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Review Article

Nurses' experiences of caring for COVID-19 patients: A systematic review of qualitative studies

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ABSTRACT

Background & Aim: Nurses are considered one of the most important members of the healthcare system in facing pandemics, including COVID-19. This study was conducted to explain the nurses' experiences in caring for patients diagnosed with COVID-19.

Methods & Materials: This study was a qualitative systematic review. A structured search was conducted using CINAHL, MEDLINE, EMBASE, Pub Med, Google Scholar, Cochrane Library, MedNar, and ProQuest. All qualitative studies describing nurses' experiences of caring for patients with Covid-19 were included. This review was conducted using the Joanna Briggs Institute methodology for systematic reviews. Themes and narrative statements were extracted from included papers using the JBI SUMARI data extraction tool.

Results: The findings of 46 qualitative studies were included in this systematic review. From the data analysis, four themes "Professional Development", "Psychological exhaustion", "Care Challenges" and "Work-family conflict" were extracted.

Conclusion: Nurses have experienced conflicts between their work and family and challenges when caring for patients with COVID-19. Hence, they were psychologically under pressure but professionally developed. To ensure the survival of nurses in critical situations, all their needs must be carefully monitored and the necessary support provided to them.

Introduction

Pandemics are emerging and re-emerging infectious disease epidemics, which affect a large number of people worldwide and often lead to a significant mortality rate, and social and economic disruptions (1). The Covid-19 pandemic was first detected in Wuhan, China in 2019 and spread to other parts of the world. Covid-19 has infected 555 million people and killed 6 million people worldwide by July 2022 (2).

The virus spreads mainly among people in close contact with each other through respiratory droplets (3). Nurses, as the largest group of health care professionals, (4) take care of patients with direct physical contact. Therefore, they are often directly exposed to a high risk of being infected with viruses. Until February 20, 2020, 2055 cases from the medical staff in 476 hospitals worldwide were diagnosed with Covid-19 (5).

Nurses should be equipped with up-to-date knowledge and required skills in crisis management including clinical treatment, disinfection, isolation, communication, triage, psychological support, and palliative care (6,7). Despite nurses' professional obligation to care for the community during the pandemic, many of them were concerned about their profession and its impression on themselves. The fear of being infected, virus transmission to their family members, the stigma of the vulnerability of their profession, and their limitations of personal freedom were considered among the main key concerns of nurses (8). What complicated the

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standpoint of nurses during the pandemic were the stressors related to the healthcare system, such as the shortage of personal protective equipment (PPE), ventilators, nurses, and beds, and prohibited visitation of patients with COVID-19 by their families (9).

When nurses consider their profession as having high risks, some of them decide to resign from their jobs (10). Nurses leaving the profession when there is an increased need to provide services and care has significant consequences on the ability of health systems (7).

At times of increased workload, those nurses who stay in practice face a rapid increase in the number of patients, high volume of work, and high-risk infections, which may make them suffer from mental health disorders such as anxiety or depression (11). It should be considered that maintaining the healthcare status of nurses results in better disease control (12). Mokhtari et al. (2020) in a study reported that one-sixth of nurses and physicians were diagnosed with mental disorders during the COVID-19 pandemic (13).

Considering professional characteristics, nurses were more vulnerable to anxiety and depression symptoms than physicians. They reported the reasons were higher workload, longer time attendance in the ward, and closer and longer contact between the nurse and the patient (14). Considering the importance of the nursing role in caring for patients infected with COVID-19, exploring their experience has a great clinical importance which has to conducting numerous qualitative studies in different countries of the world.

The results of the qualitative studies conducted regarding the experience of the nurses during the COVID-19 pandemic, confirm themes such as commitment, stigmatization by society, and fear of transmitting the disease to family members' nurses (14), the duality of cognitive responses including positive and negative experiences of being on the front line (15), the dilemma between professional duty and the fear of being infected and infecting others (16). All of the researchers found different emotional reactions from stress, frustration, and fatigue to the physical effects of constant stress.

Considering the fact that, until today, Lots of research has been conducted regarding the experiences of nurses during the COVID-19 pandemic in countries with different systems of social, economic, and cultural status, healthcare systems, and diagnostic and treatment facilities, hence there is a great diversity in article aims and extracted themes. In order to develop evidence-based practice for the basis of future applications, it is necessary to synthesize the results of these studies. On the other hand, Nurses as frontlines are engaged with patients for long times, hence they have valuable data and experiences regarding challenges related to patients, themselves, and hospitals' infrastructures. Awareness of nurses' experiences is important to deal with potential future pandemics. Therefore, this study was conducted to combine and present articles on current evidence about nurses' experiences in caring for patients diagnosed with the COVID-19 pandemic.

Methods

Design

A systematic review was conducted to synthesize the evidence of nurses' experiences in caring for patients who were diagnosed with Covid-19. This review was conducted according to the JBI's (Joanna Briggs Institute) guideline (17). To report the results of this study, the PRISMA systematic review report checklist was used by the researchers (18). All methods were performed in accordance with the relevant guidelines and regulations in Ethics Approval.

Search methods

Using a structured search strategy, the CINAHL, MEDLINE, EMBASE, PubMed, Google Scholar, Cochrane Library, MedNar, ProQuest, and Clarivate databases were searched in Jan 2023. The search results were limited from April 29, 2020, to March 2022. The keywords used in the search engines include:

Nurse∗ OR Nursing staff OR Health professional∗ OR health care worker∗ OR (Health Personnel and attitude∗ OR perception∗ OR experience∗ OR lived experience∗ OR perspective∗ OR feeling∗ OR thought∗ OR opinion∗ OR belief∗ OR knowledge OR view∗

AND Coronavirus Infections OR COVID-19 OR Coronavirus)

The criteria for the search strategy were to find published, excluding time limits and merely studies in English. Previous studies that reported the nurses' experiences of caring for patients infected with COVID-19 were included in the systematic review. In this study, the only inclusion criterion was the experiences of nurses during the Covid-19 pandemic. Studies that investigated nurses who are working in medical organizations but not in hospitals were not included in the systematic review. The reference list of the selected studies was manually searched to check whether they met the criteria for inclusion in the study or not.

Search outcomes

The searches resulted in the retrieval of a total of 528 studies. Of these studies, 231 studies were duplicated. The title and abstract of the remaining 297 studies were screened for relevance to the present study's objectives, and 74 studies were retrieved for potential inclusion in the study. The references to these articles were carefully examined, but no new articles were identified. 28 out of 74 articles did not meet the inclusion criteria. Finally, 46 articles were included in the study. The excluded criteria for articles from the study included: studies that were conducted on all health professionals and not specifically on the nurses, inaccessibility to the full text of the article, the article was not written in the English language, the study focus was on nursing managers rather than on frontline nurses (Figure 1).

