

## RESEARCH ARTICLE

# Healthcare providers' challenges during the coronavirus disease (COVID-19) pandemic: A qualitative approach

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## Abstract

The uncertain trajectory of COVID-19 has led to significant psychosocial impacts on nurses and other healthcare providers. Given the critical role of these providers in pandemic response, this study sought to gain a better understanding of the challenges faced by healthcare providers caring for adult patients during the COVID-19 pandemic. A descriptive, qualitative study was conducted via semi-structured interviews. A purposeful sample of healthcare providers (n = 23) caring for patients during the COVID-19 pandemic was recruited to participate in interviews via snowball sampling and an information systems-supported recruiting process (e-recruiting). The thematic analysis revealed four themes: (1) Managing isolation, fear, and increased anxiety; (2) adapting to changes in healthcare practice and policy; (3) addressing emotional and physical needs of patients and their families; and (4) navigating evolving workplace safety. New evidence was introduced about nurses practicing outside their usual role. Nurses and other healthcare providers consistently reported increased anxiety during the pandemic. Hospital administrations can proactively support healthcare providers during this and future pandemics by ensuring access to mental health programs, standardizing communication, and developing plans that address equipment and supply availability.

## KEYWORDS

anxiety, COVID-19, healthcare providers, mental health, nurses, pandemics, support

## 1 | INTRODUCTION

The coronavirus disease (COVID-19) pandemic has caused significant disruption to health care worldwide. COVID-19 is a highly pathogenic viral infection caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case of COVID-19 was identified in Wuhan, China, in late December 2019 (Zhu et al., 2020). Coronaviruses, such as severe acute respiratory syndrome (SARS-CoV), Middle East respiratory syndrome (MERS-CoV), and COVID-19, are known to cause respiratory infections in humans. COVID-19 symptoms range from mild to severe, including acute respiratory distress syndrome, septic shock, and systemic multiple organ failure syndrome (Huang et al., 2020). In March 2020, the World Health Organization

(WHO) declared the COVID-19 outbreak a pandemic, leading to local, national, and international travel bans, as well as global lockdowns (WHO, 2020a). Even as countries around the globe began to reopen their borders to international travelers, new cases continued to emerge worldwide. As of September 22, 2020, there were over 31 million confirmed cases of COVID-19 globally, with 7 million cases in the United States (U.S.) (WHO, 2020b). Nearly 1,000,000 people have thus far died from COVID-19 worldwide and over 200,000 people have died in the U.S. (WHO, 2020a).

As the number of patients affected by COVID-19 increased in the U.S., emergency departments and intensive care units in areas with high numbers of cases rapidly reached capacity, calling attention to the critical role that nurses and other healthcare providers (HCPs),

such as respiratory therapists, physicians, and patient care technicians, play in pandemics. Early research has demonstrated that nurses caring for patients with confirmed or suspected COVID-19 experienced both physical and emotional exhaustion related to a sense of helplessness, increased patient workload, and lack of personal protective equipment (PPE) (Sun et al., 2020). HCPs involved in caring for COVID-19 patients also experienced fear of contracting the virus and spreading it to family and friends (Xiang et al., 2020). Jeffrey (2020) found that the COVID-19 pandemic has raised key ethical concerns for HCPs, including the moral dilemmas of isolation, quarantine, and isolation; tension around the duty to care in the face of personal concerns; and the impact of limited resources on the provision of care. Previous research has shown that HCPs caring for patients during epidemics such as influenza A subtype H1N1 (H1N1), SARS-CoV, and Ebola virus experienced increased distress related to fear of contracting and transmitting the disease (Alraddadi et al., 2016; Corley et al., 2010; Khalid et al., 2016; Speroni et al., 2015). Existing literature indicates that HCPs experience psychosocial distress related to lack of access or rationing of healthcare resources, such as PPE, and balancing personal and professional responsibilities (Al-Dorzi et al., 2016; Kang et al., 2018; Y. Kim, 2018; Smith et al., 2017; Stirling et al., 2017; Sun et al., 2020). The added responsibility to reprioritize care toward highly contagious patients adds to the complexity of these ethical dilemmas and increases moral distress (MD) among HCPs (McGowan et al., 2020; Thompson et al., 2006).

