Experiences and perceptions of family members of emergency first responders with post-traumatic stress disorder: a qualitative systematic review protocol

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ABSTRACT

Objective: The objective of this review is to understand the perceptions and experiences of family members of emergency first responders with post-traumatic stress disorder.

Introduction: Research indicates that rates of post-traumatic stress disorder in emergency first responders are approximately double civilian rates; however, little is known about the effects of post-traumatic stress disorder on family members. This review seeks to identify qualitative research on families’ experiences and perceptions.

Inclusion criteria: This review will consider all studies of family members of current or former emergency first responders with diagnosed or undiagnosed post-traumatic stress disorder of any level of severity. All possible familial configurations and family members will be considered, including nuclear, separated, and blended families, of a current or former emergency first responder. There will be no age restrictions on emergency first responders or their family members, or limitations on recency of service. Emergency first responders may include police, ambulance workers, paramedics, firefighters, or rescue personnel, with no restriction on geographic location.

Methods: The databases to be searched will include PubMed, PsycINFO, Embase, CINAHL, PTSDpubs, and Scopus, as well as handsearching of relevant journals. Unpublished studies and gray literature will be searched via PTSDpubs and OpenGrey. The search will aim to find English-language publications with no time limits. Titles and abstracts will be reviewed and then full texts, all screened by two independent reviewers against the inclusion criteria. Any conflicting views will be resolved by discussion or a third reviewer. Results will be critically appraised for methodological quality. Data extraction results will be synthesized and evaluated for credibility and dependability.

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Keywords: children; emergency first responder; families; post-traumatic stress disorder


Introduction

Post-traumatic Stress Disorder (PTSD) is a mental disorder that can occur in response to a traumatic event.¹ The World Health Organization’s International Classification of Diseases, 11th Revision (ICD-11), and the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), both define PTSD as a collection of persistent symptoms including recurrent or intrusive thoughts, avoidance of internal and external trauma-related stimuli, negative alterations in cognitions and mood, and hyperarousal following exposure to a traumatic event.¹,² ICD-11 includes additional criteria relating to the psychosocial impacts of PTSD. Both definitions emphasize high levels of comorbidity between PTSD and other diagnoses, such as alcohol and substance abuse, depression, and anxiety.³

For the purpose of this review, PTSD will encompass two further inclusions: i) “post-traumatic stress” (ie, removal of “disorder,” which has
recently emerged in the literature due to a change in rhetoric around PTSD in an attempt to destigmatize the condition and classify it as a normal response to trauma; and ii) “probable” PTSD (ie, a “probable” diagnosis determined using epidemiological cut-offs on standardized self-report measures of PTSD).^5^7^9^11^16^19^22^24^27^30^32^33^34^35^37^41^42^48^50^51^53^54^55

Prevalence of PTSD in emergency first responders

Post-traumatic stress disorder can occur in response to a range of different trauma types, typically events of an interpersonal nature such as sexual assault. The estimated prevalence of PTSD is 5.6% worldwide (0.5% to 14% across 24 different countries) and 7.3% in Australia, although rates can vary depending on the sociodemographic characteristics of the population as well as the surveying instruments used.

Although PTSD can arise from a single, brief exposure to a traumatic event, recent research is focused on the role of repeated and cumulative trauma in the workplace of military service members and emergency first responders (EFRs).^6^10^11^12^13^15^18^21^28^36^38^40^43^45^50^52

Internationally, PTSD rates in current service members and veterans range from 2.8% in Canada to 14.1% in US veterans who served in Iraq and Afghanistan to 8.3% and 17.7% in current Australian service members and veterans, respectively. In addition to depending on the diagnostic instruments used, PTSD prevalence rates also vary based on the time frame of assessment (current, 12 months, or lifetime) and the characteristics of the sample subjects, with treatment-seeking veterans and those exposed to multiple and repeated traumatic events reporting higher rates of PTSD.

