Life threat during assaultive trauma: Critical posttraumatic stress disorder risk factors for injured patients

Sydney C. Timmer-Murillo, PhD, Andrew Schramm, PhD, *and* **Terri A. deRoon-Cassini, PhD**, *Milwaukee, Wisconsin*

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BACKGROUND: Rates of posttraumatic stress disorder (PTSD) among injury survivors are higher relative to the general population, supporting the need to identify those most at risk for PTSD following injury given negative impact of PTSD on recovery. Perceived life threat and assaultive trauma are consistent risk factors for subsequent PTSD development, although less work has explored them in combination. The current study evaluated whether trauma type (assaultive vs. nonassaultive) and perceived life threat, together, led to greater PTSD symptoms 1 month and 6 months postinjury.

METHODS: Participants included adult injured trauma survivors admitted to a level 1 trauma center. While hospitalized, perceived life threat during trauma was assessed and mechanism of injury was collected via record review and was collapsed into two categories: assaultive and nonassaultive. The Clinician-Administered PTSD Scale (*Diagnostic and Statistical Manual of Mental Disorders* [Fifth Edition]) was administered at 1 month (N = 137) and 6 months (N = 220) after injury.

RESULTS: The four symptoms clusters of PTSD (intrusions, avoidance, hyperarousal, and negative mood/cognitions) were examined using four 2 (time) × 2 (life threat) × 2 (trauma type) mixed methods analyses of variance to assess differences based on risk factors and time. Results showed significant interaction effects of life threat, trauma type, and time for intrusive symptoms and avoidance symptoms. Individuals with life threat during assaultive traumas maintained heightened intrusive symptoms across time and increased avoidance at 6 months. On the other hand, participants with either life threat or assaultive traumas had decreased symptoms at 6 months.

CONCLUSION: Experiencing assaultive trauma and life threat led to greater symptoms of PTSD. Individuals with assaultive traumas who experienced life threat may represent a specific at-risk group following injury. Avoidance can protract functional impairment and impede access to care, negatively impacting recovery. This study highlights a need to assess for these peritrauma factors during hospitalization and supports early intervention targeting avoidance and intrusive symptoms in this group. (*J Trauma Acute Care Surg.* 2022;92: 848–854. Copyright © 2022 American Association for the Surgery of Trauma.)

LEVEL OF EVIDENCE: Prognostic/Epidemiologic, Level IV.
KEY WORDS: PTSD; screening; life threat; assaultive trauma.

More than 2.3 million individuals are hospitalized annually in the United States following an acute single-incident injury.[1] Trauma is associated with negative outcomes including poor quality of life and psychiatric illnesses such as posttraumatic stress disorder (PTSD[2]). Rates of PTSD among traumatic injury survivors are higher relative to the general population who experience other types of trauma. Furthermore, managing PTSD postinjury can influence functioning and quality of life.[3] Posttraumatic stress disorder impacts injury recovery and is associated with factors such as more severe pain and less engagement in physical activity, yet access to treatment for PTSD is limited.[4–6] Furthermore, greater avoidance symptoms (one of the symptom clusters of PTSD in the *Diagnostic and Statistical Manual of Mental Disorders* [Fifth Edition] [*DSM-5*]; APA, 2013) leads to overutilization of health care and more physical health complaints even 1 year out from trauma.[7,8]

Given the well-established risk of psychopathology following injury, and the extensive impacts of PTSD on recovery, examination of risk factors that may predict PTSD development is critical. Risk factors are often delineated in relation to the moment of the injury (i.e., preinjury, periinjury, and postinjury). Periinjury factors include aspects of the traumatic experience itself such as the patient's perception of the event/injury,[9–11] objective measures like Injury Severity Score,[10,11] or peritraumatic dissociation.[12] Extensive research suggests that peritraumatic risk factors are critical in predicting subsequent PTSD. Mechanism of injury (MOI) is one such critical factor. Traumatic injuries due to assault (e.g., physical attack, stabbings, gunshot wounds) carry increased risk for developing PTSD, as compared with noninterpersonal mechanisms (e.g., motor vehicle collision).[13] Violations of our interpersonal worlds, in the form of assaultive trauma, raise unique challenges to coping and rehabilitation, including negative cognitive appraisals.[14] Such cognitive appraisals of danger and threat have been shown to result in isolation and avoidance. The link between these cognitive appraisals and later isolation or avoidance is highly relevant to the development of PTSD given substantial evidence that social support following trauma exposure protects against the development of PTSD.[15–17] Furthermore, assaultive injury mechanisms are associated with poorer recovery as assessed by factors such as pain 2 years after injury.[18]

