

# Nurses' barriers to caring for patients with COVID-19: a qualitative systematic review

Jee Young Joo<sup>1</sup> PhD, RN  & Megan F. Liu<sup>2</sup> PhD, RN

**1** Associate Professor, College of Nursing, Gachon University, Incheon, Korea, **2** Assistant Professor, School of Gerontology Health Management, College of Nursing, Taipei Medical University, Taipei, Taiwan

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**Aim:** The aim of this qualitative systematic review is to identify and synthesize qualitative studies of frontline nurses' experiences and challenges when caring for patients with COVID-19 in hospitals.

**Background:** This review is the first qualitative systematic review of nurses' experiences since the beginning of the COVID-19 pandemic in 2020. Understanding nurses' experiences with COVID-19 is important because nurses are among the most vital of healthcare workers.

**Methods:** This study used a qualitative systematic review methodology with thematic synthesis to analyse the included studies. Five databases (CINAHL, PubMed, Ovid, Web of Science, and PsycINFO) were searched from January to mid-August 2020, and 25 abstracts were screened. Based on inclusion criteria, this qualitative systematic review included nine studies.

**Results:** Five themes were identified as barriers to COVID-19 care by 133 hospital-based nurses: limited information about COVID-19, unpredictable tasks and challenging practices, insufficient support, concerns about family, and emotional and psychological stress.

**Conclusions:** The five barriers identified in this review should be overcome to improve nurses' experiences and, in turn, the quality of care patients with COVID-19 receive.

**Implications for nursing and health policy:** The findings from this review can be used to reform current healthcare and hospital-support systems for populations with COVID-19. They can also be used to point towards areas of research interested in improving frontline nursing. Finally, nursing leaders, healthcare policymakers and governments should use these findings to better support the nursing workforce in the current or a future pandemic.

**Keywords:** COVID-19, Nurses, Nursing experience, Qualitative studies, Qualitative synthesis, Qualitative systematic review

## Introduction

On January 31, 2020, the World Health Organization (WHO) declared the novel coronavirus disease (COVID-19) a Public Health Emergency of International Concern (WHO 2020a) – the highest level of alarm for a public health emergency. COVID-19 expanded quickly from China to the rest of the world; by August 31, 2020, it had infected about 25.1 million persons and killed 844,312 (WHO 2020b). At the time of this

research, in healthcare settings treatment of the disease is still uncertain, transmission is still widespread, and the mortality rate is not decreasing. Meanwhile, nurses, who are the world's largest healthcare workforce (Yin & Zeng 2020), are working on the front line of care for hospitalized COVID-19 patients (Kackin et al. 2020; Nie et al. 2020; Yin & Zeng 2020). As such, they are at high risk of infection and death (Zhao et al. 2020).

Several empirical studies conducted in the wake of other epidemic and pandemic outbreaks, such as Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), and H1N1, serve as the basis for evidence-based research into epidemics and nursing. Kim & Choi (2016) assessed nurses' burnout level for treating patients with MERS, Kim (2018) explored nurses' experiences caring for the same patients, and Marjanovic et al. (2007) studied nurses' coping

Correspondence address: Jee Young Joo, College of Nursing, Gachon University, 191 Hambakmoero, Yeonsu-gu, Incheon 21936, Korea; Tel: +82-32-820-4232 (office); E-mail: jeeyoungjoo@gmail.com, drjoo@gachon.ac.kr

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strategies during SARS. Fernandez et al. (2020) aggregated nurses' views of previous epidemics. The aim of all these studies was to better prepare healthcare systems and nurses for future epidemics (Kim 2018). However, none of these outbreaks were as serious as the COVID-19 pandemic – they ended quickly and had regional, not global impacts (Watson & Hayter 2020).

Studies related to nursing during the COVID-19 pandemic have been published since the COVID-19 outbreak began (e.g. Diez-Sampedro et al. 2020; He et al. 2020; Nie et al. 2020; Prestia 2020). However, none are qualitative systematic reviews that identify nurses' barriers for caring for patients with COVID-19. A qualitative systematic review – a relatively new methodology in systematic reviews of evidence-based qualitative studies – is capable of shedding greater light on nurses' perceptions by synthesizing their experiences systematically. This qualitative systematic review (the first in COVID-19 research) synthesizes hospital nurses' experiences, issues, and common perceptions about their practice when caring for patients diagnosed with COVID-19.

## Methods

### Aim

This qualitative systematic review aimed to synthesize reports of nurses' experiences when caring for patients with COVID-19, identifying issues regarding their practice and their perceived barriers to care. The review targeted qualitative studies published since the pandemic outbreak in January 2020. The research question was “What barriers do nurses have to providing care for patients with COVID-19?”

