

# Truck drivers are also lay rescuers: A scoping review

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## Abstract

*A recent comprehensive investigation by Comcare (2021) has elucidated the real and severe mental health problems suffered by truck drivers on Australian roads, reporting that 36.7% of all Australian truck drivers experience moderate to severe psychological complaints, including suicidality. Reasons for such poor mental health included unrealistic demands, lack of respect, and compromised support systems. The current paper, however, argues that a largely hidden but common role of “lay rescuer” is also a significant contributing factor to the mental health decline in truck drivers in Australia. Unfortunately, the prevalence, impact, and best practice intervention strategies for this occurrence is unknown in the literature. This paper therefore aimed to highlight this hidden role of truck drivers with a qualitative scoping review of both published and grey literature, on what is already known generally about the effects of being a lay rescuer on the untrained bystander. Nine relevant papers were found, reviewed, and summarised. Conclusions drawn were that bystanders who become lay rescuers commonly experience symptoms similar to post traumatic stress disorder, and largely do not receive any formal mental health interventions to help cope with the resultant symptoms, weeks or months after the incident. This represents initial evidence that the lay rescuer role for Australian truck drivers may also contribute to their poor mental health. Interventions and organisational policy changes should ensure truck drivers who are also lay rescuers receive the care they need. Research limitations and future recommendations are discussed.*

**Keywords:** *Truck driver, lay rescuer, PTSD, scoping review*

Truck drivers have been identified as one of the most at-risk occupations (behind defence force members) for mental health complications in Australia (SafeWorkAustralia, 2021). Given that the heavy vehicle trucking industry is increasingly vital for the prosperity of Australia (with 77% of the freight in Australia being conveyed via the road system; Australian Bureau of Statistics, 2020), these findings prompted a recent large-scale study by Comcare (2021) exploring the current status of mental health issue severity and prevalence in Australian truck drivers. Up to 36.7% of all truck drivers in the study experienced moderate to severe psychological distress, including depression, stress, post traumatic stress disorder (PTSD), and suicide (OzHelp Foundation, 2020), resulting in an average of 61 days per year lost due to needing time off work, compared to the average 48 days for all industries (Australian Government, 2022). Reported factors responsible for this high rate of psychological distress in this population include unrealistic job demands, lack of respect and recognition, compromised support systems, “macho male” mentality, regret, and isolation (Comcare, 2021).

These results, coupled with the growing realisation of the mental health crisis facing Australian truck drivers (Hosier, 2020), has prompted timely mental health and wellbeing programmes including Healthy Heads Trucks & Sheds (2021) and FleetComplete (2021) to increase the trauma resilience of this population. These programmes are reportedly prioritising education, increased mental health awareness, changing organisational policies, prevention, early intervention, and return to work strategies aimed at improving the mental health and resilience of the Australian transport industry. The efficacy of these programmes from an individual and organisational frame of reference is yet to be reported.

## Road Traffic Incidents

Within the media and industry associations however, there are indications of further “hidden” reasons for the prevalence of moderate to severe mental health complaints in truck drivers. A media article published by Australasian Transport News (ATN, 2019) hinted at the significant and growing prevalence of truck drivers taking part and being first at the scene of a road traffic incident. OzHelp Foundation (2020) added to this,

identifying traffic hazards, traffic accidents, and other motorists driving into trucks to suicide (also known as suicide by truck, or SBT; McKay, 2019; National Road Safety Partnership Program, 2019; Radun et al., 2020) as significant contributing factors for poor mental health for these truck drivers. Finally, Worthington (2019) and Radun et al. (2020) add that truck drivers involved with SBTs have reported guilt, flashbacks, depression, and anxiety (including PTSD), which are exacerbated when media reports assume the truck driver is at fault for the road traffic incident.

Unfortunately, a review of the main journal databases did not find any original research reporting on the mental health effects on truck drivers of being the first at the scene of a road traffic incident, nor the recommended intervention for this population.

