

Mental health difficulties in paramedics: A review of the literature

Jade Thomas

Background: Paramedics are frequently exposed to traumatic events as part of their role. The implications of this constant exposure have suggested that paramedics are at high risk of developing long-term mental health issues such as depression, anxiety, burnout, trauma, PTSD, and suicide.

Purpose: To synthesise studies to examine factors that play a role in the development of mental health difficulties in ambulance personnel. As well as, establishing gaps within the literature for further research.

Data Sources: From the first 77 published journals reviewed from Psycinfo, PsychArticles, CINAHL, Education Research Complete, ERIC and grey literature, 15 studies met the inclusion criteria for this review and were included in the present study.

Results: Findings of this review suggest that the mental health and wellbeing of paramedics are significant issues. In reviewing the research, it was found that several different factors may play a role in the development of mental health difficulties in ambulance personnel. Four main themes were determined, (1) occupational stressors, (2) negative attitude towards emotional expression, (3) peer and social support, and (4) preparing paramedics for mental health challenges.

Conclusions: It is paramount for further research to explore paramedic students' mental health experiences, as well as a focus on research to investigate a UK paramedic population due to most of the literature focusing on an international population. Psychological support and early interventions should be made a priority for all ambulance workers, as a way of improving the quality of the working life of paramedics.

Keywords: Paramedics; Emergency-medical workers; Trauma; PTSD; Paramedic students.

Introduction

It has been widely reported that the mental health and wellbeing of paramedics is a significant issue internationally (Smith et al., 2019; Lawn et al., 2020; Pyper & Paterson, 2016). As part of their role, paramedics are frequently exposed to potentially traumatic and distressing experiences, involving human pain, suffering, and death over the course of their entire career (Davis et al., 2019). Short recovery times and infrequent accessibility to peer support have been reported by paramedics to impact trauma recovery processes (Lowery & Stokes, 2005; Pinks et al., 2021).

When psychological or social support is accessed, this has been shown to have a positive impact on paramedics' mental health and wellbeing (Sheen et al., 2012; Fjeldheim et al., 2014; Streb et al., 2014).

Nonetheless, the unpredictable, demanding, and traumatic nature of the role can result in an increased number of mental health issues, such as rates of psychological distress, anxiety, depression, burnout, fatigue, suicide, trauma, and post-traumatic stress disorder (PTSD), which have been reported in both paramedic students and experienced paramedics (Sheen et al., 2012; Porter, 2008; Guadagni et al., 2018). In the UK, paramedic-science undergraduate courses include a mixture of theory and practical work; this includes placements within the ambulance services, which provides trainees with on-the-job training experience. It is highlighted that trainees will be 'thrown into unknown, unpredictable, and stressful situations' (NHS n.d.). Studies have reported that a significant number of paramedics

experience varying degrees of psychological distress within the first few years of their paramedic careers (Lowery & Stokes, 2005).

This systematic review aims, therefore, to build on the existing understanding of paramedics' mental health experiences as well as identify factors that play a role in the development of mental health difficulties in all paramedics. As well as identify gaps in the literature for further examination. In summarising the literature on paramedics' mental health experiences, it is hoped that counselling psychologists will be better positioned to support allied health colleagues and individuals who work in emergency healthcare.

Methods

Search strategy

A systematic literature review was conducted from April to July 2021. The following databases were searched: Psycinfo, PsychArticles, CINAHL, Education Research Complete, and ERIC.

Two search strings were carried out separately, due to exploring both the literature relating to paramedic students and literature relating to psychological support for paramedics. When the search strings were combined, this showed to be problematic as limited results occurred and relevant results were removed. Therefore, for the purpose of this literature review, two separate searches were conducted in all databases and were combined using the [AND] and [OR] search functions. The following combination of search terms were used: DE 'Post-traumatic Stress Disorder' OR 'PTSD' OR 'Post Traumatic Stress Disorder' OR 'Psychological Trauma' AND DE 'Allied Health Personnel' OR 'Allied health personnel' OR 'Paramedic*' OR 'Ambulance Personnel' OR 'Emergency Medical Technicians'

NOT 'Firefighter' OR 'Fire fighter' OR 'Military' OR 'veterans'

AND 'paramedic students' OR 'paramedic trainees' OR students or trainees.