International studies of PTSD in EFRs, such as firefighters, police, and ambulance personnel, have focused on PTSD rates connected to mass casualty and disaster events. One US study found that after the 1995 bombing in Oklahoma City, firefighters reported a 13% PTSD rate, and an eight-year trajectory study of PTSD in EFRs after the 2001 US World Trade Center terrorist attack showed rates of chronic PTSD from 5.3% to 9.5%. A broader 2018 study of EFRs in Canada surveyed 5813 participants in six groups: call center operators, correctional workers, firefighters, municipal/provincial police, paramedics, and Royal Canadian Mounted Police; results found that 23.2% screened positively for probable PTSD based on self-report measures. In Australia, rates of PTSD are significantly higher in both current EFRs (10%) and former EFRs (25%) than in the general Australian community 6.4%.^13^15^20^21

Effects of PTSD on emergency first responder families

Research on military and EFR families has identified the effects of service members’ PTSD on interpersonal relationships, mental health, and well-being of other family members, such as parents, carers, spouses, and children. More recently, Fear et al. examined 1044 children aged three to 16 years of 621 fathers who were deployed to Afghanistan and Iraq between 2003 and 2009 in the UK Armed Forces, and confirmed that PTSD, not deployment, increased the children’s risk of behavioral and emotional mental health conditions.

Increased rates of PTSD and other behavioral issues have been reported in children of first responders to the World Trade Center attacks; one study found that children with an emergency medical technician family member who was exposed to the 9/11 terrorist attacks reported a probable PTSD prevalence of 18%. Similarly, children aged four to 19 of US law enforcement officers who were involved in the large-scale interagency manhunt following the 2013 Boston Marathon bombing attack were 5.7 times more likely to have PTSD symptoms than those without parents involved in the manhunt.

The 2018 South Australian Metropolitan Fire Service Health and Wellbeing Study showed a significant impairment in family functioning associated with the serving member’s mental health symptoms. Comorbid affective and anxiety disorders and PTSD had the greatest impact on EFRs’ functioning in social and family domains.

In 2020, an Australian qualitative study by Waddell et al. on interpersonal partners of EFR and veterans living vicariously with PTSD, showed significant impacts on partners’ mental health, a feeling that the partners needed to protect their family unit, and problematic family functioning.

There are many commonalities between military and EFR populations in terms of occupational training, culture, and identity. Both groups are trained...
with high levels of discipline and regimentation to perform duties automatically under duress and to suppress emotional reactions to distress. The culture of military and EFR organizations builds attachment through common purpose, camaraderie, and loyalty to fellow service members. This creates an entwined personal and occupational identity for service members. This identity also translates to their family members, who share the lifestyle and the anticipation or reality of sacrifices (e.g., possible injury and intensive service periods during natural disasters or overseas conflicts). An understanding of the similarities and differences in the effects of PTSD on the families of these two service populations can provide important information on how to best support the needs of EFRs and military personnel and what types of interventions can be provided to their families. It is also important to understand the similarities and the differences in cultural nuances between EFR and military populations and their families for targeted clinical interventions.

A JBI systematic review is being conducted on the experiences of military families living with PTSD. Our systematic review on EFR families will consolidate the literature on the EFR families and the effects of PTSD, and will complement the aforementioned review to provide a comprehensive status of the research on experiences of service families with PTSD.

Mechanisms of transmission of trauma and the impacts of trauma

There is limited but growing discourse about proposed mechanisms of transmission of trauma from one family member to another. When transmission is from parent to child, it is referred to as intergenerational transmission of trauma, and the phenomenon was originally identified in the children of Holocaust survivors.

The discourse on mechanisms of transmission of trauma includes literature on biological transmission to offspring during conception studied through epigenetics, as well as primary, secondary, and vicarious traumatization. In primary (direct) traumatization, an individual may be directly traumatized by another’s behaviors (e.g., as a victim or witness of violence). In secondary (indirect) traumatization, an individual is affected by another individual’s PTSD symptoms, and experiences their own symptoms or adopts a similar worldview and maladaptive behaviors. Vicarious traumatization is defined as an individual’s psycho-emotional reactions as a consequence of exposure to others’ traumatic experiences via verbal accounts or photographs, for example. If a child is experiencing traumatization and exposure is prolonged, this can lead to complex or developmental trauma, especially if the trauma occurs at a vulnerable developmental age or is caused by a primary attachment figure.

For children in particular, these mechanisms of primary, secondary, and vicarious traumatization are often attributed to reduced parental capacity due to PTSD. This is characterized by the parent’s dysregulated emotions and arousal states, which can result in maladaptive parenting practices. This may include avoidance, emotional withdrawal, mood swings, negative thoughts and views about the world, anger, and violence, all of which impact the behavior and emotional health of the child. While not the primary focus of this systematic review, the consolidated findings around the mechanisms of transmission of trauma as they apply to families of EFRs will be discussed.