### **Research Aims**

It is argued in this current paper that the timely intervention initiatives led by Healthy Heads Trucks & Sheds (2021) and FleetComplete (2021) will only be partially successful, if this “hidden” issue of truck drivers often being part of road accidents and/or being first at the scene at road accidents is not formally recognised as a contributing factor to the increasing poor mental health of this population.

Given that the transport industry has been identified as a high-risk industry (SafeWork Australia, 2021) and remains crucial to the prosperity of Australia (Australian Bureau of Statistics, 2020), a scoping review was conducted to explore the following questions:

- What are the psychological sequelae (such as guilt, flashbacks, depression, or PTSD) on any untrained persons (known as active bystanders, immediate responders, or rescuers) who witness or are involved in a trauma incident such as a traffic accident?
- What are the intervention techniques available for this population? and
- What is the effectiveness of these interventions?

Answers to these questions may hint at the effects of being part and/or first on scene at a significant and/or fatal motor vehicle accident for the Australian truck driver.

It is hoped that the results of this scoping review will stimulate further empirical investigations aimed at creating a more accurate understanding of the prevalence of road accidents and its psychological effects on truck drivers and an understanding of what is best practice for intervention programmes for this population,

as well as stimulating policy changes to allow support and interventions for truck drivers who have been first on scene at significant and/or fatal motor vehicle accidents.

## **Method**

### **Review Method**

Given this is believed to be the first review in this topic area, it was argued that a scoping review is the best synthesis method (Munn et al., 2018). A scoping review was chosen over other synthesis methods as it allows both qualitative and quantitative research articles to be included, as well as articles of lesser evidence quality (i.e., grey literature and public information). In so doing, it is hoped the review will reflect a comprehensive and robust summary of all types and grades of knowledge that is relevant to the questions.

### **Search Strategy**

Given the topic is believed to be the first of its kind, a comprehensive search strategy by topic and year only was adopted, not limiting the search by sample, research type, or other filters as is recommended in standardised search strategies such as PICO (Patient/population, Intervention, Comparison, Outcome; Caldwell et al., 2012) or SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type; Cooke et al., 2012). The search included the following databases and open access literature and grey literature: Google, Google Scholar, ProQuest, PsycNET, ScienceDirect, Directory of Open Access Journals (DOAJ), PLoS ONE, Social Science Research Network (SSRN), Open Grey, and Grey Literature Report.

A combination of the following search terms, limited to the years 2011 to 2021, were entered: “(immediate or lay or active) and (responder or rescuer or bystander) and (mental or distress) and (coping or intervention or treatment or post-intervention)”. Further, resources with the following terms were excluded: first, education, and role.

### **Inclusion/Exclusion Criteria**

Inclusion criteria included being published in English and published between 2011 and 2021. Exclusion criteria included if “responder” included first responders in their definition, and if “bystanders” were passive (observers only).

Initially, a total of 261 papers were identified as satisfying the above search inclusion criteria (see Figure 1). Initial reviewing of the titles of these papers identified that 247

papers were not applicable due to not being relevant (e.g., reporting on trained responders). This left 14 papers for further review. A further paper by Barry et al. (2019) was excluded as it reported on the effects of volunteer first responders (who thus had received prior training and support). Three further papers, although relevant to the topic, were excluded as they did not report on psychological sequelae or interventions following an incident (refer Ashkenazi & Hunt, 2019; Harris et al., 2020; Khorram-Manesh et al., 2020). Finally, a paper by Feinstein and Storm (2017) was excluded due to its reporting on the psychological effects on journalists who had *witnessed* trauma rather than being active in the reported incident (related to the refugee crisis). A total of nine papers were identified as applicable to the current review and appraised for quality as the next step.

