INTENS CRIT CARE NUR 78 (2023) 103476

Contents lists available at ScienceDirect

Intensive & Critical Care Nursing

journal homepage: www.sciencedirect.com/journal/intensive-and-critical-care-nursing

Research Article

Factors that may threaten or protect the wellbeing of staff working in paediatric intensive care environments

Liz Crowe [a,b,*,1], Jeanine Young [a,b,c,2], Anthony C. Smith [a,c,d,3], Helen M. Haydon [a,b,4]

[a] Centre for Online Health, The University of Queensland, Brisbane, Australia
[b] Centre for Health Services Research, The University of Queensland, Brisbane, Australia
[c] School of Health, University of the Sunshine Coast, Australia
[d] Centre for Innovative Medical Technology, University of Southern Denmark, Odense, Denmark

ARTICLE INFO

Keywords:
Intensive care
Meaning
Psychological distress
Team
Wellbeing

ABSTRACT

Objective: This study explored the risk and protective factors for wellbeing from the perspectives of multidisciplinary paediatric intensive care unit staff.
Design: Using a qualitative, descriptive study design we purposively recruited a sample of nurses, physicians, and allied health professionals to participate in semi-structured interviews which explored staff perceptions of risk and protective factors relating to their daily paediatric intensive care roles. Data was analysed using thematic analysis.
Setting: Four paediatric intensive care units in Australia.
Findings: Twenty staff were recruited. Braun and Clarke's thematic analysis approach identified perceived risks for wellbeing included a lack of preparation for the role, and clinical situations that contributed to psychological distress, including perceived worst shift, moral distress, non-accidental injuries, and isolation. Themes perceived as protective to wellbeing included: finding the work stimulating and meaningful, belonging to the team, and using humour.
Conclusion: Staff perceptions of wellbeing in the paediatric intensive care unit suggested that risk factors often co-existed simultaneously with protective factors. These results are not consistent with the notion that wellbeing as a phenomenon can be considered on a risk-protection continuum. Strategies that enhance this work as meaningful and stimulating, promote a sense of belonging to the team, and support the use of humour, may assist health professionals to achieve a balance between risk and protective factors for wellbeing.
Implications for clinical practice: Education and training on end-of-life care, and how to have difficult conversations and manage the consistent psychological distress of intensive care work, is essential at orientation and requires regular formal interventions.
Experiencing the work as stimulating highlights the need for advanced scope of practice work. Opportunities for individual and team reflection about the meaning and purpose of their work, and ensuring staff feel valued and experience a sense of belonging to the team, are critical to the intensive care context.

Introduction

It has never been more critical to understand what threatens and protects the wellbeing of health care professionals (HCP) who work in critical care (National Academies of Sciences and Medicine 2019; Hammond et al. 2021; Greenberg et al. 2021). Staff who work in the paediatric intensive care unit (PICU) are faced with child and family grief, loss, death, and tragedy daily (Crowe et al. 2021; Moynihan et al.

* Corresponding author at: Centre for Online Health, Ground Floor Building 33, Princess Alexandra Hospital, Woolloongabba, QLD 4102, Australia.
E-mail addresses: Liz.Crowe@health.qld.gov.au (L. Crowe), jyoung4@usc.edu.au (J. Young), a.smith8@uq.edu.au (A.C. Smith), h.haydon@uq.edu.au (H.M. Haydon).
[1] ORCID: 0000-0002-5270-0389.
[2] ORCID: 0000-0003-3849-3392.
[3] ORCID: 0000-0002-7756-5136.
[4] ORCID: 0000-0001-9880-9358.

https://doi.org/10.1016/j.iccn.2023.103476
Received 18 March 2023; Received in revised form 25 April 2023; Accepted 5 June 2023
Available online 26 June 2023

2019; Ffrench-O'Carroll et al. 2019). Despite extensive research during the last two decades, consensus on how to define or achieve wellbeing, or provide interventions for sustainable enablers of wellbeing for critical care HCP, has remained elusive (National Academies of Sciences and Medicine 2019; Unjai et al. 2022; van Mol et al. 2015; Crowe et al. 2021). Arguably, previous research focused on wellbeing in the workplace has potentially oversimplified concepts related to wellbeing and may misrepresent individual or team wellbeing (Ryff 2014; Dodge et al. 2012). Indeed, staff wellbeing may need to be reconceptualised given the unique and dynamic challenges of the health environment, particularly since the COVID-19 pandemic (Simons and Baldwin 2021; Chari et al. 2018; Unjai et al. 2022). A common assumption is that the absence of negative sequelae equates to wellbeing (Rothenberger 2017; Smith and Reid 2018). Yet, there is evidence that the central determinants of wellbeing are embedded in values, meaning and relationships (Seligman 2018; Dodge et al. 2012; Both-Nwabuwe et al. 2017). These topics remain relatively unexplored in the intensive care unit (ICU) environment (Jarden et al. 2020; Unjai et al. 2022; Crowe et al. 2021).