### Study design

This study employed a thematic synthesis methodology for qualitative systematic reviews (Thomas & Harden 2008). This type of review synthesizes findings from existing qualitative studies to generate common themes and identify implications for future practice (Butler et al., 2016). In addition, this review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al. 2020) and Participant, phenomenon of Interest, Context, Outcome (PICO) format for qualitative systematic reviews (Pettigrew & Roberts 2005).

### Search strategy

Five electronic databases – Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Web of Science, Ovid, and PsycINFO – were searched using the following keywords and Medical Subject Headings (MeSH): *nurse* or *front-line nurse*; and *qualitative research*, *qualitative study*, or

*interview*; and *COVID-19*, or *SARS-CoV-2*. These additional search terms were also used: *perception*, *experience*, *barriers*, or *challenge*; or *ethnography*, or *phenomenology*; or *pandemic*, *perception* or *patient*.

The initial database search was conducted August 25, 2020. Because COVID-19 research is being published rapidly, a second confirmation search was conducted August 31, 2020.

### Inclusion and exclusion criteria

Table S1 presents the inclusion and exclusion criteria for this review. Included studies had the following characteristics: (1) empirical primary studies with qualitative research designs, (2) studies that targeted as participants registered nurses (RNs) who provide direct care to patients with COVID-19 in hospital-based settings, (3) studies that focused on nurses' perspectives and experiences when caring for patients with COVID-19, (4) studies published in English and in peer-reviewed journals, and (5) studies either published or in pre-publication between January and August 2020.

The following studies were excluded: studies focused on or including the perspectives and experiences of non-nurse healthcare providers, including nursing students; studies reporting on care for pandemic diseases or respiratory diseases other than COVID-19, studies published in languages other than English, and studies that did not meet the aim of this review.

### Selection and quality assessment

The initial search retrieved 81 articles. EndNote X9 (Thomson Reuters, Philadelphia) was used to remove 32 duplicates, and 24 more studies were removed by title, leaving 25 studies for abstract evaluation. Fifteen of these studies were then selected for full-text review, of which one was excluded because it was not published in English, three were excluded because their participants included healthcare practitioners other than nurses, and two were excluded because their aims were not pertinent to the aim of this review. Ultimately, nine studies met all the inclusion criteria and were assessed for quality assessment. The first author (JYJ) and the second author (MFL) double-checked the study-selection process for accuracy. Figure 1 illustrates the study-selection process.

The Critical Appraisal Skills Programme Qualitative Research Checklist (CASP) (2013) was used to appraise the methodological quality of the selected studies. The checklist includes 10 questions that assess a study's aim, qualitative design, recruitment strategy, data analysis and synthesis, findings, and overall research value. The first and second authors independently conducted the quality appraisal, and then they compared results. All nine selected studies were deemed to have appropriate methodological rigour (see Table S2).

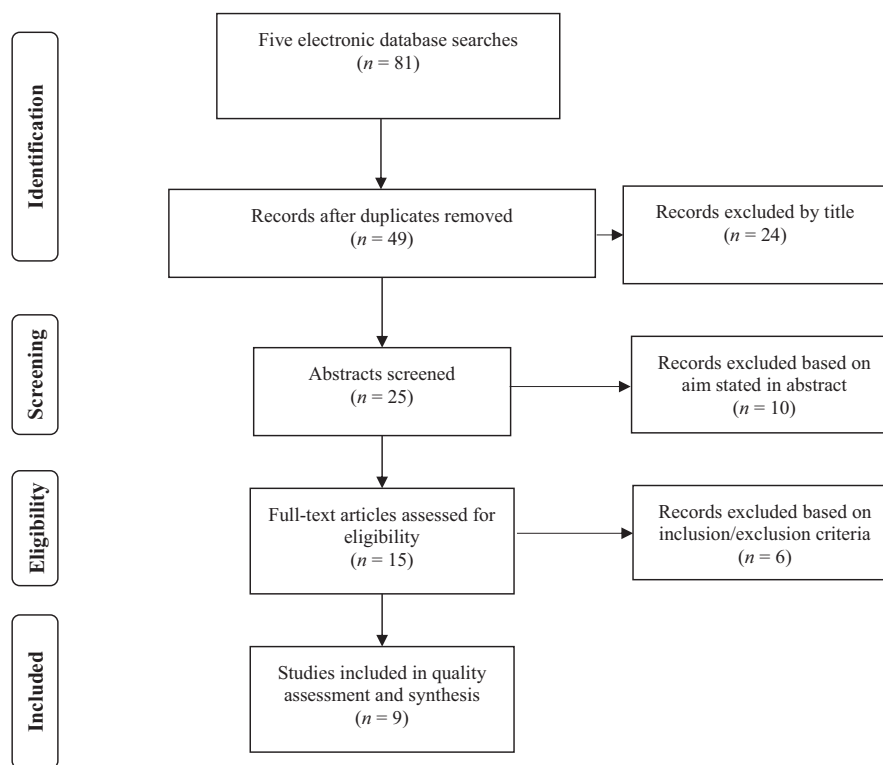


Figure 1 PRISMA flow diagram of the selection process.