Unknowns persist related to the SARS-CoV-2 virus and COVID-19 infection, including the physical, psychological, and economic impact the pandemic will have for years to come for patients, families, and the world at large. Nurses and other HCPs will experience significant physical and psychological impacts as they care for patients and their families. Unresolved ethical dilemmas from previous pandemics and epidemics persist during the coronavirus pandemic, leading to increased distress among HCPs. Therefore, the purpose of this study was to gain a better understanding of the challenges faced by HCPs caring for adult patients during the COVID-19 pandemic.

## 2 | METHODS

This study is part of a larger study that aims to understand the influence of personal and professional experiences caring for patients during the COVID-19 pandemic on HCPs' quality of life (QoL) and MD. This manuscript is a descriptive, qualitative analysis focused on understanding the challenges that HCPs faced at the beginning of the COVID-19 pandemic. Qualitative description allows for a rich, textural description of HCPs' experiences in their own words (Kim et al., 2017; Sandelowski, 2000). Approval to perform this study was granted by the University of Delaware Institutional Review Board on April 29, 2020 (Project #1601049-1). This project was conducted in accordance with the Declaration of Helsinki. Prior to signing the consent form, all participants were informed of the purpose and voluntary nature of participating in this study.

### 2.1 | Sample

A sample of 23 HCPs (see Table 1) from the U.S.A. completed the electronic eligibility survey to ensure inclusion and exclusion criteria were met. HCPs who directly cared for patients at least 50% of their work hours during the COVID-19 pandemic were primarily registered nurses ( $n = 18, 9\%$ ), employed in the acute care setting (see Table 2). Additionally, HCPs were required to speak and read English and have an electronic device with video chat capability.

### 2.2 | Data collection

Study enrollment and interviews took place between May 2020 and July 2020. Electronic recruitment materials were shared on Facebook, on Twitter, and with contacts at hospitals nationwide. After determining study eligibility, participants completed electronic informed consent, followed by demographic and COVID-19 practice surveys via Research Electronic Data Capture (REDCap) (Harris et al., 2009). Once complete, participants were contacted to set up a mutually agreeable time for the interview. Semi-structured interviews were conducted by the first author (M.N.) using an interview guide with open-ended questions (see Table 3) to explore the challenges faced by HCPs as they cared for patients during the COVID-19 pandemic. Interviews were conducted in a private home office recorded via ZOOM video conferencing technology and lasted approximately 1 h and participants were able to speak freely beyond the interview questions. The interviewer used two or three probes per question when necessary to clarify any questions and foster a deeper exploration of the participant's experience. Data collection ceased after data saturation was achieved and no new themes emerged. Interviews were transcribed verbatim using an automatic transcription service then verified by the first author (M.N.). Participants were assured of the confidentiality and anonymity of the data. At the close of the study, participants were entered into a drawing for one of four Amazon electronic gift cards worth \$25 each.

### 2.3 | Data analysis

A thematic approach was used to identify emergent ideas prior to beginning the coding process (Creswell & Poth, 2018). The researchers collected and analyzed data concurrently, allowing the processes to influence each other (Sandelowski, 2000; Vaismoradi et al., 2013). Interviews were organized by the first author and independently reviewed by the first and second authors (M.N. and J.S.) to identify emergent ideas prior to beginning the coding process (Creswell & Poth, 2018). Once the initial interpretation of the data was complete, an inductive coding system was applied to refine the development of themes that emerged in the data (Creswell & Poth, 2018). A list of 25–30 tentative codes were applied across the interview transcripts to assist in the development of themes (Creswell & Poth, 2018). An initial interpretation of the data led to the

**TABLE 1** Sociodemographic characteristics of participating healthcare providers who cared for patients during the COVID-19 pandemic (n = 23)

