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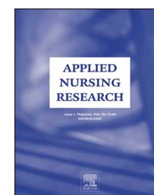

The experiences of critical care nurses caring for patients with COVID-19 during the 2020 pandemic: A qualitative study

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ABSTRACT

Aim: Due to a lack of literature about US critical care nurses caring for patients with coronavirus disease 2019 (COVID-19), the aim of this study was to examine their experiences caring for these patients.
Background: COVID-19 placed nurses at the forefront of battling this pandemic in the intensive care unit (ICU). Emerging international evidence suggests nurses experience psychological and physical symptoms as a result of caring for these patients.
Methods: A qualitative descriptive design was used. Using purposive sampling, 11 nurses from one ICU participated in semi-structured interviews. Interviews were recorded and coded; data were analyzed using content analysis. An audit trail was maintained and member checking was employed.
Results: The experiences among critical care nurses caring for patients diagnosed with COVID-19 were categorized into five themes and subthemes. Emotions experienced was subcategorized into anxiety/stress, fear, helplessness, worry, and empathy. Physical symptoms was subcategorized into sleep disturbances, headaches, discomfort, exhaustion, and breathlessness. Care environment challenges was subcategorized into nurse as surrogate, inability to provide human comforting connection, patients dying, personal protective equipment (PPE), isolation, care delay, changing practice guidelines, and language barrier. Social effects was subcategorized into stigma, divergent healthcare hero perception, additional responsibilities, strained interactions with others, and isolation/loneliness. Short term coping strategies was subcategorized into co-worker support, family support, distractions, mind/body wellness, and spirituaty/faith.
Conclusion: ICU nurses are experiencing intense psychological and physical effects as a result of caring for patients diagnosed with COVID-19 in a challenging care environment. Outside of work, nurses faced pandemic-induced societal changes and divergent public perceptions of them.

1. Introduction

In December 2019 a novel betacoronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), surfaced in Wuhan, China (Centers for Disease Control and Prevention [CDC], 2020a). The virus rapidly spread globally and was characterized by the World Health Organization (WHO, 2020) as a pandemic on March 11, 2020. Healthcare systems were impacted and as the pandemic progressed, nurses were at the forefront of the outbreak in the United States. As of March 11, 2021, there were over 29 million cases confirmed within the United States (US) with 529,267 deaths (Center for Systems and Science Engineering, 2021). Vaccines are now available for nurses and qualifying adults; however, nurses continue to endure the brunt of the pandemic at patients' bedsides amidst national vaccination hesitancy (Coustasse et al., 2021).

The virus primarily spreads through respiratory tract droplets, respiratory secretions, and direct contact and causes a distinct acute respiratory disease named coronavirus disease 2019 (COVID-19) (Guo et al., 2020). Infection symptomatology varies drastically from no symptoms to life-threatening complications including acute respiratory distress syndrome, multisystem organ failure, and ultimately, death (Grein et al., 2020). Care of patients with COVID-19 in the critical care environment may be necessary (Arabi et al., 2020). Multiple challenges are facing ICU teams including the ability to surge staffing, appropriate infection prevention and control, and staff protection (Ranney et al., 2020). The interventions necessary to care for patients are

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predominantly carried out by nurses. This presents occupational risks because nurses' exposures to patients with COVID-19 are extended. As the pandemic continues, adequate supply of personal protective equipment (PPE) may not be available if hospitals continue to reach crisis capacity (Ranney et al., 2020). The rapid spread of the virus coupled with the inadequate PPE supply in the US led the Centers for Disease Control and Prevention to issue guidance to optimize the PPE supply, including conservation strategies and re-use of conventionally disposable PPE (CDC, 2020b).

There is a paucity of research describing US nurses' experiences during the pandemic (Schroeder et al., 2020). The focus of published studies regarding the pandemic consist predominantly of clinical characteristics of the disease (Beigel et al., 2020; Goyal et al., 2020; Guan et al., 2020). Internationally, nurses are experiencing fear, anxiety, stress, physical exhaustion, and feeling powerless to handle patients' conditions (Kackin et al., 2020; Lai et al., 2020; Schroeder et al., 2020; Sun et al., 2020). Several reports, editorials, and cross-sectional surveys gave attention to the psychological and physical effects of the COVID-19 pandemic on US nurses (American Nurses Association [ANA], 2020; Beckman, 2020; Shechter et al., 2020). Therefore, the purpose of this study was to explore the experiences of critical care nurses working in central Texas amidst the pandemic.

