

## POSITION PAPER

# Critical care nursing workforce in crisis: A discussion paper examining contributing factors, the impact of the COVID-19 pandemic and potential solutions

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**Abstract**

**Aims and Objectives:** The critical care nursing workforce is in crisis, with one-third of critical care nurses worldwide intending to leave their roles. This paper aimed to examine the problem from a wellbeing perspective, offering implications for research, and potential solutions for organisations.

**Design:** Discursive/Position paper.

**Method:** The discussion is based on the nursing and wellbeing literature. It is guided by the authors' collaborative expertise as both clinicians and researchers. Data were drawn from nursing and wellbeing peer-reviewed literature, such as reviews and empirical studies, national surveys and government and thinktank publications/reports.

**Results:** Critical care nurses have been disproportionately affected by the COVID-19 pandemic with studies consistently showing critical care nurses to have the worst psychological outcomes on wellbeing measures, including depression, burnout and post-traumatic stress disorder (PTSD). These findings are not only concerning for the mental wellbeing of critical care nurses, they also raise significant issues for health-care systems/organisations: poor wellbeing, increased burnout and PTSD are directly linked with critical care nurses intending to leave the profession. Thus, the wellbeing of critical care nurses must urgently be supported. Resilience has been identified as a protective mechanism against the development of PTSD and burnout, thus offering evidence-based interventions that address resilience and turnover have much to offer in tackling the workforce crisis. However, turnover data must be collected by

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studies evaluating resilience interventions, to further support their evidence base. Organisations cannot solely rely on the efficacy of these interventions to address their workforce crisis but must concomitantly engage in organisational change.

**Conclusions:** We conclude that critical care nurses are in urgent need of preventative, evidence-based wellbeing interventions, and make suggestions for research and practice.

#### KEYWORDS

burnout, critical care, nursing, resilience, workforce

## 1 | INTRODUCTION

It is estimated that there will be a global deficit of 9.9 million nurses, midwives and physicians by 2030 (World Health Organization, 2016; World Health Organization Office for Europe, 2022). Within OECD (Organisation for Economic Co-operation and Development) countries alone, a shortfall of ~400,000 doctors and ~2.5 million nurses by 2030 is predicted (Scheffler & Arnold, 2019). This is especially concerning for the UK National Health Service (NHS): the UK is the OECD country with the fewest nurses trained per capita, training around 50% less nurses than its European counterparts (Buchan et al., 2019). Furthermore, in 2017, more nurses in the UK were leaving the profession than joining it (Nursing Midwifery Council, n.d.). The problem of high turnover has been cited as a dominant contributor to healthcare workforce shortages (Castro Lopes et al., 2017) and is a global issue (The Health Foundation, 2019a), which is especially prevalent in critical care (Cortese, 2012; Cutler et al., 2021; Stone et al., 2006; van Dam et al., 2013). A 2021 meta-analysis reported that 27% of critical care nurses worldwide were intending to leave critical care nursing (Xu et al., 2021).

While intention to leave is not synonymous with turnover (i.e. the number of employees leaving an organisation), it has been found to be a significant predictor for turnover (Halter, Boiko, et al., 2017; Hom et al., 2017; Tolksdorf et al., 2022). It is therefore often used as an alternative measure to turnover data when these are unavailable (Cohen et al., 2016; Lazzari et al., 2022). In critical care, turnover is a substantial issue. In the UK, for example, a significant number of critical care units have an annual staff turnover of over 20% (and as high as 42% for some) (Cutler et al., 2021), and a recent survey of members of the UK CC3N (Critical Care Network) found that one in two current adult critical care nurses are expecting to leave their current unit in the next 3 years (CC3N, 2022).

## 2 | AIMS

In this review, we will discuss the problem of high turnover among critical care nurses and consider how this relates to nurse wellbeing and the support available for nurses.

### What does this paper contribute to the wider global clinical community?

- The impact of COVID-19 on the critical care nursing workforce has been, and remains, significant.
- As a result, many critical care nurses are intending to leave, or leaving, their current roles in critical care.
- In this paper, we discuss potential solutions which address staff wellbeing, and which may have concomitant benefits for retention, especially highlighting the role of resilience-boosting interventions.