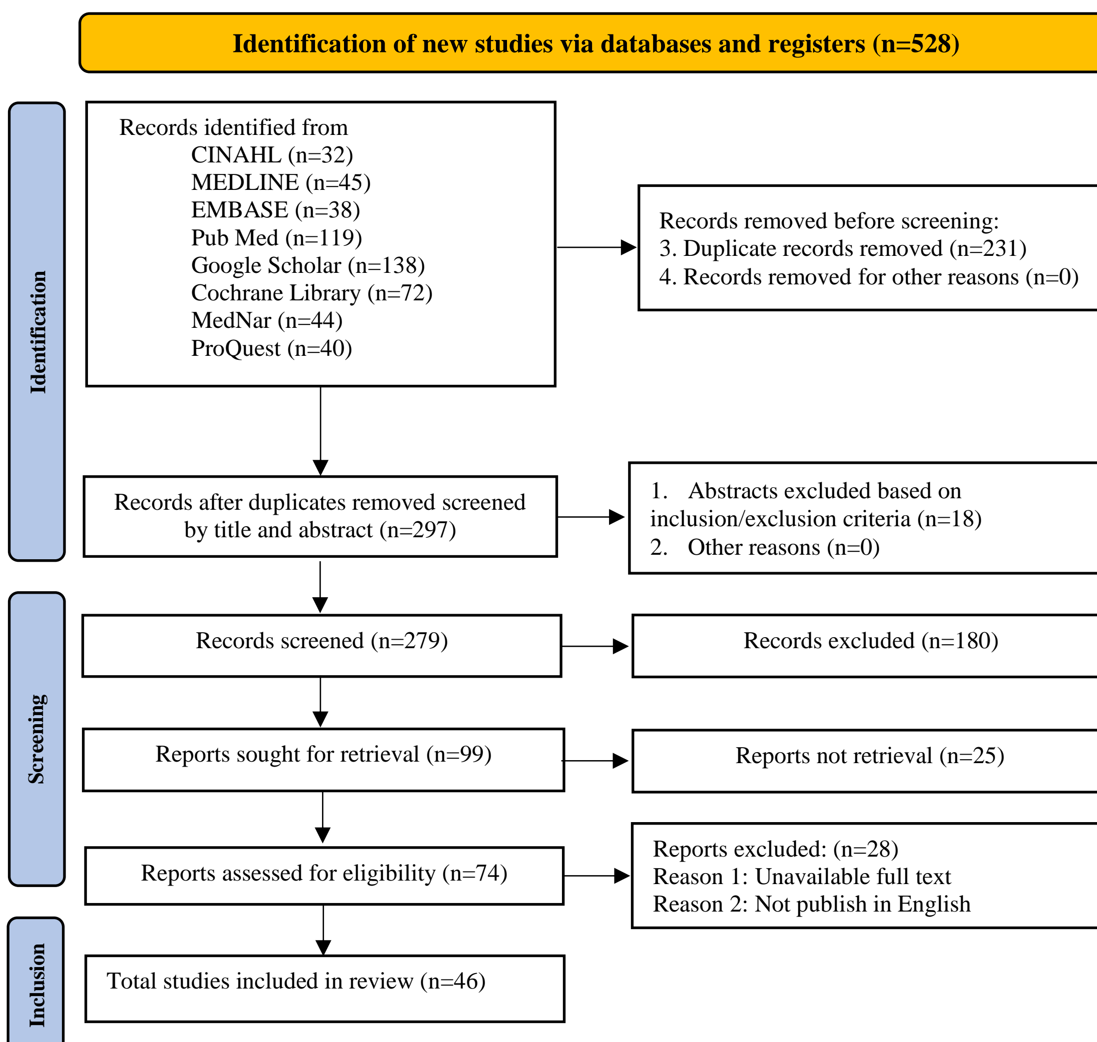

Figure 1. PRISMA flow diagram

Quality appraisal

Using JBI's critical appraisal tool, each study was assessed for methodological quality by two independent reviewers (SV and PM) and reviewed by a third reviewer subsequently (MN). Each criterion was assigned A score (yes=2, no=0, unclear=1), and a total score of 20 was assigned to each article.

JBI's criteria' are including of:

1. Is there congruity between the stated philosophical perspective and the research methodology? 2. Is there congruity between the research methodology and the research question or objectives? 3. Is there congruity between the research methodology and the methods used to collect data?

4. Is there congruity between the research methodology and the representation and analysis of data?

5. Is there congruity between the research methodology and the interpretation of results?
6. Is there a statement locating the researcher culturally or theoretically?
7. Is the influence of the researcher on the research, and vice-versa, addressed?
8. Are participants, and their voices, adequately represented?
9. Is the research ethical according to current criteria or, for recent studies, is there evidence of ethical approval by an appropriate body?
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Then, these scores were converted into percentages. Any disagreement between the reviewers was resolved through discussion or a third reviewer. The articles included in the study obtained a minimum score of 75% and no article was excluded from the study due to methodological quality (Table 1).

Table 1. Critical appraisal

Citation	**Criterion**										**Results (%)**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
LoGiudice and Bartos (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Nelson et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	18/20 (90%)
Sadang (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Karimi et al. (2020)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Villar et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Gray et al. (2021)	Y	Y	Y	Y	Y	N	N	U	Y	Y	15/20 (75%)
Robinson and Stinson (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Dalrae and Gyuyoung (2020)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Moghaddam-Tabrizi and Sodeify (2020)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Muz and Erdoğan (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Guttormson et al.(2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Schroeder et al. (2020)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Roberts et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Cos kun S imsek and Gunay (2020)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Foli et al. (2021)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Akkuş et al. (2020)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Cengiz et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Gunawan et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Gordon et al. (2020)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Simeone et al. (2022)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	16/20 (80%)
Lee et al. (2022)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
McGlinchey et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Aukerman et al. (2020)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Arcadi et al. (2020)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Heydarikhayat et al. (2022)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Lee and Lee (2020)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Pogoy and Cutamora (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)

Citation	Criterion 1	2	3	4	5	6	7	8	9	10	Results (%)
Chung et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Kinsella et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Liu et al. (2020)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Lee and Lee (2020)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Grailey et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Fontanini et al. (2021)	Y	Y	Y	Y	N	Y	N	Y	Y	Y	16/20 (80%)
Mohammed N and Lelièvre (2021)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	16/20 (80%)
Moradi t al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Yau et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Khanjarian and Sadat Sadat-Hoseini (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
EftekharArdebili et al. (2020)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	16/20 (80%)
Robinson et al. (2022)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Tune et al. (2021)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	16/20 (80%)
Chandler-Jeanville et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Brockopp et al. (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
Levi and Moss (2022)	Y	Y	Y	Y	Y	Y	N	N	Y	Y	16/20 (80%)
McCulloh Nair et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Ganapathy et al. (2021)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	18/20 (90%)
Mokhtari et al. (2022)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	16/20 (80%)
%	100	100	100	100	84.7	56.5	0.0	89.1	100	100	

Y= yes; N= no; U= unclear

1. Is there congruity between the stated philosophical perspective and the research methodology? 2. Is there congruity between the research methodology and the research question or objectives? 3. Is there congruity between the research methodology and the methods used to collect data? 4. Is there congruity between the research methodology and the representation and analysis of data? 5. Is there congruity between the research methodology and the interpretation of results? 6. Is there a statement locating the researcher culturally or theoretically? 7. Is the influence of the researcher on the research, and vice-versa, addressed? 8. Are participants, and their voices, adequately represented? 9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? 10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Data extraction and synthesis

The data were extracted from the included articles by using the JBI SUMARI data extraction standard tool. The extracted data included the country, the number of participants, the demographic characteristics of the participants (age, gender, and years of working experience), the methodology of the study, data gathering, and analysis. Some studies included data for other health professionals, however only data for nurses was extracted. The relevant qualitative findings from the included studies were extracted verbatim with the inclusion of a participant quote to support and illustrate the meaning of the findings. The qualitative findings were rated according to JBI Levels of Credibility (19), as unequivocal, credible, or unsupported. The findings were compiled by using the meta-aggregation method. This process involved assembling the findings at the subtheme level from individual studies, followed by categorizing the findings based on similarity in meaning. Based on this, a comprehensive set of synthesized findings was created, which could be used as a basis for clinical practice.