2. Methods

A qualitative, descriptive design was used; an a priori theoretical framework was not selected for this study because the researchers were attempting to obtain an unbiased perspective of the nurses' experiences. Institutional Review Board (IRB) approval was obtained from the hospital system where the nurses were employed. A semi-structured interview guide was developed for the interview process. Nurses were recruited from the ICU where COVID-19 care was provided. The study was explained to all potential participants, a waiver of signed consent was obtained from the IRB to ensure participants' confidentiality. Purposive sampling was used to recruit 11 ICU nurses who had cared for COVID-19 patients. The nurses agreed to be interviewed and audiotaped; all audiotapes were transcribed and validated by two researchers. Interviews were conducted in person with both the interviewee and researcher masked, six feet apart; additional interviews were conducted using the encrypted Zoom platform. Saturation was achieved after the 10th interview but one additional interview was conducted to ensure saturation.

3. Analysis of data

Content analysis was employed to analyze the data (Krippendorff, 2015; Saldana, 2013). Constant comparative analysis was used to look for similarities and differences in the narratives. Line by line coding was completed by two members of the research team and the data were subsequently collapsed into relevant themes. The researchers discussed the themes and arrived at consensus. Methodological rigor was maintained through the use of an audit trail, process and analytic memos, peer debriefing, and member checking. At the member checking session, the ICU nurses indicated the results reflected their experiences fully.

4. Results

Most of the 11 critical care nurses identified as female ($n = 7$, 63.6%) and white ($n = 8$, 72.7%), the mean age was 33.6 years (range = 23–60 years). The majority held a Bachelor of Science in Nursing degree or higher ($n = 8$, 72.7%) (Table 1). Data from the nurses caring for COVID-19 patients resulted in five themes: *emotions experienced*, *physical symptoms*, *care environment challenges*, *social effects*, and *short term coping strategies*.

Table 1
Participant demographic characteristics.

Characteristic	Value[a]
Age, mean (range)	33.6 (23–60)
Gender	
Female	7 (63.6)
Male	4 (36.4)
Race/ethnicity	
White	8 (72.7)
Asian	2 (18.2)
Hispanic	1 (9.1)
Level of nursing education	
BSN	7 (63.6)
MSN	1 (9.1)
AD	3 (27.3)
Current years of experience (mean ± SD)	
In practice	7.9 ± 7.8
In ICU	7.2 ± 7.6
In current unit	3.6 ± 2.8
Certified in critical care	7 (63.6)

Abbreviations: AD, Associate Degree; BSN, Bachelor of Science in Nursing; MSN, Master of Science Degree in Nursing; SD, standard deviation.
[a] Value is number (percentage) unless otherwise indicated in the first column.

4.1. Emotions experienced

Emotions experienced were further categorized into subthemes: anxiety/stress, fear, helplessness, worry, and empathy. Sources of these emotions included contracting and/or transmitting the virus, a COVID-19 knowledge and intervention deficit, and caring for patients in an isolated environment.

4.1.1. Anxiety/stress

"But with these patients, because of the risk to myself (crying) and the risk of bringing home something to my family, it is very high stress."

(RN1)

"There is a level of anxiety because there's a lot of unknowns about the disease."

(RN3)

"I guess kind of like an anxiety feeling…I can feel my heart beating in my ears…"

(RN8)

4.1.2. Fear

"I'm just afraid."

(RN8)

"It's scary being exposed."

(RN4)

"I'm terrified. You know seeing a person that's really healthy gasping for air on 100% FiO_2 on bipap and realizing that could be me because I'm being more exposed to this situation than the majority of the population at this moment."

(RN5)

4.1.3. Helplessness

"With everything that we have in nursing and this is the whole brand new illness that we are trying to learn and figure out, everything that we've learned and prepared for wasn't helping them at all (crying)."

(RN2)

"In some ways it's a feeling of helplessness with these patients because you kind of sit there and watch them suffer and there's not a whole lot you can do about it."

(RN6)

"And at those moments, there's nothing to do…you have to stand there…be helpless (crying)."

(RN4)

4.1.4. Worry

"I'm worried about getting the disease, I'm worried about spreading it."

(RN7)

"That would worry me the most, is not being able to stay healthy to continue to help and work and to take care of not just the people, you know, in the hospital, in the ICU. Helping the staff I work with and then my family."

(RN2)

"I'm worried that I'm going to take it home to the people that I care about… I'm just worried that they'll be exposed elsewhere and being that I have seen how it can go, I worry about that…I just worry about my family…"

(RN11)

4.1.5. Empathy

"I learned to empathize with my patient, being in their shoes…That's what happened here, knowing his situation, knowing that he has kids that love him, care for him, the same level that I would love my parents."