The following search terms were used for the second search DE 'Posttraumatic Stress Disorder' OR 'PTSD' OR 'Post Traumatic Stress Disorder' OR 'Psychological Trauma'

AND DE 'Allied Health Personnel' OR 'Allied health personnel' OR 'Paramedic*' OR 'Ambulance Personnel' OR 'Emergency Medical Technicians'

NOT 'Firefighter' OR 'Fire fighter' OR 'Military' OR 'veterans'

AND 'therapy' OR 'Counselling' or 'Psychotherapy'.

Grey literature was also searched via google scholar, in order to broaden the literature search. The following search terms were used for this search 'paramedic students' 'PTSD' 'Therapy'. Grey literature titles and abstracts were then individually, assessed based on inclusion criteria.

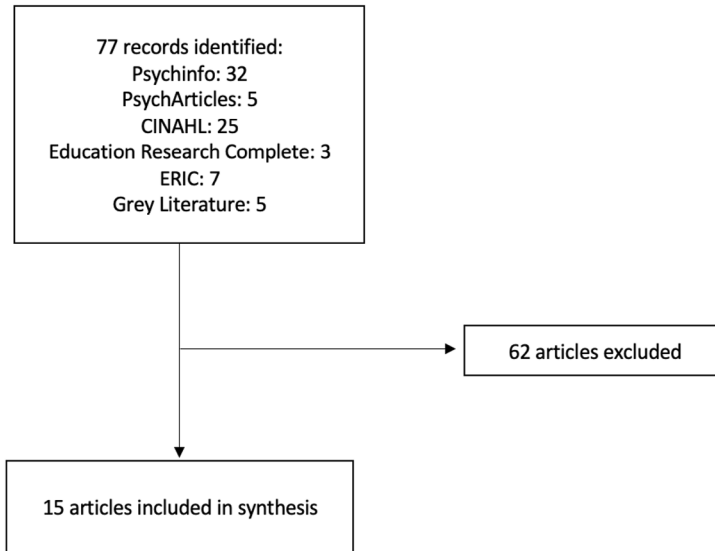
Inclusion criteria and screening

The following inclusion criteria determined which articles were to be included in the review: population of ambulance workers, paramedics, or paramedic students; English-language version available; focus on psychological issues or support experienced by personnel; and year of publication from 2000–2021. Literature from the past 20 years was favoured, as many of the results with a focus on paramedic students were from 2000–2010. Dissertations, theses, and previous literature reviews or systematic reviews were excluded from the search. In light of the variation in terminology amongst ambulance personnel and paramedics internationally, a variety of terms were used during the literature search to ensure an inclusive search of such workers.

Data extraction and quality assessment

Duplicates were automatically removed, and each article's title and abstract were then independently reviewed. Some articles were manually removed as their topic of focus was not related to 'paramedics' or 'paramedic students' or they did not meet the further inclusion criteria. Some articles were also

Figure 1: Flow chart of literature retrieved.



Note: This figure outlines all literature results that were retrieved from all databases and grey literature searched. It highlights how many articles were excluded if they did not meet the inclusion / exclusion criteria, were duplicates or were inaccessible.

Table 1: All papers included in the review.

Bibliographic details	Aims	Design	Key Findings
Anderson, G.S., Vaughan, A.D. & Mills, S. (2017).	Examination of the impact of a 6–8-hour, self-paced, online resiliency training programme.	Quantitative	Following the resiliency training and the practicum experience, the experimental group scored better in total resilience and each of the sub-scores ($p < 0.05$).
Fjeldheim, C.B., Nöthling, J., Pretorius, K., Basson, M., Ganasen, K., Heneke, R., Cloete, K.J. & Seedat, S. (2014).	To investigate the type, frequency, and severity of direct trauma exposure, PTSD symptoms and other psychopathology amongst paramedic trainees.	Quantitative	94% of paramedic trainees had directly experienced trauma, with 16% meeting PTSD criteria. A high rate of depression (28%), alcohol abuse (23%) and chronic perceived stress (7%) and low levels of social support was found.