Results

Study characteristics

The results of the 46 qualitative studies conducted on a total of 2030 nurses were included in the present systematic review (Table 2). These studies were published between 2020 and 2022 and the methodology of the studies was mostly phenomenological. The gender of most of the nurses was female and their ages were between 18 (20, 21) to 64 (21, 22) years old. The years of work experience varied from 3 months (23) to 44 years (22). Studies were conducted in the USA (22, 20, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33), Canada (34, 35), Philippines (36), Iran (37, 38, 39, 40, 41, 42), Qatar (43), South Korea (44, 22, 45, 46), Turkey (23, 47, 48, 49), UK (50, 51, 52, 53), Indonesia (54), Italy (55, 56, 57), UAE (58), China (59, 60), Bangladesh (61), France (62) and India

(63). Studies were conducted in different hospital environments, intensive care units, and emergency departments.

The results of the included studies included 163 subcategories, which finally led to the formation of 27 categories based on similarity in meaning. Based on this classification, 4 synthesized findings were extracted: Professional Development, Psychological exhaustion, Care Challenges, and Work-family conflict.

Table 2. Characteristics of included studies

Citation	Country	No. of Participants	Age (years)	Clinical experience (years)	Females	Study design	Data collection and analysis
LoGiudice and Bartos (2021)	United States	43	23-64	15.8	42	Mixed methods	Open-ended questionnaire- Thematic analysis
Nelson et al. (2021)	Canada	31	NR	NR	NR	Phenomenology	Interviews- Thematic analysis
Sadang (2021)	Philippines	12	25 - 38	NR	9	Phenomenology	Interviews- Colaizzi's method
Karimi et al. (2020)	Iran	12	29.41	6.75	8	Phenomenology	Interviews- Colaizzi's method
Villar et al. (2021)	Qatar	30	25-49	2-26	4	Phenomenology	interviews- Colaizzi's method
Gray et al. (2021)	USA	110	18->45	NR	NR	Mixed-methods	Online survey- Thematic analysis
Robinson and Stinson (2021)	United States	14	40.3	10.8	14	Phenomenology	Interviews- Colaizzi's method
Dalrae and Gyuyoung (2020)	South Korea	10	28-54	2.2-28	NR	Qualitative	Interviews- Thematic analysis
Moghaddam-Tabrizi and Sodeify (2020)	Iran	14	22-43	3-15	9	Phenomenology	Interviews- Diekelmann's approach
Muz and Erdoğan (2021)	Turkey	19	25-40	3m-18	17	Phenomenology	Interview - Colaizzi's method
Guttormson et al. (2021)	United States	285	20->60	8	247	Qualitative	Open-ended question - Content analysis
Schroeder et al. (2020)	United States	21	33.5 ± 7.3	7.9 ± 6.6	19	Qualitative	Interview - content analysis
Roberts et al. (2021)	UK	255	45.1	NR	226	Qualitative	Open-ended questions -Content analysis
Cos kun S imsek and Gunay (2020)	Turkey	26	20->38	1-12	16	Qualitative	Open-ended question– Content analysis
Foli et al. (2021)	USA	73	35	12	71	Qualitative	Online survey- Content analysis
Akkuş et al. (2020)	Turkey	19	31.9 ± 7.2	9.9 ± 8.3	64.7%	Qualitative	Interviews -Thematic analysis
Cengiz et al. (2021)	Turkey	52	NR	NR	37	Mixed methods	Open-ended question- Thematic analysis
Gunawan et al. (2021)	Indonesia	17	25-40	NR	12	Phenomenology	Interviews- Van Manen'smethod
Gordon et al. (2020)	USA	11	33.6	7.9± 7.8	7	Qualitative	Interviews- Content analysis
Simeone et al. (2022)	Italy	16	23-61	1-32	7	Phenomenology	Interview-Cohen's methodology
Lee et al. (2022)	South Korea	10	28	4	7	Phenomenology	Colaizzi's method
McGlinchey et al. (2021)	UK	10	25 to 56	NR	7	Phenomenology	Interviews - Thematic analysis
Aukerman et al. (2020)	USA	12	23.25	NR	12	Phenomenology	Interviews- Thematic analysis
Arcadi et al. (2020)	Italy	20	25-45	2-27	7	Phenomenology	Interviews - Thematic analysis
Heydarikhayat et al. (2022)	Iran	13	27.69± 3.83	5.46 ±3.25	7	Phenomenology	Interviews- Colaizzi's method
Lee and Lee (2020)	Korea	16	24-41	1-15	14	Phenomenology	interviews- Thematic analysis
Pogoy and Cutamora (2021)	United Arab Emirates	8	28-32	NR	5	Phenomenology	Interviews -Collaizi's method

Citation	Country	No. of Participants	Age (years)	Clinical experience (years)	Females	Study design	Data collection and analysis
Chung et al. (2021)	China	10	<30->40	<10-30	8	Phenomenology	Interviews- Collaizi's method
Kinsella Et al. (2021)	UK and Ireland	38	18-64	NR	29	Phenomenology	Interviews -Thematic analysis
Liu et al. (2020)	China	13	23-42	2-17	8	Phenomenology	Interviews- Colaizzi's method
Lee and Lee (2020)	South Korea	18	NR	NR	NR	Phenomenology	interviews - Thematic analysis
Grailey et al. (2021)	UK	49	NR	NR	NR	Qualitative	Interview- thematic analysis
Fontanini et al. (2021)	Italy	380	35.5	NR	219	Qualitative	Texts and videos -Content analysis
Mohammed and Lelièvre (2021)	Canada	43	NR	NR	NR	Phenomenology	Interviews -Thematic content analysis
Moradi et al. (2021)	Iran	17	27-43	2-17	12	Qualitative	Interviews-Content analysis
Yau et al. (2021)	Canada	23	NR	NR	NR	Grounded theory	interviews –Thematic analysis
Khanjarian and Sadat Sadat-Hoseini(2021)	Iran	12	25-44	1-18	8	Phenomenology	Interviews-Glaizer technique
EftekharArdebili et al. (2020)	Iran	97	35.34	10.04	53	Qualitative	Interviews - thematic analysis
Robinson et al. (2022)	USA	19	23-49	0.75-23	14	Phenomenology	Interviews- thematic analysis
Tune et al. (2021)	Bangladesh	41	<30->50	<1->5	19	Qualitative	Interviews – Thematic analysis
Chandler-Jeanville et al. (2021)	France	49	NR	NR	NR	Phenomenology	Interviews- Thematic analysis
Brockopp et al. (2021)	United States	10	NR	NR	NR	Interpretive phenomenology	Interviews- thematic analysis
Levi and Moss (2022)	USA	10	26.6	1.95	9	Phenomenology	Interviews- Colaizzi method
McCulloh Nair et al. (2021)	United States	25	NR	NR	NR	Phenomenology	Qualtrics-Thematic analysis
Ganapathy et al. (2021)	India	25	22 -45	7.73± 5.11	22	Phenomenology	Interviews -Colaizzi's method
Mokhtari et al. (2022)	Iran	12	28.58 ± 3.98	5.25 ± 2.89	11	Content analysis	Interviews -Thematic analysis

NR= Not reported

Professional development

Professional development was derived from 7 subcategories of professional solidarity, being appreciated, developing skills and competence, gaining new experiences, a sense of pride, improving social image, and educating nurses.

Professional solidarity

Overall, this systematic review concluded that the COVID-19 pandemic affected HCWs as a common experience (53). This common goal gave HCWs, including nurses, a sense of true family bonding (59). As a result, coordination and communication (65), teamwork dynamics (53), teamwork cohesion and camaraderie (43), sense of belonging (20), and professional solidarity (23) between nurses and other HCWs increased. Breaking communication barriers led to changes in relationships (53), and finally, the partnership between team leaders, nurses, and between nurses and other HCWs improved significantly (64).