A preliminary search for existing systematic reviews on the topic was conducted in PubMed, Scopus, Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis, and no current or in-progress systematic reviews were identified. This systematic review on the perceptions and experiences of family members of EFRs with PTSD can inform future research and therapeutic programs to support these families.

Review question

What are the experiences and perceptions of family members who live or interact with EFRs who have PTSD?

Inclusion criteria

Participants

This review will consider studies that include family members of current or former EFRs with diagnosed or probable PTSD of any level of severity. All possible familial configurations and family members will be considered, including nuclear, separated, and blended families, of a serving EFR. There is no age restriction on participants. Emergency first responders, also called public safety personnel, can
refer to vocations such as police, ambulance workers, paramedics, and firefighters.

**Phenomena of interest**
This review will consider studies that explore the experiences and perspectives of family members of EFRs with PTSD.

**Context**
This review will consider studies that are focused on the EFR family context, including family members who currently live or previously lived with them. The definition of family includes all familial configurations. The database search will not be geographically limited and will include all studies globally. The study will explore the context of families where at least one member is an EFR with PTSD and how this may affect family members.

**Types of studies**
This review will consider studies that focus on qualitative data about the perceptions and experiences of family members of EFRs with diagnosed or probable PTSD, including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research, and feminist research.

**Methods**
The proposed systematic review will be conducted in accordance with the JBI methodology for systematic reviews of qualitative evidence.²⁹

**Search strategy**
The search strategy will aim to locate both published and unpublished studies. An initial search of PubMed and Scopus was conducted 18 June 2020, which yielded 643 records. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop the search strategy (see example for MEDLINE (PubMed) in Appendix I). The search strategy, including all identified keywords and index terms, will be adapted for each included information source. The reference lists of all studies selected for critical appraisal will be screened for additional studies. Studies published in English will be included. No time limit will be applied to the search due to the initial search indicating few results; the aim will be to capture all data available for the topic.

The databases to be searched include MEDLINE (PubMed), PsycINFO (Ovid), Embase (Elsevier), CINAHL (EBSCOhost), PTSDpubs (ProQuest), and Scopus (Elsevier). Handsearching of relevant journals will be conducted including *Australian Paramedic*, *Australasian Journal of Paramedicine*, *British Paramedic Journal*, *International Paramedic Practice*, *Irish Journal of Paramedicine*, *Journal of Paramedic Practice*, *Prehospital and Disaster Medicine*, and *Prehospital Emergency Care*.

Sources of unpublished studies and gray literature, such as dissertations, will be searched via PTSDpubs (ProQuest) and OpenGrey.

**Study selection**
Following the search, all identified citations will be collated and uploaded into Covidence (Veritas Health Innovation, Melbourne, Australia) and duplicates removed. Titles and abstracts will then be screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant studies will be retrieved in full and their citation details imported into the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia).³⁰ The full text of selected citations will be assessed in detail against the inclusion criteria by two independent reviewers. Reasons for exclusion of full-text studies that do not meet the inclusion criteria will be recorded and reported in the systematic review. Any disagreements that arise between the reviewers at each stage of the study selection process will be resolved through discussion or with a third reviewer. The results of the search will be reported in full in the final systematic review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.³¹

**Assessment of methodological quality**
Eligible studies will be critically appraised by two independent reviewers for methodological quality using the standard JBI critical appraisal checklist for qualitative research.³² This assessment of methodological quality may result in exclusion of a study that scores poorly by the reviewers on credibility and dependability.³³ This would include studies that claim to use a qualitative methodology but on appraisal are assessed by the reviewers to not use a qualitative methodology, and studies that have eight or more “No”, “Unclear,” or “N/A” responses
to the JBI checklist in JBI SUMARI. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer. The results of critical appraisal will be reported in narrative form and in a table.

**Data extraction**

Data will be extracted from studies included in the review by two independent reviewers using the standardized JBI data extraction tool. The data extracted will include specific details about the populations, context, culture, geographical location, study methods, and phenomena of interest relevant to the experiences and perceptions of family members of EFRs with PTSD. Findings, and their illustrations, will be extracted and assigned a level of credibility. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. Authors of papers will be contacted to request missing or additional data, where required.