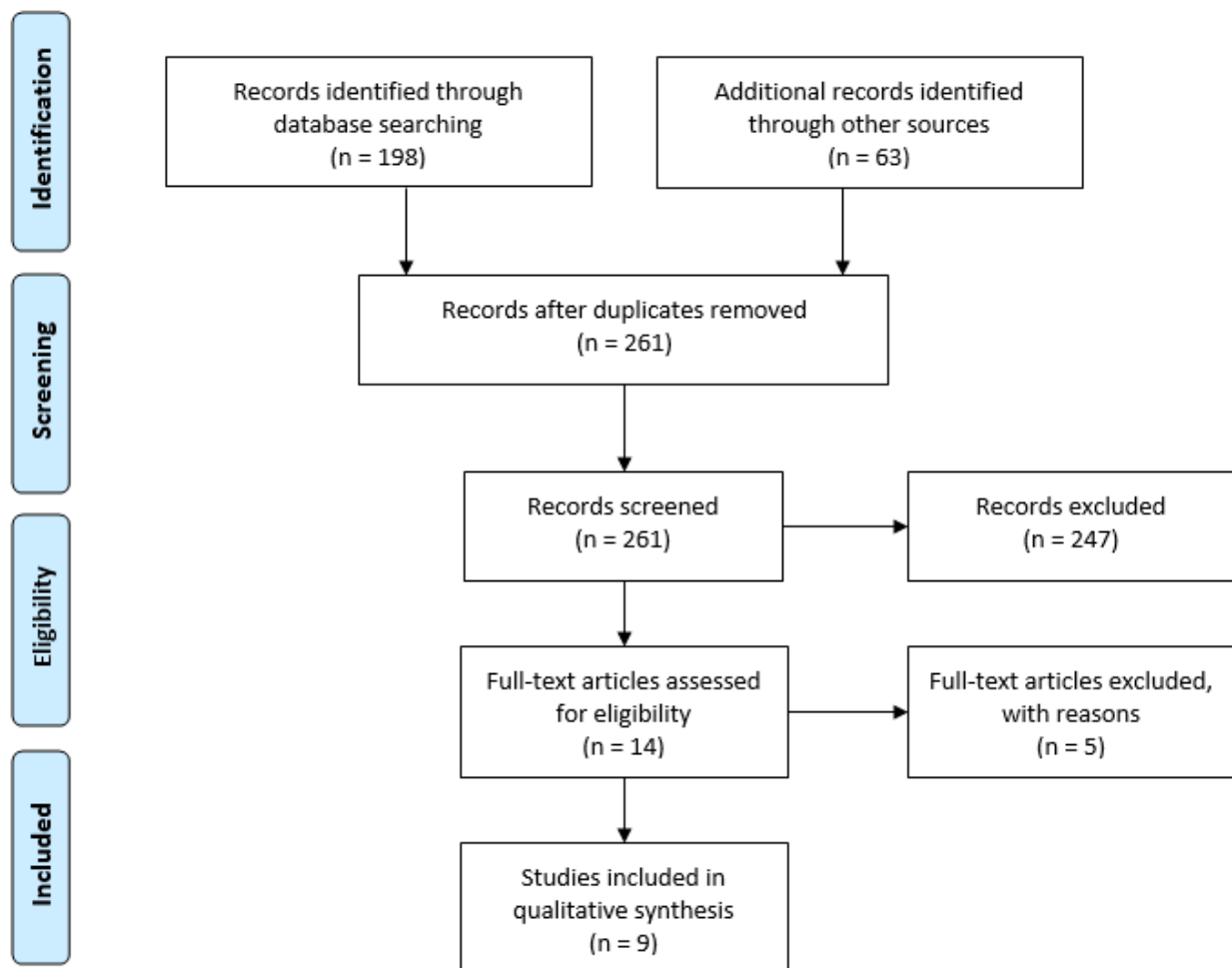
### Quality Assessment

These final nine papers were appraised using several standardised appraisal checklists in order to assess the

credibility of the found sources. For original research papers, the Critical Appraisal Skills Program (CASP, 2018) was adopted. For systematic reviews, the Scottish Intercollegiate Guidelines Network (SIGN) Methodology Checklist 1 (Shea et al., 2007) was adopted. Finally for grey literature, the Guide to Appraising Grey Literature (GAGL; Public Health Ontario, 2015) was used.