First, we will review evidence regarding the impact of the COVID-19 pandemic on critical care nurses and its association with Post-traumatic stress disorder (PTSD) and burnout.

Second, we will report evidence from research studies investigating the challenges that PTSD and burnout in critical care nurses present for turnover intentions.

Third, we will discuss potential solutions which address staff wellbeing, but which may also have concomitant benefits for turnover, especially highlighting the role of resilience-boosting interventions.

Finally, we generate recommendations for research and practice. We suggest there is a need for future wellbeing intervention research to measure turnover intentions more consistently and recommend that preventative, prophylactic resilience interventions should be offered to Critical Care Nurses.

## 3 | METHOD

To identify relevant peer-reviewed papers, literature searches were undertaken (PubMed, Scopus, PsycInfo & CINAHL), using the terms burnout, post-traumatic stress, healthcare, intensive care, critical care, nurs\*, resilience, wellbeing and intervention (and combinations thereof). Searches were non-systematic. We restricted searches to articles published since 2020 when identifying post-pandemic literature. We reviewed the reference lists of included articles to identify relevant contemporary and contextual studies and reviewed citing

articles to ensure included literature was the most up-to-date available in the area.

## 4 | DISCUSSION

### 4.1 | The impact of the COVID-19 pandemic on critical care nurses: PTSD and burnout

The COVID-19 pandemic has increased the occupational stressors known to be associated with burnout across healthcare settings. In nurses, factors which have been suggested to cause burnout include inadequate staffing levels, incongruence between professional values and reality, low flexibility for shift scheduling, time pressures, poor social support, working 12+ hour shifts and high psychological demands with limited support (Dall'Ora et al., 2015, 2020). Against this wider context, Critical Care has been, and remains, one of the most disproportionately affected clinical areas by COVID-19. Around 5%–10% of patients with COVID-19 have needed intensive care treatment (Alharbi et al., 2020) and mortality rates were as high as 42% during the first wave of the pandemic (Dennis et al., 2021). During the pandemic, critical care nurses have had to work in highly infectious conditions, adjust to higher patient–nurse ratios [both significant predictors for higher burnout and greater intention to leave nursing (Chen et al., 2019)], take the places of family members by filling the void of 'no visiting' restrictions, facilitate emotionally distressing remote communication, and absorb responsibility for training and supervising inexperienced nurses coming to critical care units (newly qualified or re-deployed) (Andersson et al., 2021; Montgomery et al., 2021). Some nurses have also felt conflicted about their ethical obligations to protect their own health and those of their families (Dunn et al., 2020; Newdick et al., 2020), and experienced compassion fatigue especially when caring for patients who were unvaccinated by choice (Alharbi et al., 2020; Moodley, 2021).

The nature of critical care nursing work involves both the indirect, repeated exposure to other people's traumatic events (absorbing patient and family experiences) and the direct exposure to traumatic events (e.g. dealing with tragic, life-changing illness, or an unexpected death of a young person) in the workplace. Thus, it is not surprising that CCNs are at increased risk of developing symptoms of PTSD (Levi et al., 2021). PTSD symptoms can develop due to exposure to a single traumatic event, long-term exposure to multiple events, witnessing a traumatic event affecting someone else, or indirectly through repeated or extreme exposure to aversive details of a traumatic event. PTSD is characterised by persistent negative reminders about the event (e.g. flashbacks), avoidance of stimuli related to the trauma, negative thoughts and feelings, and heightened arousal or reactivity (e.g. hypervigilance or sleep issues) (American Psychiatric Association, 2013). Women are 2.5 times more likely to develop PTSD compared to men (Qian et al., 2022; Warner et al., 2013); considering that the majority of the critical care nursing workforce is female, this is another important consideration.

Recent studies illustrate just how substantial the impact of COVID-19 on Critical Care nurses has been, and remains to be, worldwide. In the UK, Greenberg et al. (2021) examined the mental health of healthcare professionals working in nine UK intensive care units (ICUs). The sample consisted of 709 healthcare professionals (49% of whom were critical care nurses). Out of the nurses, 19% reported suicidal ideation. Furthermore, critical care nurses were significantly more likely to meet screening thresholds for depression (moderate, and severe), anxiety (moderate, and severe) and PTSD, compared to doctors and other healthcare workers in ICUs.