Sample characteristic	n (%)
Healthcare providers	
Nurses	18(78%)
Respiratory therapists	2(9%)
Patient care/Emergency technicians	2(9%)
Physicians	1(4%)
Gender	
Agender	1(4%)
Female	18(78%)
Male	4(17%)
Locations of participants	
Delaware	3 (13%)
Florida	2 (9%)
Illinois	2 (9%)
Indiana	2 (9%)
Kansas	1 (4%)
Maryland	4 (17%)
Minnesota	1 (4%)
Pennsylvania	3 (13%)
Tennessee	1 (4%)
Texas	1 (4%)
Utah	1 (4%)
Washington	2 (9%)
Education level	
Some college/certificate	2(9%)
Associates degree	5(22%)
Bachelor's degree	9(39%)
Advanced degree	7(30%)
Relationship status	
Single	3(13%)
In a relationship (not cohabitating)	2(9%)
In a relationship (cohabitating)	5(22%)
Engaged (cohabitating)	3(13%)
Married	8(35%)
Divorced	2(9%)
Children	
None	15(65%)
One	3(13%)
Two	4(17%)
Three	0(0%)
Four	0(0%)
Five	0(0%)
Six or more	1(4%)
Voluntary self-isolation from family	
Yes	10(43%)
No	13(57%)

**TABLE 2** Workplace characteristics of participating healthcare providers who cared for patients during the COVID-19 pandemic (n = 23)

Sample characteristic	n (%)
Hospital: number of beds	
Less than 100 beds	3(13%)
100–499 beds	9(39%)
500 or more beds	6(26%)
Other/not indicated	5(22%)
Years in practice	
2 years or less	6(26%)
3–10 years	8(35%)
11–20 years	6(26%)
21+ years	3(13%)
Change in practice area due to COVID-19 <sup>a</sup>	
Yes	13(57%)
No	10(43%)
Type of new PPE <sup>b</sup> available each shift	
N95	11(48%)
Powered air purifying respirator	5(22%)
Full face shield	11(48%)
Goggles	7(30%)
Gown	13(57%)
Gloves	13(57%)
Impervious shoe covers	7(30%)
Type of PPE <sup>b</sup> reused each shift	
N95	10(43%)
Powered air purifying respirator	3(13%)
Full face shield	8(35%)
Goggles	7(30%)
Gown	2(9%)
Gloves	0
Impervious shoe covers	0

<sup>a</sup>Moved from one unit to another or unit changed to a COVID unit.

<sup>b</sup>Personal protective equipment.

identification of emergent concepts including fear, practice issues, patient concerns, and safety forming the basis of the themes (Creswell & Poth, 2018). Intercoder agreement was established by using an iterative process of recoding, rereading, and reanalysis of transcripts, which yielded four final themes. Intercoder discrepancies were resolved with the third author (L.D.), who is a clinician. For the final phase of thematic analysis, the authors choose participant examples for each theme as it related to the purpose of this study.

## 2.4 | Trustworthiness

The consolidated criteria for reporting research (COREQ) checklist was used to ensure quality reporting in the study (Tong et al., 2007).

**TABLE 3** Semi-structured interview questions

1. How has daily life changed for you since the start of the pandemic?
2. How would you describe your current state of health?
3. How is your family doing right now?
4. What was your job normally like before COVID-19?
5. Walk me through how you felt when you heard you would be caring for COVID + patients.
6. How do you typically cope and handle stress?
7. How have you been coping with stress related to caring for COVID + patients (i.e., dealing with traumatic events, risk of contamination, operating in draining environments and people's attitudes towards you when returning home)? Please give examples.
8. Tell me about any concerns for your personal safety.
9. What was your experience with PPE?
10. Tell me about the type of support that is/was available to you at your worksite.
11. What information, education, or training did you and your healthcare colleagues receive prior to working with COVID-19 patients?
12. How have changes in policies and procedures related to COVID-19 influenced your ability to provide patient care?
13. How has the COVID-19 pandemic influenced changes or improvements to the delivery of patient care at your hospital?
14. How has your organization made things easier for you during this time?
15. How has COVID-19 influenced your relationship with your patients?
16. Has your experience caring for COVID-19 patients led you to consider leaving nursing?
17. How has the media coverage surrounding the pandemic influenced you?
18. How has caring for COVID-19 patients influenced your home life?
19. What has been the most challenging thing about this time?
20. What do you think it will be like as states/businesses start to resume pre-COVID activities?
21. What positive things have or will come out of this pandemic?