The CASP requires reviewers to appraise the quality of empirical qualitative papers, responding to 10 questions with “yes”, “no”, or “can’t tell”. For this report, “yes” was attributed a score of “+1”, “no” was attributed “-1”, and “can’t tell” was attributed “0”. A paper that was “yes” for all 10 answers could be appraised at “+10”. Conversely, a paper that was “no” for all 10 answers could be appraised at “-10”. The higher the score, the higher the quality of the paper being appraised. An example appraisal question within the CASP is “Is a qualitative methodology appropriate?”

Figure 1  
Flow Diagram of Search Strategy



Note. Based on PRISMA (Moher et al., 2009) recommendations.

The SIGN requires reviewers to provide an overall assessment of the methodological quality of a review paper (based on a consideration of 12 questions) as high quality (++), acceptable (+), low quality (-), and unacceptable. Those rated as unacceptable were not included in the current review. An example appraisal question within the SIGN is “At least two people should have selected studies”.

Finally, the GAGL asks the reviewer to assess each piece of grey literature on four questions, answered “yes” or “no”. Similar to the CASP, no quantitative scoring key is provided. For this review, a “yes” answer was attributed “+1” and a “no” answer was attributed “-1”. These results were summed to arrive at a total score. A paper that received a score of “+4” would be one that had been appraised as high quality in the grey literature area. An example appraisal question within the GAGL is “Are references included?”

For each checklist, two of the authors (KA and CP) independently appraised each surviving resource with standard questions assessing for validity, reliability, and relevance. This procedure was followed by a meeting between authors to further discuss any incongruent ratings and arrive at an agreed overall rating. Results are presented in Table 1 below.

**Positionality Statements**

Andrews is a researcher employed at the University of the Sunshine Coast, Australia. Andrews has a background in psychology and counselling. She identifies as an Australian cisgendered female, living in an urban coastal region of eastern Australia. She is not involved in the transport industry and is not affiliated with any organisation involved with the transport industry.

Paganini is an adjunct researcher at the University of the Sunshine Coast Australia, with a strong background in clinical psychology. She identifies as an Australian cisgendered female, living in an urban region of southern Australia. She is not involved in the transport industry and her role was to review the paper and assess the sources used in the paper for validity, reliability, and relevance.

Finally, Sweeney is a trained counsellor and coach in private practice, situated in an urban coastal region of eastern Australia, and identifies as a cisgendered Australian male. Sweeney has a long history in the transport industry. His role in this project was to check for the validity of research finding, ensuring interpretations reflected the experience and interest of the population on which it is reporting.

**Results**

A summary of each source is provided in Table 2 below. Key findings from each source are tabled according to the three initial research questions: (1) What are the psychological consequences on untrained persons who witness or are involved in a trauma incident, (2) what are the interventions currently available for lay rescuers, and (3) what is the effectiveness of these interventions.

**Summary of the Reviewed Sources**

Regarding the first research question, eight of the nine papers reported on significant anxiety and distress symptomatology, including flashbacks, insomnia, social avoidance, and increased arousal. These papers also reported on persistent feelings of guilt and a desire to learn if their efforts were enough, as well as learning of the victim’s eventual outcome. Finally, three of the papers reported the lay rescuers desire to debrief with someone about the incident (such as a mental health professional).

**Table 1**  
Summary of CASP, SIGN, and GAGL Appraisal Protocols by Authors KA and CP

Citation	Type	CASP		SIGN		GAGL		Overall Rating
		KA	CP	KA	CP	KA	CP	
Brinkrolf et al. (2020)	Peer Reviewed Original Article	9	8					8.5
Chen et al. (2020)	Peer Reviewed Original Article	10	10					10
Hall et al. (2013)	Peer Reviewed Original Article	10	9					9.5
Mathiesen et al. (2016)	Peer Reviewed Original Article	9	8					8.5
Mausz et al. (2018)	Peer Reviewed Commentary Article	10	9					9.5
Kragh et al. (2019)	Peer Reviewed Systematic Review			++	++			++
Snobelen et al. (2018)	Professional Association Peer Reviewed Journal Commentary Article					4	4	4
Hernon (2021)	Website					1	1	1
Catch Training (2015)	Training Manual					2	2	2