A mixed-methods study from Canada (Crowe et al., 2020) echoed these findings, reporting that 38% of their sample of 109 critical care nurses screened positive for PTSD symptoms, and 57% exhibited significant depression symptoms. The study's qualitative results further revealed the significant psychological consequences of working on critical care units during the pandemic. Anxieties, worries, distress and fear were commonly reported in relation to four areas, which were (1) rapidly changing policy and information, (2) overwhelming and unclear communication, (3) meeting patient care needs in new ways while staying safe and (4) managing home/personal commitments to self and family (Crowe et al., 2020).

In addition to increases in PTSD symptoms, there has also been an increase in burnout among critical care nurses, reflecting increases in burnout in healthcare professionals more generally (Khatatbeh et al., 2022; Qian et al., 2022; Wise, 2022). It is now widely acknowledged that PTSD and burnout are closely linked, their drivers and consequences being similar (Restauri & Sheridan, 2020). Even pre-pandemic, burnout rates were high in healthcare professionals, including critical care nurses (Friganoviü et al., 2019; Galanis et al., 2021; Shin et al., 2018), with data from one large multinational study indicating that around a third of European nurses were reporting burnout prior to the pandemic (Alexandrova-Karamanova et al., 2016).

Burnout is characterised by emotional exhaustion with work, de-personalisation or disengagement from patients, and low personal accomplishment (Maslach & Jackson, 1981). Burnout is more likely to occur when work demands are higher, control over how work is delivered is lower and workplace support is also lower (Bakker & Demerouti, 2007). For critical care nurses, specific occupational factors which have been suggested to cause burnout include the disproportionate involvement in death and dying, high workloads, challenging daily routines, the fast pace at which interventions must be delivered, increased risk of medication errors and the confrontation with ethical dilemmas (Moss et al., 2016; Tolksdorf et al., 2022). These stressors are in addition to factors associated with nursing more generally (e.g. Dall'Ora et al., 2015, 2020).

A longitudinal study from the US illustrates just how dramatic the increase in burnout for nurses has been: Moll et al. (2022) compared the burnout scores of healthcare professionals working in ICUs between 2017 ( $n = 572$ , nurses  $n = 323$ ) and 2020 ( $n = 710$ , nurses  $n = 372$ ). While increases in the prevalence of burnout were found across all professional groups (nurses, physicians and 'other' critical care clinicians) between 2017 and 2020, nurses were found

to have the sharpest increase. Physicians reported significantly better (i.e. lower) burnout scores compared to nurses, and male clinicians also reported significantly better, that is, lower, burnout scores compared to female clinicians (Moll et al., 2022).

## 4.2 | Challenges of PTSD and burnout for critical care nurse retention

Both burnout and PTSD are crucial considerations in the context of the critical care workforce shortages, as research has repeatedly drawn a link between burnout, PTSD and intention to leave the profession (Jung et al., 2020; Levi et al., 2021; Tolksdorf et al., 2022).

A 2021 systematic review and concept analysis by Levi et al. (2021) reported that PTSD in critical care nurses was associated with burnout, and both PTSD and burnout caused nurses to become disengaged from their jobs, eventually leading to greater intentions to leave (paper time span: 2010–2020). These links have been reported in the international nursing literature for close to 30 years (Cameron et al., 1994; Chen et al., 2019; Dall'Ora et al., 2020; Hayes et al., 2006; Janiszewski Goodin, 2003; Shin et al., 2018), as well as for other healthcare professionals around the world (Rouveau et al., 2012; Tabur et al., 2022). Most recently, in China, for example, Pan et al. (2021) found that healthcare staff who were working on the frontline during COVID-19 and developed PTSD symptoms as a result, were twice as likely to intend to leave nursing, compared to those without PTSD symptoms. Shah et al. (2022) reported that COVID-19-related stress was linked with intentions to leave in nurses who were working in high-risk areas in two hospitals in Pakistan (including critical care), and that emotional exhaustion also played a significant role in intentions to leave. In addition, some studies have identified direct links between trauma exposure and intention to leave. These studies include Said and El-Shafei (2021) in Egypt, and Labrague and de los Santos (2021) in the Philippines. In detail, Said and El-Shafei (2021) reported that out of 210 nurses working on the frontline caring for COVID-19 patients, 96% intended to leave the profession (compared with 90% of nurses, who were working in a non-COVID setting in the same city). In addition, Labrague and de los Santos (2021) reported that, among frontline nurses, higher fear of COVID-19 was associated not only with lower job satisfaction, but also greater intention to leave the profession.