Being appreciated

Nurses experienced public support in various forms during the Covid-19 pandemic. For example, the citizen of Wuhan City expresses their gratitude by installing a gratitude banner in the hospital (59) and expressing

gratitude to patients during their hospitalization (46). Community appreciation (41) established the feeling of being a hero (24) among nurses and as a source of social support (43) increased the ability of nurses to deal with the stressors of the pandemic (60).

Developing skills and competence

In most of the studies, nurses called the COVID-19 pandemic an opportunity (49, 39) to gain a novel experience (46). This new experience has provided the opportunity to come up with the pandemic (39), professional awareness (47), empowerment (53), and gaining experience (42). The above-mentioned experiences led to the growth of nursing independence (53), improved the quality of care (31), and restored self-confidence among nurses (42).

Gaining new experiences

It is noteworthy to mention that although all participants' experiences were not positive, however, most nurses reported self-improvement in their work and their response to the pandemic, (47, 53) Because they learned how to care for patients as professional nurses during the pandemic (66). Due to the experiences gained during this pandemic, nurses believe that they are now well-equipped to professionally devote their profession to any pandemic situation in the future (66).

Sense of pride

A number of nurses who participated in the included studies reported that the COVID-19 pandemic led them to experience a sense of purpose (43), love for their profession (47), and job satisfaction (57) among them. Commitment to the nursing profession (58) has made nurses feel sad about their colleague's resignations (45) and feel proud of being a nurse (22, 46, 57).

Improving social image

Nurses' concern for the community's health and their happiness for the recovery of patients increased the value and reputability of the nursing profession throughout the community (41). Providing care to patients in crisis, concern for society and patients, and excellent performance when they were judged by society raised the value of nursing in the view of society. In the meantime, nurses experienced the sense of being a superhuman (28), who defended the health of the society by following the example of important figures on the battlefields, so this was a professional and lasting experience, that they were proud of (41, 67).

Educating nurses

The emerging nature of the COVID-19 pandemic, and its rapid widespread and high mortality rate highlighted the need to educate nurses on new infection control issues. Providing nurses with the latest published information in the world (61), publishing prevention protocols (68), training personnel in simulated wards (69), training to don and doffing PPE (44), and providing oxygen therapy care to Covid-19 patients (57), etc., to nurses were among the measures taken to control the Covid-19 pandemic. Informing nurses led to anxiety alleviation an increase in the feeling of mastery over the situation and a decrease in the rate of transmission and infection among them (63).

Psychological exhaustion

Psychological exhaustion included 5 subcategories emotional/psychological stress, helplessness, calamity/disaster, rejection, and lifestyle change suffering.

Emotional/Psychological stress

Challenged by the COVID-19 pandemic, nurses suffered from many emotional and psychological disorders. They considered caring for a patient diagnosed with COVID-19 to be comparable to being on the battlefield (24). The initial panic (48) caused by the onset of a pandemic with a high rate of widespread mortality rate shocked nurses (41). During this pandemic, they face the crisis of fear (37, 56), despair (34, 47, 46), stress (34), initial panic at the beginning of the pandemic (48), possible death (37), and worry about the future (42) and experienced the feeling of overwhelm (39). The accumulation of this amount of stress with various causes led to an increase in the rate of anxiety disorders, obsessive behaviors, and mental fatigue (49) among nurses. The source of

all these disorders was the feeling of uncertainty and feeling of incompetency due to unfamiliar nursing situations (45), and finally, the nurses underwent the psychological pressure of dying alone or losing their loved ones (42).

Frustration

Nurses stated that coronavirus disease not only has no certain treatment, but it is also impossible to predict the possibility of recovery or death of the patient with high certainty (38, 42). They stated that despite the positive overall health condition of some patients, in the next shifts, they were shocked when they heard the news of their deaths from their colleagues. Therefore, the nurses felt the sense of providing inefficient care, lack of control over the situation (42), frustration (28), and ineffective (25). Self-uncertainty of one's own abilities (29) is a testimony to the feeling of helplessness in facing COVID-19 among nurses.

Calamity/Disaster

The patient's effort to survive, in facing the continuous deterioration of his clinical condition (25), his contact with their loved ones and farewell to them (43), seeing the sorrow and tears of the cry of the patients (60), and the patients begging the nurses to save their lives (37), the high mortality rate (20), seeing the mourning of the patient's families (25) and even the death of the patient next to strangers (and not his family) many times during the day had a strong emotional effect on the nurses (24). Nurses daily witnessed the plight of their patients and their families and considered it a form of torture for themselves.

Rejection

Rejected by family members, friends, nurses, colleagues, and the community, for fear of getting infected with COVID-19, made nurses feel socially discriminated against and rejected (54, 63). In addition to nurses, their families were also rejected by others even though they were not infected (46). This stigma broke the hearts of nurses and forced them to hide the fact that they are nurses who are caring for patients with COVID-19 (61).

Lifestyle change suffering

Caring for a patient diagnosed with Covid-19 exposed nurses to a high risk of infection and spreading the virus, so, to prevent this from happening, they had to change their lifestyle (42). This lifestyle change was accompanied by suffering for nurses. Nurses reported that their relationships with friends and family had changed during the pandemic (24). The reason for this change is the fear of transmitting the virus to them and the mental and physical stress experienced by nurses. Voluntary restriction from social activities (46), self-quarantine (23, 28), and daily routine transportation between home and hospital put nurses in the trap of loneliness (34, 55) and homesickness (54), for family and friends.

Care challenges

Care challenges are categorized into 8 subcategories, which are: new protocols, unpreparedness, the difficulty of care and treatment, weak support system, non-cooperative society, personal protective equipment, working in new departments, and ethical issues.

New protocols

The continuous change of care protocols for patients with Covid-19 (22, 20, 24, 27, 28), their ambiguity, and the complexity of details in the protocols (46) lead to frustration in the role due to chaos in the environment (30). Protocols are a means of instruction for transmission, treatment, prevention, diagnostic, and treatment methods. Ambiguity and frequent changes in protocols caused stress, and confusion, therefore, creating questions about its ambiguities among nurses.

Unpreparedness

One of the reasons for the unpreparedness of nurses to deal with this pandemic is the emerging nature of this virus. The unknown nature (29) of this new disease led to (40) the scarcity of available information, constantly changing or ambiguous information (42). Therefore, nurses felt overwhelmed, and unprepared (20), fearful, worried, and uncertain about the basics of the diagnosis and care concepts (61). Another reason

for nurses' unpreparedness was the new work environment (35).

The difficulty of care and treatment

The difficulties that nurses reported in providing care and treatment could be summarized as patients' characteristics, overcrowded hospital wards (58), patients' isolation (27) prohibited visitation of patients by their families (25), and use of PPE (48). Since providing physical care and treatment is a time-consuming process for a large number of patients, therefore there would be no time left to talk to patients who are alone in isolated rooms. Nurses face difficulties in managing older patients' care with concomitant diseases such as dementia, Alzheimer's, and hearing loss (51). PPE in older people with hearing loss was considered a major communication barrier for lip reading (29). Infected mothers are treated along with their infected children. Conscious patients and children are among the most challenging groups in care (27). Isolation of patients and prohibited visitation of patients by their families led to facing nurses with challenges such as the psychological burden of caring for patients in the last days of their lives without the presence of their families, fulfilling the basic needs of the patient such as bathing and feeding him to a large number of patients., nurses' anger at the patients' requests to bring goods or food delivered by their families, patients' attempts to leave the isolation unit against the infection prevention guidelines (58).