Recent research, which has addressed the wellbeing of critical care professionals, provides strong evidence to support the need to utilise diverse methodologies, particularly qualitative methods, within critical care settings (Unjai et al. 2022; Crowe et al. 2021; Butcher et al. 2022). Qualitative methodologies allow exploration of complexity, and the role of emotions for HCP, providing a rich narrative to further understand potential risk and protective factors for wellbeing (Ryff 2014; Thin 2018). A recent systematic review which focussed on HCP wellbeing in the adult ICU presented recommendations for future research on the contributors to wellbeing and highlighted the need for studies which extend beyond the United States of America (Unjai et al. 2022). A recent review designed to investigate the prevalence and risk factors of burnout among PICU staff, highlighted that determination of risk factors remained inconclusive; thus, preventing intervention development (Crowe et al. 2021). Further, the authors of this review proposed exploration of staff wellbeing beyond the absence or presence of burnout be undertaken and advocated for the utilisation of qualitative research to further understand risk and protective factors for PICU staff wellbeing (Crowe et al. 2021).

The overarching objective of this study was to address the gaps and limitations identified in existing research relating to PICU staff wellbeing. The specific aim was to explore the risk and protective factors for wellbeing from the perspectives of multidisciplinary Paediatric Intensive Care Unit (PICU) health professionals. The research question that underpins this research is: What are the factors that cause risk of harm to, or provide protection - for wellbeing, from the perspective of staff working in the PICU?

Methods

Study design and ethical approval

A qualitative, descriptive approach supported analysis of data generated from semi-structured interviews with a sample of HCP working in PICU. The Consolidated Criteria for Reporting Qualitative Studies (COREQ) is presented in Supplementary Material 1. Ethical approval for this study was granted from The University of Queensland School of Medicine 2014-SOMILRE-0103, Mater Research Governance RG-14-248, Children's Health Queensland HREC/14/QRCH/40, and Sydney Children's Health Network CHREC/15/SCHN/84.

Setting, recruitment, and participants

Multidisciplinary PICU HCP working in four tertiary paediatric hospitals along the East coast of Australia were purposively recruited (Supplementary Material 2, Demographic Details of the PICUs involved). Participants were invited for a one-on-one interview via work email, posters, and promotion during PICU team meetings. Eligible participants were qualified PICU physicians, nurses, or allied health professionals, employed on permanent contracts in one of the participating PICUs, and who spent >60% of their clinical work in the PICU. Medical trainees and administration staff were excluded as it was determined that these perspectives may be divergent from permanent members of the PICU clinical team. Participant information and consent forms were distributed to interested participants who contacted the research team (Supplementary Material 3).

Data collection

Written consent was confirmed and received at the time of the interview; no participants withdrew their participation. The first author (LC) conducted all interviews in-person in mutually agreed locations (personal home or workplace). The interview guide (Supplementary Material 4) was informed by a review of PICU wellbeing literature (Crowe et al. 2021) and general HCP wellbeing literature (National Academies of Sciences and Medicine 2019; Sonnentag 2015; Dyrbye et al. 2018). Interviews were between 45 and 90 min in duration, audio-recorded and then transcribed. The interviewer was an experienced social worker and doctoral candidate, who had previously worked with ten of the twenty staff interviewed, increasing the need for reflexivity (Guba 1981; Brooks et al. 2018) and peer debriefing (Guba 1981) to understand and work with the influence of assumptions, beliefs and assumed knowledge (Reid et al. 2018; Kanuha 2000). A reflexive diary was used to record impressions, feelings, and points of interest immediately after the interview. Peer debriefing (Asselin 2003) occurred regularly with authors LC, JY, HH & AS throughout data collection and analysis. Due to the sensitive topics being explored, participants were aware of, and had access to, confidential psychological support as required. This information was provided in the participation information sheet and again at the time of the interview; none of the participants requested this service. (Supplementary Material 2). Data saturation was determined to have been reached with 14 participants. Due to the opening of a new children's hospital with a significantly larger PICU with more beds and a larger staff population, a further 6 participants were interviewed to explore if a larger PICU created different attitudes for staff. No key differences were observed in these transcripts. (Supplementary Material 5, Interview Schedule).

Data analysis

Analysis of the interview transcripts occurred inductively and were guided by Braun and Clarke's (2006) six-step framework to thematic analysis (Braun and Clarke 2006). The principal author took notes in a reflexive diary immediately after the interview to record impressions, feelings, and points of interest. Trustworthiness and credibility were adhered to through checking with participants about what had been said, and that it was interpreted correctly (member checking) (Guba, 1981) and contextualised by the PICU environment. Identifiable information was removed. LC, JY and HH independently read the interview transcripts multiple times exploring patterns, commonalities, and outliers in the data and defining codes. All authors attended multiple meetings to define and refine themes. The authors used supervision, peer discussions and mind map exercises to increase robustness (Guba 1981). Reflexivity strategies were a dynamic process throughout the analytic process.

