Differences in PTSD Symptomatology Between Combat Veterans and Emergency Dispatchers

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ABSTRACT

Background: The current study examines posttraumatic stress disorder (PTSD) symptom clusters in the context of indirect exposure and compares symptom expression between emergency dispatchers and veterans. Given that a dispatcher's job is inherently different from that of our military, it would be expected that their PTSD symptoms are different as well.

Objective: Understanding differences in presenting PTSD symptoms in emergency dispatchers relative to a group of veterans for the purposes of providing insight into prevention and treatment. We hypothesized that emergency dispatchers are different from combat soldiers in the description of their PTSD symptoms.

Methods: We compared dispatchers' responses to descriptions of PTSD symptoms on the most common PTSD assessment test (n = 130) with data published on soldiers by Hodge et al. (n = 1822).[1]

Results: Compared to soldiers, dispatchers were more likely to meet criteria for avoidance-related and intrusive symptoms, and different symptom clusters were predictive of different domains of functional impairment. Of the avoidance symptoms, dispatchers were more likely to endorse cognitive rather than physical avoidance of trauma reminders.

Conclusions: The different symptom profiles may suggest different treatment approaches. For example, dispatchers may be more likely to engage in cognitive rather than physical avoidance. This suggests a cognitive treatment may be more efficacious than an exposure-based treatment.

INTRODUCTION

Television public service announcements, community events, and congressional legislative actions (e.g., S. Res. 541, 2010) have directed the nation's attention toward the combat-related "invisible wounds" of posttraumatic stress disorder (PTSD). As a result, the public is more cognizant of the consequences of PTSD, and public and congressional support has enabled researchers to further understand PTSD in combat veterans.

Until recently, there was only minimal awareness concerning individuals who experience potentially traumatic events (PTEs) in instances other than war and its associated consequences.[2-4] One example of growing awareness is among those who are chronically exposed to trauma. Existing studies of these groups have found that individuals who experience multiple events and indirect exposure have the highest prevalence rates of PTSD.[5-9] These findings prompted changes in PTSD diagnostic criteria for the latest release of *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA]).[10] Specifically, these changes allow researchers to address two areas: 1) symptom-cluster-informed treatment, and 2) indirect exposure and stress-related illness.

Indirect Exposure and Stress-Related Illness

Using the new diagnostic criteria, it is also no longer necessary to directly experience or witness an event to receive a PTSD diagnosis, nor is it required to respond to the traumatic event with "feelings of fear, helplessness, or horror." These fundamental changes in the diagnostic criteria, along with recent research on individuals outside the combat experience, provide a basis and framework for examining the impact of traumatic events on other groups, such as individuals not in direct danger, yet chronically exposed to the consequences of trauma. Emergency dispatchers are one such group. Despite the increase in awareness of those who experience indirect PTEs, emergency dispatchers remain an overlooked population when considering rates of stress-induced psychopathology.

Emergency dispatchers are repeatedly exposed to PTEs as well as events that may be characterized "indirectly" as traumatic. The job of an emergency dispatcher combines the stress of occupational demands with the need to be compassionate, behave appropriately, and communicate clearly under highly stressful, time-pressured situations. Specifically, a dispatcher must speak professionally while providing advice, counsel, and directions, being compassionate even if the caller is hostile, agitated, or distressed.[19-21]

Symptom Clusters Inform Treatment for Indirect Exposure

In addition to allowing for those who have had indirect exposure to trauma, the current diagnostic criteria allow us to consider a wider variety of symptoms that are associated with PTSD. In turn, this affords us the opportunity to identify various clusters of symptoms associated with different types of trauma. We might then select treatments targeted to the specific symptom cluster. Unfortunately, however, no research has yet defined these differing symptom presentations. Therefore, we have elected to start by comparing the symptoms associated with direct (combat) exposure, as opposed to indirect exposure (emergency dispatch). Symptom clusters associated with the diagnosis of PTSD are described below. We also describe how these clusters are assessed in the most common measure of PTSD, the PTSD Checklist for *DSM-5* (PCL-5).