(RN5)

"If you put yourself in the patient's shoes I now see this guy coming in with a mask on, goggles on, all gowned up how dissociative does that make them feel and no matter how I try my best to communicate with them, they themselves feel like they are the oddball, the black sheep of society in a sense."

(RN2)

4.2. Physical symptoms

Subthemes of sleep disturbances, headaches, discomfort, exhaustion, and breathlessness were reported by all participants. Sleep was altered in all participants. Nurses believed PPE contributed to discomfort, headaches, and exhaustion.

4.2.1. Sleep disturbances

"Yeah, sleeping wasn't a thing. I didn't really sleep."

(RN2)

"I definitely don't sleep that well anymore. And even when I do sleep, it's just anxious sleep."

(RN5)

"I'd have a hard time falling asleep because…my thoughts would just be racing."

(RN9)

4.2.2. Headaches

"I will have a headache every single day. I mean without a doubt."

(RN4)

"Like your head hurts. I always get migraines after."

(RN8)

"Now that I've started taking care of these patients, I've had three migraines."

(RN11)

4.2.3. Discomfort

"I mean it's uncomfortable and you feel uncomfortable in your skin the whole time you're there."

(RN4)

"You're just all sweaty and it's uncomfortable."

(RN8)

4.2.4. Exhaustion

"You're just exhausted."

(RN8)

"It's just exhausting being in there for so many hours."

(RN7)

4.2.5. Breathlessness

"Air just doesn't feel satisfying...Like it's constant pressure or just constant not feeling satisfied with my breathing."

(RN11)

"Wearing that mask for so long I don't wanna say you couldn't breathe but you just feel like you're breathing heavier and harder… you just feel like you're kind of lightheaded after a while because you have to breathe differently."

(RN4)

4.3. Care environment challenges

An unprecedented care environment challenge due to virus transmission risk was the role of the nurse as a surrogate for family members. Nurses reported challenges providing human comforting connections, experiencing patient deaths, isolation, PPE concerns, care delays, changing clinical practice guidelines, and language barriers.

4.3.1. *Nurse as surrogate*

> "The family sits outside the room and we've kind of pushed the bed as close as we could to the door so they could be as close as they could be. I think three of us were in there…[we] just held their hand and it's just very different. Usually that would be the family there and we would be outside the room giving them their time and talking a little bit more to the family...it's a very weird experience. At least we're there for them... I know a lot of us care a lot for them (crying)."
>
> (RN6)

4.3.2. *Inability to provide human comforting connection*

> "Seeing the patients who are in the hospital for weeks at a time and they haven't seen their family members, all they've seen are nurses that come in in their gown and mask and they don't even hardly even look like humans at that point…that's difficult."
>
> (RN11)

> "It just feels more distant because you're gowned up you feel like you're in a suit all the time. You can't really make that personal connection, they can't see, you can't see, you're in a mask and glasses…"
>
> (RN4)

4.3.3. *Patients dying*

> "It's like you know maybe we eventually will be able to flip them back over and then they're on their back for weeks but then in the end they end up dying anyways. So, yea that's our outcomes are typically people are dying…"
>
> (RN11)

> "COVID caused so many other problems like they couldn't recover from that so they ended up dying anyways. So, it's also like tug of war between oh yeah we fixed it, we like basically fought against the disease and you won but all this other stuff that happened you couldn't win, or you couldn't beat it."
>
> (RN8)

4.3.4. *PPE*

> "That in itself is just terrifying, the fact that I'm supposed to be working in an industry that gives, that has all the equipment that I need to do my job…It's like saying to a firefighter now you go to fight a fire but you gotta use a garden hose... We were too ill prepared as a country in general."
>
> (RN5)

> "I was angry about it [PPE re-use] and upset about it, but now that we've been doing it for months on end, it's kind of just become the norm."
>
> (RN4)

> "Our hospital created the PPE czar where they could make sure they had the PPE more available to us."
>
> (RN 8)

4.3.5. *Isolation*

> "The sheer isolation of it all I think has been the most difficult…"
>
> (RN2)

> "You know it's isolating to them and to us…"
>
> (RN3)

4.3.6. *Care delay*

> "I feel like if I can't get to them fast enough then I feel in my mind that I am part of the problem in the numbers of COVID patients dying."
>
> (RN5)

4.3.7. *Changing practice guidelines*

> "I feel like there's new interventions every week."
>
> (RN8)

