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Lessons Learned by Nurse Managers During the COVID-19 Pandemic: A Systematic Literature Review

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ARTICLE INFO Keywords: Lessons learned, nurse managers, COVID-19 pandemic A systematic literature review	<p>Abstract</p> <p>Background: The role of the nurse manager is to ensure adequate resource management and quality patient care, especially in dire emergencies such as the COVID-19 pandemic. Understanding the nurse managers' experiences is crucial to better inform nursing management on how to overcome this kind of critical situation in the future.</p> <p>Aim: This review aims to synthesize existing qualitative studies exploring the experiences of nurse managers during the COVID-19 pandemic.</p> <p>Design: Systematic literature review of qualitative studies</p> <p>Methods: The systematic literature review was conducted from October 2022 to April 2023. The study population included nurse managers responsible for managing the health facilities. The study included qualitative studies conducted in English and published between 2019 and 2023. A systematic search using CINAHL, EBSCO Host databases, Google Scholar, MEDLINE, and Scopus is used in the study. The PRISMA guidelines used to illustrate the selection process of the included articles have been incorporated as part of the review. The final set of data included original papers meeting the eligibility criteria.</p> <p>Results were presented under three major themes: time-consuming, lack of recognition, and need for extra support. Further research is required in the mental health clinical setting to effectively explore the impact of relationships between preceptors and the preceptors.</p> <p>Conclusion: Preceptors reported many benefits to supervising students in the clinical area. However, some challenges they raised were increased workload and the need for guidance and acknowledgment from the organization.</p>
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What is already known about the topic?

- Nurse managers experienced significant physical, emotional, and logistical challenges during the COVID-19 pandemic. These included managing resource shortages, rapidly changing protocols, and overwhelming workloads while ensuring patient care and staff well-being.
- Despite the challenges, nurse managers developed more potent leadership skills, improved coping mechanisms, and enhanced their ability to make critical decisions, leading to improved crisis management and teamwork in healthcare settings

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Introduction

The unusual coronavirus disease detected in Wuhan, China, in December 2019 radically spread and quivered the global health sphere (World Health Organisation, 2020a). Due to the enormous spread of this highly contagious virus, on 30th January 2020, the World Health Organisation (WHO) declared COVID-19 as a worldwide health emergency and consequently as a pandemic on the 11th March 2020 (WHO, 2020b). The dire effects of the COVID-19 pandemic included escalating deaths and morbidity, which directly affected health services and resources management (Nyasulu & Pandya 2020:4, WHO, 2020c). The compounding effect of the pandemic had a traumatic impact on the healthcare workers, especially the nurses' emotional and physical well-being. In this dire situation of enormous strain caused by the COVID-19 pandemic, frontline nurses were emotionally and physically affected (Sheraton et al. et al., 2020). The post-traumatic stress was also exacerbated by a lack of personal protective equipment and uncertainties regarding the spread of the infection (Sheraton et al., 2020). According to Rapisarda et al. (2022), during the COVID-19 pandemic crisis, the nurse managers were not unscathed by the aftermath of the disease.

In all aspects, the nurse managers are expected to be competent in ensuring the smooth running of the healthcare facility. The nurse manager's four generic managerial functions include planning, organizing, leading, and controlling (Patarru et al., 2019). Furthermore, some nurse managers' crucial competencies include financial skills, decision-making, strategic and human resources management, organizational management, and communication skills (González García, Pinto-Carral, Sanz

Villorejo, et al., 2020). The nurse managers' core competencies aim to ensure patient and staff satisfaction, maintain high standards and quality of care, and align the unit's goals with the hospital's strategic goals. According to Tan, Yu, and Luo et al. (2020), the nurse manager's roles and competencies became more prominent and evident in the emergence of the novel COVID-19 pandemic.