### Data analysis and synthesis

For data analysis, the first author (JYJ) created a summary and narrative table; the second author (MFL) reviewed the table for accuracy. For each included study, Table 1 identifies the author (s), year and nation of publication, and setting(s); aim; sample and sample characteristics; study design; data collection, analysis, and synthesis methods; and major findings.

For data synthesis, a thematic analysis and synthesis devised by Thomas & Harden (2008) was used to find recurring themes in the selected studies. The two authors conducted three phases of thematic synthesis to extract clear qualitative data: (1) generate initial codes from the selected studies, (2) search descriptive themes from the codes based on similarity, and (3) abstract and review themes. Each author developed codes and aggregated analytical themes independently – twice for each study to ensure methodological rigour. Then, the authors reviewed each other's codes and themes and discussed both to reach consensus.

## Results

### Study characteristics

Table 1 summarizes characteristics of the nine included studies (He et al. 2020; Hou et al. 2020; Kackin et al. 2020; Pei

et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020; Yin & Zeng 2020; Zhang et al. 2020). All studies were published in 2020; several were in prepublication (Hou et al. 2020; Schroeder et al. 2020; Sheng et al. 2020). Six of the studies were conducted in China and one each was conducted in Iran, Turkey, and the US. The studies conducted in China took place in three different provinces (see Table 1).

The eight studies included 133 participants, all of whom were RNs caring for patients with COVID-19 in hospitals. The nurses worked in medical, isolation, intensive care, or emergency units. The ages of participants ranged from 22 to 43 years, and working experience ranged from 1 to 23 years. Sadati et al. (2020) did not report ranges of participants' age or years of working experience.

All studies were qualitative studies and were conducted with appropriate rigour (see supplementary Table 2). Two studies (Schroeder et al. 2020; Yin & Zeng 2020) adopted a theoretical framework. Data collection methods included semistructured, one-on-one, and in-depth interviews. Several studies used video calls, smartphone applications, or telephone calls for their interviews (He et al. 2020; Kackin et al. 2020; Zhang et al. 2020). Four different analytical methods were utilized: thematic analysis ( $n = 1$ ), category analysis

Table 1 Summary of included studies (N = 9)

Author(s) (year) Setting Country	Study aim	Target sample (number in sample) Gender break- down of sam- ple Work experi- ence(s) Mean age or age range Sampling method	Study design Theoretical framework Ethical issues	Data collection meth- ods Data analysis methods	Major findings
He et al. (2020) Hospitals Wuhan, China	To examine the experiences of Chinese nurses who travelled to the outbreak city to provide medical support in the very first period of the coronavirus outbreak	<ul style="list-style-type: none"> <li>Nurses (N = 10)</li> <li>8 female, 2 male</li> <li>Working experience range: 2–23 y</li> <li>Age range: 22–43 y</li> <li>Convenience sampling</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative study of phenomenological research</li> <li>NR</li> <li>Approval from University administration office &amp; informed consent</li> </ul>	<ul style="list-style-type: none"> <li>In-depth interview via smartphone</li> <li>Content analysis</li> </ul>	<ul style="list-style-type: none"> <li>Working stress regarding work overload and new challenges such as powerlessness</li> <li>New concepts caring for patients</li> <li>Lack of information about COVID-19 and about protection from the disease</li> <li>Negative feeling such as worries, fear, and sadness</li> </ul>
Hou et al. (2020) Tertiary hospital ED ShanXi, China	To explore the ED's preparedness during the novel coronavirus outbreak from nurses' perspectives	<ul style="list-style-type: none"> <li>ED nurses (N = 12)</li> <li>9 female, 3 male</li> <li>Working experience range: under 1 y to over 10 years</li> <li>Mean age: 30.42 y</li> <li>Purposive sampling</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative study</li> <li>NR</li> <li>Approval from ethics committee, informed consent, &amp; freedom to withdraw</li> </ul>	<ul style="list-style-type: none"> <li>Semistructured face-to-face interview</li> <li>Colaizzi analysis</li> </ul>	<ul style="list-style-type: none"> <li>Concerns about timely care and treatment because patients need quick rescue</li> <li>Need adequate and timely PPE and medical supplies</li> <li>Moral distress about who are priority patients in critical condition and which patients with fever in the ED have COVID-19</li> <li>Lack of preparedness for this pandemic and infectious disease</li> <li>Lack of knowledge about COVID-19 and its care for patients, limited time to learn</li> </ul>