> "At first we were intubating everybody and now we're holding off until they really need to be intubated."
>
> (RN10)

4.3.8. *Language barrier*

> "Language line is hard to use…through a plastic bag with somebody that has bipap making all this noise, it's hard to hear for them to hear me through the translator and for the translator to hear them…it's almost impossible."
>
> (RN6)

> "The majority of the population do not speak English, enough to communicate to have a conversation, but not enough with the tools we have to understand that 'hey' you're very sick."
>
> (RN5)

4.4. *Social effects*

The pandemic brought unique challenges to critical care nurses outside of the hospital. Social effects experienced by nurses were categorized into stigma, divergent healthcare hero perception, additional responsibilities, strained interactions with others, and isolation/loneliness.

4.4.1. *Stigma*

> "… someone's gonna spray me with Lysol at the grocery store. I don't have that big of a fear about that… those are things that I have witnessed through the media…fear of being shunned when you're just trying to do your job."
>
> (RN1)

> "You almost feel like the bubonic plague just walking around… that if someone touches you that they're gonna die instantly."
>
> (RN10)

4.4.2. *Healthcare hero perception*

> "Everybody calling us heroes all the time; I don't like it because I don't think any of us feel like a hero right now."
>
> (RN6)

> "I definitely have felt like a hero."
>
> (RN1)

> "I know that everybody's trying to be nice by calling us a hero but it's just like I don't feel that way, I never have felt that way. It doesn't feel like that, heroes are supposed to save everybody, we're not doing that."
>
> (RN9)

4.4.3. *Additional responsibilities*

> "It [homeschooling] was getting frustrating for both of us and I didn't want my wife to have to do that by herself... Because it's challenging, we're not teachers, we don't know how to do that on a consistent basis."
>
> (RN2)

> "So not only was I a nurse…but I was also a teacher…there's no day off…so it's just something you have to power through"
>
> (RN10)

4.4.4. *Strained interactions with others*

> "My attitude towards that dish that was left in the sink or… really stupid stuff…I'd ask my wife, 'why am I the only person that sees this?'"
>
> (RN3)

> "Patience is a lot less…I'm going to say what I've got to say and then walk away. I don't have as much tolerance…"
>
> (RN4)

4.4.5. *Isolation/loneliness*

> "Just being isolated, I can't go do things, I can't go see anybody, the only place I can really go is work. It was just very isolating."
>
> (RN9)

> "What makes me feel more human is having social interaction…and because I work in such a high-risk area, I'm not allowed to have those intimate conversations or intimate meetings."
>
> (RN5)

4.5. *Short term coping strategies*

Short term coping strategies were discussed by all participants. Co-worker support, family support, distractions, mind/body wellness, and spiritualty/faith were reported.

4.5.1. *Co-worker support*

> "Your co-workers, they're along with you during this same crazy time…they are a huge support."
>
> (RN2)

> "Coworkers are everything."
>
> (RN10)

> "I'm able to kind of share [my feelings] with my co-workers and then…all my decompression happens."
>
> (RN5)

4.5.2. *Social support*

> "My husband…being able to talk to him about how I'm feeling…"
>
> (RN1)

> "I've been talking on the phone a lot with my best friend from forever…"
>
> (RN9)

> "My family helps me get through stuff too."
>
> (RN2)

4.5.3. *Distraction*

> "Music helps me a lot. Uplifting music."
>
> (RN1)

> "That's what I do more often, do more cooking and cleaning."
>
> (RN11)

> "Maybe drinking has picked up a little."
>
> (RN10)

4.5.4. *Mind/body wellness*

> "Going on walks with the dogs is nice, or exercising. I like to exercise."
>
> (RN6)

> "I have that hour to myself to meditate…that has helped me tremendously for sure."
>
> (RN10)

> "I work out a lot that is also a good stress reliever for me that kind of helps stress get off my brain so that's always nice."
>
> (RN9)

4.5.5. *Spirituality/faith*

> "Prayer. A lot of prayer (crying)."
>
> (RN1)

> "I rely on the Lord for me personally."
>
> (RN3)