The nurse managers had to ensure the availability of nurses and resources to cater to many critically ill patients during the COVID-19 pandemic. Nurse managers are responsible for supporting the nurses by developing policies and protocols to ensure a conducive working environment during the COVID-19 pandemic (Mo et al. et al., 2020; Catton, 2020). In addition, protocols that change all the time, lack of adequate communication, and unclear guidelines may lead to confusion and be barriers for nurse managers when leading their teams, as such problems can threaten the quality of care as well as the safety of healthcare workers (Rodrigues & Silva, 2020). With this kind of background, it is clear that some lessons can be drawn from the nurse managers' experiences regarding the COVID-19 pandemic.

Aim

This review aims to synthesize existing qualitative studies exploring the experiences of nurse managers during the COVID-19 pandemic. It describes the nurse managers' challenges, opportunities, and lessons learned in managing health facilities during the pandemic.

METHODS

Design

The literature review was grounded in the guidelines of the Joanna Briggs Institute (JBI) (Aromataris & Munn, 2017). The PRISMA systematic review

reporting checklist (Moher, 2009) was used to report the review.

Search strategy

The two authors using Preferred Reporting Items for systematic reviews and Meta-Analysis (PRISMA) (source) conducted the systematic literature review. In order to identify the relevant articles, the initial search was conducted using the Boolean search strategy and databases, including CINAHL, EBSCO Host databases, Google Scholar, and MEDLINE, and 315 articles were recovered. The search terms included: "Nurse Managers," "Nurse Leaders," "Experiences"; "Lessons"; "Perceptions"; "Nursing management," "COVID-19 pandemic," "Coronavirus disease pandemic." The search was subsequently tapered by applying the inclusion criteria that entailed articles written in English,

peer-reviewed, original articles, full text, and published from December 2019 to March 2023. The two authors purposefully chose the period to find relevant research articles that focussed on the nurse managers' experiences during COVID-19. The relevance of the identified articles was further determined by checking the title and the abstract. The two reviewers retrieved and evaluated the complete article based on the inclusion criteria, as illustrated in Table 1. The search strategy was summarized using the PRISMA statement flow chart (Moher et al. 2009). The exclusion criteria pertained to studies that focussed on the experiences or perceptions of other health service managers. In the process of this search strategy, the authors retrieved twenty Articles.

Table 1: Inclusion and exclusion criteria

Variable	Description
Population	<p>Inclusion: Nurse managers Newly qualified nurses.</p> <p>Exclusion: Other health service managers do not hold a nursing qualification.</p>
Phenomenon of interest	Experiences, which might be positive or negative, and lessons learned were the phenomena of interest.
Study type	<p>Inclusion: Qualitative studies</p> <p>Exclusion: Quantitative studies; literature reviews</p>
Context	COVID-19 pandemic

Critical appraisal

The two reviewers further evaluated the studies which met the inclusion criteria to establish methodological rigor. Subsequently, articles were read, authenticated, and reaffirmed by the two reviewers to guarantee the rigor of the articles and ensure that they met the

inclusion criteria. The critical appraisal skills program checklist (CASP) was employed to appraise the studies (CASP, 2018) critically. The credibility of the selected articles was grounded on the author(s), publication year and country, title, methods sample, and data quality. The credibility of the studies was predominantly based on criteria such as

appropriateness of the research design and methodology and ethical considerations, as illustrated in Table 2.

Data extraction

The data from qualitative data were extracted with the use of a standardized JBI qualitative assessment and review instrument (JBI-QARI). The two reviewers (SHK and KLM) independently conducted data extraction and discussed how to reach a consensus. The data extracted included demographic information about the population, phenomena of interest, study methods, and findings relevant to the research question.

Data analysis

Thematic analysis was employed in this study because it offers a systematic approach to organize, analyze and present qualitative data collected from different sources of literature (Thomas & Harden, 2008). Thematic analysis was used to categorize newly qualified nurses' experiences and support needs, which were grouped into meaningful themes. The analytical process involved the reading and re-reading the studies before extracting relevant statements (Thomas & Harden 2008). The extracted content was reviewed iteratively against the emerging themes, which were inferred with constant recourse to the research question on newly graduated nurses' experiences and support needs. The analysis yielded 35 categories that were then grouped into four main themes (see Table 2).