Weak support system

The nurses stated that basic equipment in hospitals is not enough to care for patients with Covid-19. They also expressed that multi-unit work guidelines were often created for financial reasons rather than for patient and staff safety (65). Insufficient number of ventilators and nurses (53), lack of training of personnel before entering the quarantine wards in some countries, low-quality of PPE, mandatory overtime in nursing in 24-hour shifts with a set of PPE, lack of psychological support, lack of financial incentives are considered as the reasons proving weak support (68). Most respondents felt that the regulations had betrayed them since physical and social distancing had been violated and airports reopened at the peak of the pandemic (54).

Non-cooperative society

One of the obstacles regarding disease control was society's thoughts and beliefs. People were not informed about COVID-19 (25), or they did not believe in COVID-19's harm and did not believe in its dangers (27). Some consider health, illness, and death to be their destiny and believe that they have no ability to control them (51). As a result, they resisted accepting this new disease and tried to escape from the reality of the disease (29). Nurses are angry that they are putting themselves and their family's health at risk when caring for patients with COVID-19, while some people are ignoring social distancing guidelines, denying COVID-19, and resisting accepting it (32). Because the nurses believed that by not following the protocols, they were endangering the lives of the medical staff (61).

Personal protective equipment

In total, the articles included in the study all emphasized the lack of personal protective equipment during the pandemic (36, 25, 27, 28, 51, 56, 58, 60, 46). Therefore, the quantity and quality of PPE became a concern for nurses. The use of PPE poses challenges such as hindering communication with others (63), sweating and dehydration in the hot months of the year (60), skin rashes (40), sores on the nose and ears (51), and restricting activity (60), wasting a long time for donning and doffing (53), they could not use the washroom facilities in 12-hour shifts (60), difficulty in identifying nurses by colleagues and patients, the impossibility of lip reading for hearing loss patients and fatigue (symptoms such as headache, myalgia, shortness of breath[34] for nurses.

Working in new departments

Nurses experienced many changes in their workplace, which were accompanied by logistical and personal challenges in their new roles. These changes in their role and workplace were often sudden and happened in daily routines (47). Although nurses considered these changes necessary and inevitable, these changes were associated with high levels of anxiety and

discomfort (43, 60). Among these changes, we can point out working in places with negative pressure, working with PPE, changes in a prescribed medication, working in the intensive care unit without proper training, and changing the working hours of shifts (51).

Ethical issues

One of the moral dilemmas that nurses faced was the conflict between their duty and their self-safety (20, 23). Some nurses were very afraid of this disease and tried to stay away from the patients. They only stay in the patient's room for a short time, provide little care, or sometimes even ignore it in order to not be infected (39). Being afraid to come to work and preferring to take care of patients with an illness rather than COVID-19 was an example of this conflict among nurses. The indifference of nurses to people who were infected and hospitalized due to non-observance of preventive protocols and attending churches and gatherings was also observed (46).

Work-family conflict

The work-family conflict included 7 subcategories, which are: work pressure, family protection, self-protection, economic pressure, being far away from family, work commitment, and coping.

Work pressure

Nurse shortage (36, 43, 28), frequent increase of hospitalized patients, lengthy 24-hour working shifts, vacation cancellations, increased working hours, insomnia, and insufficient rest proved the heavy workload of nurses during the pandemic (40, 42, 61). The heavy workload led to the physical and emotional exhaustion of nurses (60, 46, 53). Therefore, they did not have time and energy to take care of their other personal life roles such as maternal, wifely, etc. (57).

Family protection

One of the main concerns of nurses is the fear of getting infected and spreading the virus to their family members (22). Despite frequent contact with patients with Covid-19, using PPE, however, nurses felt insecure (43). Therefore, nurses felt the need to take additional measures to protect themselves and their families (25). Some nurses stayed in hotels to protect their families (57). The rest of those who went home were taking strict measures such as frequent bathing, using a mask at home, putting off clothes before entering the house (28), isolating themselves in a separate room, and disinfecting hands and surfaces before entering the house (39, 58).

Self-protection

In order to prevent themselves from infecting by COVID-19 while caring for patients, nurses used measures based on their own intuition and not based on infection control protocols (45). Following health protocols, boosting the immune system by the consumption of minerals and vitamins, not smoking, sleeping at least 8 hours a day, wearing several masks (57), gloves, and gowns, and limiting the time of caring for patients, including the actions which nurses took during the Covid-19 (51).

Economic pressure

While during the pandemic, other government employees were quarantined at home and receiving salaries. Nurses worked extra shifts due to critical conditions in the hospital and had the risk of contamination and transmitting the infection to their family members. Inadequate support, failure to reward personnel, and lack of financial support from the hospital proved the weak organizational support for nurses (40, 63). Therefore, nurses felt victimized and betrayed by the organization (54). For this reason, during the pandemic, job dissatisfaction and the desire to leave the job increased (40, 41, 57, 46).

Being far away from family

Long work hours and shift work during the pandemic affected the family life of nurses (50). As a result, reducing the time spent caring for their family and face challenges such as not having enough time to do their children's school assignments, leaving their teenage children alone during long working hours at home, losing peace of lifestyle, ignoring their personal life, limited contact with family members, their family

members were faced with the fear of transmission of infection by the nurse and express the regret about not seeing the children by the nurse's parent (28, 63).

Work commitment

Many nurses volunteered to work in the centers dedicated to patients diagnosed with Covid-19, without hesitation after seeing the fear of these patients (34, 36, 43, 20). Nurses considered this pandemic to be an opportunity to be at the service to their countrymen and pay their respects to the nursing profession (24, 38, 26, 55). They felt guilty about abandoning their colleagues on this battlefield, and they considered it their inevitable duty to join this battle (33, 63, 65).

Coping

A short time after the onset of the pandemic many nurses accepted and adapted themselves to the crisis and its challenges (48). Nurses use various strategies to cope with physical and psychological stressors (20). They used self-adjustment strategies such as establishing an emotional connection with new members of their team, actively acquiring knowledge about COVID-19, limiting watching news about COVID-19, having a sense of humor with colleagues (63), studying, walking, gardening (27), worshipping, listening to music, chatting, talking on the phone (48), dancing and playing puzzles. And used relaxation strategies such as yoga, and art therapy (25,26), and altruistic behaviors such as paying out-of-pocket to meet the needs of patients who were far from their families because of quarantine, volunteering to work in covid-19 centers, doing non-nursing tasks (53).

Discussion

This review led to the formation of 27 categories that formed 4 synthesized findings: 1) Professional Development, 2) Psychological exhaustion, 3) Care Challenges, and 4) Work-family conflict.

These findings synthesized the literature review about nurses' experiences in caring for patients diagnosed with Covid-19. As such, they are important to inform support strategies to optimize the international nursing workforce both during and following the current COVID-19 pandemic.

Nurses have a high degree of inter-disciplinary collaboration (69) and work in multidisciplinary teams focused on collaborative care, which is considered an important strategy to improve patient outcomes (70). In this review, many nurses identified an increased sense of commitment and unity among healthcare providers in teamwork. They reported that professional solidarity among the HCWs increased in such a way that it removed communication barriers and formed a family bond between them.

Nursing has always sought to provide effective services and care (71). The goal of improving teamwork cohesion is to provide effective and organized nursing care. Putting nurses in new circumstances that have not been experienced before and receiving the necessary training led to the development of skills, gaining new experiences, and job qualifications. Patient care is the most important objective of a nurse (72). Therefore, the development of skills and promotion of professional solidarity would make it possible to achieve this goal. People's appreciation for nurses led to a sense of pride among nurses. The COVID-19 pandemic provided an opportunity to increase the ethical value of the nursing profession in the world (73). The results of the included studies were in line with each other’s.