Findings

Twenty PICU staff (9 Senior Physicians, 8 Registered Nurses, 3 Allied Health Professionals) participated in the study. Duration of time working in the PICU ranged from 16 months to 36 years. Most participants had worked in the PICU for over 8 years (n = 15) (Supplementary Material 6, Participant Characteristics). A complex relationship was found in the data between PICU work and staff wellbeing where risk and

protective factors were identified by participants to exist simultaneously.

Two main domains of risk and protective factors for PICU staff wellbeing were identified. Two themes were generated for risk factors that potentially impair staff wellbeing in the PICU. The first was an inability to prepare for the emotional demands and end-of-life care involved in their roles. The second was the acute and chronic psychological distress as a consistent feature for staff due to the nature of clinical work. Themes for wellbeing protective factors in the PICU included identifying the work as stimulating and meaningful, humour as armour and the importance of belonging to the team.

Risk factors for PICU staff wellbeing

Two broad themes identified as risk factors to wellbeing were: feeling unprepared for the role and ongoing psychological distress. Participants described their PICU work as causing psychological distress on a frequent basis, although most participants stated their distress was greater in the earlier phases of their career as they often felt overwhelmed and underprepared for the PICU work.

Nothing can prepare you for the role

Participants spoke of feeling unprepared for the depth of human emotion, the intensity and responsibility of the clinical work and the diversity of skills that was required for PICU clinical work. Rapid acquisition of a broad clinical knowledge of disease, treatments, and technologies to keep children alive was frequently reported as 'overwhelming'. Clinical skills were acquired in parallel to learning how to bear witness and engage in conversations about grief, death, and trauma. Participants were asked if their training prepared them for the PICU work:

> *"No, not a clue, I was overwhelmed! I had a headache for weeks trying to learn all the information"* – Nurse 4.

> *"I had no idea. Not at all, I did not sleep for a week. I'm not kidding. I did not sleep for a week. I was on edge 80% of the time. I cried in the Unit once"* – Intensivist 7.

Participants suggested that working intimately with children and their families, particularly during end-of-life care, added a layer of complexity and emotional responsibility to the role. Participants expressed how their role in the death of a child often felt surreal.

> *"Definitely never in my life would I have thought that I would be working knowing this child is going to die. There were a lot of things that I didn't see would happen"* - Allied Health Professional 2.

Reflecting on their university training and clinical placements several participants acknowledged that, prior to working in PICU, they had lacked the maturity and context to understand the importance of learning how to engage in difficult conversations or end-of-life care.

> *"I don't know* [that] *if we had, how serious we would have taken it? You think at 18 or 19 when you haven't seen anything yet (but you think you know it all), would you listen? You don't get it until you get here"* – Nurse 3.

> *"There was something wishy washy… I remember thinking, I am never going to need this"* - Nurse 6.

Ongoing psychological distress - the grief just stays with you

All participants spoke of experiences of acute and chronic psychological distress impacting their wellbeing due to various elements of clinical work. Four subthemes were generated from the data which related to participant perceptions of what contributed to psychological distress: distressing clinical cases (*the stories that linger*); moral distress (*why are we doing this to children*); Non-accidental injuries (*the horror of NAI*); and a sense of isolation in not being able to share PICU experiences beyond their colleagues (*no-one wants to hear what we do*).

The stories that linger – Distressing Clinical Cases.

All participants could recall and describe in vivid detail their 'worst' shift or clinical case. Senior staff recalled cases that continued to impact them years or decades after the event. Interestingly, cases recalled were consistently from the early phases of PICU careers suggesting an adaptation phase or developmental component to learning to cope with the grief and emotional aspects of critical care. The participants stated that day to day, these cases were safely in the recesses of their mind.

However, memories of these cases were easily recalled and could be disruptive and distressing.

> *"Some deaths just sit with you. You learn over the years to cope, but I am lucky I didn't damage myself in gaining that knowledge"* – Nurse 1.

> *"I have a whole list of cases that still trigger me, but they are from being a registrar, from my early days"* – Intensivist 5.

Why are we doing this to children? - Moral Distress.

Nursing and allied health participants highlighted their feelings of powerlessness and distress at requests from medical staff to provide what they perceived to be futile, invasive interventions on babies and children who had either life-limiting or terminal conditions not compatible with life. Nursing participants expressed a burden of responsibility for not being able to advocate for different patient outcomes. Nursing participants used highly emotive language to convey the intensity of their feelings. Researchers have previously described these reactions and feelings as moral distress (Garros, Austin, and Carnevale 2015; Prentice et al. 2016). Medical staff, in stark contrast to nursing and allied health staff, did not speak or identify futility or moral distress in the interviews.

> *"I think we do sometimes flog those poor kids and sometimes I do think it is unethical, and I kind of don't want to look after those kids because I think it is just cruel"* - Nurse 8.

> *"Everyone knows it is a futile thing, but it is the nurses who have to go in there. The medical staff can actually dodge going in there, it is very frustrating that you are not heard sometimes in those situations. Because we are meant to be an advocate for that child"* – Nurse 6.

Non-Accidental Injuries (NAI) are horrendous- Non-accidental Injuries.