Prolonged engagement with participants and triangulation of the data were applied by locating evidence of qualitative codes in the demographic and COVID-19 practice survey (Lincoln & Guba, 1985). The maintenance of detailed research activities including data collection and analysis increased the dependability of our findings (Lincoln & Guba, 1985). Multiple researchers evaluated the findings, interpretations, and recommendations, ensuring confirmability in the research (Lincoln & Guba, 1985).

### 3 | RESULTS

Nurses and other HCPs were primarily employed in small (0–100 beds) to medium-sized (101–500 beds) hospitals (52%;  $n = 12$ ). The majority (61%;  $n = 14$ ) had been practicing for less than 10 years.

More than half of HCPs in our sample were required to change their practice area during the COVID-19 pandemic. Ten HCPs (43%) reported that access to new PPE was restricted in their practice setting and 13 HCPs (57%) reported that they reused disposable PPE.

A thematic analysis of the qualitative data resulted in four major themes. These themes highlighted the challenges experienced by nurses and other HCPs, including physicians, respiratory therapists, and patient care technicians, caring for patients during the COVID-19 pandemic. Themes were as follows: (1) managing isolation, fear, and increased anxiety; (2) adapting to changes in healthcare practice and policy; (3) addressing emotional and physical needs of patients and their families; and (4) navigating evolving workplace safety.

#### 3.1 | Theme 1: Managing isolation, fear, and increased anxiety

As the first cases of COVID-19 were identified in the U.S., its novel nature led to a great deal of uncertainty and a heightened sense of fear among nurses and other HCPs. Fear of the unknown was their greatest concern. S.G., a nurse, said, "...we just didn't know what we were doing, we didn't know, we didn't know who we were dealing with. So it was just super scary." HCPs felt unprepared for the emotional toll that this fear created. Some nurses continued to work despite fearing for their life. R.D., a patient care technician, stated, "I didn't sign up for this job to die. I didn't, I'm not like a hero. I'm not like, I'm not a soldier going off to war. Like that's not what I signed up for." Most HCPs indicated that their institutions did not offer any mental health support specific to concerns about managing fear and anxiety related to COVID-19 and instead were directed to existing employee assistance programs for support.

All HCPs expressed extreme concern about contracting COVID-19 and spreading it to family and friends. H.L., a physician, said, "I needed to wrap my head around how I could be the safest at work, not bring it home to my family." Unfortunately, due to the concern of unknown viral transmission, many HCPs separated from family members, elected to physically distance themselves from family members at home or left their home altogether. HCPs who resided with individuals with compromised immune systems echoed this sentiment. C.H., a nurse, stated that her 2-year-old daughter:

Has a history of respiratory issues. So when my unit turned into a COVID unit, I got myself an Airbnb and got out of the house. So at this point I haven't seen my daughter in seven weeks and four days.

Fear of contracting COVID-19 led HCPs to experience increased levels of distress. S.N., a respiratory therapist, shared that she experienced:

A lot of anxiety, a lot of isolation. [I feel] very fatigued. Both mentally and physically. It's been difficult. It's been difficult to balance both, you know, trying to stay both mentally, you know, healthy and ready in terms of work.

HCPs who suffered from underlying health conditions were particularly concerned for their safety. G.S., a nurse, noted, “I was really terrified, you know, crying when I would sit and think about it because I have asthma.”

In addition to stressors at work, participants spoke about changes in their personal lives, including educating children at home, continued isolation from family and friends, and alterations in their physical activity routine. Additionally, HCPs worried about what the future might hold in the face of an ongoing pandemic. C.B., a nurse, stated, “It wasn't just the stress of patients that we're feeling, but stress ourselves with our own families and the unknown.” This distress was compounded by quarantine restrictions that prevented HCPs from engaging in their usual methods of stress management, which may have led to negative impacts on their overall well-being. D.B., a nurse, noted:

I'm just worrying about the long-term mental health implications for everybody involved. ...not just for us [nurses], but throughout the entire healthcare spectrum, that there's going to be some sort of continuity of care as far as mental health or in this for us or healthcare works. It's going to be a whole generation of healthcare workers that are going to be deeply scarred for the rest of their lives.