The first cluster, Cluster B, represents "intrusion" symptoms. Intrusion can occur in the form of an "instant replay of the traumatic event" or as here-and-now sensory memories and images of the event. For example, one related question in the PCL-5 is, "How much are you bothered by feeling very upset when something reminded you of the stressful experience?" Intrusion symptoms can occur while awake or during sleep.[13] Of five intrusion symptoms listed in the *DSM-5*, a person must only experience one to meet the diagnostic criteria for PTSD.

The second cluster, Cluster C, represents "avoidance" symptoms. To meet criteria for Cluster C, avoidance must be persistent. Avoidance can be of a cognitive (thoughts or memories) or physical nature (external reminders). Of two avoidance symptoms listed in the DSM-5 a person must endorse one (i.e., must provide a response indicating that at least one of the symptoms exists for them). The avoidance items on the PCL-5 ask, "How much were you bothered by avoiding memories, thoughts, or feelings related to the stressful experience?" and, "How much were you bothered by avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?"

The third cluster, Cluster D, represents "Negative alterations in cognitions and mood." Cluster D was added to clarify and highlight the distinction between behaviors and cognitions and mood.[13] Cluster D emphasizes that individuals with PTSD have a persistent inability to experience positive emotions. For example, the PCL-5 asks, "How much have you been bothered by trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?" Further, individuals' beliefs about self and world around them often change (i.e., blaming self or others, feeling detached, loss of interest). To address this symptom, one of the items on the PCL-5 asks, "How much have you been bothered by blaming yourself or someone else for the stressful experience or what happened after it?" Of seven "Negative alterations in cognitions and mood" symptoms listed in the DSM-5 a person must endorse two in order to meet diagnostic criteria.

The fourth cluster, Cluster E, represents "Alterations in arousal and reactivity." Cluster E emphasizes behaviors that an individual with PTSD may experience. These can be behaviors or consequences of heightened arousal, such as hypervigilance, problems with concentration, problems with sleep, and exaggerated startle response, among others. Further, individuals may engage in reckless or self-destructive behaviors (i.e., suicidality, risky sexual behavior, reckless driving). For example, the PCL-5 asks, "How much have you been bothered by taking too many risks or doing things that could cause you harm?" Of six "alterations in arousal and reactivity" symptoms listed in the *DSM-5*, a person must endorse two in order to meet diagnostic criteria.

In summary, to meet criteria for *DSM-5* diagnosis of PTSD, an individual must exhibit changes in wellbeing across several areas, or clusters. Specifically, one symptom from Cluster B, one symptom from Cluster C, two symptoms from Cluster D, and two symptoms from Cluster E must be present.

With regard to treatment selection, Maples-Keller, Price, Rauch, Gerardi, and Rothbaum[18] provide early evidence that different treatments may target different symptom clusters. Their results of the cross-lagged panel design suggested that the re-experiencing symptom cluster ("intrusion" symptoms) best predicted virtual reality exposure therapy outcomes. The associated reduction in re-experiencing symptoms had a downstream effect on the other PTSD symptom clusters. In comparison, poorer fit was observed when avoidance was entered into the model as influencing the other PTSD symptom clusters. The authors conclude that their findings may be useful for informing treatment strategies that will maximize the benefit of each treatment.

Current Study

This study examines PTSD symptoms of emergency dispatchers relative to a group of veterans who are more likely to have experienced direct exposure to PTEs. We hypothesize that emergency dispatchers are different from combat soldiers in the endorsement of PTSD symptoms. Specifically, we hypothesize that dispatchers are more likely to endorse "cognitive" symptoms such as guilt, but less likely to endorse hypervigilance or other arousal symptoms.