Screening

During the screening process, duplicate articles were removed at the title and

abstract level, leaving 215 articles. The research articles were further screened using the title and abstract, further abridged the total included articles to forty. With the intense application of the inclusion and exclusion criteria, twenty-one articles were eliminated, resulting in the retention of nineteen articles.

Analysis and quality appraisal

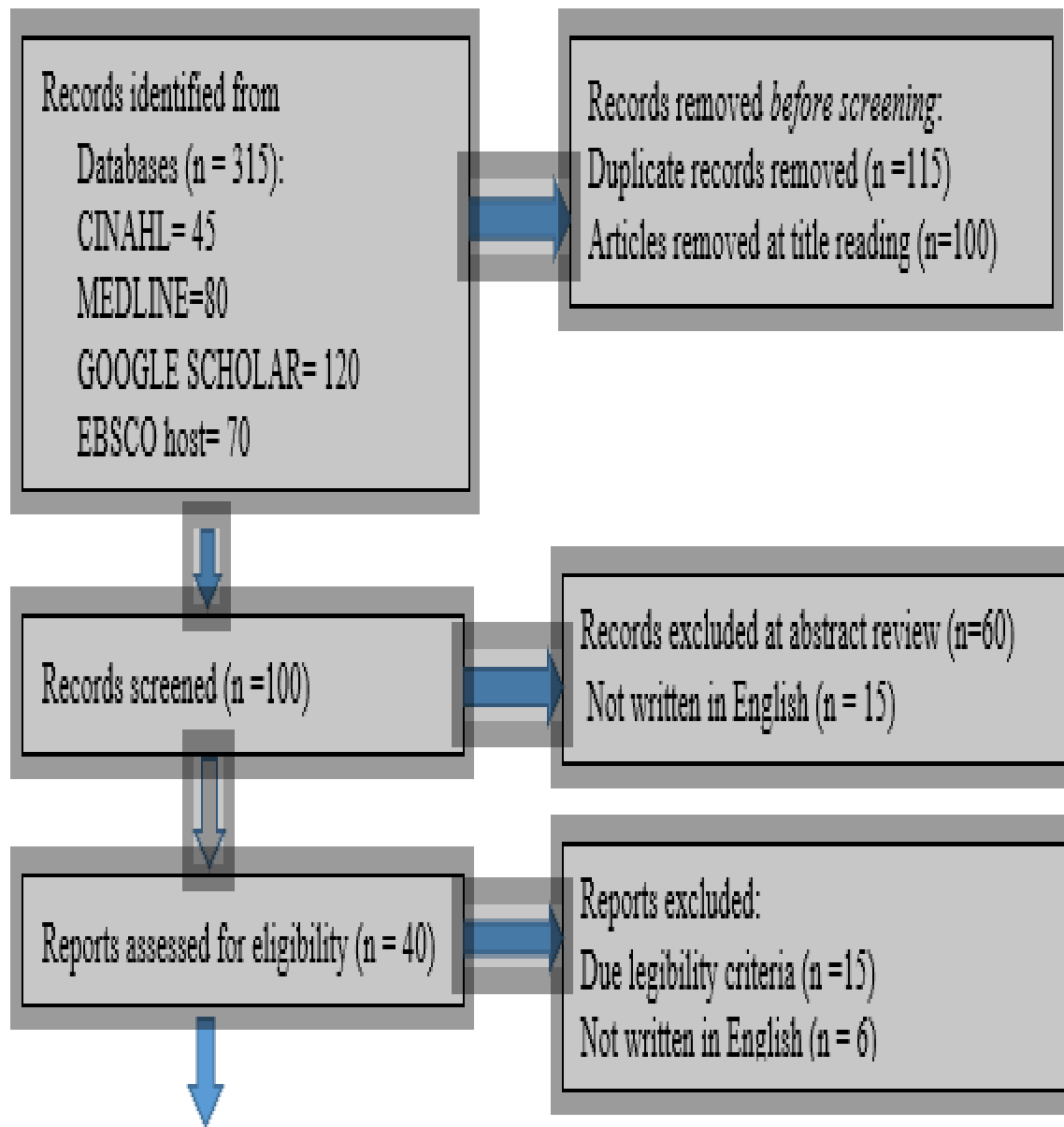
The information extracted from each article included authors, year of publication, country, study aim, methodology, data collection method and analysis, limitations, and key findings (Table 1). All the relevant articles were combined; data resemblances were noted, critiqued, and produced the report in three headings. The Critical Appraisal Skill Program (CASP) qualitative checklist was applied to verify the rigor and quality of the selected studies (CASP UK, 2020). After the quality appraisal, twenty articles were included (Figure 1).