Table 1: All papers included in the review. (Continued).

Bibliographic details	Aims	Design	Key Findings
Guadagni, V., Cook, E., Hart, C., Burles, F. & Iaria, G. (2018).	To test whether chronic poor sleep quality would have a negative impact on the emotional empathy of experienced paramedics.	Quantitative	Experienced paramedics have a significantly reduced emotional empathy as compared to non-paramedics and paramedic trainees, and that such effect is caused by their poor quality of sleep.
Holmes, L., Jones, R., Brightwell, R. & Cohen, L. (2017).	To explore the preparedness of undergraduate student paramedics for the mental health challenges of the paramedic profession from the perspective of course coordinators and their students.	Quantitative	Results illustrate there was widespread recognition for the need to include preparation for the mental health challenges of the profession within undergraduate courses.
Jonsson, A. & Segesten, K. (2004).	The phenomenon approached in this study could be described as 'the way ambulance staff experience and handle traumatic events'.	Qualitative	The traumatic experience can be divided into pre-trauma experience, mid-trauma experience, post-trauma experience, and how to handle a traumatic experience.
Lowery, K. & Stokes, M.A. (2005).	This study contrasted and tested the predictive value of the reverse buffering hypothesis of social support and the information processing model of PTSD in an investigation of trauma-related symptomatology.	Quantitative	Results indicated that a direct relationship exists between duty-related trauma exposure, dysfunctional peer social support, and students' negative attitudes toward emotional expression.
Michael, T., Streb, M. & Haller, P. (2016).	Differences in posttraumatic cognitions as well as in dealing with intrusions were investigated in relation to severity of PTSD.	Quantitative	Direct threats seem to have a higher chance of eliciting partial or full PTSD than indirect threats. Furthermore, direct threats were more strongly associated with dysfunctional posttraumatic cognitions than indirect threats.

Table 1: All papers included in the review. (Continued).

Bibliographic details	Aims	Design	Key Findings
Pinks, D., Warren James, M. & Katsikitis, M. (2021).	This study aimed to examine whether participation in a peer social support group, using the CARES skills framework, changed paramedic students' emotional expression and emotion-focused coping.	Quantitative	Findings suggest that peer social support participation significantly increased emotional expression and emotion-focused coping when compared to the control group.
Porter, S. & Johnson, A. (2008).	This study sought to determine whether perceived peer support, negative attitude towards emotional expression, and specific coping processes, would be significantly predictive of levels of self-reported psychological distress and burnout symptomology.	Quantitative	Significant correlates were identified, and several interesting trends emerged that underscore the need for further research in this area.
Pyper, Z. & Paterson, J.L. (2016).	To investigate levels of fatigue, stress, and emotional trauma in rural and regional ambulance personnel.	Mixed-Methods	Participants reported high levels of fatigue and emotional trauma. Results indicate a complex and unique profile of risks and challenges for this critical and understudied community resource.
Shakespeare-Finch, J. & Daley, E. (2017).	Investigated whether workplace belongingness was significant in predicting psychological distress.	Quantitative	Hierarchical multiple regression analyses demonstrated that workplace belongingness was significantly associated with reduced distress levels and enhanced resilience levels.
Shakespeare-Finch, J., Rees, A. & Armstrong, D. (2015).	This study assessed the impact of self-efficacy and giving and receiving social support on psychological wellbeing, posttraumatic growth (PTG), and symptoms of PTSD.	Quantitative	Receiving social support emerged as a significant positive predictor of wellbeing and PTG, and a significant negative predictor of PTSD. Self-efficacy was found to significantly and positively predict wellbeing, and shift work was found to significantly and negatively predict PTSD.

Table 1: All papers included in the review. (Continued).