These findings show both the magnitude of the issue of nurse retention and turnover in critical care nurses and the complex impact that COVID-19 has had. Furthermore, while these findings raise concerns about the mental wellbeing of critical care nurses, they also raise significant issues for healthcare systems/organisations more broadly. The occupational factors associated with burnout are likely to remain, and become exacerbated, in coming years due to pandemic-induced waiting list backlogs and delayed diagnoses of serious illness. This could lead to potential increases in burnout rates and concomitant nursing turnover. For example, in the UK, the productivity of nurses has increased by 23% in the last decade, but nurse recruitment has only seen an increase of 1% (The Health

Foundation, 2019b). Over this same period, the number of nurses leaving the profession to seek employment elsewhere has also increased (Chen et al., 2019; Nursing Midwifery Council, n.d.; Stone et al., 2006), with critical care being one of the worst affected areas for turnover (Cutler et al., 2021).

## 4.3 | Potential solutions addressing staff wellbeing may have concomitant benefits for tackling turnover

There are well-established solutions to prevent and address both PTSD symptoms and burnout. These can be separated into two broad types of interventions: person-directed and organisation-directed interventions. Person-directed interventions aim to improve an individual's capacity to cope with the demands of their job, which is often achieved via mindfulness or cognitive-behavioural therapy (CBT) programmes. Organisation-directed interventions aim to change organisational structures to alleviate pressure on their workforce, such as increased employee involvement in scheduling shifts, increased flexibility in scheduling or increased involvement of employees in service planning and decision-making (DeChant et al., 2019; Verbeek et al., 2019). Organisation-directed interventions aim to make 'system changes', compared with person-directed interventions which aim to support change within individuals.

Although there is currently no specific systematic review investigating the efficacy of burnout interventions for critical care nurses, there are some systematic reviews that include nurses as part of larger groups of healthcare professionals (Aryankhesal et al., 2019; Awa et al., 2010; Zhang et al., 2020). For example, one recent systematic review (Dreison et al., 2018) in multidisciplinary healthcare staff found that both person-directed and organisation-directed interventions were effective at decreasing overall burnout (Hedges'  $g = .13$ ,  $p = .006$ ), while person-directed interventions were significantly more effective at decreasing emotional burnout, the aspect of emotional exhaustion associated with burnout ( $Q_{between} = 6.70$ ,  $p = .010$ ). Another systematic review which focused on nurses-only found that, overall, person-directed interventions were most effective at reducing burnout (Zhang et al., 2020). While evidence has been unclear regarding the relative benefits of person-directed and organisation-directed interventions, it has been suggested that organisational interventions are foundational (Montgomery et al., 2015; Panagioti et al., 2017; Ramos et al., 2020). Without a healthy organisational culture and reasonable working conditions, person-directed interventions would be unlikely to succeed (Ramos et al., 2020).

There have been fewer studies into PTSD reduction interventions, and a recent scoping review found only eight interventions focused on reducing PTSD symptoms in healthcare professionals (Qian et al., 2022). Of the eight, only one focused on adult critical care nurses (Mealer et al., 2014), while others had non-nurse or mixed samples of healthcare professionals. The study by Mealer et al. (2014) was a single-centre, randomised controlled trial assessing the feasibility of a 12-week multimodal intervention which

included educational workshops, writing therapy, stress-reduction workshops, exercise, and counselling. While the intervention was feasible and acceptable to the CCNs, both the intervention and no intervention control group showed statistically equivalent reductions in PTSD symptoms at follow-up (Mealer et al., 2014). Regarding the distinction between organisation and person-directed interventions, we are aware of no studies which have investigated the impact of organisational changes on PTSD in healthcare professionals.

