# Trauma at the Hands of Another: Longitudinal Study of Differences in the Posttraumatic Stress Disorder Symptom Profile Following Interpersonal Compared With Noninterpersonal Trauma

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**ABSTRACT**

***Objective:*** Survivors of traumatic events of an interpersonal nature typically have higher rates of posttraumatic stress disorder (PTSD) than survivors of noninterpersonal traumatic events. Little is known about potential differences in the nature or trajectory of PTSD symptoms in survivors of these different types of traumatic events. The current study aimed to identify the specific symptom profile of survivors of interpersonal and noninterpersonal trauma, and to examine changes in differences in the symptom profile over time.

***Method:*** The study examined PTSD symptom data from 715 traumatic injury survivors admitted to the hospital between April 2004 and February 2006, who were assessed 3, 12, and 24 months after injury using the Clinician-Administered PTSD Scale (primary outcome measure). Multivariate analyses of variance were used to investigate differences in PTSD symptom profile over time between interpersonal and noninterpersonal trauma.

***Results:*** Multivariate analyses of variance revealed significant differences between the 2 groups in overall severity of PTSD symptoms at each of the 3 time points: 3 months, $F_{17,696} = 5.86$, $P < .001$; 12 months, $F_{17,696} = 3.62$, $P < .001$; 24 months, $F_{17,696} = 3.09$, $P < .001$. Survivors of interpersonal trauma demonstrated significantly ($P < .01$) higher scores on 14 PTSD symptoms at 3 months after injury but on only 6 symptoms by 24 months. Symptoms on which differences persisted were the PTSD unique symptoms more associated with fear and threat.

***Conclusions:*** Interpersonal trauma results in more severe PTSD symptoms in the early aftermath of trauma. Over the course of time, the distinctive persisting symptoms following interpersonal trauma involve fear-based symptoms, which suggest fear conditioning may be instrumental in persistent interpersonal PTSD.

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Before a diagnosis of posttraumatic stress disorder (PTSD) can be considered, the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (*DSM-IV*) requires an individual to have experienced, witnessed, or been confronted with "an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others."[1(p427)] While this definition covers a vast array of threatening experiences, potentially traumatic events are often grouped into 2 broad categories: interpersonal events, such as physical or sexual assault, and noninterpersonal events, such as accidents or natural disasters. Events of an interpersonal nature typically result in higher rates of PTSD than do accidents and other noninterpersonal traumas. For example, rape is most likely to be associated with PTSD in both men (65%) and women (46%), while the lifetime prevalence of the disorder following a natural disaster is much lower (eg, 5%).[2,3]

It has been proposed that interpersonal trauma is more pathogenic because, in addition to the direct threat, it involves a challenge to the individual's assumptions about the safety and predictability of the world and, in particular, the capacity for others to deliberately harm.[4] However, while numerous studies have demonstrated that interpersonal trauma is more pathogenic, little is known about how the symptom profile of interpersonal trauma survivors differs from that of people who experience noninterpersonal traumatic events. Norris[5] demonstrated that individuals who experienced interpersonal events endorsed more items within all the PTSD symptom clusters than victims of noninterpersonal trauma. However, these data refer to *DSM-III* PTSD criteria in which the symptom clusters were very different from current formulations. In addition, Norris[5] described only differences in overall symptom clusters without reporting differences in the specific PTSD symptoms. Chung and Breslau,[6] investigating the structure of PTSD by gender and trauma type, found that survivors of assaultive violence were more likely to report more pervasive disturbance than survivors of nonassaultive trauma, with differences most prominent in numbing symptoms and exaggerated startle response.

In considering potential differences in the impact of interpersonal versus noninterpersonal trauma on the range of PTSD symptoms, we need to be cognizant of the considerable heterogeneity within the PTSD diagnosis.