Bibliographic details	Aims	Design	Key Findings
Sheen, J., Boyd, L., Eastwood, K., Archer, F. & Leaf, S. (2012).	Investigating the frequency and nature of adverse health events experiences by paramedic students undertaking ambulance clinical placements.	Quantitative	The results indicate that several students experience adverse health events while on clinical placement, with fourteen cases of verbal abuse, one case of physical abuse, nine cases of sexualised behaviour and seven cases of psychological distress reported.
Smith, E., Walker, T. & Burkle, F.M. (2019).	To explore preferred self-care practices among paramedics and emergency medical technicians who responded to the terrorist attack (9/11) in New York City.	Qualitative	The 9/11 paramedic and EMT participants reported a delay in recognizing the need for self-care. A range of physical and psychosocial self-care practices should be encouraged among paramedic students and implemented by Australian ambulance services.
Streb, M., Haller, P. & Michael, T. (2014).	To examine whether sense of coherence (SOC) and resilience are associated with PTSD severity in paramedics.	Quantitative	As expected, both resilience and SOC were negatively correlated with PTSD symptoms.

removed as they focused on a wide range of emergency service personnel as opposed to paramedics alone; therefore, results relating to paramedics were unclear. Articles were reviewed in detail, and the literature was synthesised to present themes of results.

Key themes

1. Exposure to traumatic incidents

Anderson et al.'s (2017) research concluded that entering a paramedic career has a '100% chance of being exposed to trauma' (Anderson et al., 2017). Further research reported that paramedics during duty are routinely exposed to a range of highly stressful incidents that are unavoidable (Lowery & Stokes, 2005; Shakespeare-Finch and Daley, 2017). Lowery and Stokes (2005) suggested that these incidents have been shown to be related to and predictive of PTSD. It was also reported that PTSD symptoms are regarded as a 'natural behaviour and reaction' amongst paramedics (Jonsson & Segesten, 2004) and that paramedic students may become 'acclimatised' to trauma-related symptoms (Lowery & Stokes, 2005). This indicates that trauma and PTSD symptoms appear to be normalised within the paramedic profession; consequently, appropriate trauma support may not be provided or considered. Dismissing or ignoring trauma-related symptoms could lead to further mental health illnesses or difficulties for paramedics, which could impact the quality of their work. As suggested by Jonsson and Segesten (2004), untreated traumatic experiences could impact paramedics' sympathetic behaviours toward their patients.

Specific traumatic incidents were also reported throughout the literature. Lowery and Stokes (2005) found that the death of a child was rated as the most traumatic event experienced (21.4%). Witnessing a traffic accident was also reported as the most common trauma (53%), according

to a sample of paramedic trainees (Fjeldheim et al., 2014). Furthermore, Shakespeare-Finch and Daley (2017) found that much of their sample of ambulance officers reported that 'the most traumatic event they had experienced was at work' (81.8%). These findings illustrate the urgency for trauma-informed psychological support to be provided to ambulance personnel.

Only seven studies focused on paramedic students (Lowery & Stokes, 2005; Porter, 2008; Sheen et al., 2012; Fjeldheim et al., 2014; Anderson et al., 2017; Holmes et al., 2017; Pinks et al., 2021). Studies importantly suggest that trainees are at 'heightened risk of developing PTSD and depression' (Fjeldheim et al., 2014). Lowery and Stokes (2005) found that the strongest predictive model of PTSD in student paramedics were three separate variables: job exposure, dysfunctional peer social support, and negative attitudes towards emotional expression. Furthermore, it was found that the model significantly predicted PTSD symptom development in student paramedics, thus highlighting the importance of offering psychological support to paramedic students and equipping students with helpful tools and strategies to cope with demands of the role.

2. Negative attitude towards emotional expression

Shakespeare-Finch and Daley (2017) suggested that a culture of denial and negative stigma towards mental health remains present within emergency services. Pinks et al. (2021) also highlighted that 'paramedic culture' creates barriers to help-seeking. Moreover, one study reported that paramedic students did not initiate any formal support themselves following incidents such as verbal abuse, physical abuse, sexualised behaviour, and psychological distress while on clinical placements (Sheen et al., 2012). This could suggest that paramedic students suppress their psychological distress because

they do not wish to highlight it to their supervisors. The study recognised that students may be less likely to report on issues such as bullying or verbal abuse due to power imbalances or fears that reporting could have consequences for their career progression. It could also be implied that paramedic students have the desire to show constant capability, as alternative studies have reported that paramedics believed they would be 'socially rejected' if they expressed their emotions (Lowery & Stokes, 2005).