METHOD

Participants

The present study utilized data from a survey of resilience and social support in emergency dispatchers. The data was collected during a 2015 national emergency dispatch conference. All procedures of the study were reviewed and approved by the University of Central Florida (UCF) Institutional Review Board (IRB). Inclusion criteria required that participants be at least 18 years of age and currently working in the field of emergency dispatching. One hundred thirty (130) emergency dispatchers completed the PCL-5. In addition, the present study utilized PCL-5 scores reported by Hodge, Riviere, Wilk, Herrell, and Weathers[1] from

their 2013 survey of one infantry brigade (all soldiers *N*= 1,822). The brigade included soldiers with one or more deployments in support of combat missions (*n* = 946), with deployments on non-combat missions, and without deployment experience. Included in Table 1 are the demographic data for both studies.

Measures

The gold standard self-report PTSD Checklist (PCL) was recently revised to accurately reflect *DSM-5* PTSD criteria. The resulting PCL-5[12] is most commonly used as a screening tool and can be administered by paraprofessionals. The original PCL was expanded to 20 items, from the previous 17; it now captures four symptom clusters, compared to the previous three.

The scoring was also changed so that the PCL-5 descriptor of *"Not at all"* corresponds with a score of 0 and the descriptor of *"Extremely"* corresponds with a score of 4. The previous version of the PCL utilized a scale of 1: *"Not at all"* to 5: *"Extremely."*

Additionally, questions are included on the revised version to assess for PTSD DSM-5 Criterion A (trauma) and Criterion F (impairment). To assess Criterion A, participants completed the PCL-5 based on a work-related traumatic event. To assess Criterion F, impairment was measured using three questions that asked about three domains: life, relationships with other people, and ability to work or go to school. Each item was rated on a scale ranging from 0: "No adverse impact" to 4: "Extreme, incapacitating distress (with little or no social relationships; extremely unable to work or go to school due to the above experience)."

Data Analysis

Using IBM SPSS (v.22) we compared the proportions of those satisfying each *DSM-5* PTSD cluster criteria as reported in a paper by Hodge, Riviere, Wilk, Herrell, and Weathers[1] with the data we collected on emergency dispatchers. We also performed a chi-squared analysis for the purpose of comparing independent groups, e.g., all soldiers compared with emergency dispatchers, or deployed soldiers compared with emergency dispatchers. Additional analyses were conducted to further understand PTSD symptom expression in emergency dispatchers.

Demographics	Soldiers (N = 1,822) n (%)	Dispatchers (N = 130) n (%)
Age		
18-19 years	78 (4.3)	0 (.0)
20-24 years	799 (43.9)	1 (0.77)
25-29 years	447 (24.5)	1 (0.77)
30-39 years	353 (19.4)	23 (17.7)
≥40 years	90 (4.9)	50 (38.4)
Gender		
Male	1597 (87.7)	40 (30.8)
Female	225 (12.3)	84 (64.6)
Education		
H.S or equivalent	782 (42.9)	40 (30.8)
College level	748 (41.1)	50 (38.5)
B.A./B.S. or higher	230 (12.6)	35 (26.9)
Married		
	938 (51.5)	83 (63.8)
Deployment History		
Deployed IQ or AFG	946 (51.9)	N/A
Deployed Other	142 (7.8)	N/A
Never deployed	734 (40.3)	N/A

Note. Demographic data for Hodge et al. (2014) is presented as total N (%) from Survey A (n = 911) and Survey B (n = 911). H.S = High School; B.A. = Bachelor's of Arts; B.S. = Bachelor's of Science; IQ = Iraq; AFG = Afghanistan.

Table 1. Demographic information by study sample.

RESULTS

One hundred and thirty emergency dispatchers completed the PCL at the dispatch conference, and information about 1,822 soldiers (including 946 deployed soldiers) who had also completed the PCL was drawn from the study by Hodge et al.[1] The distribution of demographic variables is presented in Table 1. Table 2 compares data from the current study of emergency dispatchers reporting the prevalence of *DSM-5* symptom clusters and full criteria with that of the Hodge et al.[1] study on all soldiers and deployed soldiers.

