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Review article

Psychological impacts of disaster on rescue workers: A review of the literature

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ABSTRACT

When a disaster strikes, rescue workers are deployed to the disaster site to provide immediate rescue support to victims. Given the unpredictable and overwhelming nature of disasters, rescue workers are at risk of suffering from negative psychological consequences. The goal of this review is to explore the psychological impact of a disaster on rescue workers. In this paper, a total of 55 articles – one qualitative study, 53 quantitative studies, and one mixed-methods study – were eligible for inclusion. The rescue workers identified in the literature included fire fighters, police officers, military personnel/soldiers, healthcare professionals, and volunteers. The literature revealed that these rescue workers who were deployed to disaster sites might suffer from acute stress disorder (ASD), anxiety and depression, post-traumatic stress disorder (PTSD), and other psychological disorders. Generally, of all rescuers and nurses among the healthcare professionals, the unaffiliated volunteers were most susceptible to negative psychological consequences. The findings of this review indicated that rescue workers are at a high risk of experiencing psychological problems after a disaster deployment. Interventions are needed to mitigate negative psychological consequences and foster resilience in rescue workers.

1. Introduction

A disaster is defined as “a situation or event that overwhelms local capacity, necessitating a request at the national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering” ([1] p. 15). With the increasing number of disasters worldwide, a large number of people have been affected and the economic losses have been significant [2]. Disasters have also had a harmful impact on the physical, psychological, and sociological health of the people involved in rescue efforts [3-6,21].

Previously published studies mainly focused on the psychological impact of disasters on survivors. More recently, however, increasing attention also has been paid to the rescue workers. Rescue workers, or rescuers, refer to individuals who provide assistance to people in emergency circumstances such as disaster [7]. In the context of this review, we use the term of rescue workers refer to professionals such as firefighters, police officers, military personnel/soldiers, healthcare rescuers, and nonprofessional volunteers who free people from danger in various disasters, provide acute medical care, and transport them to facilities where they can receive better care [8]. Because of the work

nature, rescue workers invariably encounter seriously injured or dead bodies, witness the emotional reactions of devastated survivors (distress, grief, and anger), experience disappointment when they were unsuccessful in saving a life, and exposed themselves to potential physical harm. All these stressors could increase the likelihood of negative psychological consequences among rescuers, compared to the general population who are not exposed to a disaster [9,10]. The negative psychological impact of disaster on rescue workers include acute distress disorder, anxiety and depression, post-traumatic stress disorder (PTSD), and substance use/dependency disorders [11,12].

Previous reviews of related literature were examined. There is one review of studies exploring the mental health impact of volunteering in disaster rescues [13]. However, only nine articles (1994–2007) were included in this review, which focused solely on nonprofessional volunteers. Other reviews focused only on the issue of PTSD among emergency medical service responders [14], first responders [15], or volunteers [16] who responded to terrorist attacks, and did not include those exposed to natural disasters, technological disasters. These reviews also failed to explore other types of negative psychological sequelae, such as acute stress disorder (ASD), anxiety and depression [17].

