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The impact of Covid-19 on mental health and well-being in Critical Care Nurses – a longitudinal, qualitative study.

Abstract

Background

The Covid-19 pandemic has had both a psychological and physiological effect on the human race. For those working in healthcare, particularly in critical care, the pandemic has put unprecedented strain on staff. Witnessing suffering during crisis in an organizational setting can be a traumatic experience and critical care nurses often risked, not only their own lives, but their psychological well-being, so that those infected with the virus might have a better chance at survival.

Aim and Objectives

The aim of this study was to explore the challenges to mental health and psychological well-being experienced by Critical Care Nurses during the COVID-19 pandemic.

Study design and method

A longitudinal, qualitative study involving semi-structured interviews with 54 critical care nurses across 38 hospitals in the United Kingdom and Ireland. Interviews were transcribed verbatim and analysed using thematic analysis.

Results

Four key themes were identified which represent the challenges faces by critical care nurses during the COVID-19 pandemic: Lack of control, Psychological trauma, Unexpected leadership, Public-political betrayal.

Conclusion

While public-political praise may lead to a short-term lift in morale for front line workers; where it is not accompanied by practical support in terms of appropriate equipment, leadership, emotional support and renumeration it is likely to be damaging in the longer term.

Relevance to clinical practice

This study has provided a greater understanding of the factors which affected the well-being and mental health of critical care nurses during a global pandemic.

Keywords

Critical care, intensive care, nursing, well-being, trauma, psychological health

1. Background

Pre-Covid data showed that a third of Critical Care Nurses (CCNS) experienced severe burnout, with 86% experiencing one of the three classic symptoms of exhaustion, depersonalisation and reduced personal accomplishment. (Moss et al. 2016). There has been unprecedented demand for critical care services since the onset of the COVID-19 global pandemic in 2020 (Hetland et al. 2020). The global

shortage of CCNs was exacerbated by the pandemic and alternative models of working had to be initiated to manage demand (WHO 2021). In the United Kingdom (UK) this led to the rapid development of a surge staffing model where the usual ratio of one nurse to one patient was stretched to one nurse to up to five patients and indeed sometimes even more (NHS 2020) with attendant negative consequences.

Globally, CCNs have faced multiple challenges which have caused psychological trauma. In a study of Australian and New Zealand critical care nurses, Hammond et al. (2020) found that 28% suffered from moderate to extremely severe stress with high levels of anxiety, depression and post-traumatic stress disorder identified in CCNs globally (Pan et al.2021, DiTella et al. 2021, Caillet et al. 2020 and Crowe. 2021). A survey of 709 multi-disciplinary health professionals by Greenberg et al. (2021) identified that 1:5 critical care nurses reported experiencing thoughts of self-harm and suicide. In comparison to other health professionals, nurses are more likely to suffer from psychological trauma as they spend significantly more time with their patients (Lie et al. 2020; Papa et al. 2020). This is especially true of critical care nurses who experienced increased workload, prolonged fatigue, increased risk of infection, cared for high numbers of end of life patients and supported family members who were unable to visit their loved ones due to COVID-19 infection control precautions (Shen et al. 2020). Current research highlights the impact of lack of management support, inadequate staffing levels due to extreme demand, inability to provide quality care, undertaking tasks with no training, lack of personal protective equipment (PPE) and fear of being infected with COVID-19 with an increase in occupational stress (Stayt et al. 2022; Şanlıtürk, 2021; Bruyneel et al. 2021; González-Gil et al. 2021).

As we now move out of the pandemic, healthcare provision remains under extreme pressure. It is still not fully understood what impact the pandemic has had on the mental health and well-being of critical care nurses. It is crucial that we understand the challenges faced by critical care nurses during the COVID-19 pandemic in order to inform nurse recruitment and retention strategies for the future.

2. Aim and objectives

The aim of this study was to explore the challenges to mental health and psychological well-being experienced by CCNs during the COVID-19 pandemic.