### 3.2 | Theme 2: Adapting to changes in healthcare practice and policy

Healthcare providers consistently reported changes in the way they practiced during the COVID-19 pandemic. These changes, sometimes made very quickly by hospital administration, were generally viewed as a response to the contagious nature of COVID-19 and ranged from being transferred to a different unit in the hospital, adjusting delivery of care, and dealing with increased emotional demands. Nurses and other healthcare providers reported that they received little to no training about caring for patients diagnosed with COVID-19, stating it was a “learn as you go experience.” In response to increased numbers of patients with COVID-19, many hospitals abruptly established dedicated COVID-19 units to reduce risk. While many nurses anticipated that their unit would be converted to a “COVID unit,” they typically did not receive any training specific to the provision of care for patients diagnosed with COVID-19. T.K., a nurse, said:

Well I think we all got a little bit of ICU training, whether you were an ICU nurse or not, you learn how to be one...and then when we started opening up the surge ICU and started creating ICU's out of nothing, it was we're pulling nurses from, from the floors and saying, “Hey, you're going to be an ICU nurse today”.

Lack of training and challenges with communication were complicated by frequent and rapid changes in information. Recommendations were

frequently modified or updated, sometimes within hours. S.G., a nurse, noted that the volume of information was challenging to manage, stating “every day you get a new email about a new policy or a new procedure.” This led to significant concerns about the quality of care being provided among HCPs caring for patients who were diagnosed with COVID-19. W.S., a respiratory therapist, reported struggling to keep up with information, sharing “even from Saturday to Sunday we had new policies, new procedures. What you did yesterday was totally wrong. And now we're going to do it this way today.”

Participants reported a sense of pride regarding the level of care they were able to provide, despite conflicting information and necessary changes in care management. HCPs indicated that they attempted to “batch” or cluster care to reduce the amount of times they were required to enter patient rooms. Donning and doffing of PPE created significant challenges for nurses as they attempted to manage care for multiple patients. P.F., a nurse, noted, “It [donning/doffing PPE] really interrupted, like, the flow of the shift. It was, it's just very strange...That was, that was very difficult.” The challenges of donning and doffing PPE was particularly evident when patients experienced respiratory arrest. M. J., a nurse, shared:

Normally you run right in and take care of it. But if you stop and put on all your PPE, that can take a good 30 seconds. And if someone's in V-fib or arrest, they don't have that thirty seconds.

Many HCPs noted that they were not accustomed to the significantly higher level of care required by patients diagnosed with COVID-19. The complex needs of patients with COVID-19 led to increased feelings of distress among HCPs. W.S., a respiratory therapist, stated that “It is a blessing to be working with somebody on probably what is the scariest day of their life. But it's the scariest day of my life too at that point, because I had never seen anything like it.”

### 3.3 | Theme 3: Addressing the emotional and physical needs of patients and their families

Nurses indicated that patients diagnosed with COVID-19 appeared to experience high levels of fear, requiring increased levels of emotional support from HCPs. Families were typically not permitted to stay with the patient, which appeared to increase anxiety for both the patient and the family. Often, the nurse was the only HCP who would enter the room, leaving them to be the sole source of emotional support for fearful patients. The added responsibility led to increased distress for nurses. T. K., a nurse, shared, “She [a patient] has no family that can visit. She's angry and because she's COVID positive, I can't stay in the room with her for hours. I can't sit at her bedside.”

HCP distress was particularly acute, given the increased mortality related to COVID-19. F.P., a nurse, stated, “I came home feeling like I had nightmares, these patients like alone dying.” Nurses reported supporting each other to prevent patients from dying alone. P.M., a charge nurse, shared “the first one [patient] of the day and she went

[died] peacefully, but my nurse stayed at the bedside with her. So she wasn't alone.”

Nurses felt that they were able to continue to provide quality care to their patients, despite restrictions on the amount of interaction between nurses and patients despite the challenge of staffing shortages K.L., a nurse, stated,

I feel confident most of the time taking care of my patients, but the moments where...I know that I need help [providing patient care]. I know that I can't do what I need to do by myself and no one is available because we are short staffed.

Restricted contact with patients led to significant changes in the delivery of patient care. W.S., a respiratory therapist, noted, “I feel a little more distant from them [patients]. I can't let myself get that close because it will devastate you. I have always been, I've always really loved the connection you get with the patients.” Use of additional PPE such as gowns, face masks, and face shields/powerful air purifying respirators (PAPR) compounded this sense of disconnectedness. C.B., a nurse, stated, “I feel like initially I felt like I didn't have that same connection. Like, you know, there's this big barrier between me and the patient.”

