

# Lessons in Post-Disaster Self-Care From 9/11 Paramedics and Emergency Medical Technicians

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## Abbreviations:

EMT: emergency medical technician  
FDNY: Fire Department of New York  
PTSD: posttraumatic stress disorder  
SJA: St John Ambulance  
WA: Western Australia  
WTC: World Trade Center

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## Abstract

**Objective:** The objective of this study was to explore preferred self-care practices among paramedics and emergency medical technicians (EMTs) who responded to the September 11, 2001 terrorist attack (9/11) in New York City (New York USA).

**Design, Setting, and Participants:** Qualitative research methodology with convenience and subsequent snowball sampling was utilized. Participants were adult (at least 18 years of age) paramedics or EMTs who self-reported as responding to the 9/11 terrorist attack in New York City.

**Main Outcome Measures:** Preferred self-care practices; participant characteristics; indications and patterns of self-care use; perceived benefits and harms; and views on appropriate availability of support and self-care services were the main outcome measures.

**Results:** The 9/11 paramedic and EMT participants reported a delay in recognizing the need for self-care. Preferred physical self-care practices included exercise, good nutrition, getting enough sleep, and sticking to routine. Preferred psychosocial self-care practices included spending time with family and friends, participating in peer-support programs and online support forums, and routinely seeing a mental health professional. Self-care was important for younger paramedics and EMTs who reported having less-developed supportive infrastructure around them, as well as for retiring paramedics and EMTs who often felt left behind by a system they had dedicated their lives to. Access to cooking classes and subsidized gym memberships were viewed as favorable, as was the ability to include family members in self-care practices.

**Conclusion(s):** A range of physical and psychosocial self-care practices should be encouraged among paramedic students and implemented by Australian ambulance services to ensure the health and well-being of paramedics throughout their career and into retirement.

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## Introduction

The mental health and well-being of paramedics is a significant issue internationally.<sup>1</sup> Safe-Work Australia (Canberra, Australian Capital Territory, Australia) indicates that the occupation of paramedicine has one of the highest rate of claims for mental disorders,<sup>2</sup> and existing evidence suggests that emergency service personnel such as firefighters, police officers, and paramedics have a higher prevalence of mental health disorders associated with trauma and stress.<sup>3–7</sup> This challenge is compounded by a complex working environment where paramedics face life and death emergencies, violence, and major trauma on a daily basis, contributing to cumulative stress that can directly impact both physical and mental health.<sup>8</sup>

Several studies suggest that paramedics are at a higher risk of being overweight, obese, and physically unfit compared to the general population,<sup>9,10</sup> and was identified as early as 1991.<sup>11,12</sup> Paramedics are also more likely to smoke, have higher blood pressure, and higher cholesterol than the general population.<sup>9–12</sup>

In 2015, the Director General of the Western Australia (WA) Department of Health (Perth, WA, Australia), Professor Bryant Stokes, requested the Chief Psychiatrist to conduct an external review into five suicides of St John Ambulance (SJA) paramedics and volunteers that occurred between 2013 and 2015. The SJA WA also commissioned two further reviews during 2015 into SJA's workplace and current organizational culture. These reports detailed a "culture of bullying" and a "toxic" workplace, highlighting deep cultural issues.<sup>1,13–14</sup> Across the globe, the United Kingdom (UK) mental health charity "Mind" reported that

paramedics were twice as likely to suffer mental health problems than the general public, and they were much less likely to reach out for support,<sup>15</sup> also, the suicide rate among Canada's first responders has reached crisis levels, and continues to grow each year, with the latest reports indicating that one in four paramedics in Canada will develop posttraumatic stress disorder (PTSD) in the course of their careers, and a suicide rate five-times that of the national average.<sup>16</sup>

Figures released in 2015 by the Australian National Coronial Information System (Melbourne, Victoria, Australia) revealed that one police officer, paramedic, or firefighter was taking their own life every six weeks.<sup>17</sup> These figures may, however, be only the tip of the iceberg. The suicides of many former emergency services personnel are not officially recognized (Figure 1; available online only).

In June 2018, an Australian Senate inquiry into the mental health of first responders, including emergency service workers and volunteers, was told of the challenge of facing trauma and difficult situations as part of the emergency services job. Submissions made to the Senate inquiry clearly highlight a key challenge: while emergency service personnel face trauma on a daily basis, entrenched institutional stigma often stops them from accessing the mental health support they need.