On the basis of several factor analytic studies,[7–10] as well as research exploring the relationship between PTSD factors and other disorders,[11,12] considerable diversity in symptoms is apparent and areas of overlap with other disorders evident. Certain symptoms in *DSM-IV*, such as the reexperiencing (recollections [B1], nightmares [B2], flashbacks [B3], cued distress [B4], physical reactivity [B5]) and active avoidance (avoiding thoughts [C1], avoiding activities [C2]) symptoms, hypervigilance (D4), and startle response (D5), have been reported as more specific to PTSD.[12] These symptom clusters have also been identified as more closely related to the fear/phobic disorders such as panic disorder, agoraphobia, obsessive-compulsive disorder,

and social phobia.[11] In contrast, other symptoms—such as the passive avoidance or numbing symptoms (amnesia [C3], diminished interest [C4], detachment [C5], restricted affect [C6], foreshortened future [C7]) and the first 3 hyperarousal symptoms of sleep difficulties (D1), irritability (D2), and concentration problems (D3)—are shared with conditions such as major depressive disorder and generalized anxiety disorder. It has been suggested that this latter, less-specific group of symptoms be conceptualized as a more general factor of "dysphoria."[10] This differentiation between PTSD specific and general dysphoria symptoms in the diagnosis becomes important if it is proposed that certain high severity events result in different psychological reactions.

Another critical issue is the distinctive impact of interpersonal trauma on PTSD symptoms in the acute and longer-term phases of adaptation. Although there is strong evidence that PTSD severity abates over time in survivors of interpersonal and other forms of trauma,[13] there is a dearth of evidence regarding how symptom profiles change over time across these 2 different forms of trauma. If interpersonal and other trauma result in distinct traumatic stress reactions, it is critical to understand these differences across acute and more chronic presentations.

The current study aimed to (1) explore differential patterns of symptom profile in those exposed to interpersonal trauma compared to noninterpersonal trauma in both acute and chronic phases of adaptation and (2) identify differences in PTSD prevalence across the 2 groups over time. In order to address these questions, we investigated PTSD symptom data in a large sample of traumatic injury survivors interviewed at 3, 12, and 24 months after injury. The types of traumatic events responsible for the injury included interpersonal (assault with and without weapons) and noninterpersonal (motor vehicle and workplace accidents).

- Survivors of different types of trauma experience different posttraumatic stress disorder (PTSD) symptom profiles and trajectories.
- Interpersonal trauma survivors are more likely to suffer ongoing problems with fear- and threat-based responses than survivors of noninterpersonal trauma.
- Clinicians may need to target these symptoms in order to achieve optimal outcomes for the interpersonal PTSD patient.

Clinical Points

## METHOD

### Participants

Between April 2004 and February 2006, one thousand one hundred sixty-five traumatic injury survivors were recruited from four level-1 trauma centers across Australia. Patients were included in the study if they had no brain injury or a mild traumatic brain injury,[14] were aged between 16 and 70 years of age, and had a reasonable comprehension of English. Patients were excluded from the study if they were currently suicidal or psychotic. The study was approved by the research and ethics committee at each hospital. Informed consent was obtained from all participants following the provision of both verbal and written explanation of the study. Further information on this sample has been provided previously (eg, Bryant et al[15]).

Participants in the current study comprised 715 injury patients who completed interviews at 3, 12, and 24 months following their hospital admission. The majority of participants were male (n = 521, 73%), with a mean age of 39 years (SD = 13.4). Forty-two percent of participants experienced a mild traumatic brain injury. Participants spent a mean of 12.8 (SD = 13.2) days in the hospital, and 16% had an intensive care unit (ICU) admission. The 715 patients who completed all 3 assessments and were included in the current sample did not differ from those who dropped out in terms of age ($t_{1162} = 4.33$, nonsignificant [NS]), gender ($\chi^2_1 = 0.93$, NS), injury severity ($t_{1163} = 1.12$, NS), mechanism of injury ($\chi^2_1 = 0.01$, NS), admission to ICU ($\chi^2_1 = 3.88$, NS), or presence of mild traumatic brain injury ($\chi^2_1 = 3.68$, NS), although dropouts were more likely to be diagnosed with PTSD at 3 months ($\chi^2_1 = 6.31$, $P = .019$).