In addition to assaultive traumas, perceived life threat (i.e., individual believes they are going to die) during trauma is a consistent risk factor across a variety of MOIs.[5,11] Traumatic events elicit an immediate response of intense emotions (e.g.. fear, helplessness, horror), supporting one of the leading theories that fear-based learning underlies PTSD development.[19,20] As such, the experience of life threat within injury promotes learned fear responses to stimuli, likely making life threat such a consistent risk factor to PTSD development. These emotional processes, including helplessness, loss of control, and negative emotionality related to the potential loss of life, predicts PTSD and other mental health issues following injury.[10,21] In meta-analytic work, perceived life threat (often assessed through yes/no or single-item measures of life threat during trauma) has a small-to-medium effects in predicting subsequent PTSD development; this finding was consistent across a variety of trauma contexts and populations.[22] In a sample of hospitalized traumatically injured patients, the patient's perception of the injury, as opposed to objective measures such as the ISS, best predicted mental

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From the Division of Trauma and Acute Care Surgery, Medical College of Wisconsin, Wauwatosa, Wisconsin.
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Address for reprints: Sydney C. Timmer-Murillo, PhD, Division of Trauma and Acute Care Surgery, Medical College of Wisconsin, 8701 W Watertown Plank Rd, Milwaukee, WI 53226; email: stimmer@mcw.edu.

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health outcomes. Brasel and colleagues[23] found that not only did the patient's perception of the severity of their injury predict subsequent PTSD but also it was associated with poorer physical health after injury regardless of the objective injury severity. Similarly, patients experiencing medical emergencies in an emergency department (ED) had greater risk of PTSD development if they perceived their life was endangered at the time.[24] Collectively, this evidence suggests that a patient's acute experience and perception of the event are key to assess when considering long-term risk of PTSD within trauma-injured populations.

Indeed, given the impact of PTSD on patients with traumatic injuries, hospitals have begun to screen for those most at risk for psychopathology following admission to a trauma center.[3,25] One measure used in this context, the Injured Trauma Survivor Screen (ITSS[3]), includes five yes/no questions to assess risk for PTSD and major depressive episodes. The ITSS total score successfully predicted later diagnosis of PTSD. Nevertheless, evidence suggested that the specific items assessing peritrauma factors (i.e., perceived life threat and perceived intentionality of trauma) and negative emotionality were the strongest predictors of PTSD symptoms (including hyperarousal, reexperiencing, and avoidance symptom clusters).[26] This finding is notable because, while the nine-item measure is routinely used as a screener, peritrauma risk factors appeared to be a driving force in predicting risk at 1-month postinjury.

Therefore, if assaultive traumas and perceived life threat are two consistent components of PTSD risk, it is valuable to ascertain if, in combination, they represent a particularly at-risk group postinjury. Furthermore, there is a lack of evidence on how assaultive MOI and perceived life threat are related to the specific PTSD symptom clusters.[26,27] Evidence suggests that hyperarousal and reexperiencing symptoms play a meaningful role in the initial fear response (e.g., "I'm going to die") and the subsequent maintenance of fear conditioning and threat responding.[28] This finding is consistent with research with samples of intimate partner violence survivors and injured adults.[26] Therefore, determining how life threat during assaultive trauma may impact symptom severity across the different PTSD symptom clusters could allow for greater insight into treatment planning and interventions for this subset of trauma-injured patients.[29]

To address this gap in previous research, the goal of the current study was to explore whether perceived life threat and assaultive type trauma led to greater PTSD symptom cluster severity. The literature demonstrates perceived life threat and assaultive traumas as consistent risk factors for PTSD, although less work has explored them in combination. Delineating risk via these two items could allow for a quick and efficient screening within trauma centers. More specifically, we tested the following three hypotheses: (1) individuals who endorsed life threat during an assaultive trauma would have higher hyperarousal and reexperiencing symptoms at baseline and that these would persist at a 6-month follow-up (suggesting maintenance of PTSD symptoms); (2) individuals who endorsed life threat during assaultive trauma would report an increase in avoidance symptom severity at 6 months; and (3) individuals endorsing only one factor (i.e., only assaultive trauma or only life threat) or neither risk factor would go on to have low levels of PTSD symptom cluster severity at 6 months.

