published version of this paper:

<http://www.cmrojournal.com>

Paper CMRO-2324, *Accepted for publication*: 17 Jan 2003

Published Online:

doi:10.1185/030079903125001604