Individuals who refused to participate in the study did not differ from participators in terms of gender ($\chi^2_1 = 1.50$, NS) or injury severity ($t_{1571} = 1.46$, NS). Refusers were younger than participants ($t_{1561} = 3.44$, $P = .001$) and less likely to have an ICU admission ($\chi^2_1 = 5.37$, $P = .02$).

The Clinician-Administered PTSD Scale (CAPS),[16] the primary outcome measure, was used to assess PTSD symptoms at 3, 12, and 24 months after injury. This structured clinical interview is one of the most widely used tools for diagnosing PTSD and measuring PTSD severity and has demonstrated excellent reliability and validity. Severity scores for each symptom (range, 0–8) were computed by summing the frequency and intensity ratings. The CAPS interviews were conducted by research assistants who were trained in the study protocol by a clinical psychologist. All interviews were recorded, and 5% were rescored blind to the original scoring to test interrater reliability. Overall, the PTSD diagnostic consistency for the CAPS ranged between 0.98 and 0.99 across the 3-, 12-, and 24-month time points.

Interpersonal trauma (n = 45; 7%) included physical assault with or without a weapon, while noninterpersonal traumas (n = 670; 93%) included falls and motor vehicle, work, and other accidents. Attrition from the study was comparable in the interpersonal and noninterpersonal groups ($\chi^2_1 = 0.01$, NS). Among completers, there were no significant differences between the 2 groups in terms of gender ($\chi^2_1 = 3.26$, NS) or admission to ICU ($\chi^2_1 = 0.11$, NS). However, survivors of interpersonal trauma were younger ($t_{713} = 3.39$, $P = .001$), had less severe injuries ($t_{713} = 3.44$, $P = .001$), and were more likely to have sustained a mild traumatic brain injury ($\chi^2_1 = 6.68$, $P = .012$) than survivors of noninterpersonal trauma.

**Table 1. Multivariate Analysis of Variance Comparison of Scores on the 17 Symptoms of Posttraumatic Stress Disorder (PTSD) Among Survivors of Interpersonal and Noninterpersonal Trauma at 3, 12, and 24 Months After Injury[a]**