PATIENTS AND METHODS

Participants and Procedure

A total of 356 adult participants were recruited from the trauma service of a level 1 trauma center in a Midwestern, midsized city. Data were pooled from two studies that examined outcomes (e.g., psychological and biological) of traumatic injury (for full description of methods.[3,30] This study conforms with the Strengthening the Reporting of Observational Studies in Epidemiology guidelines, and a complete checklist has been uploaded as Supplemental Digital Content (see Supplementary Table 1, http://links.lww.com/TA/C316, for Strengthening the Reporting of Observational Studies in Epidemiology checklist). Participants were recruited during hospitalization by trained psychology research personnel. Chart review was conducted to determine eligibility for participation before approaching patients; as such, to avoid bias, no one was denied participation. Inclusion criteria were the following: (1) 18 years or older; (2) Glasgow Coma Scale score of >13 on arrival to ED; (3) injury was not intentionally self-inflicted; and (4) ability to communicate in English. Exclusion criteria were as follows: (1) younger than 18 years, (2) Glasgow Coma Scale score of <13 on arrival to ED, (3) intentional self-inflicted injuries, (4) inability to communicate, and (5) non-English speaking. Both studies were approved by the institutional review board. Participants were consented and then administered the ITSS along with a battery of other measures. A total of 356 participants were initially enrolled for their respective studies, 137 completed 1-month assessments, and 220 completed 6-month assessments. When provided, reasons given for nonparticipation included not interested in research or did not want to participate following injury. To assess subsequent development of PTSD and evaluate functioning, participants were administered the Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5) during 1-month and 6-month follow-ups. Of those who completed both follow-ups, only one participant had incomplete CAPS-5 data and was removed from analyses.

Measures

Perceived Life Threat

Risk for development of PTSD was evaluated during participants' hospitalizations using the ITSS.[3] The ITSS is a nine-item screening tool that evaluates potential risk for development of PTSD and depression among patients admitted to a level 1 trauma center. Each item requires a yes/no response with a "yes" response of two or more indicating risk. The ITSS PTSD items demonstrate good sensitivity (75%) and specificity (93.94%).[3] For the purpose of this study, one item assessing perceived life threat during the trauma (i.e., "did you think you were going to die?") was used.[5,9,10,12,26]

Mechanism of Injury

To assess the difference between assaultive and nonassaultive trauma, medical record review was conducted for each participant to determine MOI. Medical records were reviewed, and MOI was initially categorized into 10 distinct categories (i.e., motor vehicle crashes, gunshot wounds, falls, motorcycle crashes, stabbings, pedestrian struck by vehicles, industrial accidents, recreational accidents, blunt assaults, or other). For the aim of our study, MOI was further categorized dichotomously into assaultive (e.g., assaults,

stabbings, gunshot wounds) and nonassaultive (e.g., motor vehicle crash, falls, pedestrian struck by vehicles) trauma types.

PTSD Symptom Severity Post Injury

Posttraumatic stress disorder symptoms were assessed at 1-month and 6-month follow-up using the CAPS-5.[31] The CAPS-5 included sections evaluating each symptom cluster of the *DSM-5* PTSD diagnosis. It has demonstrated good reliability.[32] Similarly, the CAPS-5 shows excellent interrater reliability for diagnosis of PTSD (Pearson's $r = 1.00$) and good interrater reliability for frequency and intensity of symptoms (Pearson's $r = 0.83$–1.00).[33] Therefore, the CAPS was used to provide both diagnosis of PTSD (yes or no) and symptom severity scores for each of the four symptom clusters: reexperiencing, avoidance, hyperarousal, and negative alterations in mood and cognition (NAMC).

Statistical Analysis

Descriptive statistics were computed, using percentages for categorical variables and means and SDs for continuous variables. Based on a power analysis (G*power; Faul et al., 2007; with power = 0.80, and $\alpha = 0.05$) using estimates of a medium effect of these two risk factors, we exceeded the recommended sample of 48 participants. Difference testing via independent *t* tests and χ^2 analyses were completed to identify significant differences between completers and noncompleters. Before conducting primary analyses, bivariate correlations were used to identify need for inclusion of possible confounds (e.g., prior mental health history, length of stay, substance use), which revealed no significantly related variables.