Despite the expectation to seem stoic, Lowery and Stokes (2005) indicated that emotional distancing was a maladaptive coping strategy. Porter & Johnson (2008) supported this, as it was found that individuals who endorsed a stoic attitude were more likely to report increased symptoms of interpersonal sensitivity, depression, distress, and burnout. Lowery and Stokes (2005) highlighted that student paramedics' negative attitudes towards emotional expression significantly contributed to their trauma-related symptoms and post-traumatic stress disorder (PTSD) scores. Porter & Johnson (2008) also reported that attitude towards emotional expression in paramedic students may be a 'predictive factor of psychological distress symptoms' as a significant correlation was found between negative attitude towards emotional expression and psychological distress and burnout.

3. Peer and social support

Peer support and social support from loved ones and support from a mental health professional were important following a traumatic event or disaster (Smith et al., 2019). Jonsson and Segesten (2004) supported this and suggested the need for ambulance personnel to talk to others about their stressful experiences as a way of internalising the experience. It was stressed that it was not necessary to get solutions; paramedics just required someone to share their agony with. However, it was highlighted that the quality of the

social support the sample received was varied (Jonsson & Segesten, 2004).

Sheen et al. (2012) also highlighted a dysfunction in peer support as incidences of bullying and verbal abuse from ambulance staff who were responsible for the trainee while on placement were reported. It was suggested that trainees may be reluctant to report on issues due to a power imbalance between students and qualified staff members. This highlights an issue with peer support, as trainees may not feel the provision supports them in a confidential and non-judgmental way.

Shakespeare-Finch et al. (2015) results indicated that receiving social support correlated to lower levels of PTSD, and low levels of social support predicted PTSD symptoms. It was suggested that receiving social support may allow individuals to process the traumatic event by reconstructing their life narrative, as opposed to using avoidance as a coping strategy. Sheen et al. (2012) highlighted that although students reported the process of peer support as helpful, no support was accessed when peer support was not aware of situations. Highlighting a potential shortfall in some peer support provisions. Due to the negative attitude towards emotional expression in paramedics, as previously discussed, this could reduce the willingness of paramedics to seek peer support following a traumatic situation. The concerns surrounding few students accessing peer support were highlighted by Sheen et al. (2012). As a result, it was concluded that future research should focus on the barriers to accessing support.

4. Preparing paramedics for mental health challenges

Holmes et al. (2017) investigated whether paramedic undergraduate courses sufficiently prepare students for the mental health challenges of the role. Results showed that 100% of the course coordinators and 97% of students reported that the mental health challenges of the profession should

be featured within the undergraduate training curriculum. It was highlighted that 65% of course coordinators and 54% of students reported that students were not appropriately prepared for the mental health challenges that come with being a paramedic. These findings highlight an important shortfall within paramedic training courses. Furthermore, Anderson et al. (2017) concluded the possibilities that training has for positively preventing, reducing, and mitigating the risks of trauma and PTSD, which could result in improvements in the quality of the working lives of paramedics. Moreover, the need for paramedics to learn to recognise the early stages of PTSD symptoms and to manage dysfunctional post-traumatic cognitions was suggested by Michael et al. (2016). This highlights an additional sense of preparedness that could prove to be highly beneficial for paramedics' mental health and wellbeing.

The notion of enhancing paramedics resilience also became a recurring theme in the literature. It was suggested that enhancing resilience seemed to be a promising 'early intervention' in reducing PTSD symptoms in groups such as paramedics (Streb et al., 2014). Anderson et al. (2017) studied the impact of an online resilience training programme for paramedic students. Results showed a significant improvement in paramedics' resilience after taking part in the online training. It was advised that resilience education as part of paramedic training could have a significant impact on students. Further studies have supported the notion of resiliency training for paramedics as it was suggested by Guadagni et al. (2018) that resiliency training for paramedics would 'ultimately benefit all users of emergency medical services'. It could be implied from this that enhancing paramedics' resilience would allow them to better perform their service and duties. However, both studies highlight that future research is needed in this area.