| | 3 Months | | | 12 Months | | | 24 Months | | |
|---|---|---|---|---|---|---|---|---|---|
| Symptom | Noninterpersonal (n = 670), Mean (SD) | Interpersonal (n = 45), Mean (SD) | *F* | Noninterpersonal (n = 670), Mean (SD) | Interpersonal (n = 45), Mean (SD) | *F* | Noninterpersonal (n = 670), Mean (SD) | Interpersonal (n = 45), Mean (SD) | *F* |
| Recollections (B1) | 1.12 (1.93) | 2.60 (2.63) | 23.56* | 0.98 (1.87) | 1.84 (2.42) | 8.65* | 1.06 (1.91) | 1.77 (2.19) | 5.71 |
| Nightmares (B2) | 0.54 (1.49) | 1.44 (2.39) | 14.24* | 0.54 (1.53) | 1.18 (2.32) | 6.71* | 0.42 (1.37) | 1.00 (2.16) | 6.76* |
| Flashbacks (B3) | 0.50 (1.30) | 1.09 (1.96) | 8.10* | 0.40 (1.12) | 0.93 (1.94) | 8.60* | 0.29 (1.01) | 0.14 (0.55) | 0.99 |
| Cued distress (B4) | 0.99 (1.84) | 2.20 (2.71) | 17.07* | 0.95 (1.75) | 2.16 (2.58) | 18.48* | 0.95 (1.83) | 1.98 (2.42) | 12.58* |
| Physiological reactivity (B5) | 0.80 (1.74) | 1.47 (2.31) | 5.94 | 0.82 (1.71) | 1.64 (2.29) | 9.31* | 0.94 (1.86) | 1.57 (2.11) | 4.70 |
| Avoiding thoughts (C1) | 0.94 (1.94) | 2.22 (2.89) | 17.23* | 0.97 (1.95) | 2.47 (2.59) | 23.86* | 0.85 (1.88) | 1.68 (2.33) | 7.85* |
| Avoiding activities (C2) | 0.52 (1.53) | 2.62 (2.99) | 67.44* | 0.78 (1.90) | 2.42 (2.94) | 29.07* | 1.08 (2.24) | 1.73 (2.62) | 3.43 |
| Amnesia (C3) | 2.43 (3.32) | 3.91 (3.34) | 8.41* | 2.26 (3.31) | 3.11 (3.56) | 2.73 | 2.47 (3.32) | 3.64 (3.41) | 5.10 |
| Diminished interest (C4) | 0.80 (1.82) | 1.91 (2.70) | 14.57* | 0.71 (1.71) | 1.71 (2.43) | 13.54* | 0.98 (2.10) | 1.66 (2.57) | 4.18 |
| Detachment (C5) | 0.82 (1.82) | 2.27 (2.74) | 24.54* | 0.84 (1.92) | 1.60 (2.57) | 6.33 | 0.96 (2.06) | 1.73 (2.55) | 5.49 |
| Restricted affect (C6) | 0.54 (1.49) | 1.47 (2.47) | 14.68* | 0.67 (1.73) | 0.96 (2.03) | 1.16 | 0.80 (1.88) | 1.61 (2.43) | 7.43* |
| Foreshortened future (C7) | 0.24 (1.04) | 0.49 (1.50) | 2.21 | 0.65 (1.40) | 1.22 (2.10) | 6.00* | 0.48 (1.52) | 0.27 (0.97) | 0.80 |
| Sleep difficulty (D1) | 2.80 (3.04) | 3.93 (3.39) | 5.82 | 2.42 (2.92) | 3.64 (3.28) | 7.25* | 2.59 (3.02) | 2.98 (3.30) | 0.66 |
| Irritability (D2) | 1.61 (2.21) | 2.53 (2.46) | 7.26* | 1.39 (2.19) | 2.24 (2.76) | 6.23 | 1.51 (2.28) | 2.11 (2.54) | 2.81 |
| Concentration (D3) | 1.32 (2.13) | 2.67 (2.73) | 16.25* | 1.23 (2.16) | 1.84 (2.69) | 3.32 | 1.27 (2.22) | 1.64 (2.44) | 1.13 |
| Hypervigilance (D4) | 1.26 (2.03) | 3.20 (2.64) | 36.94* | 1.33 (2.12) | 3.04 (2.73) | 26.40* | 1.32 (2.08) | 2.52 (2.87) | 13.10* |
| Startle response (D5) | 0.60 (1.47) | 1.29 (2.10) | 8.63* | 0.71 (1.67) | 1.60 (2.24) | 11.48* | 0.66 (1.60) | 1.45 (2.13) | 9.60* |

[a]PTSD symptoms were assessed by using the Clinician-Administered PTSD Scale.
*$P < .01$.

### Data Analysis

A series of 3 cross-sectional multivariate analyses of variance were conducted to investigate differences in PTSD symptom profile between interpersonal and noninterpersonal trauma types at each of 3, 12, and 24 months after trauma. Given the number of analyses performed, the significance level for all symptom-level analyses was set at $P < .01$. Symptoms were then collapsed into the 2 groups of PTSD specific (B1–B5, C1, C2, D4, D5) and PTSD dysphoria (C3–D3) symptoms and a repeated-measures analysis of variance (ANOVA) conducted to assess changes in patterns of endorsement of the 2 symptom groupings by interpersonal versus noninterpersonal trauma over time. Finally, $\chi^2$ analyses compared PTSD caseness rates between the interpersonal and noninterpersonal trauma groups at 3, 12, and 24 months after trauma.