5. Discussion

The nurses that participated in this study were fearful and felt powerless against COVID-19. Across the nation, visitation policies

changed how nurses cared for patients and families. Isolated patients died alone without family members and this deeply affected the nurses' psychological well-being. Physical demands and the use of PPE while caring for patients with COVID-19 caused exhaustion, breathlessness, and discomfort. The psychological and physical effects the nurses reported are consistent with findings of Sun et al. (2020) reporting that nurses in China experienced fear, anxiety, helplessness, fatigue, and discomfort. Emerging qualitative findings suggest that these experiences are shared internationally by nurses (Kackin et al., 2020; Schroeder et al., 2020; Sun et al., 2020). As cases surged in the US between March and July 2020, the American Nurses Association (ANA) surveyed almost 10,000 nurses, of which half stated they were overwhelmed, nearly 30% were experiencing feelings of depression, and over 70% were suffering from sleep disturbances (ANA, 2020). The findings from this study support the ANA's findings. In an environment plagued with pre-pandemic burnout and compassion fatigue, ICU leaders must heed the call to action as the virus exacerbates nurses' strained psychological and physical well-being (Blake, 2020; Moss et al., 2016).

Challenges faced by nurses in the care environment included the inability to provide human comforting connections, experiencing patient deaths, isolation, PPE concerns, care delays, changing clinical practice guidelines, and language barriers. In contrast to PPE challenges reported by the media, participants in this study felt supported by their hospital with implementation of the PPE czar role. Implementing such strategies to readily provide PPE and educate about its use can mitigate fear in future pandemics (Fernandez et al., 2020). Requisite isolation further complicated the use of translation tools with non-English speaking patients and family members. Equipment, isolation, and care delay challenges also were reported by Kackin et al. (2020). Their findings are supported by the results from this study; nurses reported a sense of inability to readily intervene during emergencies. Additionally, in this study nurses attributed untoward patient outcomes to the delay caused by the need to don PPE.

Outside of work, while mainstream media extolled nurses as heroes, some participants endured homeschooling challenges and stigmatizing attitudes by those viewing them as virus carriers. A global conversation has arisen from the public healthcare hero narrative, noting that equating nursing with heroism is damaging to the individuals and the profession (Stokes-Parish et al., 2020). Many participants in this study denounced the hero rhetoric.

A variety of mechanisms were used by nurses to cope with their experiences. Employee Assistance Program resources were appreciated by nurses in this study; however, they did not use them. Nurses were comforted and processed their experiences by discussing them with co-workers and significant others. Strategies within teams sharing the same experience, such as seeking out opportunities to reframe negatives and boost each other's wellbeing, or ending a shift with a check-in on everyone's wellbeing, and creating opportunities for colleagues to meet where there is a high degree of psychological safety may be beneficial (Billings et al., 2020; Groves, 2020; Watson, 2020).

Healthcare crises caused by new infectious diseases, such as the Middle East respiratory syndrome-coronavirus (MERS-CoV), severe acute respiratory syndrome (SARS), and influenza A virus subtype H1N1 (H1N1) have occurred prior to COVID-19 and will likely occur again (Im et al., 2017; Lam & Hung, 2013; Tiwari et al., 2003). Nurses' experiences of physical and emotional exhaustion on the frontlines of past and current crises are similar and may not differ if future pandemics occur (Kim, 2018). Therefore, it is imperative that plans to prepare for future healthcare system crises are holistic and informed by nurses' experiences during this pandemic.

5.1. Limitations

Inherent to the nature of qualitative research, the findings from this study cannot be generalized to other settings and healthcare professionals. Participants in this study were from a single community hospital located in one region of Texas during the early stages of the pandemic. Methods including multiple study sites over a longer duration may lead to alternative findings.

6. Conclusion

The ICU nurse participants experienced a high degree of job stress that manifested as psychological and physical effects. They encountered care environment and social challenges, and developed short term coping strategies as a result of caring for patients with COVID-19. It is essential for healthcare organizations to recognize critical care nurses' experiences during and after the pandemic. Inherently, the ICU is a high stress environment without the overlay of a global pandemic. Caring for COVID-19 patients can cause acute stress among these nurses to become chronic stress manifesting as chronic anxiety and ongoing depression. Healthcare leaders must prioritize being visible to the nursing staff and engaging in communication to understand their concerns and experiences. Nurses must be provided with the physical and emotional resources in their practice environment to combat the short and long-term deleterious effects of caring for COVID-19 patients such as provision of a psychiatric clinical nurse specialist. Local, state, and federal governments must plan for budgetary support for healthcare organizations during disasters and pandemics to provide additional supplies, staffing, and psychological support that may be needed.

Institution where work was performed

St. David's Round Rock Medical Center.

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Jacqueline M. Gordon: Conceptualization, Investigation, Writing-Original Draft, Review & Editing. **Terry Magbee**: Conceptualization, Investigation. **Linda H. Yoder**: Methodology, Conceptualization, Investigation, Writing- Review & Editing.

Declaration of competing interest

None.

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