#### 4.4 | The role of resilience-boosting interventions

A concept that is closely linked with both PTSD and burnout, and has been identified as a protective mechanism, is resilience (Horn & Feder, 2018; Pollock et al., 2020). Resilience is a psychological coping mechanism. Resilient people are those who are able to 'bounce back' from adversity and who can maintain emotional equilibrium during difficult experiences (Johnson, 2016). Resilience interventions are one form of person-directed intervention but aim to be prophylactic (proactive) rather than ameliorative (reactive), unlike burnout or PTSD interventions (Kunzler et al., 2020). There is a strong rationale for delivering resilience focused interventions in critical care nurses, as they are disproportionately exposed to traumatic events. Higher resilience is one of the protective factors against PTSD and healthcare professionals with higher resilience are 18%–50% less likely to experience PTSD symptoms than those with lower resilience (Montgomery et al., 2019). A recent study, by Oginska-Bulik and Michalska (2021) in Poland, showed that higher levels of resilience were significantly linked with lower levels of burnout and lower levels of secondary traumatic stress (i.e. emotional distress of victims taken on by 'helpers') ( $r = -.36$ ) while secondary traumatic stress was positively related to burnout ( $r = .62$ ). These findings highlight the relationship between burnout and trauma, as well as the potentially mediating role of resilience (Oginska-Bulik & Michalska, 2021). The benefits of having a resilient critical care nursing workforce are evident: nurses with higher levels of resilience, or those who have developed effective coping strategies for the stressful critical care nursing environment will be better able to cope, will be less likely to develop poor wellbeing, such as depression, anxiety or PTSD, and will be able to stay in post longer (reducing staff turnover) (Hylton Rushton et al., 2015; Mealer et al., 2017).

As with burnout, there is no systematic review investigating interventions for resilience outcomes in nurses. There are, however, reviews that assess the efficacy of interventions for reducing burnout and increasing resilience in mixed healthcare professional groups (Aryankhesal et al., 2019; Kunzler et al., 2020). There are two key conclusions from these reviews. First, online interventions, as well as psychosocial training interventions, are among the interventions that have a positive effect on burnout and resilience. Second, CBT-based resilience interventions and interventions drawing on numerous therapy modalities, including CBT, were the most effective at increasing resilience (Aryankhesal et al., 2019; Awa et al., 2010; Joyce et al., 2018). It seems clear that while ameliorative burnout

and PTSD-focused interventions will be needed in the wake of the COVID-19 pandemic, prophylactic resilience interventions will be important for strengthening the workforce for the future, and buffer against the effects of potential future endemics or pandemics via decreases in likelihood of developing burnout and PTSD symptoms. The evidence presented suggests that decreases in burnout and PTSD will also then decrease turnover.

Resilience interventions have been criticised as being out of touch, generic and 'off the shelf', and for failing to address the real challenges faced by healthcare professionals during their work (Balme et al., 2015; Card, 2018; Gridley, 2018). We acknowledge these criticisms and recognise that person-directed interventions cannot, and should not, compensate for failings within the wider organisational structure of healthcare work environments (Dreison et al., 2018). However, we argue that resilience interventions are critical for supporting staff to cope with and manage the intrinsic demands of healthcare work, such as traumatic patient deaths and involvement in patient safety incidents (Johnson et al., 2020).

In our recent studies, we have aimed to address these criticisms, by developing a resilience coaching programme to pro-actively prepare healthcare professionals for the stressful events they are likely to encounter before they occur and provide tools to help them recover afterwards (Johnson et al., 2020; Vogt et al., 2022). Our Reboot (Recovery-Boosting) coaching programme is based on principles of CBT, identified as one of the most effective models for enhancing resilience (Aryankhesal et al., 2019; Awa et al., 2010; Joyce et al., 2018), and the bi-directional resilience framework (Johnson, 2016). Reboot consists of psycho-educational teaching, group workshop(s) and individual coaching calls with qualified therapists, and uses a range of evidence-based techniques, such as postponing worry, identifying and challenging unhelpful thinking style and facilitating flexible thinking, to equip critical care nurses to manage adverse events faced in the workplace. Reboot is not designed to be delivered to multi-disciplinary groups: it is tailored to individual healthcare disciplines (e.g. midwives only; paramedics only) with input from professionals within each discipline.