During the Senate inquiry, the Royal Australian and New Zealand College of Psychiatrists (Melbourne, Victoria, Australia) told of the need for more mental health awareness and literacy to promote help-seeking behavior, along with routine health and well-being checks in emergency services (Figure 2; available online only).

#### *The Compounding Impact of Disaster*

Evidence indicates that emergency services personnel routinely experience symptoms of PTSD and will be at-risk for other mental health conditions. A study of metropolitan firefighters in South Australia found that 17% met the criteria for an anxiety, affective, or alcohol disorder in the previous 12 months.<sup>18</sup> A separate study of retired New South Wales, Australian firefighters estimated the prevalence of PTSD at 18%, depression at 18%, and risky drinking at seven percent.<sup>19</sup> A 2017 review of the mental health of Victoria Police employees found the most common reasons for seeking help were relationship problems, work trauma, other mental health issues, anger, alcohol abuse, and workplace conflict. A separate Australian Federal Police survey found almost 25% of respondents were experiencing moderate to high-levels of current mental distress.<sup>20–22</sup>

Research using Victorian compensation claims identified that paramedics have elevated and increasing risks of mental injury when compared to other health care workers, and international evidence suggests that prehospital personnel have the highest prevalence of PTSD among all occupational groups of first responders and rescuers.<sup>23–24</sup>

With this baseline of poor mental health, exposure to a disaster or mass-casualty incident may potentially be the tipping point for many first responders. Providing an integral part of any emergency frontline response to a disaster, paramedics will potentially be at-risk of both physical and psychological injury. The September 11, 2001 terrorist attack (9/11) in New York City (New York USA) highlighted the risk associated with disaster response for emergency first responders. A total of 413 first responders died during the attacks, including 343 firefighters from the Fire Department of New York (FDNY), 60 police officers from the New York Police

Department (NYPD) and the Port Authority Police Department (PAPD), and 10 from various Emergency Medical Service agencies.<sup>25</sup>

In addition to the deaths that occurred on the day of the attacks, over 800 responders have died since 9/11 due to illness directly associated with their exposure to "Ground Zero." In addition to these deaths, thousands more responders are suffering from ongoing physical and mental health impacts associated with their exposure to the World Trade Center (WTC) site. Over 2,100 firefighters and medics have retired on disability with WTC-related illnesses, mostly lung disease and cancer, since 9/11. More than 7,500 FDNY firefighters and medics have been treated for a 9/11 illness now, almost 16 years later, and 1,100 have cancer directly related to exposure to the WTC site.<sup>25</sup>

#### *The Importance of Self-Care*

Self-care has been identified as a key protective measure against negative health impacts.<sup>26</sup> Recent research suggests that paramedics need to acquire a unique set of personal qualities that promote self-care and self-resilience.<sup>27</sup> Learning lessons from paramedics who have lived through traumatic events and have identified successful self-care activities will help ensure that ambulance services can recognize and support activities that are most beneficial in improving and maintaining the health and well-being of paramedics throughout their career. To that end, this research explores the lessons learned regarding self-care from a cohort of paramedics and emergency medical technicians (EMTs) who responded to the 9/11 terrorist attacks (Figure 3; available online only).

#### **Methods**

This research reports on a secondary thematic analysis that was undertaken on an existing data-set that was developed to explore paramedic and EMT reflections on the long-term impact of responding to the 9/11 terrorist attacks.<sup>25</sup>

Participants were originally recruited through a mix of purposive and snowball sampling. Invitations to participate in a qualitative research study were sent to paramedics and EMTs known by the authors to have responded to the WTC site on September 11, 2001, or during the eight months of recovery efforts. Invitations were also sent to a number of 9/11 responder-focused groups on social media sites. Responders were then invited to share the invitation to participate with their extended networks. All participants provided written consent prior to participation in the research study. Written consent was provided in paper format during face-to-face interviews and electronically prior to Skype (Skype Communications; Palo Alto, California USA) and telephone interviews. Additional written consent approving the use of quotations was provided electronically from participants whose direct quotes have been included in this publication. The interviews were unscripted and conducted either face-to-face or via telephone or electronic communication and ranged in length from 60 to 90 minutes.