Continued media coverage on television and social media seemed to influence HCPs relationships with their patients. P.F., a nurse, said:

So these people [patients] are at home watching the news 24-7, getting minute by minute updates. We're in an office where we're not watching the news constantly, where I felt like a lot of our influence on our patients was taken away by the news and media because of the constant information barrage all the time.

While media coverage did not necessarily affect the provision of patient care, HCPs felt increasingly frustrated that their patients appeared to value information they received from the media rather than their HCP. R.E., a nurse, stated:

I don't think the media coverage has influenced me very much, but I think it's influencing the patients. And it's frustrating for me to encounter patients who are influenced more by the media than by what their doctors and nurses are telling them.

### 3.4 | Theme 4: Navigating evolving workplace safety

Concerns about COVID-19 transmission often prevented ancillary service providers, such as patient care technicians, dietary personnel, and environmental services, from entering COVID units. Nurses were left to perform ancillary staff duties, including meal tray delivery and

set up as well as removing trash from patient rooms, in addition to direct patient care. In an attempt to further reduce COVID-19 exposure among HCPs, patient care technicians (who usually support nurses) were not permitted to work in COVID-19 units, contributing to increased demands for nurses. K.L., a nurse, stated, “They want you to minimize the number of times you go into a patient's room and the number of people that go into that patient's room.” Additionally, nurses reported the need to take on other HCP roles as more and more providers were unwilling to enter patient rooms. M.W., a nurse, said, “Their doctors won't physically see them you know, round on them. People are scared to go in there.” S.G., a nurse, stated, “They would have like a respiratory therapist come ... show us these new ventilators and show us how to, you know, program everything if they're on the outside and we're on the inside of a room.” Additionally, the rapid increase in patient volumes due to COVID-19 coupled with PPE shortages and feelings of decreased employer support led to staff resignations and increases in nurse/patient ratios. HCPs voiced concerns about potentially unsafe work environments. K.D., a nurse, noted,

Normally seasonally we have a lot of travelers. We lost a lot of them because they were frustrated by the lack of PPE and the support from the hospital and they were going, so they were breaking their contracts and going and taking, like, the big money deals out of New York and places like that.

Many HCPs felt that their institutions had adequate access to PPE, but were unwilling to share it freely due to fears of future shortages. In response, many hospitals elected to reuse disposable items, such as masks and gowns, which ultimately led to significant concerns about safety among nurses. R.E., a patient care technician, noted that his institution adopted a policy that, “Chang[ed] N95s to a durable item instead of a disposable item.” Regarding N95 masks, A.D., a nurse, stated,

I had it for like three weeks. The second one I repurposed once. So you send it down, it gets decontaminated, it comes back up. And that one just disappeared when I tried to repurpose it again and never came back up. So I got a third one. I repurposed that one four times.

Confusion about appropriate levels of PPE for various patient care scenarios created increased distress among HCPs. C.H., a nurse, stated, “if we have something that's aerosolized we can put our N95s on. And at first, they were saying put it on, leave it on, but then people would come around and question why you were wearing it.” Nurses reported that procedures varied from unit to unit, and occasionally from HCP to HCP. F.P., a nurse, noted, “My main concern is just not having the proper PPE or the proper information. Like one day they'll say suctioning is aerosolized and you need N95 and then I was told that it's not.”

## 4 | DISCUSSION

This study sought to explore the challenges experienced by nurses and other HCPs as they cared for patients and families during the COVID-19 pandemic. Fear of the unknown and managing their own personal stressors were undercurrents for HCPs on the frontline, consistent with studies that reported extreme physical fatigue and discomfort among nurses caring for patients during the MERS-CoV and Ebola outbreaks (Kang et al., 2018; Smith et al., 2017; Sun et al., 2018). Nurses and other HCPs reported concerns about contracting and spreading COVID-19 to family and friends. These concerns led many HCPs in our sample to voluntarily isolate from family members while they cared for COVID-19-positive patients in the workplace. Concerns about contracting and spreading COVID-19 are supported by Sun's research team (2020), who found that caregivers with children and elderly family members experienced significant negative psychological impacts as they cared for patients during the COVID-19 pandemic. Isolation and limited opportunities to practice typical stress reduction activities due to government-induced closures led to self-reported feelings of increased depression and anxiety. Xiang et al. (2020) found that HCPs who care for people with confirmed or suspected COVID-19 are at increased risk of infection as well as mental health problems.