In the initial evaluation of Reboot, delivered to numerous single healthcare discipline groups, outcomes included confidence in coping with adverse events and resilience. At 4–6-week follow-up, participants across disciplines showed significantly higher levels of confidence and resilience ( $d = .65$ ), compared to baseline. In the qualitative evaluation, participants reflected on the applied value of Reboot, giving practical tools that can be used both at work, and in day-to-day life. The results showed that Reboot can be tailored for different disciplines, is acceptable and can be effective for increasing resilience.

One limitation of the initial evaluation of Reboot was that no nurses or critical care nurses participated in the programme. It was also designed to be delivered in-person, which, during the pandemic and restrictions imposed, was not suitable to be delivered to critical care nurses. To address this, we adapted Reboot to a remote format and tailored it for critical care nurses (Vogt et al., 2022). Results (Vogt et al., *in prep.*) showed that at 9- to 12-week follow-up, participant



critical care nurses had significantly higher resilience and significant decreases in burnout and depression. Of particular note is that participants also had significantly lower intention to leave at follow-up.

This supports our view that tailored interventions such as Reboot, which are evidence-based and easy-to-access, represent a useful route forward for organisations seeking to better support their critical care staff, and potentially reduce turnover. This is especially important for nurses, because research investigating critical care nurse experience found that there currently is a lack of training and preparation for the challenges of the emotionally exhausting work of the Intensive Care Setting (Griffiths, 2019). Greater investments will be needed, both to evaluate such interventions using controlled and rigorous designs and to ensure that such interventions are made widely available if found to be effective.

#### 4.5 | Recommendations for research and practice

Given that higher burnout (and development of PTSD) is associated with higher intention to leave and higher turnover (Chen et al., 2019; Dall'Ora et al., 2015; Hoff et al., 2019), it is therefore plausible that wellbeing interventions of all types may impact turnover. However, this cannot be presumed. In the following, we make recommendations for future research, and for organisations.

#### 4.6 | Implications for research

Our first key recommendation is that the evaluation of wellbeing interventions in the workplace should incorporate actual turnover or turnover intentions as an outcome, as these are not currently measured or recorded as a standard outcome. This failure to record actual turnover could partly be potentially owing to availability of data. While local turnover statistics, such as those for a local unit or hospital, may be readily available to human resources departments at healthcare centres, they are much less readily accessible for research studies; especially in instances where participation in research is not localised to the hospital or done in nurses' time outside of work. A proxy measure that could be used is nurses' intention to leave (i.e. turnover intentions), and although turnover and intention to leave are not synonymous, intention to leave appears to be a significant predictor for turnover across studies (Kivimäki et al., 2007; Nancarrow et al., 2014). One challenge for researchers seeking to measure intention to leave is that there is currently no gold standard measure for turnover intentions, with many studies using ad-hoc measures, often without reports of psychometric properties of the measures (e.g. Treglown et al., 2018). A further issue is that different studies use different nomenclature for their measures, varying from intention to leave or quit, to intention to stay. However, these concepts are not necessarily synonymous: what makes a critical care nurse want to stay is not the same what makes them want to resign (Nancarrow et al., 2014).

Our second recommendation involves the focus of future research. Often, 'wellbeing' or 'turnover' literature do not

communicate, and they are rarely examined together, despite their close links (Brook et al., 2019; Kunzler et al., 2020). The retention literature is also dominated by a focus on early-career nurses, compared to more experienced registered nurses. For example, one systematic review (although not critical care nurse-specific) in 2019 found that there were 53 interventions to reduce turnover/increase retention in early-career nurses (Brook et al., 2019), compared to just 12 identified in a 2014 review for promoting retention of experienced nurses (Lartey et al., 2014). Despite the difference in publication dates between these two reviews, another systematic review (of systematic reviews) in 2017 echoes similar findings regarding discrepancies between interventions for early career versus experienced nurses (Halter, Pelone, et al., 2017). This focus is likely due to the high turnover rates in early-career critical care nurses. However, many experienced critical care nurses will retire early, meaning that there is a loss in qualified, experienced staff coupled with inability to fill posts with comparably experienced nurses (Cortese, 2012; Cutler et al., 2021; Strachota et al., 2003). Therefore, wellbeing and retention interventions need to target critical care nurses of all experience levels.