**Table 2**  
*Summary of Each Source Found According to Three Points of Interest*

Citation	Type of Resource	Quality Assessment Result	(1) Psychological Consequence	(2) Intervention techniques	(3) Effectiveness of these techniques
Chen et al. (2020)	Peer Reviewed Original Article	10	Psychological stress, Flashbacks, Anxiety, Worry, Relief when learning of victim outcome	Post-incident debriefing	Improved ability to cope with emotional reactions
Hall et al. (2013)	Peer Reviewed Original Article	9.5	Distress and discomfort which impacts on daily activities (including driving immediately after incident) Desire to “talk to someone” but this was not offered	Nil	Nil
Mausz et al. (2018)	Peer Reviewed Original Article	9.5	Intrusive memories, Flashbacks, Sleep Disturbance, Social Avoidance, Guilt	Nil	Nil
Kragh et al. (2019)	Peer Reviewed Systematic Review	++	Stress-related symptoms (persistence and degree remain unknown)	Nil	Nil
Brinkrolf et al. (2020)	Peer Reviewed Original Article	8.5	Intrusive recollections, Flashbacks, Increased arousal, Anxiety Severe and recurring feelings of guilt (lessened if reassured at the scene of incident)	Nil	Nil
Mathiesen et al. (2016)	Peer Reviewed Original Article	8.5	Nightmares, Insomnia Weight changes, Unfocused, Intrusive memories, Anxiety, Feeling isolated, Self criticism, Feelings of relief when learning of victim outcome, Desire to talk to a professional, Desire for reassurance that their efforts were enough	Nil	Nil
Snobelen et al. (2018)	Professional Association Peer Reviewed Journal Commentary Article	4	Mental trauma	Suggests a 3 stage lay responder support model (LRSM)	Unknown Observations are that this post-intervention model assists coping with emotional reactions and cognitive perceptions
Hernon (2021)	Website	1	Traumatised	Suggests the same as that offered to first responders	Nil
Catch Training (2015)	Training Manual	2	PTSD	Suggests talking to friend, co-worker, or trained counsellor, Engaging in self care, De-briefing	Nil

Regarding the second research question, only four of the nine reviewed papers commented in this area, two of which received low quality ratings (Catch Training, 2015; Hernon, 2021). Chen et al. (2020) detailed that post-incident debriefing is effective for this population to cope in the aftermath of the incident, and Snobelen et al. (2018) suggests a three stage lay responder support model (LRSM) which has only anecdotal evidence of its effectiveness at this point in time. Finally, the training manual by Catch Training (2015) recommend debriefing

or talking to a trained counsellor, as well as engaging in self-care strategies.

Finally, regarding the third research question, only one paper (Chen et al. 2020) reported on the efficacy of an intervention strategy (post-incident debriefing). Chen et al. (2020) summarised that lay rescuers who had the opportunity to debrief after the event reported increased ability to cope with the emotional reactions and reduced psychological impact.

**Ontology of the “time period” and the “first at scene helper”.** Prior to discussing these results in the discussion, two key phenomena were found not to have ontological consensus in the literature. The first is the period of time between the crisis event and the arrival of the first helper, and the second is the term used to identify those who are first at scene. Regarding the first phenomenon, Ashkenazi and Hunt (2010) use the term “silent response gap” (p. 2) to refer to that time between the crisis event and when the trained first responders arrive. Khorram-Manesh et al. (2020) prefer the term “critical therapeutic window” (p. 1,310), and Hernon (2021) coins the term “disaster gap” to refer to this window of time. The current authors prefer to refer to this window of time as the “critical therapeutic window” as this captures the critical nature of this period of time for help.