Logistic regression measured the degree to which life threat and assaultive trauma predicted CAP-5 PTSD diagnosis at 1 month and 6 months. Corresponding classification rates were reported. Furthermore, to better elucidate differences across symptom domains rather than overall PTSD risk, four 2 (time point) × 2 (life threat) × 2 (assaultive) mixed model analysis of variance (ANOVA) examined whether life threat and assaultive trauma lead to greater CAPS-5 PTSD symptom cluster severity at 1 month and 6 months. Two potential confounds, length of hospital stay and mental health history (yes/no), were initially included and subsequently removed due to nonsignificance.

RESULTS

Descriptive Statistics

Participants' average age was 41.90 years (SD, 16.79 years), with the majority having a high school diploma (or equivalent degree; 40.5%) or some college (28.2%). One hundred fifty participants (68.2%) were male; 49.3% self-identified as White American, 40.2% as Black American, 9.1% as Hispanic or Latinx, and 1.4% as Native American. Mechanism of injury included 30.0% motor vehicle crashes, 19.9% gunshot wounds, 14.2% falls, 10.1% motorcycle crashes, 9.7% stabbings, 5.5% pedestrian struck by vehicles, 3.4% industrial accidents, 4.3% recreational accidents, 2.2% blunt assaults, and 0.6% other. Collapsed across MOI, 32% were assaultive, and 68% were nonassaultive traumas. Regarding perceived life threat, 45% of the sample endorsed life threat. The sample was nearly evenly split with 49% screening at risk for PTSD using the ITSS. Analyses examining differences between those who completed follow-up assessments and noncompleters suggest no significant differences in race, sex, MOI, ISS, or length of admission. Age was significantly different between completers ($M = 41.97$) and noncompleters ($M = 37.54$) ($t_{449.15} = 3.06$, $p = 0.002$), with older participants being more likely to complete both time points.

PTSD Diagnosis

Logistic regression indicated that life threat and assaultive trauma were significantly associated with CAPS-5 PTSD diagnosis at 1 month, $\chi^2_2 = 38.57$, $p < 0.001$ (Nagelkerke's $R^2 = 0.35$, representing a "medium" effect; see Table 1). Assaultive trauma and life threat's unstandardized regression coefficient were 1.22 (SE, 0.47) and 1.89 (SE, 0.46), respectively. Correct diagnostic classification was achieved for 78.8% of the sample at 1 month.

Logistic regression indicated that life threat and assaultive trauma were significantly associated with CAPS-5 PTSD diagnosis at 6 month, $\chi^2_2 = 38.21$, $p < 0.001$ (Nagelkerke's $R^2 = 0.24$, representing a "small" effect; see Table 2). Assaultive trauma and life threat's unstandardized regression coefficient were 1.17 (SE, 0.36) and 1.39 (SE, 0.36), respectively. Correct diagnostic classification was achieved for 75.4% of the sample at 6 months.

PTSD Symptom Clusters

One 2 × 2 × 2 ANOVA exploring the reexperiencing symptom cluster severity showed significant main effects of life threat ($F_{1,\ 82} = 11.67$; $p < 0.001$; $\eta^2 = 0.12$; power, 0.92), assaultive trauma ($F_{1,\ 82} = 9.10$; $p = 0.003$; $\eta^2 = 0.10$; power, 0.85), and time ($F_{1,\ 82} = 11.75$; $p < 0.001$; $\eta^2 = 0.13$; power, 0.92). These were qualified by a significant interaction effect of life threat and assaultive trauma by time ($F_{1,\ 82} = 7.63$; $p = 0.008$; $\eta^2 = 0.08$; power, 0.77; see Fig. 1). Results showed that individuals with life threat during assaultive traumas maintain reexperiencing symptoms from time 1 ($M = 9.50$; SD, 4.24) to time 2 ($M = 9.36$; SD, 4.96). On the other hand, symptoms decreased for assault survivors without life threat ($T_1M = 7.00$; SD, 7.53; $T_2M = 2.50$; SD, 1.73) or those with nonassaultive life threat ($T_1M = 6.00$; SD, 5.72; $T_2M = 4.40$; SD, 4.24). Individuals who endorsed neither risk factor endorsed minimal symptoms at both time points ($T_1M = 2.45$; SD, 5.35; $T_2M = 1.89$; SD, 2.61).