Participants were asked if there were any clinical scenarios that were regularly distressing. Consistently, child protection cases were identified as being the most confronting and distressing aspect of clinical work in the PICU. PICU staff spoke of the heartbreak and disillusion of caring for a baby or child who had been assaulted or neglected by a primary caregiver, sometimes for days and weeks at a time.

> *"Child protection cases are pretty horrible to be honest. Those are the cases that do play on your mind when you go home. I think they always affect us pretty strongly"* - Nurse 7.

> *"Child protection is often shocking and distressing, a tiny baby with a fractured skull and bleed, broken bones. You know they have been bashed and beaten. It is very distressing, hard to believe…"* – Intensivist 6.

No one wants to hear what we do – A senses of isolation.

Participants spoke of a sense of isolation due to an inability to share their stories and feelings about their PICU work with anyone beyond their PICU colleagues. Participants reported consciously avoiding discussions of their working day with partners, friends, or family unless they also worked in critical care. Participants stated this created a barrier between work and home which could create a sense of loneliness. Participants spoke of consciously 'protecting' those they love and the general community from the realities of what occurred in the PICU. Participants expressed it was their choice to work in the PICU environment, and so any distress was their personal burden to bear.

"I used to ring friends, but I don't tend to anymore. Especially friends who now have kids, they really don't want to hear about it [PICU work]. *I don't tend to actually talk about my PICU work unless it is with PICU colleagues"* – Nurse 7.

"I do guard what I tell my husband…I only share the detail of what happens here with my PICU friends. It is traumatic and horrible, and I don't want to expose people who haven't chosen this world to it" - Allied Health Professional 3.

Interview data suggested that participants accepted that psychological distress was an inevitable consequence of PICU work and a psychological price they were willing to endure due to a sense of altruism and meaning.

"We have the opportunity to make a significant difference in people's lives. Yes, there are tragedies but if we weren't here more children would die. That is meaningful to me" – Intensivist 9.

Protective factors for PICU staff wellbeing

Participants explored painful memories and challenging topics during the interviews. Yet, the mood and tone of the interviews remained reflective and engaged rather than sombre. Despite the confronting nature of PICU work, participants continued to express energy, pride and humour when discussing their roles. Participants were able to recognise risk factors while emphasising protective factors and embracing protective strategies. Four themes were described within this domain that were potentially protective of staff wellbeing: finding the PICU work stimulating, finding the work meaningful, belonging to the team, and maintaining a sense of humour. Participants described how these four factors created a balance, reducing negative risks and impact to wellbeing.

PICU work is stimulating and challenging

Participants became animated as they described the intellectual stimulation of managing the pathophysiology and disease processes for patients in the PICU. All participants described enjoying the pace, acuity, and demanding nature of the work as part of the attraction of the role. Participants displayed lively facial expressions and changes in speech tone and pace, as they expressed how interesting they found the PICU work.

"I like the challenge of looking after really sick kids. I like the level and depth of information you need to know" - Nurse 7.

"The spectrum is so much more interesting [in the PICU]. *From cardiac disease to trauma, to infection, there is always so much more to play with. You have got a 12-year-old with a trauma and adult physiology, and then you go down to a 3 kg post-operative cardiac patient"* – Intensivist 5.

PICU is the most meaningful work you can do

All twenty participants described their work in PICU as meaningful. Meaning was central to how participants made sense of their PICU careers which represented a protective balance for the tragedy, distress, and fatigue.

"I don't know if there is anything more meaningful as this. I mean this would be as meaningful as anything else that I could possibly be doing. No matter how hard or bad the job gets, I never question the meaning. We have the opportunity to be with people and make a difference in what is easily the worst time of their lives" –Intensivist 8.

Participants expressed feeling 'privileged' to work in partnership with families experiencing the worst times of their lives. Several participants described their PICU roles as more like a vocation than a place of employment.

"It's more than a career. It's a vocation. It shapes your entire life" – Intensivist 9.

Participants described saving the lives of children and providing end-of-life care as the two most deeply meaningful aspects of clinical care. Participants expressed jubilation and pride when an infant or child survived because of their interventions and skills, protecting families from unimaginable distress.

"We had a child a few weeks ago who should have been dead. It was a miracle and she walked out of hospital. The team worked at every single point of care. You can't be involved in that and not think wow, that is meaningful" – Nurse 1.

The PICU staff spoke of their commitment, passion, and responsibility for ensuring that families have the opportunity for a peaceful and meaningful death when their child died. They did not identify a child's death as negatively impacting their wellbeing even though they frequently described it as painfully sad. Participants spoke with passion and commitment about the anticipatory grief work and memory making they conducted and how humbling and rewarding death work could be.

"I don't know, it feels really important [being involved in the death of a baby]. It's weird but it is a real privilege if you can do that for someone. Everyone says to you "Oh how do you do that?" and you kind of feel a little proud, like you work in a good place. It is really special. Very meaningful. I have a passion for providing a good death" – Nurse 5.