Specific objectives were to:

- Understand the experiences of CCNs through the lens of a global pandemic
- Provide an insight into the challenges faced by CCNs and the impact on their mental health and psychological well-being
- Give a voice to an essential and often unheard-of group of health professionals
- Consider the implications to CCNs and the wider healthcare system of working in an extreme environment which contributes to psychological distress.

3. Methods

3.1 Design

A longitudinal, qualitative design was chosen for this study. Semi-structured interviews provided a rich, in-depth data set to enable insight into the experiences of CCNs. Three phases of interviews were planned with each participant (Phase 1: September/October 2020, Phase 2: January/February 2021 and Phase 3: May/June 2021). Interviews were audio recorded and the same researcher undertook all three interviews with each participant to maintain continuity. Using a longitudinal interview approach

enabled the “capture of critical moments of change and transitions” and enable participants to describe how feelings and situations changed during a highly disruptive and fluid time in their career (Vogl et al, 2018 p.178).

3.2 Setting, sample and recruitment

A purposive sampling method was used with a call on social media by the British Association of Critical Care Nurses (BACCN). 54 registered CCNs who had worked on the Intensive Care Unit (ICU) during the pandemic were recruited. The experience of the participants ranged from two years to over thirty years. The majority of the participants (n=52) worked on ICUs in UK hospitals with the remaining (n=2) working in Ireland. 38 hospitals/ICUs were represented within the study. Recruitment and data collection continued until data saturation was achieved. Data saturation was defined when no new patterns or categories are synthesised from the data (Fush and Nest 2015).

There was expected attrition across the three phases due to the emotional and difficult nature of the interviews and the increased workloads of ICU nurses. 103 interviews were ultimately conducted (54 Phase 1, 29 Phase 2, 24 Phase 3). These lasted on average 75 minutes in phase one, 55 minutes in phase 2 and 30 minutes in phase 3 (which acted as follow up interviews).

3.3 Data Collection

A semi-structured question guide was used for each interview. Examples of interview questions were:

- What have been the most challenging aspects of patient care during the pandemic? (phase one)
- Can you give me an idea about what it feels and sounds like to work on an ICU ward at this point in the pandemic? (all phases)
- Do you feel prepared to handle a third wave of the pandemic? (phase 2)
- How are you coping mentally/emotionally at this stage of the pandemic? (all phases)

The interviews were conducted by all members of the research team, online on a platform of the participants choosing (i.e., Zoom, Teams, Skype) and audio recorded. The team held a regular debrief due to the potentially disturbing and uncomfortable nature of the interviews. Given the subject matter, interviews unintentionally took on a therapeutic form with nurses able to offload experiences and memories to interviewers (Birch and Miller, 2000). Free counselling sessions were offered to the CCNs participating through a trained psychotherapist who was also part of the wider research team.

3.4 Data Analysis

The interviews were transcribed verbatim and cross checked with the audio files. Transcripts were analysed using thematic analysis by XX and independently checked by a second member of the team. Initial emergent areas of interest were noted with transcripts coded line by line. Themes were organized and summarized following analysis of the first few transcripts and a coding ‘template’ was developed. This template served as the basis for the researchers’ interpretation of the data set and

the presentation of findings. This analytical approach ensured clarification and justification, procedural rigor, representativeness, interpretive rigour, reflexivity and evaluation rigour, and transferability (Braun and Clarke 2022).

3.5 Ethics

This study received ethical approval from XXXXX. Potential participants were sent a participant information sheet and given 7 days to decide whether to take part in the research. Participants who accepted had an interview arranged at their convenience. They were free to withdraw without specific explanation. Consent was taken immediately prior to the interview. Quotes were anonymized and participant numbers used to maintain confidentiality.

4. Findings

Four key themes emerged from the data representing the challenges to mental health and psychological well-being experienced by CCNs during the COVID-19 pandemic.

1) Lack of control
2) Psychological trauma
3) Unexpected leadership
4) Public-political betrayal.