All Soldiers vs. Emergency Dispatchers

Between-group differences in the number of soldiers and emergency dispatchers endorsing the cluster was significant for Cluster B ("intrusion") and Cluster C ("avoidance"). The corresponding statistical analyses are presented in Table 2. Emergency dispatchers were more likely to meet criteria for DSM-5 PTSD Cluster B and C than all soldiers. In contrast, no significant between-group differences were observed with regards to Cluster D, Cluster E, and full criteria (whether the individual met the overall requirements to receive a diagnosis of PTSD).

Deployed Soldiers vs. Emergency Dispatchers

A narrower analysis compared symptoms in dispatchers to symptoms in only those soldiers who had been deployed, on the presumption that this group of soldiers was more likely to have experienced trauma than non-deployed soldiers. Emergency dispatchers were more likely to meet criteria for Cluster C ("avoidance") in comparison to deployed soldiers; however, deployed soldiers were more likely to meet criteria for Cluster E ("arousal") and to meet the full diagnostic criteria than emergency dispatchers. In contrast, no significant between-group differences were observed with regard to Cluster B or Cluster D. The corresponding statistical analyses are presented in Table 2.

Post-Hoc Analyses

The results of the chi-square analysis revealed that emergency dispatchers were more likely to meet criteria for Cluster C than combat soldiers and all soldiers. Given this difference, it is important to understand how emergency dispatchers differ in their expression of avoidance to further target specific treatment needs of this unique population. To understand this difference, z-tests were used to compare sample proportions meeting each question

of the Cluster C criteria.[22] Two questions on the PCL-5 ask about avoidance symptoms. The first question (Question 6) evaluates avoidance of memories, thoughts, and feelings. The second question (Question 7) evaluates avoidance of external reminders (e.g., people, places, conversations, objects, or situations associated with the event).

With regard to differences between dispatchers and all soldiers, emergency dispatchers were significantly more likely to rate Question 6 (about avoiding memories) and Question 7 (about avoiding external stimuli) as moderately or more bothersome relative to the overall sample of soldiers (Table 3). The hypothesis that within the sample of emergency dispatchers, more dispatchers would rate Question 6 as moderately or more bothersome compared to Question 7 was also supported (Table 4), suggesting that avoidance of internal stimuli is typically more bothersome than avoidance of external stimuli for this population.

Additionally, the results of the chi-square analysis revealed that emergency dispatchers were more likely to meet criteria for Cluster B than all soldiers. To understand this difference, z-tests were used to compare sample proportions meeting each question of the Cluster B criteria. Emergency dispatchers were more likely to rate Question 1 (regarding unwanted memories) and Question 4 (regarding emotional reactions to reminders) as moderately or more bothersome relative to the all soldiers sample (Table 5). Within the sample of dispatchers, more dispatchers rated Questions 1 and 4 as moderately or more bothersome compared to Questions 2 (about dreams), 3 (about flashbacks), and 5 (about physical reactions to reminders) (see Table 6 for statistical analysis).

To further examine the role of PTSD symptom clusters, we used regression analysis to predict functional impairment in general daily living, social relationships, and work performance. In predicting general impairment in daily living, the arousal and avoidance clusters, when entered into the second step of the model, significantly accounted for 47% of the variance. The second regression analysis identified negative alterations in cognitions and mood and arousal symptoms cluster as the two most predictive variables, accounting for 56% of the variance in social impairment. In our final regression, the intrusion symptom

	DSM-5 Cluster: n (%)				
	B	C	D	E	A-E
All Soldiers					
Satisfy	431 *(23.7)**	353 *(19.4)**	432 *(23.7)*	532 *(29.2)*	216 *(11.9)*
Not Satisfy	1,391 *(76.3)*	1,469 *(80.6)*	1,390 *(76.3)*	1,290 *(70.8)*	1,606 *(88.2)*
Deployed Soldiers					
Satisfy	319 *(33.7)*	254 *(26.8)***	291 *(30.8)*	377 *(39.9)***	165 *(17.4)***
Not Satisfy	627 *(66.3)*	692 *(73.2)*	655 *(69.2)*	569 *(60.1)*	781 *(82.6)*
Dispatchers					
Satisfy	50 *(38.5)*	45 *(34.6)*	38 *(29.2)*	38 *(29.2)*	14 *(10.8)*
Not Satisfy	80 *(61.5)*	85 *(65.4)*	92 *(70.8)*	92 *(70.8)*	116 *(89.2)*