Results

Nineteen (n=19) research articles met the inclusion criteria and were published between October 2022 and April 2023. For the purpose of this study, all the reviewed articles used qualitative exploratory descriptive design. The reviewed articles reported studies conducted in the Brazil (n=2); Canada (n=1); Iceland (n=1); Indonesia (n=2); Iran (n=3); Jordan (n=1); Norway (n=1); Philippines (n=1); RSA (n=1); Spain (n=1); Switzerland (n=1); Turkey (n=1); USA (n=2); UK (n=1).

Two themes were revealed from the 19 articles: 1) Challenges related to the COVID-19 pandemic; 2) Opportunities and lessons learned by the nurse

managers in the COVID-19 pandemic. Eight out of the nineteen included articles revealed that the nurse managers experienced various challenges related to the COVID-19 pandemic (Apsay & Alalag, 2022; Abu et al., 2022; Deldar et al., 2021; Moyo et al., 2022; Sugianto et al., 2022; Freitas et al., 2021; Hølge-Hazelton et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Sutejo et al., 2022). An overwhelming number of the studies (n=14) revealed several opportunities and lessons learned by the nurse managers in the Covid 19 pandemic (Hølge-Hazelton et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Jónsdóttir et al., 2022; Abu et al., 2022; Sutejo et al., 2022; White, 2021; Vázquez-Calatayud et al., 2022; Ree et al., 2022; Bianchi et al., 2021; Apsay, & Alalag, 2022; Poortaghi et al., 2021; Mollahadi et al., 2021; Losty & Bailey, 2021; Sugianto, et al., 2022). Table 3 below unpacks the results which emerged from the reviewed articles.



Source: Page et al. (2021)

Table 1: Critical Appraisal Checklist for Qualitative studies included

Study/ Criterion	Abu et al. (202 2)	Apsa y & Alal ag (202 2)	Bianc hi et al. (2021)	Cun ha et al. (202 3)	Deld ar, et al. (2021)	Freit as et al. (202 1)	Hølge- Hazelt on et al. (2021)	Jacks on & Nowe ll (2021)	Jónsdót tir et al. (2022)	Losty & Baile y (202 1).	Mollah adi et al. (2021)	Moy o et al. (202 2)	Ozmen & Arslan Yurumezo glu (2022)	Poorta ghi et al. (2021)	Ree et al. (202 2)	Sugian to, et al. (2022)	Sutej o et al. (202 2)	Vázque z- Calatay ud, et al. (2022)	Whit e (202 1)
Aim and objectives are clearly described	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Research methods appropriate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Research design appropriate to address the aim	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
The recruitment of participants is adequately described.	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Data collection addressed.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
The relationship between researcher and participants has been adequately considered.	N	N	N	N		N	N	N	Y	N	N	N	N	N	N	N	N	N	N
Ethical issues are adequately taken into	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

consideration.																			
Data analysis sufficiently rigorous	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Findings clearly described	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
The value of the research is adequately described	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Source: JBI Critical Appraisal Checklist for Systematic Reviews and Research Syntheses (2017); **Key:** Yes: Y; Cannot tell =CN; No=N.