Discussion

This review set out to investigate factors that play a role in the development of mental health difficulties in all paramedics. Fifteen studies were found to be relevant. In reviewing the research, four main themes were determined: (1) exposure to traumatic incidents; (2) negative attitudes towards emotional expression; (3) peer and social support; and (4) preparing paramedics for mental health challenges. This section discusses these findings further as well as highlighting the limitations and implications for further research.

It is important to highlight that there are some limitations to the present review. Firstly, this review was largely conducted by a solo author; therefore, it lacks a team-based approach to systematically reviewing the articles. The support of additional authors would have allowed for increased quality control. There are also several limitations to the current scope of paramedic mental health literature. Firstly, paramedic trainees and students showed to be under-represented as a population within the literature, as only a few studies focus on this specific population (Lowery & Stokes, 2005; Porter & Johnson, 2008; Sheen et al., 2012; Fjeldheim et al., 2014; Anderson et al., 2017; Holmes et al., 2017; Pinks et al., 2021). Despite the underrepresentation of this population, the studies importantly all highlight the mental health challenges that paramedic students face when training. Holmes et al. (2017) reported that if inclusion of mental health and wellbeing was a formal accreditation requirement for paramedic training courses, additional resources may be allocated by education providers. This suggests a motivation for change within accreditation requirements or training policies. Holmes et al. (2017) is the first to research this topic among undergraduate students and course coordinators. They received a 100% response rate from participants, which indicated the importance of this topic within paramedicine. However, it could also suggest that paramedic students want to see changes

made to the mental health provisions within their training. Therefore, emphasising the value of giving this population a voice.

The majority of these studies also place focus on an international sample, particularly Australian paramedics (Lowery & Stokes, 2005; Shakespeare-Finch et al., 2015; Holmes et al., 2017; Shakespeare-Finch & Daley, 2017; Smith et al., 2019; Pinks et al., 2021). Although these studies provide imperative findings, it could be suggested that findings may differ between international paramedic populations due to differences in protocols, training programmes, or cultural variations. Research has highlighted a 'major discrepancy' in relation to the duration of clinical placements between UK and Australian ambulance service training (Devenish et al., 2015). Eaton et al. (2018) also highlighted a key difference between UK paramedics and paramedics from other parts of the world. Reporting that 'UK paramedics have a level of autonomy as allied health professionals due to the requirement for paramedics to now register with the Health and Care Profession Council (HCPC)'. This highlights a further gap within the literature, with a focus on a UK population of paramedics.

Finally, there are few studies that provide recent research and evidence. Although much of the research from the past 20 years has provided critical discoveries regarding mental health and wellbeing within paramedicine and training, it has been argued that the role of a paramedic has 'evolved rapidly since 2000'. Paramedics are now expected to manage a broad range of conditions outside of the hospital environment and provide far more than just emergency care (Eaton et al., 2018). Moreover, it could be argued that mental health attitudes have modernised in the last 20 years, as suggested by Lien et al. (2019). This suggests that some of the current literature could be presenting outdated views.

The literature showed varied responses regarding peer support, some suggesting the provision to be valuable and others

suggesting it to be 'dysfunctional' (Lowery & Stokes, 2005). There appeared to be notable issues highlighted, as few individuals were utilising the peer support services (Sheen et al., 2012), as well as difficulties with accessing the peer support (Pinks et al., 2012). This could suggest that accessibility or attitudes towards the support need to be adapted, as it was highlighted by Sheen et al. (2012) that 'no intervention will be effective if it is not accessed'. It could be proposed that a compulsory approach to psychological support may reduce these limitations as well as diminish the need for trainees to ask for support.