The second phenomenon, regarding the term used to identify the first helper, defines this population as “an untrained individual that is unwittingly ‘thrust’ into disaster response due to being at the scene at the time of the incident” (Harris et al. 2018, p. 2), “an individual having provided CPR with no professional obligations in the incident” (Mathiesen et al., 2016, p. 2), “persons who fill a critical silent gap before trained professionals arrive” (Ashkenazi & Hunt, 2019, p. 1), and “on scene, immediately responding, victimised rescuer in an undefined time period that we need to give attention to” (Hernon, 2021). A number of terms have been used to denote those populations defined above, including “bystander” (Brinkrolf et al. 2020; Chen et al., 2020; Hall et al., 2013; Mausz et al., 2018), “immediate responder” (Ashkenazi & Hunt, 2019; Harris et al., 2020; Hernon, 2021; Khorram-Manesh et al., 2020), “lay rescuer” (Chen et al, 2020; Mathiesen et al., 2016; Mausz et al., 2018; Snobelen et al., 2018), “lay responder” (Snobelen et al., 2018), and “citizen responder” (Kragh et al., 2019). The current authors recommend the use of the term “lay rescuer” as this term does not include “responder”, which can infer having some training in the area of disaster response, and does not include the term “bystander”, which can infer being an “observer” only. Finally, it is argued that the term “lay rescuer” reflects the earlier definitions which identify this population as being “untrained”, “unwittingly thrust into the role”, and present during the “therapeutic window”. Thus, this paper will refer to this population as “lay rescuer” going forward, and consider this population as untrained individuals who provide help to those involved in a significant incident during the critical therapeutic window, before first responders arrive.

## Discussion

In response to growing awareness of the poor mental health of truck drivers, there has been recent interest and research in the causality, prevalence, severity, and best practice interventions for truck drivers’ mental health challenges (Comcare, 2021). However, we argued in this paper that a further cause of psychological distress in truck drivers (involvement and/or first at the scene in significant and/or fatal road accident) continues to remain hidden, rendering the consequent psychological effects unknown and unresearched. For this reason, the current scoping review aimed to find what is currently known about the phenomenon of being “first at scene” at an incident (such as a road traffic incident) generally and the psychological complications following such an event, what are the interventions for this population, and the reported effectiveness of these interventions. It is hoped that the answers to these questions will help to better understand the probable impacts of being “first at scene” at road traffic incidents for truck drivers, and the current interventions available that are effective in providing post-intervention to truck drivers who have been or will be impacted following their lay rescuer experience.

### *Psychological Consequences of Being a Truck Driver as Lay Rescuer*

The reviewed papers indicated the common psychological consequences of being a lay rescuer included anxiety, distress, flashbacks, insomnia, social avoidance, increased arousal, guilt, a desire to learn if their efforts were enough, and a desire to debrief after the experience (Brinkrolf et al., 2020; Catch Training, 2015; Chen et al., 2020; Hall et al., 2013; Hernon, 2021; Kragh et al., 2019; Mathiesen et al., 2016; Mausz et al., 2018; Snobelen et al., 2018). This list of symptoms is almost identical to the list of symptoms from Comcare (2021), OzHelp Foundation (2020), Worthington (2019), and Radun et al. (2020) as those suffered by nearly 37% of all truck drivers, with the exception of the final two (desire to learn if their efforts were enough, and a desire to debrief about the incident soon after). It is worth noting that these symptoms are also listed in the DSM5 diagnostic category of PTSD (American Psychological Association, 2013).

Given that the Australasian Transport News (ATN, 2019) hinted at a growing prevalence of truck drivers being first at the scene of a road traffic incident, it is possible that these psychological symptoms reported by truck drivers may also be the result of having to undertake a lay rescuer role. However, given that this role is under-

reported (ATN, 2019; McKay, 2019; Radun et al., 2020; Worthington, 2019), the truck driver as lay rescuer population is thus not being recognised and therefore addressed.

### **Current Interventions Available for the Truck Driver as Lay Rescuer**

The reviewed papers indicated that the only interventions that are currently offered to those who are distressed following a lay rescuer experience include post-incident debriefing (Chen et al., 2020) or a 3-stage lay responder support model (Snobelen et al., 2018). Other, less robust sources (Catch Training, 2015; Hemon, 2021) reiterate the importance of post-incident debriefing, counselling, and self-care strategies. These review findings are promising since post-incident debriefing is one of the many strategies currently offered to distressed truck drivers by the programmes endorsed by Healthy Heads Trucks & Sheds (2021) and FleetComplete (2021) reviewed earlier. This indicates that existing programmes may be effective for intervention strategies related to the role of truck driver as lay rescuer as well, as long as the role of lay rescuer is recognised and included as an incident triggering referral to the above programmes.