Several factors, including high contagion spread (74), shortage of medical supplies and PPE, shortage of vaccine and specific treatment, and high mortality rate of treatment staff were the source of psychological stress and fear among nurses during the pandemic (75). Nurses who dealt with positively diagnosed cases of COVID-19 and witnessed death rates from the pandemic experienced greater psychological stress (76). The results of this review were in line with these studies, indicating that nurses suffer from emotional and psychological stress, feel helpless in the recovery of patients after witnessing their high mortality rate, and witness the suffering of a large number of patients and families during the day. In addition to these factors, nurses were rejected by society, including colleagues, family

members, strangers, and friends because of the risk of transmitting the virus to them. On the other hand, nurses were forced to change their lifestyle to self-isolation, limiting social relationships and loneliness in order to prevent others from getting infected. Nurses suffered mental burnout during the Covid-19 pandemic. Anxiety, depression, insomnia, and stress were among the psychological disorders experienced by nurses during the pandemic (75).

Knowledge is power and increases control over critical situations (34). Nurses working in the COVID-19 centers faced many challenges since they had to control and deal with a virus that was not well known, and they had to adapt to policies, protocols, nursing skills, and the new workplace without orientation (77). The results of this review also showed that the unknown nature of this virus and the frequent change of protocols, the poor quantity and quality of PPE, working in a new unit, and the lack of support made care and treatment difficult for nurses. In this regard, unfollowing preventive protocols by people increases the rate of infection and hospitalization. While caring for patients with Covid-19, nurses faced moral dilemmas. Among these moral dilemmas, they mentioned the risk of infection during care.

Insufficient nursing staff, the complexity of caring for COVID-19 patients, long working hours, and providing services with PPE resulted in physical exhaustion for nurses. On the other hand, the main concern of nurses is getting infected and its transmission to their family members (78, 79, 80, 81). Therefore, they were taking strict measures to protect themselves and their families from getting infected with Covid-19. The commitment to the nursing profession in a context that brought possible risks for their family members and the nurse herself put them in a work-family conflict. Considering these challenging conditions, while other jobs were quarantined at home, financial rewards were not allocated to nurses.

Study strengths and Limitations

using the standardized JBI critical appraisal instrument for qualitative studies to assess the methodological quality of included studies is the strength of this review. In addition, involving more than one reviewer in the quality assessment, data extraction, and data analysis leads to reducing potential bias. The recurrence of findings between studies augmented the validity of the review. The use of the meta-aggregation approach enabled the categorization of each finding reported in the studies without seeking to re-interpret the primary author's findings.

This review was conducted some limitations need to be acknowledged. Firstly, only studies published in English were included in this review. Hence, other studies published in other native languages were excluded. Secondly, most of the nurses participating in the studies were female. So, the results reported in this review may not be representative of male nurses.

Conclusion

The results of this systematic review showed that explaining the experiences of nurses can help to identify their emotional, psychological, physical, and economic needs in all affected countries in order to provide a platform for their work with more confidence. Nurses have experienced conflicts between their work and family and challenges when caring for patients with COVID-19. Hence, they were psychologically under pressure but professionally developed. On the other hand, understanding the experiences and effects of the pandemic on nurses is a necessity to ensure that nurses are well supported, stay in the workplace, and provide effective health care when the need for health in society has increased. It is vital that nurses receive clear, concise, and current information about best practice nursing care and infection control, as well as sufficient access to appropriate PPE to optimize their safety.

It is vital to have sufficient nursing staff during a pandemic when a nurse gets sick or needs rest. The possibility of safe visiting of nurses with their family members can play an effective role in reducing their stress. To ensure the survival of nurses in critical situations, all their needs must be carefully monitored and the necessary support provided to them.

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Conflict of interest

No conflict of interest has been declared by the authors.

References

1. Madhav N, Oppenheim B, Gallivan M, Mulembakani P, Rubin E, Wolfe N. Pandemics: risks, impacts, and mitigation. Disease control priorities: Improving health and reducing poverty. 3rd edition. 2017 Nov 27.
2. Wasiuta M. Worldometers. (2022). Coronavirus center. [Retrieved from]: https://www.worldometers.info/coronavirus/
3. National Health Commission. China-WHO joint report on COVID-19. http://www.nhc.gov.cn/jkj/s3578/202002/87fd925 10d094e4b9bad597608f5cc2c.shtml (accessed Mar 1, 2020)
4. World Health Organization, 2020. State of the World's Nursing 2020: Investing in education, jobs and leadership Accessed 14 April 2020 https://www.who.int/ publications-detail/nursing-report-2020.
5. Hope K, Massey PD, Osbourn M, Durrheim DN, Kewley CD, Turner C. Senior clinical nurses effectively contribute to the pandemic influenza public health response. Australian Journal of Advanced Nursing, The. 2011 Mar;28(3):47-53.
6. Borasio GD, Gamondi C, Obrist M, Jox R; for the Covid-Task Force of palliative ch. COVID-19: decision making and palliative care. Swiss Medical Weekly. 2020 Mar;150(1314):w20233.
7. Corless IB, Nardi D, Milstead JA, Larson E, Nokes KM, Orsega S, Kurth AE, Kirksey KM, Woith W. Expanding nursing's role in responding to global pandemics 5/14/2018. Nursing Outlook. 2018 Jul 1;66(4):412-5.
8. Koh Y, Hegney D, Drury V. Nurses' perceptions of risk from emerging respiratory infectious diseases: A Singapore study. International Journal of Nursing Practice. 2012 Apr;18(2):195-204.
9. Jervis R. Death is our greeter': Doctors, nurses struggle with mental health as coronavirus cases grow. USA Today. 2020 May 3.
10. Martin SD, Brown LM, Reid WM. Predictors of nurses' intentions to work during the 2009 influenza A (H1N1) pandemic. AJN The American Journal of Nursing. 2013 Dec 1;113(12):24-31.
11. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, He LI, Sheng C, Cai Y, Li X, Wang J. Mental health care for medical staff in China during the COVID-19 outbreak. The Lancet Psychiatry. 2020 Apr 1;7(4):e15-6.
12. Liu Z, Han B, Jiang R, Huang Y, Ma C, Wen J, Zhang T, Wang Y, Chen H, Ma Y. Mental health status of doctors and nurses during COVID-19 epidemic in China. Available at SSRN 3551329. 2020 Mar 4.
13. Mokhtari 15. Liu YE, Zhai ZC, Han YH, Liu YL, Liu FP, Hu DY. Experiences of front-line nurses combating coronavirus disease-2019 in China: A qualitative analysis. Public Health Nursing. 2020 Sep;37(5):757-63. https://doi.org/10.1111/phn.12768
14. Mealer M. Promoting well-being and resilience in critical care nursing. AACN Advanced Critical Care. 2020 Jun 15;31(2):139-40. doi:10.4037/aacnacc2020952
16. Polit, D. F., & Beck, C. T. (2004). Nursing research: Principles and methods: Lippincott Williams & Wilkins.
17. Munn Z, Barker TH, Moola S, Tufanaru C, Stern C, McArthur A, Stephenson M, Aromataris E. Methodological quality of case series studies: an introduction to the JBI critical appraisal tool. JBI Evidence Synthesis. 2020 Oct 1;18(10):2127-33.
18. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, Akl EA, Brennan SE, Chou R. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ. 2021 Mar 29;372.
19. Munn Z, Porritt K, Lockwood C, Aromataris E, Pearson A. Establishing confidence in the output of qualitative research synthesis: the ConQual approach. BMC Medical Research Methodology. 2014 Dec;14:1-7.
20. Gray K, Dorney P, Hoffman L, Crawford A. Nurses' pandemic lives: A mixed-methods study of experiences during COVID-19. Applied Nursing Research. 2021 Aug 1;60:151437.
21. Kinsella EL, Hughes S, Lemon S, Stonebridge N, Sumner RC. "We shouldn't waste a good crisis": the lived experience of working on the frontline through the first surge (and beyond) of