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Table 1 Continued

Kackin et al. (2020)	To determine the experiences and psychosocial problems of nurses in Turkey caring for patients diagnosed with COVID-19	RNs (N = 10) 8 females, 2 male Working experience range: NR Mean age: 29.7 y Purposive sampling	Qualitative study of phenomenological research NR Approval from ethics committee & informed consent	One-on-one, face-to-face interview via the internet Colaizzi analysis	Psychological stress due to pandemic Burnout Lack of adequate PPE Psychological stress such as anxiety, worry, and threat Social isolation Shortage of staff who care for COVID-19 patients
Pei et al. (2020)	To explore the psychological experience of the frontline support nurses in fight against COVID-19, so as to provide a reference basis for targeted intervention and ensure the mental health of the frontline support nurses	RNs (N = 9) 9 females Working experience range: 4–16 y Mean age: 30.6 y Purposive sampling	Qualitative study NR Informed consent & confidentiality	Semistructured, in-depth, individual, face-to-face interview in the hospital Colaizzi analysis	Tension, anxiety, fear, and depression Psychological pressure Concern for family
Sadati et al. (2020)	To investigate nurses' perceptions and experiences of COVID-19 outbreak in Iran	RNs (N = 24) Working experience range: NR Mean age: NR Purposive sampling	Qualitative study NR Approval from ethics committee & informed consent	Individual interviews in hospitals (n = 13), at home (n = 3), and by telephone (n = 8) Thematic analysis	Unclear understanding of new virus Inadequate preparedness for new virus Necessity of protective facilities and PPE Social stigma and social isolation
Schroeder et al. (2020)	To explore the experience of being a RN caring for patients with COVID-19 at an urban academic medical centre during the early stages of the pandemic	RNs (N = 21) 19 female, 2 male Working experience range: 1–16.5 years Mean age: 33.5 y Purposive sampling	Qualitative study Quality Framework for Evaluation of Healthcare Delivery Approval from institutional review board & informed consent	Semistructured in-person interviews Content analysis	Nurses experienced the care context as incredibly dynamic

Table 1 Continued

Sheng et al. (2020) Hospital Wuhan, China	To explore the experiences of Chinese nurses involved in the COVID-19 rescue task on professional identity	<ul style="list-style-type: none"> <li>RNs (N = 14)</li> <li>11 female, 3 male</li> <li>Working experience range: 1–23 years</li> <li>Mean age: 32 y</li> <li>Purposive sampling</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative study</li> <li>NR</li> <li>Approval from ethics committee &amp; informed consent</li> </ul>	<ul style="list-style-type: none"> <li>Semistructured, internet video interviews</li> <li>Colaizzi analysis</li> </ul>	<ul style="list-style-type: none"> <li>Physical exhaustion due to work overloaded and the wearing of PPE</li> <li>Worries about participants' families due to participants' isolation</li> <li>Powerlessness because participants had no previous working experience with pandemics</li> </ul>
Yin & Zeng (2020) Tertiary general hospital Wuhan, China	To explore the psychological needs of nurses caring for patients with coronavirus disease 2019(COVID-19) and to propose corresponding interventions	<ul style="list-style-type: none"> <li>RNs (N = 10)</li> <li>9 female, 1 male</li> <li>Working experience range: 5 years or less; 10 years or more</li> <li>Mean age: 29.9 y</li> <li>Purposive sampling</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative study</li> <li>Existence, relatedness, and growth (ERG) theory</li> <li>Approval from ethics committee, confidentiality, &amp; informed consent</li> </ul>	<ul style="list-style-type: none"> <li>Semistructured in-depth interviews</li> <li>Category analysis</li> </ul>	<ul style="list-style-type: none"> <li>Inadequate PPE</li> <li>Lack of clear information about COVID-19 and numerous and excessive unclear rumours</li> <li>Need for physical health and safety from the virus</li> <li>Social isolation, thus, wanted to interpersonal relationships with family</li> </ul>
Zhang et al. (2020) University-affiliated hospital Wuhan, China	To explore the psychological needs of nurses caring for patients with COVID-19 and to propose corresponding interventions	<ul style="list-style-type: none"> <li>RNs (N = 23)</li> <li>18 female, 5 male</li> <li>Working experience: 7.58 y</li> <li>Mean age: 31.5 y</li> <li>Purposive sampling</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative descriptive study</li> <li>NR</li> <li>Approval from ethics committee &amp; informed consent</li> </ul>	<ul style="list-style-type: none"> <li>Semistructured interview recorded by WeChat video</li> <li>Colaizzi analysis</li> </ul>	<ul style="list-style-type: none"> <li>Fear of highly contagious virus</li> <li>Feelings of loneliness because of social isolation and isolation from family</li> <li>Negative feelings of fear, anxiety, and depression</li> <li>Physical distress due to heavy PPE</li> </ul>

ED, emergency department; NR, not reported; PPE, personal protection equipment; RN, registered nurse.