The ANOVA exploring the avoidance symptom cluster showed significant main effects of life threat ($F_{1,\ 82} = 11.22$; $p < 0.001$; $\eta^2 = 0.12$; power, 0.91) and assaultive trauma ($F_{1,\ 82} = 12.72$; $p < 0.001$; $\eta^2 = 0.13$; power, 0.94). These were qualified by a significant interaction effect of life threat and assaultive trauma by time ($F_{1,\ 82} = 7.75$; $p = 0.007$; $\eta^2 = 0.09$; power, 0.79; see Fig. 2). In this sample, avoidance symptoms increased from time 1 ($M = 4.29$; SD, 2.09) to time 2 ($M = 5.00$;

TABLE 1. Logistic Regression Analysis Evaluating Life Threat (No/Yes) and Trauma Type (Assault/Nonassault) as Predictors of PTSD Diagnosis at 1-Month Postinjury

Predictor	*b* (SE)	Wald χ^2	OR	95% CI	*p*
Life threat	−1.89 (0.46)	17.09	0.15	0.06–0.37	<0.001
Trauma type	1.22 (0.47)	6.73	3.39	1.35–8.53	0.009

All predictors are mean centered; Step 1 χ^2 omnibus $\chi^2_2 = 38.57$, $p < 0.001$, R^2 (Nagelkerke) = 0.35, R^2 (Cox and Snell) = 0.25.
CI, confidence interval; OR, odds ratio.

TABLE 2. Logistic Regression Analysis Evaluating Life Threat (No/Yes) and Trauma Type (Assault/Nonassault) as Predictors of PTSD Diagnosis at 6 Months Postinjury

Predictor	*b* (SE)	Wald χ^2	OR	95% CI	*p*
Life threat	1.39 (0.36)	15.41	0.25	0.12–0.50	<0.001
Trauma type	−1.17 (0.36)	10.51	3.20	1.59–6.48	0.001

All predictors are mean centered; Step 1 χ^2 omnibus $\chi^2_2 = 38.21$, $p < 0.001$, R^2 (Nagelkerke) = 0.24, R^2 (Cox and Snell) = 0.16.
CI, confidence interval; OR, odds ratio.

SD, 2.66) for individuals with life threat during assaultive traumas, whereas it decreased for assault survivors without life threat (T_1M = 3.25; SD, 3.20; T_2M = 1.25; SD, 1.50) or those with nonassaultive life threat (T_1M = 2.47; SD, 2.59; T_2M = 1.80; SD, 2.27). Similar to reexperiencing symptoms, individuals with neither risk factor endorsed minimal symptoms at both time points (T_1M = 0.87; SD, 1.52; T_2M = 1.04; SD, 1.70).

The ANOVA exploring the hyperarousal symptom cluster showed a significant main effect of life threat ($F_{1, 82}$ = 13.26; $p < 0.001$; η^2 = 0.14; power, 1.00) such that individuals endorsing life threat had higher hyperarousal symptoms (M = 7.19; SD, 4.31) than those without life threat (M = 2.83; SD, 2.89). There was also a main effect of trauma type ($F_{1, 82}$ = 6.73; p = 0.01; η^2 = 0.08; power, 0.73) with those experiencing assaultive trauma reporting higher hyperarousal (M = 8.08; SD, 4.12) than those with nonassaultive trauma (M = 3.30; SD, 3.30). There were no significant interaction effects.

Lastly, when examining the NAMC symptom cluster, there was a main effect of life threat ($F_{1, 82}$ = 9.39; p = 0.003; η^2 = 0.10; power, 0.95) qualified by an interaction effect of assaultive type and life threat ($F_{1, 82}$ = 4.65; p = 0.03; η^2 = 0.05; power, 0.57). Results showed significant difference in NAMC symptoms (collapsed across time) between individuals with assaultive traumas who endorsed life threat (M = 9.85; SD, 5.63) and those without life threat (M = 2.38; SD, 1.93). There were no significant differences between those with nonassaultive traumas regardless of life threat.