Theme 1: Lack of control

When the pandemic was first declared CCNs were unsure about what they would be facing, how many patients they would be admitting to ICU, how sick the patients would be and how they would be treated. There was significant concern about how many patients each CCN would be caring for and what additional support (if any) would be provided. This created anxiety at the unknown and an inability to plan for what the future was going to bring.

"I don't like to be out of control...I was highly anxious and highly frightened about what was going to happen and we were being told that at any point in the pandemic that we could be seeing between 30 and 50 patients coming through the doors and maybe, you know, 30% or 40% of those are going to need to be intubated immediately." (CCN7 Phase 2)

"It was like this alien thing that was coming to attack us and we were on the frontline and we were going to have to deal with all this. We were like, right, bring it on, sort of thing. Well, sorry, I felt a little bit like that, but also absolutely terrified and petrified, thinking, holy shit! But then I was like, I'm going to be there for my team and we're going to get through it" (CCN1 Phase 1)

As patients started to be admitted into ICU's it rapidly became evident that they were high acuity, being admitted in high volumes and often end of life. Despite CCNs "doing their best" patients were unstable and unresponsive to treatment. CCNs felt that they could not influence or control the outcomes for patients.

"It was the fear of the absolute unknown because they were really sick, you were watching them desaturate. As soon as they moved about in bed or repositioning or trying to get them to self –like move onto their side a little bit, man alive, that monitor was dropping..." (CCN6 Phase 1)

"You didn't really understand what was happening with the patient and so you couldn't really achieve the targets you wanted to, because they were so sick, or because we didn't really understand what the virus was doing" (CCN8 Phase 1)

Theme 2: Psychological trauma

It was evident across the dataset that CCNs had experienced extreme trauma. The effect of this trauma spanned the mental health continuum and were evident from the first phase of interviewing.

"I spent the whole shift just like walking around, just doing my jobs, crying. I had a day shift where I was having heart palpitations, I felt like I couldn't breathe. …..kept crying and I was just having really bad –I basically had a couple of panic attacks that day" (CCN9 Phase 1).

'I went for a run to the park… I thought I'd lost my mind. I had to stop running and I was just hysterical crying in the middle of a park and I couldn't calm it down… next morning, from the moment I opened my eyes, hysterical, again' (CCN42 Phase1).

For some participants this psychological trauma was severe and lead to formal diagnosis and management of their mental health.

'I had a really, really down month where I was feeling really suicidal and all I could think in my head was I just want to go into work and get some IV Propofol or IV Potassium and just kill myself' (CCN16 Phase3)

"I made a will because I just thought, what would happen to my daughter if like I hadn't done that...I just felt like really, I had no energy at all, I couldn't get out of bed, I just felt really depressed, I just felt, like I was just living in these moments, of these patients, and then it got to such a point that.... The second week was more nightmares and like flashbacks about my patients... I felt like I kind of like failed my patients and I wanted to be with my patients. I basically threatened to kill myself and [my daughter] by driving into a wall. I was sectioned twice over the summer under a section 2." (CCN16 Phase 1)

The trauma was also felt by staff who had been redeployed into ICU to support the CCN workforce.

"A PICU nurse looked at the patient and went, "I can't do this." And she literally turned and walked off the unit. And I was like, "come back." I said, "no," I said, "don't walk away." I said, "it's just the same as what you're used to, just slightly bit bigger." I said, "all you need to do is get him through the night

and I'm back in the morning," and she's like, "no," she said, "this is too much." She said, "I can't cope with this on my face. I can't cope with this. I can't cope with the death."" (CCN6 Phase 1).

Theme 3: Unexpected leadership

In a context of such uncertainty and sense of limited control CCNs might look to senior staff to act and support them. What was clear was that CCNs were not impressed by the (in)action and support of these senior staff as participants were widely critical of a perceived lack of senior staff support. They felt that they were "abandoned" and "left to get on with it".