COVID-19 in the UK and Ireland. Psychology & Health. 2022 Feb 1;37(2):151-77.
22. LoGiudice JA, Bartos S. Experiences of nurses during the COVID-19 pandemic: A mixed-methods study. AACN Advanced Critical Care. 2021 Mar 15;32(1):14-26.
23. Muz G, Erdoğan Yüce G. Experiences of nurses caring for patients with COVID-19 in Turkey: A phenomenological enquiry. Journal of Nursing Management. 2021 Jul;29(5):1026-35.
24. Robinson R, Stinson CK. The lived experiences of nurses working during the COVID-19 pandemic. Dimensions of Critical Care Nursing. 2021 May 1;40(3):156-63.
25. Guttormson JL, Calkins K, McAndrew N, Fitzgerald J, Losurdo H, Loonsfoot D. Critical care nurses' experiences during the COVID-19 pandemic: a US national survey. American Journal of Critical Care. 2022 Mar 1;31(2):96-103.
26. Schroeder K, Norful AA, Travers J, Aliyu S. Nursing perspectives on care delivery during the early stages of the COVID-19 pandemic: A qualitative study. International Journal of Nursing Studies Advances. 2020 Nov 1;2:100006.
27. Foli KJ, Forster A, Cheng C, Zhang L, Chiu YC. Voices from the COVID-19 frontline: Nurses' trauma and coping. Journal of Advanced Nursing. 2021 Sep;77(9):3853-66.
28. Gordon JM, Magbee T, Yoder LH. The experiences of critical care nurses caring for patients with COVID-19 during the 2020 pandemic: A qualitative study. Applied Nursing Research. 2021 Jun 1;59:151418.
29. Aukerman R, White L, Gierach M, Miller T, Wolles B. The lived experience of nurses transitioning to professional practice during the COVID-19 pandemic. Nursing Forum. 2022 Sep;57(5):756-64. doi: 10.1111/nuf.12759.
30. Robinson KR, Jensen GA, Gierach M, McClellan C, Wolles B, Bartelt S, Hodge J. The lived experience of frontline nurses: COVID-19 in rural America. Nursing Forum. 2022 Jul;57(4):640-649. doi: 10.1111/nuf.12727.
31. Brockopp D, Monroe M, Davies CC, Cawood M, Cantrell D. COVID-19: The lived experience of critical care nurses. JONA: The Journal of Nursing Administration. 2021 Jul 1;51(7/8):374-8.
32. Levi P, Moss J. Intensive care unit nurses' lived experiences of psychological stress and trauma caring for COVID-19 patients. Workplace Health & Safety. 2022 Aug;70(8):358-67.
33. Nair JM, Birkhoff S, Mandel D, Thomas A. The ever-changing work environment during COVID-19: nurses' experiences in the early phase. Journal for Nurses in Professional Development. 2023 Jan 1;39(1):E1-7.
34. Nelson H, Hubbard Murdoch N, Norman K. The role of uncertainty in the experiences of nurses during the Covid-19 pandemic: A phenomenological study. Canadian Journal of Nursing Research. 2021 Jun;53(2):124-33.
35. Mohammed N, Lelièvre H. Lived experience of medicine nurses caring for COVID-19 patients: a quality improvement perspective. Journal of Nursing Care Quality. 2022 Jan 1;37(1):35-41.
36. Sadang JM. The Lived Experience of Filipino Nurses' Work in COVID-19 Quarantine Facilities: A Descriptive Phenomenological Study. Pacific Rim International Journal of Nursing Research. 2021 Jan 1;25(1):154-64.
37. Karimi Z, Fereidouni Z, Behnammoghadam M, Alimohammadi N, Mousavizadeh A, Salehi T, Mirzaee MS, Mirzaee S. The lived experience of nurses caring for patients with COVID-19 in Iran: a phenomenological study. Risk Management and Healthcare Policy. 2020 Aug 20:1271-8.
38. Moghaddam-Tabrizi F, Sodeify R. Lived experiences of nurses in the care of patients with COVID-19: A study of hermeneutic phenomenology. Iranian Journal of Nursing and Midwifery Research. 2021 Nov 1;26(6):537-43.
39. Heydarikhayat N, Ghanbarzehi N, Shahkaramzehi Z, Sabagh K, Rohani C. Nurses' lived experiences of caring for patients with COVID-19: A phenomenological study. Journal of Research in Nursing. 2022 Jun;27(4):313-27.
40. Moradi Y, Baghaei R, Hosseingholipour K, Mollazadeh F. Challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients: A qualitative study. Journal of Nursing Management. 2021 Jul;29(5):1159-68.
41. Khanjarian F, Sadat-Hoseini AS. Lived experiences of nurses providing altruistic care to patients with COVID-19. Nursing Outlook. 2021 Sep 1;69(5):767-79.
42. Ardebili ME, Naserbakht M, Bernstein C, Alazmani-Noodeh F, Hakimi H, Ranjbar H. Healthcare providers experience of working during the COVID-19 pandemic: a qualitative study. American Journal of Infection Control. 2021 May 1;49(5):547-54.
43. Villar RC, Nashwan AJ, Mathew RG, Mohamed AS, Munirathinam S, Abujaber AA, Al-Jabry MM, Shraim M. The lived experiences of frontline nurses during the coronavirus disease 2019 (COVID-19) pandemic in Qatar: A qualitative study. Nursing Open. 2021 Nov;8(6):3516-26.