Duty to care is grounded in the principle of beneficence and guided by the ethics of one's profession (Jeffrey, 2020). HCPs reported feeling very concerned about contracting and transmitting the virus, yet continued to work out of a sense of professional obligation to their patients and their coworkers. Previous research has indicated that this sense of professional obligation is not relevant to the extent of the risk; however, risk can be mitigated by access to adequate resources, including PPE (Jeffrey, 2020). HCPs in our study all reported feeling obligated to work, despite concerns for their safety. Combined with concerns about lack of access to PPE, these obligations had a detrimental impact on both their physical and mental health. Patients diagnosed with COVID-19 required a significant amount of care, physically and emotionally, from HCPs. Nurses perceived that restrictive visitation policies, designed to prevent the spread of COVID-19, resulted in fear and feelings of increased isolation for patients. While visitor restriction is a reliable technique to control the spread of infectious disease (Danial et al., 2016), it may be more beneficial for hospitals to find other ways to support the emotional needs of patients that are not contingent on nursing care. Hospital-established guidelines must consider the ethical impact of isolation and the burden it may place on HCPs (Jeffrey, 2020). Nonetheless, nurses were predominately alone at their patients' bedside (many of whom were very ill and scared) and served as their only support person. This research study found that nurses were often the only HCP permitted or willing to enter patient rooms, which increased their risk for infection and left them emotionally vulnerable in their added role as sole supporter for their patient. Alraddadi et al. (2016) found that HCPs were at increased risk for infection when in close contact with patients diagnosed with MERS.

In some instances, nurses were asked to change roles or perform duties that were outside of their normal practice area because other HCPs either refused or were instructed not to enter a patient room. To the authors' knowledge, this finding is new to the literature as no prior studies revealed that pandemics required nurses to practice outside of their usual role. Performing additional duties or practicing in unfamiliar areas greatly enhanced the risk of exposure for nurses and led to concerns about the possibility of decreased quality of care. In addition to concerns about providing safe, quality care, HCPs working outside their usual area of practice experience increased distress regarding professional liability (Jeffrey, 2020). Information for HCPs that addresses how to reduce personal safety risks may be recommended, given that more than half of the HCPs in this sample were asked to change their area of practice as their units became COVID-19 units. These changes were often made with little to no notice, and without further education or opportunity for nurses to change to a non-COVID unit. Similarly, previous research indicated that nurses who were involved in care outside of their usual area of practice experienced higher levels of self-reported stress (Fernandez et al., 2020; Seale et al., 2009).

Restricted access to patient rooms compelled nurses to be creative in how they managed patient care, such as batching or grouping tasks, as they attempted to minimize contact with patients. Extensive PPE precautions hindered patient care, as it was cumbersome and labor intensive to don and doff. Likewise, HCPs found PPE uncomfortable and difficult to use during patient care tasks, indicating that medical equipment companies should consider partnering with HCPs to design PPE that is more comfortable to wear (Phin et al., 2009). Additionally, increased PPE forced nurses to care for patients without the use of touch, compounding both patient and nurse isolation. In our study, nurses worked to combat this sense of isolation by working together to provide team care for their patients. Studies conducted by Honey and Wang (2013) and Kang et al. (2018) support this finding, indicating that while PPE exacerbated feelings of isolation, creating systems of communication as well as working as a team served to reduce stress related to isolation. Despite struggles with PPE and isolation, nurses in this study reported that the quality of care they provided to their patients remained the same.

As the pandemic evolved and scientific knowledge about its transmission and disease progression continued to unfold, information and recommendations from various government agencies was provided at an alarming rate. Findings from Kang et al. (2018) identify frequent changes in information as challenging for both HCPs and hospitals alike, indicating that quickly changing guidelines may lead to confusion among clinicians. HCPs reported that the sheer amount of information was overwhelming. Further, staying current with the constant changes was extremely difficult as they were concerned about missing important safety information that they needed to care for their patients. Research from previous pandemics indicates that improving communication between HCPs is paramount (Speroni et al., 2015). Therefore, hospitals must create communication plans that deliver timely information to HCPs actively working at the bedside.