Belonging to the PICU team

All participants extended the role of meaning to include the important relationships and bonds they had with PICU colleagues. Participants described how belonging and being valued by their PICU peers normalised their emotions and validated their experiences.

"The other component of it being meaningful is belonging and working as a team. This sense that we are all in this together. Let's just get through today because we are here to help others, that is part of what is meaningful" – Intensivist 5.

Those interviewed reported being able to debrief with their peers as the most valuable intervention to manage PICU work. Relationships with other PICU colleagues appeared protective of long-term survival in the role. The work was seen as a multidisciplinary effort. The collective experience of PICU work created a level of meaningful intimacy, achievement, and connection with colleagues. Participants reported the connections with colleagues were not replicated elsewhere in their lives. There was a sense of exclusivity in belonging to the specialised PICU team.

"I think being a team, that sense of belonging. I draw strength from that. I go into the tearoom, and I have a sense that I am protected. Those people on the ground, that teamwork, they get you, and I find that very important" – Allied Health 2.

Using humour as armour

All twenty participants identified that humour was an intentional mechanism used for coping with the realities of PICU work. Participants described using 'black' or macabre humour as a source of 'armour' to mask and juxtapose the 'comedy and tragedy' of PICU work. Humour created an incongruity for individuals and the team to escape the grief and tragedy of the PICU work.

"Yeah, black humour definitely. I think it dulls it down and makes it (the trauma) less significant. It probably masks how bad it can get, how horrible and how tragic it can get" – Nurse 6.

"Oh, black humour is the number one thing in PICU! You know you just want to direct that really traumatic situation on to, not a positive, but fun; it seems to make that memory easier, easier to digest and make sense" – Allied Health 2.

Discussion

The psychological health and wellbeing of PICU staff has important implications on the provision and quality of care provided to critically ill children and their families (Jones et al. 2019; Crowe et al. 2021; de Lima Garcia et al. 2019). The findings of this qualitative study strongly suggested that risk and protective factors may exist simultaneously for HCP in the PICU.

There were two broad themes for risk factors for wellbeing: *feeling unprepared for the PICU role* and the *psychological distress* that may arise from a variety of clinical PICU experiences. Participants identified their early PICU career as a time in which they felt particularly overwhelmed, or experienced acute distress. Participants reported feeling unprepared and lacking the psychological and communication skills to cope within the environment. Inadequate preparation and training for paediatric end-of-life care communication, processes and management of subsequent emotions have been previously reported as potential contributors to distress and harm for staff (Chew et al. 2021; Hollingsworth et al. 2018). There is evidence health communication training offered at an undergraduate level is often viewed by students as less important compared to biomedical aspects of the degree (Woodward-Kron et al. 2013; Silverman 2009). Biomedical education is often prioritised for orientation of HCP despite recognition that understanding and managing personal emotions are central to the development of being a HCP (Kilbertus et al. 2022).

Participants expressed a belief that psychological distress is a salient and consistent feature of PICU work. Critical care staff reportedly have higher rates of psychological distress due to exposure to trauma and end-of-life care (van Mol et al. 2015; Chuang et al. 2016; Jones et al. 2019) with increased risks for those who work with children (Ffrench-O'Carroll et al. 2019; Dryden-Palmer et al., 2020). Consistent with previous research this study's findings suggested that distress may be more intense and last longer when experienced in the early stages of a career (Chew et al. 2021; Facey et al. 2015). Findings in this study also support existing research that psychological distress in PICU is caused by the emotional burden of tragic cases (Mu et al. 2019; Groves et al. 2022) and moral distress (Mu et al. 2019; Gagnon and Kunyk 2022). Importantly, participants in this study, highlighted that child protection cases were the most distressing clinical work they encountered. This distress was frequently compounded by a sense of isolation, as staff did not feel able to share these experiences with family and friends. To date, responsibility for the resolution of, and interventions for, workplace psychological distress largely remain with the individual due to organisational failure to provide formal processes to respond to distress in the PICU (Bloomer et al. 2016; Chew et al. 2021). Results from a 2022 systematic review into effective interventions for reducing moral distress in critical care identified that education, mentoring, debriefing, and participation and training in ethics were all beneficial to the reduction of moral distress and is an area which requires further research (Zeydi et al. 2022).

Protective factors for wellbeing were broadly described as finding the PICU work intellectually stimulating, and meaningful, belonging to the team and the importance of humour. Achieving a sense of mastery in one's work (Sonnentag 2015; Seligman 2018), and the opportunity for ongoing personal development (Ryff 2014; National Academies of Sciences and Medicine 2019) are central characteristics for wellbeing. Previous critical care studies have highlighted that work that is stimulating is often perceived as being protective of staff wellbeing (Highfield 2019). Critical care literature frequently suggests that the pace and demands of intensive care work are related to burnout and negative wellbeing (van Mol et al. 2015; Chuang et al. 2016) which is contrary to this study's findings.