DISCUSSION

Previous literature demonstrates perceived life threat and assaultive trauma as consistent risk factors for subsequent PTSD development, although less work has explored them in combination. Furthermore, research tends to focus on their association to PTSD development broadly rather than individual symptom clusters, including within the at-risk population of hospitalized traumatic injury patients. Nevertheless, understanding symptom domains may better target the features that maintain the disorder (e.g., avoidance or heightened fear response). As such, the current study sought to determine if, within an injured sample, patients endorsing both life threat and assaultive trauma experienced greater severity of the different clusters of PTSD symptoms compared with those endorsing one risk factor or neither.

Assaultive trauma and life threat correctly predicted PTSD diagnosis for 78.7% and 75.4% of participants at 1 month and 6 months, respectively. These numbers demonstrate that these two risk factors can serve as a quick preliminary screen of potential risk of PTSD development. Conducting additional examination of PTSD symptom clusters demonstrated meaningful findings. Largely consistent with our hypotheses, we found that individuals with assaultive traumas who experienced life threat maintained elevated reexperiencing symptoms, although not hyperarousal symptoms, across time. Furthermore, avoidance symptoms increased from 1 to 6 months for those who endorsed both risk factors. On the other hand, participants endorsing only one risk factor showed decreases in symptoms by 6 months. Participants who experienced nonassaultive traumas and denied life threat during the trauma reported minimal symptoms across time. This provides evidence that perceived life threat during assaultive trauma likely engages heightened fear learning within this critical period, which goes on to impact chronic reexperiencing and avoidance.[19]

The current findings are consistent with and expand on the literature examining life threat and assaultive trauma as major risk factors for PTSD.[15,22] For instance, in the current study, main effects demonstrated that those who endorse life threat had higher PTSD symptoms across all four symptom clusters

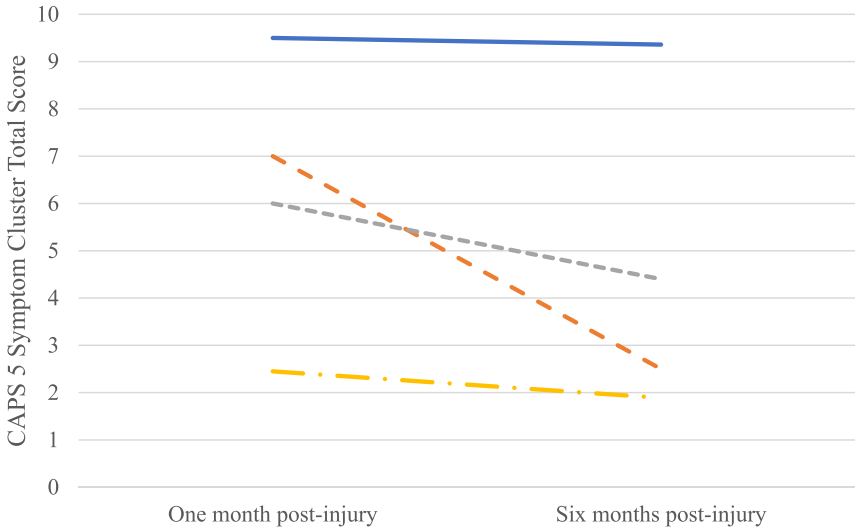

Figure 1. Total reexperiencing symptom severity score by group across time.

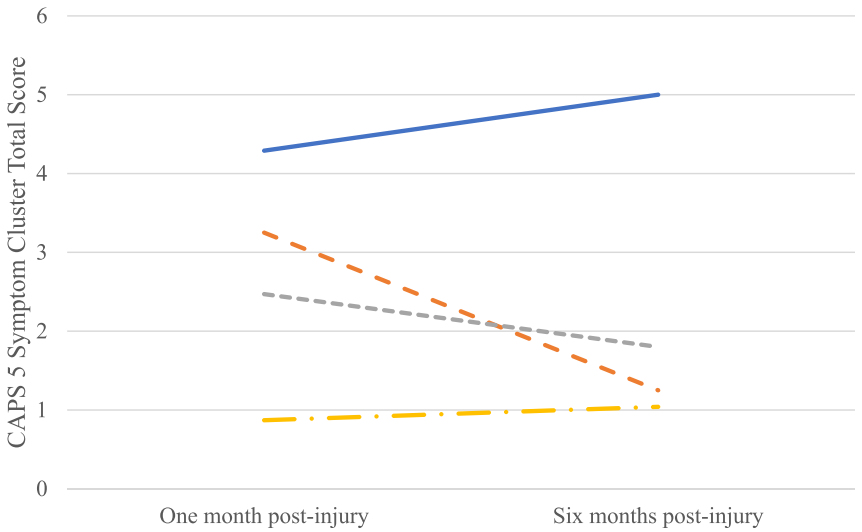

Figure 2. Total avoidance symptom severity score by group across time.