Note. Data are n (%) for PCL-5. *denotes comparisons between Emergency Dispatchers and All Soldiers are significant; **denotes comparisons between Emergency Dispatchers and Deployed Soldiers are significant
B = Cluster B, "Intrusion" symptoms (1 of 5 rated moderately or higher = satisfy); C = Cluster C, "Avoidance" symptoms (1 of 2 rated moderately or higher = satisfy); D = Cluster D, "Negative Alterations in Cognitions and Mood" symptoms (2 of 7 rated moderately or higher = satisfy); E = Cluster E, "Arousal" symptoms (2 of 6 rated moderately or higher = satisfy); A – E = Full criteria for PTSD (satisfy = 1 Cluster B, 1 Cluster C, 2 Cluster D, and 2 Cluster E symptoms were rated moderately or higher).

Table 2. Frequency of satisfying and not satisfying DSM-5 clusters and full criteria based on PCL-5.

	Dispatchers*	Deployed Soldiers*	z	*p*†
PCL-5 Question 6	0.333	0.229	2.6	<0.01
PCL-5 Question 7	0.231	0.22	0.3	0.388
	Dispatchers*	**All Soldiers***	**z**	***p****
PCL-5 Question 6	0.333	0.165	4.7	<0.001
PCL-5 Question 7	0.231	0.155	2.2	0.013

*Data are sample proportion for rating the PCL-5 item as moderately or more. PCL-5 Question 6 = "Avoiding memories, thoughts, or feelings related to the stressful experience." PCL-5 Question 7 = "Avoiding external reminder of the stressful experience (for example, people, places, conversations, activities, objects, or situations.)"
†denotes one-tailed z-test.

Table 3. Post-hoc comparisons of dispatchers and soldiers on Cluster C (Avoidance Symptoms).

cluster alone predicted work impairment and accounted for 39% of the variance in occupational impairment (Table 7).

DISCUSSION

There is a noticeable absence of literature regarding the potential adverse stress reactions and negative health consequences experienced by emergency dispatchers. Although this group of first responders shares many similarities with other groups chronically experiencing occupational trauma, such as firefighters and police officers, the types of events experienced by emergency dispatchers are unique. Emergency dispatchers are often cross-trained to handle a wide variety of emergencies related to medical intervention, fires, criminal violence, accidents, and so on. These events also vary considerably in magnitude and severity. Emergency dispatchers are often solely responsible for coordinating rescue or medical intervention, often with minimal information. Consequences of mistakes and vicariously experiencing the distress of a civilian or fellow first responder magnify the high-stress nature of these work conditions.

The current study builds on previous work highlighting the increased prevalence of stress-related psychopathology in emergency dispatchers[3,4] by examining the symptom profiles of three groups. Compared to two samples of military veterans (deployed soldiers and all soldiers), emergency dispatchers were more likely to meet criteria for avoidance-related symptoms, whereas soldiers with combat experience were more likely to meet criteria for hyperarousal symptoms. Furthermore, in addition to avoidant symptoms, compared to all soldiers, emergency dispatchers were also more likely to meet criteria for intrusive symptoms, but not more likely to meet full criteria for diagnosis. Additionally, of the five intrusion symptoms on the PCL-5, dispatchers were most likely to endorse unwanted memories and emotional reactions to reminders. Of the two avoidance symptoms on the PCL-5, dispatchers were more likely to endorse cognitive rather than physical avoidance of trauma reminders.