Meaningful work is correlated with the cultivation of feeling that life has purpose and a sense of direction and is foundational to the presence of wellbeing (Ryff 2014; Steger et al. 2012). Meaningful work and relationships with colleagues is reported as central to how individuals manage distress and make positive life adjustments (Sloan et al. 2017; Moreno-Milan et al. 2019). This current research demonstrated that experiencing PICU work as meaningful did not eliminate psychological distress, but rather the two experiences could occur concurrently. Contemporary literature indicates that meaningful work is not always pleasant and can occur in challenging or distressing situations (Restauri et al. 2019). This is the first known study in the PICU environment to present the potential important role of meaning for overall staff wellbeing.

Belonging to the PICU team was an important aspect of wellbeing for managing psychological distress, normalising emotions, and validating one's roles. Using colleagues to 'relate and validate' trauma and emotional work that may be unpalatable to the wider community has been previously described (Chew et al. 2021). Seligman (2011) argued that social relationships are the best antidotes to the challenges of life. Colleagues play an important role in trauma and death work because there is a sense of shared solidarity, and an understanding and experience that staff recognise cannot be shared in their normal support networks (Plante and Cyr 2011).

The use of humour was identified as an important adaptive mechanism to cope in the PICU and contributed to overall wellbeing. Humour has previously been reported as a significant coping and self-care strategy in the emergency department (Scott 2007) and palliative care (Mills et al. 2018). Humour as an adaptive strategy to support wellbeing and as relief therapy to psychologically escape health environments, has been previously described (Hardy 2020; Bhattacharyya et al. 2019).

Limitations

This study involved interviews with staff currently employed in the selected PICUs. The study did not extend to staff previously employed by the organisation, who may have left the PICU for work related reasons. Physicians who were training or rotating through the PICU and administration staff were excluded from this study. Both of these groups are invaluable members of the PICU team and contribute to current culture and dynamics and therefore warrant further study. Given variation in healthcare systems across the world, conclusions generated from the experiences of staff working in several Australian PICUs may not be generalisable across all settings.

Conclusion

Wellbeing has been underexplored in PICU and critical care environments. Consequently, confusion remains regarding the development of effective enablers to wellbeing (National Academies of Sciences and Medicine 2019; Kleinpell et al. 2020). This study's findings suggest that rather than risk and protective factors being found on a continuum they may co-exist. Study findings suggest that the PICU may be experienced as an environment of extremes for staff, providing both risk and protective factors for wellbeing throughout employment. With increasing concerns about the recruitment and retention of intensive care staff (Highfield 2019) this research highlights the need for interventions to mitigate risk factors and build on protective factors for wellbeing. Proposed interventions in the ICU environment include orientation and professional development that focus on critical conversations and end-of-life care skills, the need to create space to debrief and reflect on the work, and which build strong relationships within the team.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We would like to thank the PICU staff who participated and the PICU leadership teams who supported the conduct of this study. We would also like to acknowledge the significant contributions of Professor Jane Turner in the early conceptualisation, design, and analysis of this work.

Role of the Funding Source

No funding source to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.iccn.2023.103476.