= 1), content analysis ( $n = 2$ ), and Colaizzi analysis ( $n = 5$ ). Eight of the studies interviewed participants in their first languages and then translated responses into English.

### Main findings

Thematic synthesis identified five barriers to nurses' care for patients with COVID-19: limited information about COVID-19, unpredictable tasks and challenging practices, insufficient support, concerns about family, and emotional and psychological stress (see Table 2).

#### Theme 1: Limited information about COVID-19

In seven studies nurses described challenges because of unclear, inaccurate, or limited information about COVID-19 (He et al. 2020; Hou et al. 2020; Pei et al. 2020; Sadati et al. 2020; Sheng et al. 2020; Yin & Zeng 2020). Much is still unknown about COVID-19. While healthcare researchers worldwide investigate its treatment and side effects and methods of protecting against it, knowledge has been slow to reach frontline nurses. For example, in Sadati et al. (2020), nurses said they had limited information and insufficient knowledge of COVID-19. When nurses did receive information about COVID-19, it was not always verified. In Yin & Zeng (2020), nurses said that much of the information they received was rumours; they wanted official and authorized information. Sheng et al. (2020) reported similar responses. Other nurses noted that while they received a lot of information about the disease, it was difficult to keep abreast of it all (Schroeder et al. 2020).

Despite these challenges, nurses recognized the importance of learning more about COVID-19 (Hou et al. 2020). Indeed, almost 90% of participants in Yin & Zeng (2020) said they would like to know more about the virus.

#### Theme 2: Unpredictable tasks and challenging practices

Studies pointed out that unpredictable tasks and challenging practices are another barrier to nurses when caring for patients with COVID-19 (He et al. 2020; Hou et al. 2020; Kackin et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020; Yin & Zeng 2020; and Zhang et al. 2020). Nurses reported that COVID-19 required them to adopt new practices (He et al. 2020; Kackin et al. 2020; Schroeder et al. 2020). For example, nurses in Hou et al. (2020) said that they had to rescue patients with fever from the emergency department (ED), in contrast to prepandemic guidelines that patients must be in critical condition before being rescued. Nurses also reported that COVID-19 patients, worried about death, isolation, and social stigma, required more

psychological support care than usual care (He et al. 2020). Kackin et al. (2020) reported that nurses had to provide more attentive care to patients with COVID-19 than usual care (He et al. 2020; Kackin et al. 2020).

One reason nursing practices represent a barrier to COVID-19 care is because guidelines for care are limited (Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020; Zhang et al. 2020). Another is because nurses assigned to COVID-19 patients received little orientation or education regarding care procedures. Many nurses had no prior experience of a national disaster and were assigned to care for patients with COVID-19 with inadequate preparation (Sheng et al. 2020; Zhang et al. 2020). As noted in Theme 1, most nurses lacked information about the disease or its treatment, so they also lacked knowledge of what they could do as nurses (Shen et al. 2020).

#### Theme 3: Insufficient support

All nine studies reported that nurses lacked sufficient support from hospitals and the healthcare system. First, nurses in every study reported shortages in personal protective equipment (PPE), equipment such as protective masks and hand sanitizer that is essential to protecting healthcare workers who deliver direct care to patients with COVID-19 (Kackin et al. 2020). In He et al. (2020), nurses worked without PPE altogether or with inadequate PPE. Nurses in Schroeder et al. (2020) reported that they reused their masks and gowns because they did not have enough supplies. Nurses in Hou et al. (2020) reported that PPE is required to provide adequate care. In Yin & Zeng (2020), nurses said that their government should pay more attention to the issue of lack of PPE.

Nurses also reported shortages of isolation units in hospitals to accommodate COVID-19 patients. Because the outbreak of COVID-19 was sudden, patients flooded into hospitals' infectious disease departments (Kackin et al. 2020; Sheng et al. 2020). Nurses treating COVID-19 experienced overwhelming numbers within their departments (Sheng et al. 2020). Hospitals constructed temporary wards to accommodate these patients. One nurse thought that the temporary ward at her hospital made providing quality care a challenge (He et al. 2020).