Together, these findings suggest that emergency dispatchers may engage in a cognitive avoidant coping strategy that previous research has related to adverse outcomes.[23] The presence of both cognitive avoidance and intrusive memories may seem paradoxical; however, research has demonstrated that the more a person tries to avoid a stimulus, the more likely they are to actually experience the stimulus.[31] The classic example by Wegner, Schneider, Carter, and White[31] demonstrated that participants who were asked to not think about a white bear were unable to suppress their thoughts about a white bear. Dispatchers may be more likely to engage in cognitive rather than physical avoidance due to the fact that dispatchers experience traumas vicariously, but must also maintain an active role in rescue operations that may serve as triggering events for a unique profile of trauma-related symptoms. It is also possible that the necessity to quickly transition from one trauma call to another reinforces an avoidant coping style that is then generalized to other environments and may increase the risk for trauma-related psychopathology. Future research should explore occupational-related variables that may predict an avoidant coping style and increase adverse outcomes.

In emergency dispatchers, PTSD symptoms were also predictive of impairment; however, different symptom clusters were associated with different domains of functional impairment. Although arousal symptoms were the strongest predictor of general functional impairment, avoidance also entered into the model. Together, arousal symptoms may impair several domains of functioning that are then exacerbated by an avoidant coping style. Social impairment was not predicted by arousal or avoidant symptoms but was related to negative alterations in cognition and mood. It is possible that these internalized depressive symptoms (e.g., anhedonia, social detachment) both limit the opportunity for social engagement and dampen affect and mood associ-

	Satisfy	n	z
PCL-5 Question 6	40	120	0.017
PCL-5 Question 7	28		

Note. Data are sample proportion for rating the PCL-5 item as moderately or more. PCL-5 Question 6 = "Avoiding memories, thoughts, or feelings related to the stressful experience." PCL-5 Question 7 = "Avoiding external reminder of the stressful experience (for example, people, places, conversations, activities, objects, or situations.)"

Table 4. Post-hoc McNemar Test for the comparison of Cluster C (Avoidance Symptoms) among dispatchers.

	Dispatchers*	All Soldiers*	z	*p*†
PCL-5 Question B1	0.283	0.152	3.78	<0.001
PCL-5 Question B2	0.117	0.131	-0.47	0.64
PCL-5 Question B3	0.100	0.087	0.49	0.62
PCL-5 Question B4	0.305	0.162	4.051	<0.001
PCL-5 Question B5	0.198	0.137	1.852	0.06

*Data are sample proportion for rating the PCL-5 item as moderately or more. PCL-5 Question B1 = "Repeated, disturbing, and unwanted memories of the stressful experience?"; PCL-5 Question B2 = "Repeated, disturbing dreams of the stressful experience?"; PCL-5 Question B3 = "Suddenly feeling or acting as if the stressful experience were actually happening again (*as if you were actually back there reliving it)*?"; PCL-5 Question B4 = "Feeling very upset when something reminded you of the stressful experience?"; PCL-5 Question B5 = "Having strong physical reactions when something reminded you of the stressful experience *(for example, heart pounding,* trouble breathing, sweating)?" †denotes two-tailed z-test.

Table 5. Post-hoc comparison of dispatchers versus all soldiers on Cluster B (Intrusion Symptoms) and Cluster C (Avoidance Symptoms)

	B1: n (%)	B2: n (%)	B3: n (%)	B4: n (%)	B5: n (%)	X^2	df
Dispatchers						26.07**	4
Satisfy	34 *(28.0)* Ŧ^	14 *(11.6)* Ŧ#	12 *(10.0)* ^ɔ	37 *(30.5)* #ɔ	24 *(19.8)*		
Not Satisfy	87 *(71.9)*	106 *(88.3)*	108 *(90.0)*	84 *(69.4)*	97 *(80.1)*		

Note. Data are sample proportion for rating the PCL-5 item as moderately or more. PCL-5 B1 = "Repeated, disturbing, and unwanted memories of the stressful experience?"; B2 = "Repeated, disturbing dreams of the stressful experience?"; B3 = "Suddenly feeling or acting as if the stressful experience were actually happening again *(as if you were actually back there reliving it)*?"; B4 = "Feeling very upset when something reminded you of the stressful experience?"; B5 = "Having strong physical reactions when something reminded you of the stressful experience *(for example, heart pounding, trouble breathing, sweating)*?" $^{**}p < .001$. Ŧ B1 vs. B2 significant differences; ^ B1 vs. B3 significant differences; # B4 vs. B2 significant differences; ɔB4 vs. B3 significant differences.