## RESULTS

Multivariate analyses of variance revealed significant differences in overall PTSD severity between the interpersonal and noninterpersonal groups at all 3 time points (3 months, $F_{17,696} = 5.86$, $P < .001$; 12 months, $F_{17,696} = 3.62$, $P < .001$; 24 months, $F_{17,696} = 3.09$, $P < .001$). Table 1 indicates that, at 3 months after injury, survivors of interpersonal trauma reported significantly greater severity on almost all PTSD symptoms, with B5 (physiological reactivity), C7 (sense of foreshortened future), and D1 (difficulty sleeping) being the only exceptions. By 12 months, there were fewer differences between the 2 groups, with significant differences between the 2 groups evident on 12 of the 17 symptoms. By 2 years after injury, these differences had reduced further, with significant differences evident on only 6 of the 17 PTSD symptoms. A $\chi^2$ analysis confirmed that, at 24 months, interpersonal and noninterpersonal trauma survivors differed on significantly fewer symptoms than at 3 months ($\chi^2_1 = 7.77$, $P < .01$).

As seen in Table 1, at 12 months significant differences were evident on reexperiencing symptoms B1, B2, B3, B4, and B5; active avoidance symptoms C1 and C2; passive avoidance symptoms C4 and C7; and hyperarousal symptoms D1 (sleep), D4 (hypervigilance), and D5 (hyperarousal). Of the 12 symptoms on which the 2 groups differed significantly, this included all 9 of the PTSD specific symptoms and only 3 of the 8 nonspecific dysphoria symptoms. By 24 months, the 2 groups differed on only 6 symptoms—5 of the 9 PTSD specific symptoms (B2, B4, C1, D4, and D5)—and only 1 of the 8 nonspecific dysphoria symptoms—C6 (restricted affect). That is, of the symptoms that assault victims scored higher on, 83% were PTSD specific ($z = 2.30$, $P < .02$). The findings above were largely unchanged when analyses of covariance were conducted to control for the effects of gender. Controlling for mild traumatic brain injury did not change the overall pattern of results but did result in nonsignificant differences between the 2 groups on symptom C3 at 3 months and on B2 and C6 at 24 months.

Analyses of variance were then used to further examine differences in endorsement over time of PTSD specific compared to the nonspecific PTSD dysphoria symptoms by the interpersonal and noninterpersonal trauma–exposed groups. Consistent with the above findings, ANOVA failed to identify a group-by-time interaction when examining PTSD specific symptoms ($F_{1,711} = 1.69$, NS) but a group-by-time interaction effect was evident in relation to the dysphoria

symptoms, with endorsement of these symptoms by the 2 groups converging over time ($F_{1,711} = 5.24$, $P < .03$).

In terms of caseness, PTSD prevalence rates following interpersonal trauma were significantly higher at 3 (24% compared with 6%, $\chi^2_1 = 32.09$, $P < .01$) and 12 months (27% compared with 8%, $\chi^2_1 = 23.06$, $P < .01$), although no significant differences were evident by 24 months (13% compared with 10%, $\chi^2_1 = 2.20$, NS).

## DISCUSSION

The current research supports previously published findings indicating that interpersonal trauma results in higher rates of PTSD symptoms than those events that do not involve interpersonal violence. At 3 months after trauma, those injured in an interpersonal trauma reported higher rates of symptoms on all except 3 PTSD symptoms. Thus, in the acute phase, interpersonal trauma appears to result in greater generalized severity of PTSD. By 24 months, however, differences between the groups are evident on only 6 symptoms, 5 of which are more specific to the disorder. These data suggest that, while differences between interpersonal and noninterpersonal trauma are apparent across most PTSD symptoms in the early aftermath of trauma, more severe chronic PTSD symptoms after interpersonal trauma are associated with the threat and fear response rather than general dysphoria.[11] These findings are consistent with recent studies examining PTSD structural models that demonstrate the distinctiveness of these more fear- and threat-related symptoms from those symptoms shared with the mood and anxiety disorders.[17,18]

One way of understanding the greater association of interpersonal trauma with the more PTSD specific fear-related symptoms may involve fear conditioning. On the basis of animal conditioning paradigms, fear conditioning models posit that fear-based disorders persist when stimuli associated with the traumatic event become strongly associated with the fearful response, and subsequent reminders cause renewed episodes of anxiety.[19] Repeated exposure to the conditioned stimuli in the acute phase typically results in extinction learning, in which the trauma survivor learns that the trauma reminders are no longer dangerous. This model has strong support from evidence that people with chronic PTSD are hyperresponsive to trauma reminders.[20] It is possible that interpersonal trauma results in stronger and more persistent fear conditioning, which leads to more fear-specific symptoms. Extinction learning may be particularly impaired in survivors of interpersonal trauma because of the violations of assumptions about safety and trust, which may limit people's ability to learn safety in the months after trauma.