Limited education about COVID-19, frequent changes in recommendations for managing patients with COVID-19, and concerns about use and availability of PPE led to increased stress among HCPs. HCPs reported that education provided focused more on the donning and doffing of PPE, and less on COVID-19, as information about its virulence, contagiousness, or other facets were unclear. Previous research indicates that nurses caring for patients affected by an emerging infectious disease expressed concerns about inadequate training, indicating that institutions should focus on the provision of training not only about safety measures, but also the disease itself (Fernandez et al., 2020; Lam et al., 2020).

Uncertainty about future availability of PPE led hospitals to ration equipment, underscoring the importance of standardized organizational protocols and pandemic response plans that include allowances to establish an adequate supply chain of PPE. The reuse of disposable items and PPE not only increased fear of contracting COVID-19 among HCPs, but also led to mistrust of executive leadership. Some HCPs shared that they believed that their hospital had an adequate supply of PPE, but were unwilling to circulate it for use. Nurses and other HCPs also reported challenges in identifying whether the type of PPE provided by their institution was appropriate for their role. Research has suggested that institutions create plans in advance to accommodate rapid surges in demand for PPE (Al-Dorzi et al., 2016; Stirling et al., 2017). Nurses consistently expressed concern about the reuse of PPE. Our research indicates that the provision of providing adequate PPE for HCPs is paramount to their overall perception of their own safety. Additional research regarding the safety of this practice is necessary to ensure the durability of reused PPE and its impact on the mental health of HCPs. Given the nature of qualitative research, results of this study are not generalizable, however, our sample included HCPs from all regions of the U.S. The majority of the participating HCPs were nurses, female, and Caucasian; therefore, additional research is recommended that examines the perspectives of all HCPs beyond the nursing profession.

## 5 | CONCLUSION

While there are many types of coronaviruses that cause disease in humans, COVID-19 has created worldwide uncertainty due to its novel profile and lack of immunity or vaccination. COVID-19 is easily spread among humans, and its variable symptom progression influences those who contract the disease in different ways. Unlike other epidemics, unknowns related to COVID-19 created a culture of unease that drove HCPs to lengthy measures to protect their patients and themselves. HCPs shared challenges about navigating the frequent changes in recommendations for COVID-19 care and the availability of PPE. Despite difficult decisions regarding isolation from significant others, extensive changes in procedures to deliver safe patient care, and challenges associated with learning new skills and adapting to new care models, nurses and other HCPs in this study continued to deliver high-quality, compassionate care to their patients. This study introduced new evidence about the effect of

rapidly changing information on HCP perceptions of their safety and their ability to provide quality patient care. Unlike other epidemics and pandemics, COVID-19 highlighted significant challenges in communication and lack of resources that rapidly became politicized in the media.

### 5.1 | Relevance for clinical practice

Our findings highlighted the personal and professional concerns experienced by nurses and other HCPs as they cared for patients and families affected by COVID-19. HCPs reported feeling increased stress as they strove to support patients who were frequently fearful and alone. Availability of mental health resources for HCPs during pandemics is crucial, and employers play an important role in procuring, advertising and supporting access to these resources. HCPs reported significant ethical and moral distress as they cared for patients during the coronavirus pandemic. It is imperative that institutions work to identify and mitigate moral distress in HCPs working at the bedside, as well as establish proactive strategies for routine surveillance. Our findings also suggest that institutions should work to create pandemic plans that address availability of PPE as well standardized communication plans to disseminate crucial information to HCPs in a timely and organized manner. Additional research is needed to understand the long-term implications of administrative decision-making on HCPs during the COVID-19 pandemic.

#### AUTHOR CONTRIBUTIONS

Study design: M.M.N., J.S., and L.A.D.F.

Data collection: M.M.N. and J.S.

Data analysis: M.M.N., J.S., and K.E.

Manuscript writing: M.M.N., J.S., L.A.D.F., and K.E.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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