Third, we recommend that future research should consider gender differences in relation to the receipt of supportive interventions. Overall, men are less likely to take up supportive interventions than women (Johnson et al., 2022). In relation to PTSD, one systematic review has indicated that men are less likely to benefit from psychological interventions than women, but this was in general populations and not healthcare staff specifically (Wade et al., 2016). Future research will need to grapple with this divergence in order to understand how men can be better engaged and supported, if interventions are to be equally well received and beneficial to people of all genders.

Fourth, we recommend that future research should consider when, that is, at what point in a nurse's career, the delivery of interventions, such as Reboot, is most salient. Indeed, it is often the younger and less experienced nurses that report higher burnout than older, more experienced nurses. While there is an argument to be made that such interventions should be delivered (at least to some extent) during training, the efficacy and utility of delivering these interventions during training is 'of very low certainty' due to lack of high-quality research (Tarfarosh & Khan Achakzai, 2022, p. 214). In our own research, we have experienced much higher drop-out rates in student groups compared to qualified healthcare professional groups during the delivery of Reboot (Johnson et al., 2022). Furthermore, in our work with critical care nurses, the majority of participants suggested that some practical experience, as a registered nurse on critical care units, was necessary to ensure salience and relevance of the programme (Vogt et al., *in prep*; Vogt et al., 2022). Thus, research must investigate this further.

#### 4.7 | Implications for organisations

The critical care nursing workforce is in crisis, and urgently needs the support of their organisations to deal with the consequences of the

pandemic on their wellbeing, as well as to enable critical nurses to continue working in their roles.

As we emerge from the COVID-19 pandemic, many organisations are concerned about their staff wellbeing and retention and are putting strategies in place to support them. Based on our research and collective experience, we urge organisations to invest in evidence-based programmes that address staff wellbeing, burnout, work-related stress, and resilience. The evidence suggests that person-directed interventions are effective, and that interventions targeting resilience may be particularly effective and well-placed within healthcare organisations. In addition, there is now consistent evidence linking staff perceptions of organisational support with decreased turnover intentions (Huang et al., 2019; Kim & Kim, 2021; Madden et al., 2015), showing better organisational outcomes if staff feel their organisations support them. Thus, it can be argued that well-pitched wellbeing interventions fit this remit on a macro scale. However, when organisations offer these interventions, they should evaluate whether these interventions are effective for their workforce, for example, by use of questionnaires or interviews with attendees, but also include and evaluate measures of turnover intentions (and actual turnover, if data is available).

Of course, organisations cannot solely rely on the efficacy of these interventions to address their workforce crises but must concomitantly engage in evidence-based organisational change strategies, which can include flexible scheduling, mentorship programmes and access to supervision (Halter, Pelone, et al., 2017; Rickard et al., 2012).

## 5 | CONCLUSION

Staff wellbeing interventions have been under-researched in critical care nurses. However, the current workforce crisis demands that such interventions be prioritised in both practice and research, and that staff should be offered evidence-based, and prophylactic (rather than ameliorative) interventions that can increase resilience. Such interventions can prepare critical care nurses for difficult situations and teach them how to recover from such, without experiencing long-term psychological detriment. In addition, such interventions may decrease the likelihood of developing burnout, which may then decrease staff turnover.

## 6 | RELEVANCE TO CLINICAL PRACTICE

The impact of COVID-19 on the critical care nursing workforce has been, and remains, significant. As a result, many critical care nurses are intending to leave, or are leaving, their current roles in critical care. In this paper, we have discussed potential solutions addressing staff wellbeing, especially highlighting the role of resilience-boosting intervention. Such interventions may also decrease the likelihood of developing burnout, which may then in turn decrease staff turnover.

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The authors have no conflict of interest to declare.

## PATIENT OR PUBLIC CONTRIBUTION

There was no Patient or Public Contribution.

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