"I've been really extremely disappointed in my –not my unit or anyone within our critical care unit, but actually the people higher up within the hospital hierarchy. I've felt really, really disappointed in the support or their lack of support that has been given to me" (CCN9 Phase 1)

'It's almost like they [senior-leaders] hid in the office. … It's almost like you were PPE'd up and they pushed you in and shut the doors, and then they're like, "You've got to stay in there now." …….. Completely abandoned. Honestly, that's the only word I can describe it with, abandoned by the senior team. It was awful.' (CCN26 Phase1)

For many, this lack of supported persisted throughout the different phases of the pandemic.

"I feel there could've been slightly better support from senior nurses, maybe nurses in management positions who definitely had their role to manage things but sometimes we felt that, the more junior staff felt a little bit under-supported from the senior team, yeah." (CCN8 Phase 2)

When support did come many felt it was too late.

"By the time the band 7's and the 8's realised that we were all like broken, it was a bit too late really. What would've been nice for us, if I'd seen some of the 7's or 8's maybe work on the unit, actually working on patients……not one person came to help us" (CCN3 Phase1)

In the absence of senior support, more junior nurses felt compelled to take on leadership roles despite a lack of experience and training.

"The chap who'd been proned three hours beforehand plugged off and his sats went down to about 40%. And all these lovely staff, bless them, were trying to do their best to help and we had a registrar who'd also been out of practice for a couple of years come to help us…..we called for help but no-one was donned at the time. So we had to manage this chap and un-prone him and try and re-ventilate him with sats of 40% and he's becoming quite bradycardic. And, you know, there was no-one to take leadership, so I took leadership of that scenario because I'd got theatre nurses trying to come and take

over from the anaesthetists and trying to bag the patient……….so that was a very, very challenging time. We got him back. He was okay." (CCN7 Phase1)

In order to support this significantly diluted workforce, staff across all professional groups were deployed from other areas of the hospital. Nurses felt that the increased supervision of staff unskilled in managing critically ill patients challenging, increasing their workload and causing significant stress.

"They didn't recognise deterioration. They kept messing up the charts as well because we still have paper charts. Yeah, so it was correcting all of their mistakes, basically, and also looking after them in the sense that some of them were really, really helpful and really got on with it, and some of them were outright dangerous. They wouldn't listen to you and just kind of did their own thing. That was incredibly stressful." (CCN2 Phase 1)

Theme 4: Public-political betrayal.

In addition to local support issues, nurses questioned national public-political support. Participants felt that, despite the "clap for carers" that the nation was encouraged to participate in to show their gratitude for those working on the frontline of the COVID-19 pandemic, this was soon forgotten. It was an empty gesture and quickly abandoned when the general public wanted things to "go back to normal".

"I'm not going to lie, I hated the clapping thing, hated it, with a passion...i thought it was, a twee kind of, kind of almost condescending way of showing your support. I'm getting home at eight o'clock, like eight o'clock, nine o'clock, that's when I want to wind down, I don't want to think about fireworks, I don't want to hear noises, I want everything to be nice and quiet and chill." (CCN11 Phase 2)

"It was almost like it was a bit fake. Obviously when everything came out about the pay rises and support that we've didn't get, that they didn't really acknowledge what we were doing. It was almost like it felt like it was just for show, almost and I think a lot of people felt the same way. It was nice that it was from the public to do it and they were showing their support but I think from members of the government doing it, it was just almost a bit like they were doing it just for a show." (CCN30 Phase 2)

In particular, participants across the entire dataset felt anger that they had been abandoned by the Government and not given the reward that they deserved. Whilst pay was not the only issue highlighted, the lack of financial recompence for the skills and expertise of CCNs was again highlighted across the dataset as impacting on mental health and wellbeing.