References

Asselin, M.E., 2003. Insider research: issues to consider when doing qualitative research in your own setting. J. Nurses Staff Dev. 19, 99–103.
Bhattacharyya, P., Jena, L.K., Pradhan, S., 2019. Resilience as a mediator between workplace humour and well-being at work: an enquiry on the healthcare professionals. J. Health Manag. 21, 160–176.
Bloomer, M.J., Endacott, R., Copnell, B., O'Connor, M., 2016. 'Something normal in a very, very abnormal environment' – nursing work to honour the life of dying infants and children in neonatal and paediatric intensive care in Australia. Intensive Crit. Care Nurs. 33, 5–11.
Both-Nwabuwe, J.M.C., Dijkstra, M.T.M., Beersma, B., 2017. Sweeping the floor or putting a man on the moon: How to define and measure meaningful work. Front. Psychol. 8, 1658–1758.
Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qual. Res. Psychol. 3, 77–101.
Brooks, K.S., Dunn, J.R., Amlôt, J.R., Rubin, J.G., Greenberg, J.N., 2018. A systematic, thematic review of social and occupational factors associated with psychological outcomes in healthcare employees during an infectious disease outbreak. J. Occup. Environ. Med. 60, 248–257.
Butcher, I., Saeed, S., Morrison, R., Donnelly, P., Shaw, R., 2022. Qualitative study exploring the well-being experiences of paediatric critical care consultants working in the UK during the COVID-19 pandemic. BMJ Open 12, e063697–e70797.
Chari, R., Chang, C.-C., Sauter, S.L., Petrun, E.L., Sayers, J.L., Cerully, P.S., Schill, A.L., Uscher-Pines, L., 2018. Expanding the paradigm of occupational safety and health: a new framework for worker well-being. J. Occup. Environ. Med. 60, 589–593.
Chew, Y.J., Ling, M.S., Ang, L., Shorey, S., 2021. Experiences of new nurses dealing with death in a paediatric setting: a descriptive qualitative study. J. Adv. Nurs. 77, 343–354.
Chuang, C.-H., Tseng, P.-C., Lin, C.-Y., Lin, K.-H., Chen, Y.-Y., 2016. Burnout in the intensive care unit professionals: a systematic review. Medicine (Baltimore) 95, e5629–e5729.
Crowe, L., Young, J., Turner, M.J., 2021. 'What is the prevalence and risk factors of burnout among pediatric intensive care staff (PICU)? A review. Transl. Pediatrics 10, 2825–2835.
de Lima Garcia, Cintia, Italla Maria Pinheiro Bezerra, José Lucas Souza Ramos, Joseane Elza Tonussi Mendes Rossette do Valle, Maryldes Lucena Bezerra de Oliveira, Luiz Carlos de Abreu, and Mojtaba Vaismoradi. 2019. 'Association between culture of patient safety and burnout in pediatric hospitals', PLoS One, 14.
Dodge, R., Daly, A., Huyton, J., Sanders, L., 2012. The challenge of defining wellbeing. Int. J. Wellbeing 2, 222–235.
Dryden-Palmer, K., Moore, G., McNeil, C., Larson, C.P., Tomlinson, G., Roumeliotis, N., Janvier, A., Parshuram, C.S., 2020. Moral distress of clinicians in Canadian Pediatric and neonatal ICUs*: Pediatr. Crit. Care Med. 21 (4), 314–323.
Dyrbye, L., D. Meyers, J. Ripp, N. Dalal, S.B. Bird, S. Sen. 2018. "Pragmatic Approach for Organizations to Measure Health Care Professional WellBeing. ." In NAM Perspectives, 11. Washington, DC: National Academy of Medicine.
Facey, A.D., Tallentire, V., Selzer, R.M., Rotstein, L., 2015. Understanding and reducing work-related psychological distress in interns: a systematic review. Intern. Med. J. 45, 995–1004.
Ffrench-O'Carroll, R., Feeley, T., Crowe, S., Doherty, E.M., 2019. Grief reactions and coping strategies of trainee doctors working in paediatric intensive care. Br. J. Anaesth. 123, 74–80.
Gagnon, M., Kunyk, D., 2022. Beyond technology, drips, and machines: Moral distress in PICU nurses caring for end-of-life patients. Nurs. Inq. 29, e12437-n/a.
Garros, D., Austin, W., Carnevale, F.A., 2015. Moral Distress in Pediatric Intensive Care. JAMA Pediatr. 169, 885–886.
Greenberg, N., Weston, D., Hall, C., Caulfield, T., Williamson, V., Fong, K., 2021. Mental health of staff working in intensive care during Covid-19. Occup. Med. (Lond.) 71, 62–67.
Groves, K.A., Adewumi, A., Gerhardt, C.A., Skeens, M.A., Suttle, M.L., 2022. Grief in critical care nurses after pediatric suffering and death. Ann Palliat Med 11 (6), 1888–1899.
Guba, E.G., 1981. Criteria for assessing the trustworthiness of naturalistic inquiries. Educ. Commun. Technol. 29, 75–91.
Hammond, N.E., Crowe, L., Abbenbroek, B., Elliott, R., Tian, D.H., Donaldson, L.H., Fitzgerald, E., Flower, O., Grattan, S., Harris, R., Sayers, L., Delaney, A., 2021. Impact of the coronavirus disease 2019 pandemic on critical care healthcare workers' depression, anxiety, and stress levels. Aust. Crit. Care 34, 146–154.
Hardy, C., 2020. Humor and sympathy in medical practice. Med. Health Care Philos. 23, 179–190.
Highfield, J.A., 2019. The sustainability of the critical care workforce. Nurs. Crit. Care 24, 6–8.
Hollingsworth, C.E., Wesley, C., Huckridge, J., Finn, G.M., Griksaitis, M.J., 2018. Impact of child death on paediatric trainees. Arch. Dis. Child. 103, 14–18.
Jarden, R.J., Sandham, M., Siegert, R.J., Koziol-McLain, J., 2020. Intensive care nurses' well-being: a systematic review. Aust. Crit. Care 33, 106–111.