Table 6. Post-hoc Chi-Squared statistic and Marascuilo procedure of Cluster B (Intrusion Symptoms) among dispatchers.

IMPAIRMENT	β	*F*	*df*	*p*	R^2
GENERAL					
STEP 1		53.470	1, 70	<0.001	0.44**
Cluster E	0.66**				
STEP 2		30.541	2, 70	<0.001	0.47 **Ŧ
Cluster E	0.53**				
Cluster C	0.23*				
SOCIAL					
STEP 1		67.417	1, 65	<0.001	0.51**
Cluster D	0.72**				
STEP 2		40.339	2, 65	<0.001	0.56**Ŧ
Cluster D	0.48**				
Cluster E	0.33*				
OCCUPATIONAL					
STEP 1		35.797	1, 56	<0.001	0.39**
Cluster B	*0.63***				

Note. B = Cluster B, "Intrusion" symptoms); Cluster C, "Avoidance" symptoms; Cluster D, "Negative Alterations in Cognitions and Mood" symptoms; E = Cluster E, "Arousal" symptoms * $p < .05$, ** $p < .001$, Ŧ ΔR^2 $p < .05$.

Table 7. Stepwise regression of impairment models and PTSD symptom clusters.

ated with positive social interactions. Occupational impairment was discrepant from the other two domains of impairment and linked exclusively to intrusive symptoms. The difference may be that dispatchers may have difficulty engaging in work-specific tasks if trauma-related memories are hindering reaction and limiting cognitive capacity. Collectively, these findings may help in directing different interventions for specific symptom profiles or identifying the appropriate delivery system for treatment (e.g., workplace training).

The current study highlights the need for further examination of stress-related outcomes in the emergency dispatcher population. Although our study assists in understanding the symptom presentation of emergency dispatchers with stress-related psychopathology, several limitations are important to consider. For example, our sample consisted of a group of emergency dispatchers attending a national conference. These employees tend to be more experienced and likely have been able to retain their positions due to resiliency and effective coping strategies. Additionally, these samples were collected at different time periods, and the comparison groups (dispatchers and soldiers) experience substantially different traumatic experiences. Future research should examine symptom clusters in other first responders (e.g., firefighters, police officers, EMTs) to serve as a more direct comparison of the effects of chronic exposure. Future research should also explore the role of coping style in predicting negative stress reactions, PTSD, and functional impairment to assist in constructing interventions to support populations who experience chronic exposure to potentially traumatic events.

Overall, the results of this study suggest that emergency dispatchers may present with a unique symptom profile that may require a unique approach to intervention. This unique approach should take into consideration the area of impairment that is of greatest concern to the dispatcher. For example, social impairment was most strongly associated with negative alterations in cognitions and mood. An intervention that directly challenges negative cognitions, such as Cognitive Processing Therapy with adjunct of behavioral activation, may best address changes in cognitions and mood and demonstrate the desired positive result of decreasing impairment in social functioning.[24-29] In comparison, occupational impairment was most strongly associated with intrusion symptoms, and exposure therapy has been shown to best target symptoms of intrusion.[30] Further, general impairment was most strongly associated with symptoms of arousal and avoidance. The literature suggests that exposure therapy with the adjunct of behavioral activation is best suited for addressing these symptoms.[24, 29, 30]

Taken together with previous research, this study indicates that emergency dispatchers are experiencing a unique profile trauma-related symptoms and that these symptoms impair psychological, interpersonal, and occupational functioning. Researchers should continue to assess the effects of chronic stress in first responders and the ways that trauma-related symptoms affect physical and mental health outcomes.

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