"I think it was a big kick in the teeth about the pay, because obviously i've been top band 5 for ages, and I think I got, I think I got £200 I think that was my bit, but i'm thinking, Christ what we've done, I

don't say I wanted a massive pay rise, but I don't think they realised what, how hard we actually do work on the regular day" (CCN3 Phase 1)

"The government's probably the biggest anger we've got. Well, it is for me that we've just been like dismissed now. It feels like that. I'm sure they've got a plan in the future maybe, I don't know, but, you know, then it was like you're definitely not getting a pay rise. Thanks for that, oh, right, okay. Thanks for that. (CCN29 Phase 2)

These diverse strands of pandemic experience – trauma, lack of control, lack of support, forced leadership and public-political betrayal – served to increase the stress, anger and sense of abandonment experienced by critical care nurses. These are the unintended legacy of COVID-19.

5. Discussion

The purpose of this study was to explore the challenges to mental health and emotional well-being experienced by CCNs during the COVID-19 pandemic.

Our participants reported feeling "out of control". They were unclear about the best treatment and management of critically ill COVID-19 patients on the ICU and this caused them distress. Bergman et al (2021) identified that nurses were making clinical decisions about prioritisation of care and subsequently carrying out interventions without the support from the senior nursing or medical team. Furthermore, nursing care in intensive care during the pandemic has been described as de-humanised (Fernando-Castillo et al. 2021) where patients became numbers and where the minimum standards for basic intensive care couldn't be upheld (Bergman et al. 2021). This sub-standard nursing care has had a severe impact on nurses' mental health and wellbeing. Significant numbers of nurses are deciding to leave intensive care and indeed the nursing profession altogether citing high levels of moral and ethical distress, anxiety, depression, disturbed sleep, post-traumatic stress disorder, and occupational burnout (Ezzat et al., 2021; Sharma et al., 2021).

Purely providing additional resource does not ensure that physical or psychological pressure on ICU nurses is alleviated. Contrary to expectation, the provision of extra staff who are not ICU trained can actually increase the stress experienced by nurses. The dilution of nurse patient staffing ratios and the use of non-ICU trained staff redeployed from other clinical areas caused significant stress amongst our participants. Some participants reported moving from a 1:1 model of care (Faculty of Intensive Care Medicine 2019) to a model where one ICU trained nurse was responsible for up to six critically ill patients. In addition, they were also often supervising clinical staff who had no critical care knowledge or experience. Whilst overall, CCNs were grateful that help was made available this was not without its challenges. The experiences of participants in this study echoes others who suggest that the dilution of staffing ratios needed to manage the COVID-19 surge made care delivery suboptimal (Endacott et al. 2021).

An inadequate workforce and the increased responsibility for the supervision of other staff are primary reasons of identified occupational stress (Hammond et al. 2020). The need to rapidly increase capacity of critical care beds particularly in terms of the unfamiliar care context and delivery of tasks alongside increased responsibility (Montgomery et al. 2021). This was further reinforced by Bruyneel et al (2021) and Hoogendoom et al (2021) who both report the challenges associated with an increase in the volume of patients requiring complex care and the associated workload. Von Vogelsang et al. (2021) highlighted that where nurse/ patient ratios were maintained staff felt that the quality of care delivered to patients remained good. It is clearly essential that crisis planning and response needs to

ensure that the right resource and support are provided in a timely manner to reduces the psychological impact on staff. It is also important that future models of "usual" care delivery consider not only the impact on patients but also the impact on staff. Resilient workplaces are essential in reducing occupational stress. Initiatives that promote the use of restorative clinical supervision (RCS) practices such as the UK Professional Nurse Advocate (PNA) role (NHSE 2021) and the US Resilience in Stressful Events (RISE) Programme (Edrees et al. 2016) involve the development of safe, open spaces for restorative discussion. This empowers the clinician to undertake reflective conversations and develop self-efficacy and problem-solving skills. Reflection on personal emotions and practice events can provide strategies to mitigate workplace stress, enhance retention and assist with the management of personal and professional workplace demands (Wallbank & Hatton, 2011; Wallbank & Woods, 2012; Pettit et al, 2015). Findings from the Restorative Supervision Programme review (Wallbank & Woods,2012) support the recommendation that RCS improves mental health and wellbeing of staff: it reduced burnout by 43% and stress by 62% from regional baselines. This could lead to improved working relationships and team dynamics whilst helping staff to manage work/life balance more effectively.