An extremely limited number of studies presented a qualitative design (Jonsson & Segesten, 2004; Smith et al., 2019). It could be argued that qualitative designs present ethical and practical challenges for the researcher, such as recruitment of participants, confidentiality, and protection of participants, as suggested by van Wijk and Harrison (2013). However, qualitative studies for this population would allow for a deeper, authentic understanding of their experiences, which allows for a different perspective than the current literature.

Conclusion

Paramedics are at high risk of developing long-term mental health challenges such as burnout, depression, anxiety, PTSD, or suicide. Occupational stressors that paramedics experience daily as part of their role put them at higher risk of these long-term mental health difficulties due to direct exposure to traumatic events. Furthermore, normalisation or dismissal of trauma or PTSD response symptoms may have negative consequences for paramedics due to not seeking or receiving the correct psychological support; therefore, this could impact the quality of their work or lead to untreated long-term mental health illnesses. Paramedic students could be at higher risk of developing mental health difficulties as a result of lacking appropriate prepara-

tion for the mental health challenges of the paramedic profession, difficulties accessing peer support, and negative attitudes towards expressing emotions or mental health difficulties. Psychological support and early trauma-informed interventions should be made a priority for all ambulance workers

Author biography

Jade Thomas BSc MBACP is a registered psychotherapist and is currently in the completion stages of her Doctorate in Counselling Psychology at the University of Roehampton. By the age of 24, Jade became a university lecturer in Psychology and Mental Health and by the age of 25

as a way of improving the quality of the working life of paramedics, thus benefiting all users of emergency medical services.

The author

Jade Thomas

she established her own private psychological therapy practice, becoming the Clinical Director and Founder of Luxe Psychology Practice. Jade's areas of interest in research are trauma, mental health, occupational psychology, and mental health in emergency services.

References

- Anderson, G.S., Vaughan, A.D. & Mills, S. (2017). Building personal resilience in paramedic students. *Journal of Community Safety and Well-Being*, 2(2), 51–54. <https://doi.org/10.35502/jcswb.44>
- Davis, K., MacBeth, A., Warwick, R. & Chan, S.W.Y. (2019). Posttraumatic stress symptom severity, prevalence and impact in ambulance clinicians: The hidden extent of distress in the emergency services. *Traumatology*, 25(4), 282–288. <https://doi.org/10.1037/trm0000191>
- Devenish, S., Clark, M., Fleming, M. & Tippett, V. (2015). 'Australian paramedic graduates transitioning into UK NHS ambulance services: what are the potential challenges?' *Journal of Paramedic Practice: The Clinical Monthly for Emergency Care Professionals*, 7(10), 492–498. <https://doi.org/10.12968/jpar.2015.7.10.492>
- Donati, M. (2016). Becoming a reflective practitioner. In B., Douglas, R., Woolfe, S., Strawbridge, E. Kasket & V., Galbraith, *The Handbook of Counselling Psychology* (pp.55–73). SAGE.
- Eaton, G., Mahtani, K. & Catterall, M. (2018). The evolving role of paramedics – a NICE problem to have? *Journal of Health Services Research & Policy*, 23(3), 193–195. <https://doi.org/10.1177/1355819618768357>
- Finlay, L. (2002). 'Outing' the researcher: The provenance, process, and practice of reflexivity. *Qualitative Health Research*, 531–545. <https://doi.org/10.1177/104973202129120052>
- Fjeldheim, C.B., Nöthling, J., Pretorius, K. et al. (2014). Trauma exposure, posttraumatic stress disorder and the effect of explanatory variables in paramedic trainees. *BMC Emergency Medicine*, 14, 11. <https://doi.org/10.1186/1471-227X-14-11>
- Guadagni, V., Cook, E., Hart, C., Burles, F. & Iaria, G. (2018). Poor sleep quality affects empathic responses in experienced paramedics. *Sleep and Biological Rhythms*, 16(3), 365–368. <https://doi.org/10.1007/s41105-018-0156-8>
- Holmes, L., Jones, R., Brightwell, R. & Cohen, L. (2017). Student paramedic anticipation, confidence and fears: Do undergraduate courses prepare student paramedics for the mental health challenges of the profession? *Australasian Journal of Paramedicine*, 14(4). <https://doi.org/10.33151/ajp.14.4.545>
- Jonsson, A. & Segesten, K. (2004). Guilt, shame and need for a container: a study of post-traumatic stress among ambulance personnel. *Accident and Emergency Nursing*, 12(4), 215–223. <https://doi.org/10.1016/j.aen.2004.05.001>
- Lawn, S., Roberts, L., Willis, E. et al. (2020). The effects of emergency medical service work on the psychological, physical and social well-being of ambulance personnel: a systematic review of qualitative research. *BMC Psychiatry*, 348. <https://doi.org/10.1186/s12888-020-02752-4>
- Lien, Y.Y., Lin, H.S., Tsai, C.H. et al. (2019). Changes in attitudes toward mental illness in healthcare professionals and students. *International Journal of Environmental Research and Public Health*, 16(23), 4655. <https://doi.org/10.3390/ijerph16234655>
- Lowery, K. & Stokes, M.A. (2005). Role of peer support and emotional expression on posttraumatic stress disorder in student paramedics. *Journal of Traumatic Stress*, 18(2), 171–179. <https://doi.org/10.1002/jts.20016>