**Data synthesis**

Qualitative research findings will, where possible, be pooled using JBI SUMARI with the meta-aggregation approach. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings and categorizing these findings on the basis of similarity in meaning. These categories will then be subjected to a synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

**Assessing confidence in the findings**

The final synthesized findings will be graded according to the ConQual approach for establishing confidence in the output of qualitative research synthesis and presented in a Summary of Findings. The Summary of Findings includes the major elements of the review and details how the ConQual score is developed. Included in the Summary of Findings will be the title, population, phenomena of interest, and context for the specific review. Each synthesized finding from the review will then be presented, along with the type of research informing it, scores for dependability and credibility, and the overall ConQual score.

**References**


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Appendix I: Search strategy

Search strategies will be adapted for all resources using the database-specific subject headings and text words when appropriate. An initial search of MEDLINE (PubMed) and Scopus (Elsevier) was conducted 18 June 2020, which yielded initial results of 643 records.

The search strategy focuses on three search term groups: 1) post-traumatic stress disorder (PTSD) AND 2) emergency first responders AND 3) family members.

Search terms list:
1. stress disorders, Post-traumatic[mh]
2. PTSD[tw]
3. Post-traumatic stress disorder[tw]
4. PTS[tw]
5. operational stress injur”[tw]
6. Moral injury[tw]
7. Posttraumatic growth, psychological[mh]
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. emergency responders[mh]
10. emergency medical technicians[mh]
11. police[mh]
12. Disaster medicine[mh]
13. Emergency responder”[tw]
14. first responder”[tw]
15. emergency first responder[tw]
16. rescue personnel[tw]
17. emergency service[tw]
18. emergency service personnel[tw]
19. public safety personnel[tw]
20. public safety officer”[tw]
21. emergency medical technicians[tw]
22. EMT[tw]
23. Paramedic”[tw]
24. ambulance[tw]
25. fire fighter”[tw]
26. firefighter”[tw]
27. fire and rescue personnel[tw]
28. police[tw]
29. Law enforcement[tw]
30. Disaster medicine[tw]
31. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30
32. Child[mh]
33. Infant, newborn”[mh]
34. adult children[mh]
35. heredity[mh]
36. Adolescent[mh]
37. Parent-Child Relations[mh]
38. Family Relations[mh]
39. Family Conflict[mh]
40. Family[mh]
41. single-parent family[mh]
42. Intergenerational Relations[mh]
43. Maternal exposure[mh]
44. Paternal exposure[mh]
45. Maternal Behavior[mh]
46. Paternal Behavior[mh]
47. Parents[mh]
48. Fathers[mh]
49. mothers[mh]
50. caregivers[mh]
51. intimate partner violence[mh]
52. spouses[mh]
53. intergenerational relations[mh]
54. historical trauma[mh]
55. compassion fatigue[mh]
56. Child”[tw]
57. Babies[tw]
58. Baby[tw]
59. offspring[tw]
60. Infant, newborn[tw]
61. adult children[tw]
62. heredity[tw]
63. Adolescent[tw]
64. youth[tw]
65. adolescent∗[tw]
66. dependent∗[tw]
67. preschooler∗[tw]
68. toddler∗[tw]
69. newborn∗[tw]
70. infant[tw]
71. teen∗[tw]
72. girl∗[tw]
73. boy[tw]
74. boys[tw]
75. kid[tw]
76. kids[tw]
77. Parent-Child Relations[tw]
78. Family Relations[tw]
79. Family Conflict[tw]
80. family[tw]
81. families[tw]
82. family member∗[tw]
83. single-parent family[tw]
84. Intergenerational Relations[tw]
85. Maternal exposure[tw]
86. Paternal exposure[tw]
87. Maternal Behaviour[tw]
88. Paternal Behavior[mh]
89. Paternal Behaviour[tw]
90. Parent∗[tw]
91. carer∗[tw]
92. caregiver∗[tw]
93. parent"[tw]
94. father"[tw]
95. mother"[tw]
96. wife[tw]
97. wife"[tw]
98. husband"[tw]
99. sibling"[tw]
100. sister"[tw]
101. brother"[tw]
102. intimate partner violence[tw]
103. partner[tw]
104. spous"[tw]
105. intergenerational relations[tw]
106. historical trauma[tw]
107. intergeneration"[tw]
108. secondary trauma"[tw]
109. compassion fatigue[tw]
110. multi-generational trauma"[tw]
111. intergenerational trauma"[tw]
112. vicarious trauma"[tw]
113. developmental trauma[tw]
114. parental communication[tw]
115. or 32–114
115. 8 and 31 and 115