Jones, G.A.L., Colville, G.A., Ramnarayan, P., Woolfall, K., Heward, Y., Morrison, R., Savage, A., Fraser, J., Griksaitis, M.J., Inwald, D.P., 2019. 'Psychological impact of working in paediatric intensive care. A UK-wide prevalence study. Arch. Disease Childhood 105, 470.
Kanuha, V.K., 2000. "Being" native versus "going native": conducting social work research as an insider. Soc. Work 45 (5), 439–447.
Kilbertus, F., King, K., Robinson, S., Cristancho, S., Burm, S., 2022. Understanding palliative care learning: a narrative inquiry exploring health care professionals' memorable experiences. SSM: Qualitative Research in Health 2, 100098.
Kleinpell, R., Moss, M., Good, V.S., Gozal, D., Sessler, C.N., 2020. The critical nature of addressing burnout prevention: results from the critical care societies collaborative's national summit and survey on prevention and management of burnout in the ICU. Crit. Care Med. 48 (2), 249–253.
Mills, Jason, Timothy Wand, and Jennifer A. Fraser. 2018. 'Exploring the meaning and practice of self-care among palliative care nurses and doctors: a qualitative study', BMC Palliat. Care, 17: 63-63.
Moreno-Milan, B., Cano-Vindel, A., Lopez-Dóriga, P., Medrano, L.A., Breitbart, W., 2019. Meaning of work and personal protective factors among palliative care professionals. Pall. Supp. Care 17, 381–437.
Moynihan, K.M., Alexander, P.M.A., Schlapbach, L.J., Millar, J., Jacobe, S., Ravindranathan, H., Croston, E.J., Staffa, S.J., Burns, J.P., Gelbart, B., 2019. Epidemiology of childhood death in Australian and New Zealand intensive care units. Intensive Care Med. 45, 1262–1271.
Mu, P.-F., Tseng, Y.-M., Wang, C.-C., Chen, Y.-J., Huang, S.-H., Hsu, T.-F., Florczak, K.L., 2019. Nurses' Experiences in End-of-Life Care in the PICU: A Qualitative Systematic Review. Nurs. Sci. Q. 32 (1), 12–22.
National Academies of Sciences, Engineering, and Medicine, 2019. Taking Action Against Clinician Burnout: A Systems Approach to Professional Wellbeing. National Academies Press, Washington DC.
Plante, J., Cyr, C., 2011. Health care professionals' grief after the death of a child. Paediatr. Child Health 16, 213–226.
Prentice, T., Janvier, A., Gillam, L., Davis, P.G., 2016. Moral distress within neonatal and paediatric intensive care units: a systematic review. Arch. Dis. Child. 101, 701–708.
Reid, A.-M., Brown, J.M., Smith, J.M., Cope, A.C., Jamieson, S., 2018. Ethical dilemmas and reflexivity in qualitative research. Perspect Med Educ 7, 69–75.
Restauri, N., Nyberg, E., Clark, T., 2019. Cultivating meaningful work in healthcare: a paradigm and practice. Curr. Probl. Diagn. Radiol. 48, 193–215.
Rothenberger, D.A., 2017. Physician burnout and well-being: a systematic review and framework for action. Dis. Colon Rectum 60, 567–576.
Ryff, C.D., 2014. Psychological well-being revisited: advances in the science and practice of Eudaimonia. Psychother. Psychosom. 83, 10–28.
Scott, T., 2007. Expression of humour by emergency personnel involved in sudden deathwork. Mortality 12, 350–364.
Seligman, M., 2018. PERMA and the building blocks of well-being. J. Posit. Psychol. 13, 333–335.
Silverman, J., 2009. Teaching clinical communication: a mainstream activity or just a minority sport? Patient Educ. Couns. 76, 361–437.
Simons, G., Baldwin, D.S., 2021. A critical review of the definition of 'wellbeing' for doctors and their patients in a post Covid-19 era. Int. J. Soc. Psychiatry 67, 984–991.
Sloan, D.H., Brintzenhofeszoc, K., Erin Mistretta, M., Cheng, J., Berger, A., 2017. The influence of relationships on the meaning making process: Patients' perspectives. Ann. Palliative Med. 6, 220–226.
Smith, T.S.J., Reid, L., 2018. Which 'being' in wellbeing? Ontology, wellness and the geographies of happiness. Prog. Human Geography 42, 807–829.
Sonnentag, S., 2015. Wellbeing and burnout in the workplace: organizational causes and consequences. Int. Encyclopedia Social Behav. Sci. 25, 537–540.
Steger, M, Bryan. J. Dik, Ryan.D. Duffy. 2012. 'Measuring Meaningful Work: The Work and Meaning Inventory (WAMI)', *Journal of Career Assessment*, 20: 322-37.
Thin, N., 2018. 'Qualitative Approaches to Culture and Wellbeing.' in E. Diener, S. Oishi and L. Tay (eds.), Handbook of Wellbeing (DEF Publishers: Salt Lake City, Utah).
Unjai, S., Forster, E.M., Mitchell, A.E., Creedy, D.K., 2022. Compassion satisfaction, resilience and passion for work among nurses and physicians working in intensive care units: A mixed method systematic review. Intensive Crit. Care Nurs. 71, 103248.
van Mol, M., Kompanje, E., Benoit, D., Bakker, J., Nijkamp, M., 2015. The prevalence of compassion fatigue and burnout among healthcare professionals in intensive care units: a systematic review. PLoS One 10.
Woodward-Kron, R., Flynn, E., Macqueen, S., Enright, H., McColl, G., 2013. The state of emergency communication skills in teaching in Australian medical schools: Gaps, barriers and opportuniites. Focus on Health Professional Education: A Multi-disciplinary Journal 14, 55–69.
Zeydi, A., Ghazanfari, M., Suhonen, R., Adib-Hajbaghery, M., Karkhah, S., 2022. Effective interventions for reducting moral distress in critical care nurses. Nurs. Ethics 29, 1047–1065.