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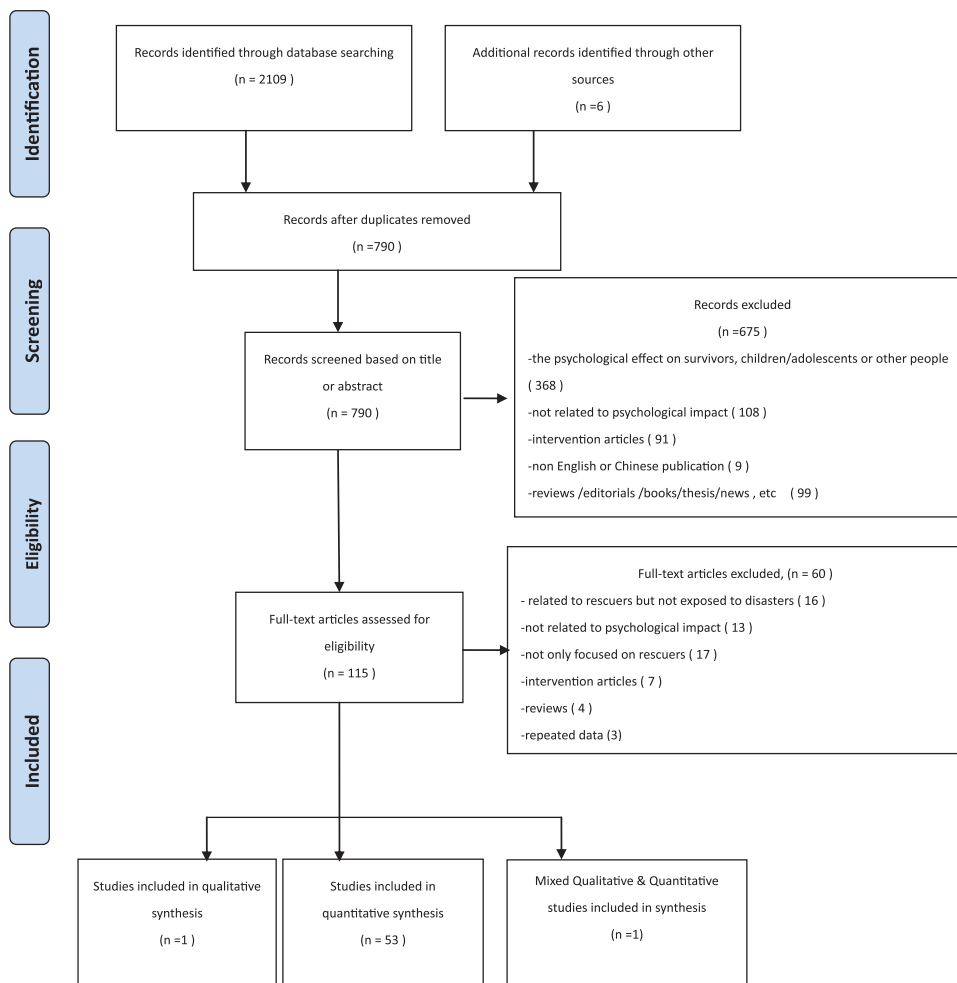


Fig. 1. The flow diagram on identifying the literature.

PTSD was the most common psychopathology among those who involved in disasters [18,19], and the prevalence of PTSD among first responders following manmade disaster ranged from 1.3% to 22.0% [15]. However, the literature review regarding the psychological impact of natural disaster on rescuers was not found. Majority of individuals who suffered from PTSD may have comorbid disorders, including anxiety disorders, major depressive disorder, substance abuse/dependency disorders [12]. Accordingly, a comprehensive picture of the wide range of psychological morbidities in various types of rescuers who have responded to all kinds of disasters is missing.

The purpose of this review study is to explore a wide range of psychological impacts of natural or manmade/technological disasters on rescue workers who are from different occupational backgrounds. The findings of this comprehensive review will provide emergency and disaster response organizations with the information that they need to monitor the mental health of disaster rescue workers before and after deployment.

2. Methods

2.1. Literature search strategy

Studies were searched using eight electronic databases: the ISI Web of Science, PubMed, MEDLINE (Ovid), Embase, CINAHL, PILOTS, PsycINFO, and the CNKI databases since their inception until November 30th, 2016. Three groups of key words or medical subject headings (Mesh) terms were used for the search. These included: “rescue personnel*” or “emergency responder*” or “first responder*” or “rescue worker*” or “disaster worker*” or “rescue*” or “humanitarian

responder*” or “disaster relief worker*” or “firefighter*” or “police officer*” or “military*” or “soldier*” or “healthcare professional*” or “paramedic*” or “ambulance personnel” or “volunteer*” AND disaster* or “catastrophe* or ”emergency” or “traumatic event*” or “extreme event*” or “critical incident*” or “earthquake*” or “flood*” or “tsunami*” or “landslide*” or “hurricane*” or “avalanche*” or “fire” or “terrorist attack*” or “terrorism” “war*” or “explosion*” AND “psychological issue*” or “psychological impact*” or “psychological trauma*” or “psychological adverse effect*” or “psychological stress*” or “psychological disorder*” or “post-traumatic stress disorder” or “PTSD” or “psychological negative consequence*” or “acute stress disorder” or “ASD” or “anxiety” or “depression”. In addition, a hand search of the reference lists of the included articles was conducted to identify additional relevant literature.

2.2. The selection process

All article citations downloaded from the databases were imported into the Endnote software, X7 version. After duplications were removed, articles were selected based on the criteria for inclusion and exclusion. The criteria for the inclusion were articles: (i) published in English or Chinese (languages understand by the authors); (ii) focusing on the psychological impacts such as ASD, anxiety and/or depression, PTSD and other psychological reactions, of any types of disasters (natural disasters or manmade / technological disasters), (iii) focusing on certain kinds of rescue workers (firefighters, police officers, military personnel/soldiers, healthcare professionals, voluntary rescue workers, rescue teams); and (iv) containing original data. The exclusion criteria were articles: (i) focusing on the impact of the disaster on survivors,

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