Finally, two studies reported that nurses indicated staff shortages, especially among nurses assigned to infectious disease control departments (Kackin et al. 2020; Zhang et al. 2020). The studies reported a need for resource management in the number of nurses (Kackin et al. 2020; Zhang et al. 2020).

**Theme 4: Concerns about family**

In seven studies, nurses reported that they were seriously concerned about their family and their family's safety from COVID-19 (He et al. 2020; Kackin et al. 2020; Pei et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020; Zhang et al. 2020). Nurses worried that they may transmit the virus to their family, even though they wear PPE while working (Sadati et al. 2020; Schroeder et al. 2020). To reduce the risk of contaminating his family, one nurse reported that he changed clothes three times: first at the hospital when finishing his shift, then at nurse's care station, and finally when

he got home (Sadati et al. 2020). For similar reasons, other nurses tried to remain physically distant from their family members (Sadati et al. 2020).

Nurses reported being particularly concerned about their children and parents. Several studies reported that nurses worried that they could not fulfil their family roles, such as by spending energy or time with their children and family members (He et al. 2020; Kackin et al. 2020). In Sheng et al. (2020), a nurse said that she is afraid to transmit the virus to her children. Another nurse, in Kackin et al. (2020), worried that her mother with hypertension might become infected.

**Table 2 Summary of thematic analysis**

<i>Main themes</i>	<i>Code in the texts</i>
Limited information about COVID-19	<ul style="list-style-type: none"> <li>• Ambiguity of information about COVID-19 (He et al. 2020; Sadati et al. 2020)</li> <li>• Far less information about patients' diagnosis when coming to the ED, except checking patients' fever (Hou et al. 2020)</li> <li>• Excessive and rich source of information, but most of them were rumours and unclear (Pei et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Yin &amp; Zeng, 2020)</li> <li>• Sudden outbreak of the virus, still under investigation of the virus, its medications; thus, strong need for knowledge about the novel virus (Sheng et al. 2020; Yin &amp; Zeng, 2020)</li> </ul>
Unpredictable tasks and challenging practices	<ul style="list-style-type: none"> <li>• New concepts for patients' practice is required (He et al., 2020; Hou et al. 2020)</li> <li>• Felt powerless and limited in ability to provide competent care (Sheng et al. 2020)</li> <li>• Challenged to provide appropriate care due to lack of information and uncertainty (He et al., 2020; Kackin et al. 2020; Schroeder et al. 2020; Zhang et al. 2020)</li> <li>• Few practical guidelines for frontline nurses and ad hoc treatment instead of structured care plans (He et al. 2020; Hou et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020)</li> <li>• No experiences such as this pandemic situation before (Sheng et al. 2020; Zhang et al. 2020)</li> <li>• Challenged to provide care due to lack of clear information (He et al., 2020)</li> </ul>
Insufficient support	<ul style="list-style-type: none"> <li>• Hospital and healthcare system unprepared to care for COVID-19 patients (He et al. 2020; Hou et al. 2020; Pei et al. 2020; Shen et al. 2020)</li> <li>• Lack of protective facilities such as isolation units (Kackin et al. 2020; Sadati et al. 2020; Schroeder et al. 2020;)</li> <li>• Limited equipment, such as PPE, for protecting healthcare practitioners (He et al. 2020; Hou et al. 2020; Sadati et al. 2020)</li> <li>• Shortage of staff who care for infected patients (Kackin et al. 2020; Zhang et al. 2020)</li> </ul>
Concerns about family	<ul style="list-style-type: none"> <li>• Worries about participants' family safety because of highly contagious virus (He et al. 2020; Pei et al. 2020; Sadati et al. 2020; Schroeder et al. 2020; Sheng et al. 2020; Zhang et al. 2020)</li> <li>• Participants worried about their parents who are older and who are more vulnerable to the virus (Kackin et al. 2020; Pei et al. 2020)</li> <li>• Uncomfortable feeling and sorry about their children due to limited time to care of them (Pei et al. 2020)</li> <li>• Worried about their children that they have little time to support their family due to heavy workload (He et al. 2020; Kackin et al. 2020)</li> </ul>
Emotional and psychological stress	<ul style="list-style-type: none"> <li>• Afraid, threatened, worried, and powerless (He et al. 2020; Hou et al. 2020; Kackin et al. 2020; Schroeder et al. 2020)</li> <li>• Isolation from society makes nurses feel depressed (Kackin et al. 2020; Zhang et al. 2020)</li> <li>• Stress due to work overload (He et al. 2020; Kackin et al. 2020; Sheng et al. 2020)</li> <li>• Job burnout (Kackin et al. 2020; Pei et al. 2020; Schroeder et al. 2020)</li> <li>• Fear of getting infected while participants were caring for patients (Pei et al. 2020; Yin &amp; Zeng, 2020; Zhang et al. 2020)</li> </ul>

ED, emergency department; PPE, personal protection equipment.