While public-political praise may lead to a short-term lift in morale for front line workers; where it is not accompanied by practical support in terms of appropriate equipment, leadership, emotional support and renumeration it is likely to be damaging in the longer term. Our participants expressed significant anger over the representation of the nursing profession in the media. They felt belittled, spoken about using terms such as "angels" and "heroes". There was a feeling that this was not commensurate with the professional status of nursing nor with the level of expert knowledge and skill needed to be a critical care nurse. This depiction is evident as far back as the mid-nineteenth century with nurses portrayed as angels of mercy (Kalish and Kalish 1983). This construct actually undermines and disempowers the voice and the work of the nursing profession and reinforces the role as one of a female subservient (Stokes-Parish et al. 2020; Girvin et al. 2016).

In order to promote the professionalization of the nursing agenda it is important that the emphasis shifts to one of nurses as skilled critical thinkers, strong leaders, compassionate advocates, expert practitioners, and powerful communicators.

6. Limitations

This study is limited to the views of CCNs and those working in the British Isles (though there is evidence of similar experiences in other occupations and countries (Pan et al.2021, DiTella et al. 2021). Whilst the reasons for the attrition between the three timepoints has been acknowledged and explained this is a further limitation as longitudinal data was lost in these participants. The study does not include staff who were redeployed into critical care to support CCNs. It is acknowledged that this group may also have mental health and psychological wellbeing issues due to their experiences. The study is strengthened by the rigorous application of in-depth research techniques, the multi-site participant recruitment, the longitudinal approach and the use of robust thematic analysis of the rich qualitative data.

7. Implications for Practice

A key challenge for the future is to ensure we explore ways to ensure resilient workplaces with wrap around psychological support for staff. Globally there are initiatives that aim to support caregivers

during significant adversity which should be implemented and evaluated in the critical care environment. Such initiatives include the UK Professional Nurse Advocate (PNA) role (NHSE 2021) and the US Resilience in Stressful Events (RISE) Programme (Edrees et al. 2016). The role of senior leadership is crucial to the success of this and there should be increased value places on visible leadership, practical support, adequate resourcing and alignment between public practice and reward. It also suggests the need to review readiness for large scale national health events.

8. Conclusion

This study has highlighted the significant, and life changing effect COVID-19 has had on CCNs ranging from stress, through anger, abjection and attempted suicide. Participants have described how a perceived lack of senior leadership increased their levels of workplace stress. They discussed how the need to deploy non-specialist staff into critical care, whilst appreciated, was challenging and increased levels of stress. It is evident that as we move out of the pandemic we must consider the critical care workforce strategy for the future. Diluting nurse to patient ratios at time of crisis (and more generally) is not sustainable and has a detrimental effect on the mental well being of our staff. Consideration needs to be given to the development of resilient workplaces and how we can support staff to excel in highly stressful and often traumatic environments. Implementation of initiatives which support restorative practice including the PNA and RISE programmes may have a direct impact on recruitment, retention, staff engagement, compassion fatigue and sickness reduction. In addition, the perception of CCNs and the sense of betrayal they felt by both the general public and in particular elected Governments had a detrimental effect on their wellbeing. As a profession it is vital that we push to ensure our voice is heard and that we have a place the table of those who make policy and operational decisions that affect us.

What is known about this topic

- The critical care environment is a highly stressful, highly technical environment
- The critical care nurse is pivotal to the safe and effective delivery of complex patient care
- The Covid-19 pandemic created unprecedented demand for critical care provision without an associated increase in critical care nursing numbers

What this paper adds

- Critical Care Nurses have suffered significant psychological trauma during and subsequent to the Covid-19 pandemic.
- The increase in demand for critical care beds and the subsequent redeployment of non-critical care staff has added extra stress due to the levels of supervision and support required to ensure safe practice.
- There is widespread displeasure over the disconnect between the popular representations of nurses as angels and heroes and the insufficient governmental response in relation to condition, pay and staffing.

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