Ethics

The study did not require ethics approval because it was a literature review. However, all the articles reviewed were adequately cited.

Table 2: Articles that met the inclusion criteria N=19: March 2023 = 17300 articles

Author s, Year & Country	Aim of the study	Methodology	Population	Data collection method and analysis	Limitations	Results
Abu et al. (2022) Jordan	To explore the experiences of Jordanian first-line nurse managers during COVID-19.	Qualitative descriptive phenomenological design	Nurse managers (n=16)	-A purposive sampling -Semi-structured interviews - Phenomenological data analysis method was used	Conducting face-to-face interviews in this study might have influenced the trustworthiness and honesty of the participants.	- Unprecedented pressure and suffering due to unprecedented demanding situations during the COVID-19 pandemic); - NMs employed several

						strategies to strengthen the health system and enhance resilience; - A robust supportive system is vital to deal with the pandemic; maturity during the crisis
Apsay & Alalag (2022) Philippine	To explore the experiences of the nurse managers in managing the hospital workforce during the COVID-19 pandemic .	Qualitative phenomenological interpretative design approach	Nurse managers (n=5)	<ul style="list-style-type: none"> - Unstructured interviews. - Combination of snowball and convenient sampling to recruit participants - Interpretative data analysis 	Not indicated	<ul style="list-style-type: none"> - Devastating events of COVID-19 pandemic, - Managing hospital resources and staffing - Strategized to solve shortcomings in staff and PPE - Psychological intervention among staff nurses during the COVID-

						19 pandemic.
Bianchi et al. (2021) Switzerland and	To explore the experiences of middle management nurses during the COVID-19 pandemic in Switzerland.	Qualitative study	Nurse Managers (n=12)	-Face-to-face semi-structured interviews -purposeful sampling, - Thematic analysis using Nvivo 12.	Involved MMs from only one of the Swiss cantons, which prevents the results from being generalized	-Lessons learned from the pandemic suggest the need for fine-tuning organizational models and the importance that NMs affirm and uphold core values for nursing and engaging patient and staff advocacy
Cunha et al. (2023) Brazil	To understand the ethical problems experienced by nurse managers in the context of the COVID-19 pandemic.	Qualitative study	Nurse managers (n=19)	Individual interviews with a semi-structured script and document analysis were analyzed using	Other nursing professionals were excluded from the study	Ethical problems were related to duplicity and lack of information about norms and routines; Routine changes without communication with nurse coordinators

Deldar, et al. (2021) Iran	To elaborate on the nurse managers' experiences facing the Coronavirus pandemic.	Qualitative content analysis.	Nurse managers (n=18)	Semi-structured interviews were conducted until data saturation	Participants were from diverse backgrounds, but these findings may not be generalised	-Facing personnel's mental health, -Managerial and equipment provision challenges, -Adaptability and exultation process,
Freitas et al. (2021) Brazil	To describe the challenges of nursing leaders and the solutions implemented to face the coronavirus pandemic in a Brazilian hospital.	Qualitative study	Nurse managers (n=8)	Convenience sampling – Audio recordings – Analyzed using inductive content analysis.	The study design precludes generalizing to other settings	-changes and challenges of an unknown disease; -Numerous solutions were implemented in response to address the challenges - Develop solutions to ensure the quality of care and the safety of the workforce, patients, and families.