The views and experiences reported in this research are those of the individual participants and do not reflect any views of the emergency services with whom they were employed. Interview recordings were transcribed and a secondary thematic analysis exploring self-care practices was undertaken using NVivo (QSR International; Doncaster, Victoria, Australia). Ethics approval was provided by the Human Research Ethics Committee at Edith Cowan University (Joondalup, WA, Australia). Funding for this study was provided by the School of Medical and Health Sciences

by Edith Cowan University. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

### Report

A total of 54 paramedics and EMTs (18 paramedics and 36 EMTs) self-reported that they responded to the WTC precinct on 9/11, or during the eight months of recovery that followed, and consented to share their reflections on the on-going impact of the terrorist attacks. These paramedics and EMTs ranged in age from 39 to 68 years (age at the time of interview); 42 (78%) were male and 12 (22%) were female.

#### *Addressing Physical Needs*

Participant responses highlighted the importance of prioritizing their own basic physical needs both before and after a disaster: sleeping; eating; hydrating; and taking downtime to engage in physical activity and social sports. Developing a rapport with a general practitioner doctor and having routine physical check-ups were also reported by participants to be important facets of physical health care. The need for this relationship to commence at the beginning of the career was highlighted, as was the need for this on-going support throughout the lifespan of the paramedic and then into retirement.

#### *Addressing Psychosocial Needs*

Participants recognized the importance of addressing their psychosocial needs as part of a comprehensive approach to self-care. This included making time to seek psychological support and for activities such as music, exercise, and faith-based activities. Another important part of effectively coping post-9/11 was the ability of paramedics and EMTs to engage in self-auditing. A self-audit is an examination of personal life and activities to assess current strengths and weaknesses for responding in a high-stress work environment. Most participants acknowledged that they never took the time prior to 9/11 to understand how this type of work affected them emotionally, but following the disaster, they understood that part of being an effective responder is to know and predict personal risk factors that may create challenges (Figure 4; available online only).

In recent years, the standard answer to first responders' emotional needs has been the critical incident stress debriefing, an often-mandatory gathering of those hit hardest by the trauma of disaster. Authoritative voices, however, say these interventions are insufficient.<sup>28,29</sup> The World Health Organization (WHO; Geneva, Switzerland) suggests that a psychological debriefing should not be used for people exposed recently to a traumatic event, and it may actually do more harm than good. While such debriefings have been common practice for paramedics and EMTs following the 9/11 attacks, the value hasn't been scientifically or anecdotally demonstrated (Figure 5; available online only).<sup>28</sup>

Yet, the need for some intervention is indisputable. First responders in disaster situations and other kinds of major emergencies are confronted with things that can be psychologically very disturbing. The lasting effects of such exposure can include depression, anxiety, and withdrawal. If generic debriefings aren't the answer, what else can ambulance services do to ensure that paramedics are properly cared for?

Participants highlighted the benefits of developing pre-existing relationships with mental health professionals prior to a traumatic event occurring. Also important were social bonds and supportive infrastructure (Figure 6; available online only). Participants in this research who were younger at the time of the 9/11 terrorist attacks

tended to be the more severely impacted, most had never before experienced the death of someone close to them, and many were single and not used to seeking support. Many were angry and resisted discussing their feelings with mental health professionals or sharing them with their colleagues. Many who felt relieved to be alive were not able to voice these normal emotions.

As with so many aspects of disaster response, the effectiveness of post-trauma care often comes down to suitable pre-event planning. Knowing that paramedics will be integral in the emergency first response to a disaster, they will also be among the first to confront the human toll of a disaster. Participants reflected on the need to ensure that proper support mechanisms and self-care practices are in place long before any event and are encouraged by employers.

Participants reflected on a broad range of psychosocial self-care activities that helped them in the years following the 9/11 attacks. Those activities run the gamut, from accessing mental health professionals, alternative healers, faith-based organizations, massage therapists, even pedicurists, and chefs helped to ease the stress and pain.