### **Effectiveness of Interventions for Truck Driver as Lay Rescuer Distress**

Concerningly, the current scoping review uncovered only one article reporting on the effectiveness of an intervention (post-incident debriefing) for lay rescuer distress (Chen et al., 2020). Post-incident debriefing resulted in an increased ability to cope with ongoing emotional reactions following the incident and reduced psychological impact. Although limited, this result indicates that current interventions offered to the truck driver for distress, via Healthy Heads Trucks & Sheds (2021) and FleetComplete (2021), are potentially effective for the treatment of lay rescuer distress in truck drivers as well, so long as the role of lay rescuer is formally recognised and addressed in these programmes.

### **Truck Drivers as Lay Rescuers: A Summary**

To summarise, this scoping review has identified that psychological consequences of being a lay rescuer (including anxiety, distress, flashbacks, insomnia, social avoidance, increased arousal, guilt, a desire to learn of their efforts were enough, and a desire to debrief after the experience) are almost identical to the commonly reported symptoms of psychological distress in truck drivers. Thus, it is likely that these symptoms for truck drivers may also be the result of an unrecognised but

common role of *lay rescuer*, in which truck drivers are increasingly involved (ATN, 2019; OzHelp Foundation, 2020). Encouragingly, this scoping review has uncovered evidence that a common intervention method currently offered to truck drivers (debriefing) has also been shown to be effective in the treatment of distress as a result of being a lay rescuer in an incident.

## **Limitations and Recommendations**

The conclusions drawn in this paper need to be considered alongside the study limitations. These include the limited number of papers found in this area of lay rescuers and psychological effects. Only one study was found that reported on the efficacy of post-intervention debriefing for lay rescuers. Further, two of the sources included from the grey literature search were low in quality ratings, and thus their findings should be cautiously interpreted.

As a result of these collated findings, there are priority recommendations that need attention. Firstly, truck drivers' own lay rescuer experiences need to be investigated. This includes a better understanding of prevalence, what the truck driver as lay rescuer does during the critical therapeutic window, and what assistance the truck driver as lay rescuer is currently offered once the first responders are on scene. Finally, a fuller understanding of any interventions that are currently offered to the truck driver in the days following the lay rescuer incident is needed.

The results of the above investigations should inform the current post-intervention programmes offered to truck drivers (e.g., Healthy Heads Trucks & Sheds and FleetComplete) so that the lay rescuer role is formally recognised and thus directly addressed within these programmes. Further, outcome research into the effectiveness of these programmes in the treatment of truck drivers who have been lay rescuers in a road traffic incident is urgently needed. Finally, the results of the above research should inform the heavy vehicle transport industry, ensuring these findings are reflected in occupational policies related to the events that trigger interventions offered to truck drivers.

### **Implications**

Truck drivers are vital for the ongoing prosperity of Australia (Australian Bureau of Statistics, 2020), yet this population is also one of the most at risk for mental health complications (SafeWorkAustralia, 2021). This has prompted large scale investigations into the prevalence and severity of mental health problems in



truck drivers (Comcare, 2021). However, this scoping review has highlighted that distress as a result of being a lay rescuer is not a well-known or researched incident contributing to truck driver distress. Thus, more needs to be known about the prevalence of truck drivers at incidents, their role as lay rescuers, their needs post-incident, and whether their response to these incidents exacerbates existing mental health problems or prompts development. Furthermore, this review highlights that there are limited generalist interventions currently outlined in the published literature. Ultimately, the role of lay rescuer needs to be recognised for the truck driver, so interventions can be targeted. By doing so, an opportunity to increase the trauma resilience of this workforce is possible.

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