This finding can also be considered from an evolutionary perspective. Evolutionary theory has suggested that the rehearsal of trauma memories in the form of flashbacks and other intrusive phenomena may represent a primitive form of threat learning that served to enhance survival in the early phylogenesis of the species.[21] Responses to predictable environmental dangers were likely to have been established early in evolution since they required stereotypic defensive responses that, in some instances, were universal. Hence, these fear responses were incorporated into neural substrates as simple or atavistic phobias, for example, of heights, confined spaces, snakes and spiders.[22] In contrast, a more complex fear learning mechanism was needed when the source of danger was variable and unpredictable, particularly in relation to the threat posed by conspecifics within or outside the band. Other members of the species could be allies or foes and their status could change capriciously. Hence, a process of intense and prolonged recounting of trauma memories after the most recent encounter with interpersonal threat ensured that the necessary information was effectively updated and consolidated. The evolutionary legacy of this survival mechanism may account for the more extensive and longer-lasting pattern of reexperiencing symptoms and associated avoidant responses experienced by contemporary survivors of interpersonal violence.

Consistent with the finding of Chung and Breslau,[6] restriction of affect was the only dysphoria symptom experienced to a greater degree by survivors of interpersonal trauma at 24 months. It is worth noting that emotional numbing has been reported across several studies as a distinguishing feature of chronic PTSD.[23] The current finding may be explained in several ways. First, emotional numbing has been conceptualized as a response to persistent fear and may function as an avoidant strategy in chronic PTSD in order to regulate the effects of persistent arousal.[4] Second, the inability to engage in emotional responses following interpersonal trauma may reflect the survivor's difficulty in trusting other people and engaging in future interpersonal relations. That the differences in restriction of affect became nonsignificant between the groups at 24 months when controlling for mild traumatic brain injury is interesting and warrants further investigation. It may be that preliminary literature linking mild traumatic brain injury with reduced emotional sensitivity and depression accounts for this finding.[24]

The minimal differences by 24 months in the injury dataset between the interpersonal and noninterpersonal trauma–exposed groups in broader dysphoria or psychological functioning were noteworthy. Analyses indicated a convergence between the 2 groups in their endorsement of dysphoria symptoms over time and a similar convergence in prevalence in PTSD caseness at this time point. As such, for the interpersonal trauma group, while the PTSD unique features associated with fear and threat appear to persist, there is a reduction in endorsement of the more general dysphoria features resulting in reduced PTSD prevalence rates. Conversely, the noninterpersonal group showed a slight increase in dysphoria symptoms C4, C5, and C6 over time, contributing to the increased PTSD prevalence in this group. It may also be speculated that such variations in symptom profiles across the 2 groups may warrant differential interventions.

## LIMITATIONS

It should be noted that our sample size of interpersonal trauma survivors was small relative to those who survived



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noninterpersonal trauma. Further, our sample did not include sexual assault survivors, as survivors of sexual assault tended not to present for care to emergency departments in the major trauma hospitals included in this study. The particular trauma responses experienced by sexual assault–related PTSD may result in other differences between interpersonal and other forms of trauma.[25,26] Accordingly, these results need to be replicated in samples with larger proportions of those exposed to interpersonal trauma, including survivors of sexual assault.

An additional limitation of this study is that interviewers were not blinded to the time point of assessments. It is possible that this may have affected scoring of the CAPS if, for example, interviewers assumed that symptoms should improve over time or that assault victims would have more persistent symptoms.

## CONCLUSIONS

These data suggest that, while interpersonal trauma has a greater impact than noninterpersonal trauma on most PTSD symptoms in the early aftermath of trauma, these differences become more specific over time. The symptoms on which interpersonal trauma has its most persisting impact are those that are more unique to PTSD and associated with fear and threat.

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