- Michael, T., Streb, M. & Hällner, P. (2016). PTSD in paramedics: Direct versus indirect threats, post-traumatic cognitions, and dealing with intrusions. *International Journal of Cognitive Therapy*, 9(1), 57–72. <https://doi.org/10.1521/ijct.2016.9.1.57>
- NHS (n.d.). Roles in the allied health professions: Paramedic. Accessed May 2021. <https://www.healthcareers.nhs.uk/explore-roles/allied-health-professionals/roles-allied-health-professions/paramedic>.
- Pinks, D., Warren-James, M. & Katsikitis, M. (2021). Does a peer social support group intervention using the cares skills framework improve emotional expression and emotion-focused coping in paramedic students? *Australasian Emergency Care*. <https://doi.org/10.1016/j.auec.2021.03.005>
- Porter, S. & Johnson, A. (2008). Increasing paramedic students' resiliency to stress: Assessing correlates and the impact of intervention. *College Quarterly*, 11(3).
- Pyper, Z. & Paterson, J.L. (2016). Fatigue and mental health in Australian rural and regional ambulance personnel. *Emergency Medicine Australasia: EMA*, 28(1), 62–66. <https://doi.org/10.1111/1742-6723.12520>
- Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Shakespeare-Finch, J. & Daley, E. (2017). Workplace belongingness, distress, and resilience in emergency service workers. *Psychological Trauma: Theory, Research, Practice and Policy*, 9(1), 32–35. <https://doi.org/10.1037/tra0000108>
- Shakespeare-Finch, J., Rees, A. & Armstrong, D. (2015). Social support, self-efficacy, trauma and well-being in emergency medical dispatchers. *Social Indicators Research*, 123(2), 549–565. <https://doi.org/10.1007/s11205-014-0749-9>
- Sheen, J., Boyd, L., Eastwood, K., Archer, F. & Leaf, S. (2012). Student perceptions of adverse health events during ambulance clinical placements. *Education*, 2(2), pp.6–10, doi:10.5923/j.edu.20120202.02.
- Smith, E., Walker, T. & Burkle, F.M. (2019). Lessons in post-disaster self-care from 9/11 paramedics and emergency medical technicians. *Prehospital and Disaster Medicine*, 34(3), 335–339. <https://doi.org/10.1017/S1049023X19004382>
- Streb, M., Hällner, P. & Michael, T. (2014). PTSD in paramedics: resilience and sense of coherence. *Behavioural and Cognitive Psychotherapy*, 42(4), 452–463. <https://doi.org/10.1017/S1352465813000337>
- Wijk, E.V. & Harrison, T. (2013). Managing ethical problems in qualitative research involving vulnerable populations, using a pilot study. *International Journal of Qualitative Methods*, 12, 570–586. <https://doi.org/10.1177/160940691301200130>