compared with those who did not experience life threat. As such, life threat appears to be a stable risk factor in predicting PTSD development including within traumatically injured populations and should be evaluated during hospitalization.[22,26] Similarly, main effects of trauma type showed that individuals who experienced assaultive traumas endorsed higher reexperiencing, hyperarousal, and avoidance symptoms relative to nonassaultive traumas. In isolation, both risk factors appear to elicit cognitions and emotions that promote heightened fear[10,15,16,21] and subsequent avoidance.[17,26]

In addition, grouping participants by the combination of these two factors provided meaningful information regarding the trajectory of symptoms across time. Individuals with assaultive traumas who experienced life threat may represent a specific at-risk group, particularly in maintaining reexperiencing symptoms and increasing in avoidance symptoms, which is known to maintain other symptoms of PTSD. By assessing symptom clusters, we were better able to elucidate how assaultive trauma and life threat impact PTSD development. The occurrence of an intense initial fear response and subsequent sensitization to feared stimuli and lack of habituation may play a role in reexperiencing symptoms and avoidance.[28,29] As such, this information can help providers identify symptoms that are more likely to emerge with this population.

Posttraumatic stress disorder and other forms of psychopathology can add significant burden to injured patients during recovery and to the institutions serving them. Nevertheless, limited capacity and resources can influence both quality and access to care. As such, taking a tiered approach to services allows for screening and intervention for those at high risk.[3,33,34] The current study supports the need for early screening for this high-risk population, particularly as assaultive trauma and perceived life threat are two easily collected pieces of information when feasibility and ease of assessment are needed in busy hospital settings.[5] Likewise, targeted intervention is vital for those at greater risk of developing PTSD. This is congruent with the implementation of stepped-care programs, which aim to identify and subsequently target higher posttrauma patient populations that need mental health intervention.[33,34] Likewise, this study supplements the work of stepped-care interventions by further proposing to tailor intervention based on risk factors or specific symptom clusters. Increasing attention has been given to the variability of PTSD symptom presentations and the importance of tailoring treatment to individual needs of each patient.[35] Indeed, the current study suggests that individuals experiencing assaultive traumas and life threat might benefit from interventions targeting fear generalization and reduction of avoidance behaviors or isolation that can happen following assault.

While the current study extends the literature on this at-risk population, one limitation is the generalizability to other trauma populations. While this work found specific symptom trajectories for injured patients, additional work should consider how this may differ in other populations. Likewise, the current study examined only two known risk factors, limiting the scope of assessing other risk factors impact on symptom clusters. In the current findings, other possible confounds (injury severity, length of stay, drug use at baseline, history of psychiatric diagnosis) were not significantly associated with PTSD symptom severity and thus not included. Nevertheless, future work could benefit from the inclusion of additional risk factors to assess for other possible screening questions to guide treatment decisions. Likewise, given significant findings regarding assaultive trauma and life threat, future work may aim to explore the underlying mechanisms that contribute to life threat (e.g., loss of control, helplessness) during assaultive trauma (e.g., betrayal, loss of power).[16,17]

Overall, individuals with assaultive traumas who experienced life threat are at heightened risk of psychopathology posttrauma compared with those with nonassaultive MOI and/or absence of perceived life threat. This group's increased avoidance and sustained hyperarousal can protract functional impairment and impede access to care given sensitization of feared stimuli, negatively impacting recovery from injury. This study supports the call for brief assessments of risk in hospitalized patients and demonstrates that evaluation of these two critical factors within injured populations could be critical to promoting early intervention.

AUTHORSHIP

All authors contributed in the study conception and design, and T.A.d.-C. contributed in materials preparation. The first draft of the manuscript and analyses were completed by S.T.M. Critical revisions of the manuscript were completed by all authors. All authors read and approved the final manuscript.

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DISCLOSURE

The authors declare no conflicts of interest.

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