There are perhaps two key lessons to be taken from this research in regards to psychosocial self-care. Firstly, there is a need for someone within ambulance services to be "on the ground" offering a supportive presence and monitoring responders' emotional state – before, during, and after a traumatic event. This may be a peer, chaplain, or officially sanctioned service member. Eyes and ears on the ground can make a difference. The second key lesson is around the concept of "Buddy Care." With the unique culture within emergency services and with a "Band of Brothers" mentality, paramedics may be more likely to respond positively to informal queries from their colleagues as to how they are doing. They may be more open to sharing with one another and more attuned than an outsider to their peers' emotional state. This speaks to what is perhaps one of the greatest challenges in caring for first responders: the culture that drives their mindset. Providing appropriate support will mean finding a way over, through, or around this fundamental sticking point. Mental health professionals can help ambulance services craft plans that address emotional needs while still treading thoughtfully on this delicate ground.

Ambulance service managers must create the time and a safe space for their staff to decompress, both prior to and also following a disaster. It is also crucial for ambulance services to equip paramedics with the skills to engage in these important conversations, with an emphasis on how to start the conversation and also on how to safely end it. One of the key findings of this research was that paramedics and EMTs recognized that they were the among the first people to notice changes in colleagues' behaviors and moods, but felt ill-equipped to have important and potentially life-saving conversations.

### Limitations

This research has been subject to a number of limitations.

#### *Influence of Assumptions*

This research assumes that people can provide meaningful answers and respond appropriately to questions of a sensitive nature. This type of research typically investigates largely subjective, affective feelings and values, rather than objective "actual" behaviors. Therefore, while these findings are reflective of the paramedics and EMTs who participated in this research project, they may not necessarily be generalizable to other paramedics.

### Impact of Researcher Bias

Although every attempt has been made throughout this research to maintain a Modified Grounded Theory approach to qualitative research, this was at times difficult to maintain. Having a history of employment within the emergency services, in addition to the experience garnered by 15 years of work in prehospital and disaster research, made it somewhat difficult to have no pre-conceived ideas about the types of answers that this research was going to identify.

### Sampling Bias

Sampling for this research was largely purposive, with subsequent snowballing techniques resulting in a very selective study sample that was skewed towards EMTs and male participants. In addition, many of the research participants were known to each other and may have discussed the interview process and the answers they provided. This may have had some impact on the feelings that were expressed during the interviews. The number of paramedics and EMTs that participated ( $n = 54$ ) was a small sample of the actual numbers of medics who responded to 9/11; therefore, while the results reported in this paper are representative of the responders who participated in this study, they may not be representative of the larger paramedic population.

### Self-Reported Data

Self-reported data such as the information provided by the participants in this research can contain several potential sources of bias. These biases include selective memory (remembering or not remembering experiences or events), telescoping (recalling events that occurred at one time as if they occurred at another time), attribution (the act of attributing positive events and outcomes to oneself but attributing negative events and outcomes to external forces), and exaggeration (the act of representing outcomes or embellishing events as more significant than is actually suggested from other data). The information provided by participants in this research was not verified from any other sources, which could potentially result in some bias in the reported findings.

### Implications

This research has made an important new contribution of knowledge to a little-researched field – being the self-care practices of paramedics who have responded to disaster. Therefore, in spite of any limitations associated with the research study design, the novelty of these results should not be overlooked. Despite the contribution of this research to the existing evidence-base on paramedic self-care, there remains an urgent need to continue monitoring a larger cohort of paramedics to ensure they are routinely engaging in potentially life-saving, self-care practices. Future research should also include exploration of the impact of disaster on paramedic family members, including spouses, partners, and children.

### Conclusion

The mental health and well-being of paramedics is a significant issue, both nationally and internationally. Disasters place added stress on paramedics who routinely face life, limb, and death emergencies, violence, and major trauma every day on the job. This research explored useful physical and psychosocial self-care practices adopted by a cohort of paramedics and EMTs who responded to the 9/11 terrorist attacks. Participants highlight the importance of engaging in regular physical activity, improving nutrition, and developing good sleeping habits. Participants also reported on the benefits of developing a routine and strengthening existing social bonds and supportive infrastructure. Building pre-disaster rapport with both mental health professionals and peers is integral to self-care. Self-care practices need to address both physical and psychosocial health needs and should be adopted when paramedics are still students and maintained throughout their career and into retirement.

### Supplementary Material

To view supplementary material for this article, please visit <https://doi.org/10.1017/S1049023X19004382>.

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