### Theme 5: Emotional and psychological stress

Nurses in all nine studies expressed feelings of anxiety, fear, or depression. They also reported other complicated feelings such as powerlessness and isolation. Pei et al. (2020) reported that while nurses felt responsible to do the best for the patients, they were afraid because COVID-19 is highly contagious. Kackin et al. (2020) observed that at the same time as they had to ensure high-quality care for patients, nurses also had to endure the pandemic crisis. Nurses in Sadati et al. (2020) said that they walked in a dark room, which made them feel very stressed. Similarly, a nurse in Pei et al. (2020) reported feeling nervous when going to the COVID-19 ward. Zhang et al. (2020) observed nurses' psychological changes. In the early stages of the pandemic outbreak, nurses who were assigned to the COVID-19 isolation unit felt fear and nervousness; some even burst into tears for fear of dying. After a few weeks in the unit, nurses expressed anxiety, depression, and irritation. The study observed that younger nurses responded especially aggressively and were emotionally depleted.

What were the sources of nurses' depression and stress? Studies such as Kackin et al. (2020) reported that nurses felt depressed because they were socially isolated. Sheng et al. (2020) reported that it was the working environment. For example, nurses said that isolation wards were depressing and that it was hard to maintain a good mood (Sheng et al. 2020).

### Discussion

This study systematically reviewed nine qualitative studies to synthesize their findings and identify barriers nurses have when caring for COVID-19 patients. Although there has been a large number of quantitative and qualitative studies of COVID-19 since January 2020, this is the only qualitative systematic review to explore frontline nurses' experiences. Thus, this review is the first one addressing nurses' value in the current pandemic.

The five barriers frontline nurses in hospital-based settings had when caring for patients with COVID-19 were (1) limited information about COVID-19, (2) unpredictable tasks and challenging practices, (3) insufficient support, (4) concerns about family, and (5) emotional and psychological stress. The first barrier revealed that nurses' information about COVID-19 has been limited. This finding aligns with evidence from healthcare providers' perspectives in previous pandemics (Billings et al. 2020). Clear and reliable information about the virus, including how it is transmitted, and about COVID-19, including its treatment and complications, are limited, unknown, or slow compared to the speed of the outbreak

(Sadati et al. 2020). Some researchers have argued that studies about COVID-19 should wait until the pandemic is over to ensure good, rigorous international research (Watson & Hayter 2020). However, evidence indicates that unclear and unreliable information about COVID-19 resulted in low-quality care (Sheng et al. 2020). Announcements by the WHO and efforts by hospital leaders to provide updated information through email (as in Schroeder et al. 2020) have been insufficient. Nurses need exact, evidence-based information about COVID-19 and about how to care for patients with the disease. Studies about COVID-19 and qualitative and quantitative systematic reviews of those studies should be published continuously to provide nurses with up-to-date information about the pandemic.

The second barrier, unpredictable tasks and challenging practices, was not well highlighted in studies about previous epidemics. In contrast, eight of the nine studies in this review noted that protocols and guidelines for nursing practice in the COVID-19 pandemic were limited and that nurses lacked structured plans and therefore frequently provided ad hoc services. Although the WHO has published some guidelines for healthcare providers, including nurses (WHO, 2020a), the abruptness of the pandemic outbreak and ensuing chaos in hospitals meant that nursing leaders and hospitals struggled to update their protocols (Sadati et al. 2020). To ensure quality of care and the best outcomes for COVID-19 patients, evidence- and research-based practical guidelines for frontline nurses must be developed, disseminated, and adopted for COVID-19. More generally, undergraduate nursing and continuing education curricula about epidemic management are needed.

Insufficient support is the most prominent barrier nurses experienced. PPE is critically essential to nurses who care for COVID-19 patients. When the pandemic started, hospitals did not have sufficient PPE, and the rush to buy more created shortages (Godoy et al. 2020; Tirupathe et al. 2020). The need for PPE requires national effort. For example, after the pandemic began, South Korea regulated mask creation and prioritized the distribution of masks to healthcare facilities (Jung, 2020). Other organizational and administrative efforts are needed to protect the safety of nurses from COVID-19. This review adds evidence of the importance of global policy in making PPE available to healthcare providers.