44. Jin D, Lee G. Experiences of nurses at a general hospital in Seoul which is temporarily closed due to COVID-19. The Journal of Korean Academic Society of Nursing Education. 2020 Nov 30;26(4):412-22.
45. Oh H, Lee NK. A phenomenological study of the lived experience of nurses caring for patients with COVID-19 in Korea. Journal of Korean Academy of Nursing. 2021 Oct 1;51(5):561-72.
46. Lee N, Lee HJ. South Korean nurses' experiences with patient care at a COVID-19-designated hospital: Growth after the frontline battle against an infectious disease pandemic. International Journal of Environmental Research and Public Health. 2020 Dec;17(23):9015.
47. Coşkun Şimşek D, Günay U. Experiences of nurses who have children when caring for COVID-19 patients. International Nursing Review. 2021 Jun;68(2):219-27.
48. Akkuş Y, Karacan Y, Güney R, Kurt B. Experiences of nurses working with COVID-19 patients: A qualitative study. Journal of Clinical Nursing. 2022 May;31(9-10):1243-57.
49. Cengiz Z, Isik K, Gurdap Z, Yayan EH. Behaviours and experiences of nurses during the COVID-19 pandemic in Turkey: A mixed methods study. Journal of Nursing Management. 2021 Oct;29(7):2002-13.
50. Roberts NJ, Kelly CA, Lippiett KA, Ray E, Welch L. Experiences of nurses caring for respiratory patients during the first wave of the COVID-19 pandemic: An online survey study. BMJ Open Respiratory Research. 2021 Jul 1;8(1):e000987.
51. McGlinchey E, Hitch C, Butter S, McCaughey L, Berry E, Armour C. Understanding the lived experiences of healthcare professionals during the COVID-19 pandemic: An interpretative phenomenological analysis. European Journal of Psychotraumatology. 2021 Jan 1;12(1):1904700.
52. Kinsella EL, Hughes S, Lemon S, Stonebridge N, Sumner RC. "We shouldn't waste a good crisis": the lived experience of working on the frontline through the first surge (and beyond) of COVID-19 in the UK and Ireland. Psychology & Health. 2022 Feb 1;37(2):151-77.
53. Grailey K, Lound A, Brett S. Lived experiences of healthcare workers on the front line during the COVID-19 pandemic: a qualitative interview study. BMJ Open. 2021 Dec 1;11(12):e053680.
54. Gunawan J, Aungsuroch Y, Marzilli C, Fisher ML, Sukarna A. A phenomenological study of the lived experience of nurses in the battle of COVID-19. Nursing Outlook. 2021 Jul 1;69(4):652-9.
55. Simeone S, Ambrosca R, Vellone E, Durante A, Arcadi P, Cicolini G, Simonetti V, Alvaro R, Pucciarelli G. Lived experiences of frontline nurses and physicians infected by COVID-19 during their activities: A phenomenological study. Nursing & Health Sciences. 2022 Mar;24(1):245-54.
56. Arcadi P, Simonetti V, Ambrosca R, Cicolini G, Simeone S, Pucciarelli G, Alvaro R, Vellone E, Durante A. Nursing during the COVID-19 outbreak: A phenomenological study. Journal of Nursing Management. 2021 Jul;29(5):1111-9.
57. Fontanini R, Visintini E, Rossettini G, Caruzzo D, Longhini J, Palese A. Italian Nurses' experiences during the COVID-19 pandemic: a qualitative analysis of internet posts. International Nursing Review. 2021 Jun;68(2):238-47.
58. Pogoy JM, Cutamora JC. Lived experiences of Overseas Filipino Worker (OFW) nurses working in COVID-19 intensive care units. Belitung Nursing Journal. 2021;7(3):186.
59. Chung LY, Han L, Du Y, Liu L. Reflections on volunteer nurses' work and caring experiences during COVID-19: A phenomenological study. Journal of Research in Nursing. 2021 Aug;26(5):457-68.
60. Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, Xia L, Liu Z, Yang J, Yang BX. The experiences of health-care providers during the COVID-19 crisis in China: A qualitative study. The Lancet Global Health. 2020 Jun 1;8(6):e790-8.
61. Tune SN, Islam BZ, Islam MR, Tasnim Z, Ahmed SM. Exploring the knowledge, attitudes, practices and lived experiences of frontline health workers in the times of COVID-19: A qualitative study from Bangladesh. BMJ Open. 2022 Jan 1;12(1):e051893.
62. Chandler-Jeanville S, Nohra RG, Loizeau V, Lartigue-Malgouyres C, Zintchem R, Naudin D, Rothan-Tondeur M. Perceptions and experiences of the COVID-19 pandemic amongst frontline nurses and their relatives in France in six paradoxes: a qualitative study. International Journal of Environmental Research and Public Health. 2021 Jun 29;18(13):6977.
63. Ganapathy M, Mathews, Shailaja MJ, Bhambid N, Jadhav U, Awate D, Sutar A. Lived experiences of nurses with COVID-19 care in India: A phenomenological study. Indian Journal of Applied Research. 2021;11(4): 64-72.
64. Yau B, Vijh R, Prairie J, McKee G, Schwandt M. Lived experiences of frontline workers and leaders during COVID-19 outbreaks in

long-term care: A qualitative study. American Journal of Infection Control. 2021 Aug 1;49(8):978-84.
65. Lee H, Lee SE, Sang S, Morse B. The lived experience of nurses who volunteered to combat the COVID-19 pandemic in South Korea: A qualitative phenomenological study. Journal of Nursing Management. 2022 May;30(4):864-71.
66. Robinson R, Stinson CK. The lived experiences of nurses working during the COVID-19 pandemic. Dimensions of Critical Care Nursing. 2021 May 1;40(3):156-63.
67. Mokhtari R, Yaghoobzadeh A, Abdi K, Sajadi M, Jaras M, Golitaleb M. The experiences of nurses in care provision to COVID-19 patients: A qualitative study. Frontiers in Public Health. 2022 Apr 29;10:766880.
68. Yau B, Vijh R, Prairie J, McKee G, Schwandt M. Lived experiences of frontline workers and leaders during COVID-19 outbreaks in long-term care: A qualitative study. American Journal of Infection Control. 2021 Aug 1;49(8):978-84.
69. Padgett SM. Professional collegiality and peer monitoring among nursing staff: An ethnographic study. International Journal of Nursing Studies. 2013 Oct 1;50(10):1407-15.
70. Varaei S, Caihong Z, Siqi Z, Mahmoodi P, Rezaee M, Rezveh AK, Mirbazegh SF. Analysis of the strategies used by Iranian nurses for management of provided care for patients with COVID-19: a qualitative study. BMC Nursing. 2023 Mar 31;22(1):93..
71. Bartoníčková D, Gurková E, Kalánková D, Mazalová L, Bečvářová R. Missed nursing care and its association with the work environment of nurses working in pediatrics. KONTAKT-Journal of Nursing & Social Sciences related to Health & Illness. 2022 Jan 1;24(1).
72. Hessels AJ, Wurmser T. Relationship among safety culture, nursing care, and standard precautions adherence. American Journal of Infection Control. 2020 Mar 1;48(3):340-1.
doi:10.1016/j.ajic.2019.11.008.
73. Barello S, Graffigna G. Caring for health professionals in the COVID-19 pandemic emergency: toward an “epidemic of empathy” in healthcare. Frontiers in Psychology. 2020 Jun 9;11:548845. doi:10.3389/fpsyg.2020.01431.
74. Park CL, Russell BS, Fendrich M, Finkelstein-Fox L, Hutchison M, Becker J. Americans’ COVID-19 stress, coping, and adherence to CDC guidelines. Journal of General Internal Medicine. 2020 Aug;35:2296-303. https://doi.org/10.1007/s11606-020-05898-9.
75. Sadang JM. The Lived Experience of Filipino Nurses' Work in COVID-19 Quarantine Facilities: A Descriptive Phenomenological Study. Pacific Rim International Journal of Nursing Research. 2021 Jan 1;25(1).
76. Barello S, Graffigna G. Caring for health professionals in the COVID-19 pandemic emergency: Toward an “epidemic of empathy” in healthcare. Frontiers in Psychology. 2020 Jun 9;11:548845. doi:10.3389/fpsyg.2020.01431.
77. Liu YE, Zhai ZC, Han YH, Liu YL, Liu FP, Hu DY. Experiences of front-line nurses combating coronavirus disease-2019 in China: A qualitative analysis. Public Health Nursing. 2020 Sep;37(5):757-63.
https://doi.org/10.1111/phn.12768.
78. Kalateh Sadati A, Zarei L, Shahabi S, Heydari ST, Taheri V, Jiriaei R, Ebrahimzade N, Lankarani KB. Nursing experiences of COVID-19 outbreak in Iran: A qualitative study. Nursing Open. 2021 Jan;8(1):72-9.
https://doi.org/10.1002/nop2.604.
79. Tan R, Yu T, Luo K, Teng F, Liu Y, Luo J, Hu D. Experiences of clinical first-line nurses treating patients with COVID-19: A qualitative study. Journal of Nursing Management. 2020 Sep;28(6):1381-90.
https://doi.org/10.1111.jonm.13095.
80. Zhang Y, Wei L, Li H, Pan Y, Wang J, Li Q, Wu Q, Wei H. The psychological change process of frontline nurses caring for patients with COVID-19 during its outbreak. Issues in Mental Health Nursing. 2020 Jun 2;41(6):525-30. https://doi.org/10.1080/01612840.2020.175.2865
81. Faramawy M, Abd El Kader A. COVID-19 anxiety and organizational commitment among front-line nurses: Perceived role of nurse managers’ caring behavior. Nursing Practice Today. 2021;9(1):37-45.