The last two themes, concerns about family and emotional and psychological stress, highlight the personal toll of the pandemic on nurses. Some previous epidemic studies focused on physical stress such as burnout, exhaustion, and workload (Kim, 2018; Kim & Choi, 2016). It is also important to know about and intervene to address nurses' psychological

challenges (Xiong & Peng, 2020). This study found that nurses felt uncomfortable that they could not take care of their families and risked transmitting COVID-19 to them. Moreover, nurses felt loneliness, depression, fear, loss of confidence, and powerlessness (He et al. 2020; Hou et al. 2020; Pei et al. 2020). These sentiments were consistent regardless of nurses' work experience or stage of involvement in COVID-19 patients' care. Many studies have argued that healthcare providers need personal emotional protections and coping strategies during an epidemic (Al-Rabiaah et al. 2020; Khalid et al. 2016); these supports are likewise needed for nurses and healthcare providers in the COVID-19 crisis (Xiong & Peng, 2020). To overcome the negative feelings of nurses that they suffered, Yin & Zeng (2020) proposed that nurse leaders and hospitals provide mental health and emotional stability supports. Nursing leaders and hospital and healthcare administrators need to better understand frontline nurses' worries, provide mental health supports to mitigate negative feelings that nurses have, and establish ways to help nurses cope with uncertainty in future epidemics.

### Limitations

This qualitative systematic review has several limitations. First, the nine included studies were conducted in hospital-based settings in four different countries. However, six studies were published in China with study populations in three different provinces, and one study, from Iran, was conducted in four different cities. Because different countries' participants may have different cultural perspectives or beliefs regarding this pandemic, the synthesis of themes in this review may not be generalizable to all nurse populations in the world. Second, one included study did not clearly describe all nurse participants' characteristics, such as age, work experience, or education levels. Both work experience and education could lead nurses to report different perspectives on caring for patients with COVID-19. Third, this review focused on barriers to practising nursing. Thus, the results may tend towards reporting negative results from the original studies. Fourth, the studies in this review were included based on searches conducted in August of 2020. Although this review included pre-publication articles, knowledge of COVID-19 is rapidly changing. New qualitative studies about the disease may have been published while the manuscript was in development. Finally, this qualitative systematic review was limited to literature published in English.

Despite these limitations, this review makes several contributions to evidence-based nursing. This is the first systematic review that summarizes nurses' perceived challenges in the

care of patients with COVID-19. Although some studies have included previous epidemic responses for comparison in their reviews, COVID-19 is the most widespread communicable disease in decades. Research needs to focus on the disease and the virus that causes it. Because this review included studies interviewing frontline nurses working in hospital-based settings, it features the voices of those who are directly treating patients with COVID-19. Because this review included studies drawing on populations in ten cities and four countries, it is likely to be broadly applicable. This study also adds new knowledge about the psychological, social, and physical barriers that frontline nurses have experienced during the COVID-19 pandemic. This knowledge can be used to improve evidence-based nursing practice, nurse supports, and future research.

### Implications for Nursing and Health Policy

Nursing and healthcare policymakers should fund more research. In particular, longitudinal research into COVID-19 will best support evidence-based public health. Research is also needed to support better nursing practice and thereby improve patient outcomes. Nurse managers and healthcare leaders must also pay attention to the barriers that frontline nurses have experienced in caring for patients with COVID-19. These nurses need better psychological, emotional, and physical supports. Moreover, nurses also need the right information at the right time. Healthcare policymakers need to create a clearinghouse that summarizes the latest studies, which is audience-directed (e.g. it gives nurses information for nurses), and actionable.

### Conclusion

This is the first qualitative systematic review to identify barriers nurses have when caring for patients with COVID-19. It highlights the fact that frontline nurses experienced both personal and system-based challenges in the first eight months of the pandemic. Nurse managers and other healthcare leaders can use this review's findings to identify areas of research to fund and to provide better supports to nurses delivering direct care to COVID-19 patients.

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### Ethical approval

Because no human subjects were engaged in this study, no Institutional Review Board approval was required.

## Author Contributions

Study design: JYJ  
 Data collection, analysis, and synthesis: JYJ, MFL  
 Manuscript writing: JYJ, MFL  
 Critical revisions for important intellectual content: JYJ  
 Study supervision: JYJ.

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**Jee Young Joo** is an associate professor in the College of Nursing at Gachon University, Incheon, Korea. Formerly, she was at the University of Missouri-St. Louis. She received her Ph.D. from the University of Iowa.

**Megan F. Liu** is an associate professor in the School of Gerontology Health Management at Taipei Medical

University, Taipei, Taiwan. Her cognate area is qualitative studies with chronic illnesses.

### Supporting information

Additional Supporting Information may be found in the online version of this article:

**Table S1.** Inclusion and exclusion criteria.

**Table S2.** Quality appraisal of extracted studies using the Critical Appraisal Skills Programme Qualitative Research Checklist.