Hølge-Hazelton et al. (2021) United Kingdom	To reflect and learn how person-centered nursing leadership may be strengthened in such situations.	Qualitative study	Nurse managers (n=13)	- Interviewed using telephone interviews three months after the first national COVID-19 case was confirmed	Few nurse managers were interviewed about their experiences during the COVID-19 wave, which may be regarded as a small number of participants.	-Lack of timely, relevant information, involvement in decision-making, and acknowledgment from management. -ward managers' sense of own competencies and leadership values came under high pressure -balancing different stakeholder needs; - involvement in decision-making; personal development.
Jackson & Nowell (2021). Canada	To understand the experiences of nurse managers during	Qualitative study	Nurse managers (n=8)	Semi-structured individual interviews for 20 -60 min. Thematic analysis	Participants self-selected, potentially limiting the representation of nurse managers perspectives	-NMs had to coordinate care in a context of uncertainty and guidance

	the COVID-19 pandemic .					– Participants found that their roles and responsibilities either expanded to include more duties without training -NMs were expected to provide support to their staff and patients but did not necessarily receive support themselves
Jónsdóttir et al. (2022) Iceland	To describe the contribution of nurse managers to establishing and running an outpatient clinic for patients infected	Qualitative descriptive study	Nurse managers (n=20)	Data were collected through four focus group interviews A mixture of deductive and inductive content analysis	The period from the occurrences of these events to their documentation is short, limiting the depth of reflections made.	-Public officials set the tone, Creating order in disorder, and Mutual respect and teamwork, -Realising one's potential and Unexpectedly rewarding.

	with COVID-19.					-Resources were sufficient. -With sound support and trust from hospital directors, NMs utilized their expertise to the fullest
Losty & Bailey (2021). United State of America	To explore the current challenges of COVID-19 on healthcare delivery and leadership styles of nurse executives that were specific to the pandemic.	Qualitative approach	Nurse managers (n=6)	Purposive sampling Web conference Data saturation; Thematic analysis approach	Participants were hand-selected to participate in the interview.	-The importance of communication; -The need for leadership presence; -Mental toughness.
Mollahadi et al. (2021) Iran	To express the experiences of nursing managers	Qualitative conventional content analysis approach	Nurse managers (n=20)	The present study was conducted in one hospital in Tehran, Iran. Semi-	Not stated	-Nurse managers as role models -full responsiveness

	in the COVID-19 crisis.			structured interviews.		-being in constant challenge -post-disaster growth.
Moyo et al. (2022) RSA	To identify gaps and lessons learned, explore and describe the nurse managers' experiences during COVID-19.	Qualitative descriptive phenomenological research design.	Nurse managers (n=10)	Purposive sampling by snowballing - Data was collected through Unstructured individual telephonic interviews and analyzed using Colaizzi's seven steps method.	Data was not collected through face-to-face interviews due to COVID-19.	-Human resource-related challenges -Material resources during the COVID-19 era in the ward -Increased workload -Stigma and discrimination.
Ozmen & Arslan Yurumezoglu (2022) Turkey	The study was conducted to understand nurse managers' experiences of the difficulties and opportunities they encountered during the pandemic.	Qualitative study	Nurse managers (n=19)	Semi-structured interview method. Content analysis was performed to analyze the data.	The study was conducted a year after the start of the pandemic; there may be inconsistencies in the perceptions of nurse managers	-Initial reactions to the crisis, -Ineffective crisis management, -Excessive workload, -Moral burden in decision-making, -Support of colleagues and other multidisciplinary team

						-NMs empowerment.
Poortaghi et al. (2021) Iran	To explore the nursing managers' perception of nursing workforce management during the outbreak of COVID-19.	Qualitative study	-Nurse manager (n=15)	<ul style="list-style-type: none"> - Purposeful sampling method. -Data were collected using in-depth semi-structured interviews. -MAXQDA software version 10 was used to help manage the data. 	-It was impossible to conduct face-to-face interviews; therefore, there was a limitation to obtaining non-verbal cues.	<ul style="list-style-type: none"> - Recruitment of the workforce - Workforce arrangement - Workforce retention.
Ree et al. (2022). Norway	This study explores nursing home and home care managers' strategies in handling the COVID-19 pandemic.	Qualitative	Nurse managers (n=13)	<p>Semi-structured individual interviews were conducted digitally with a videophone (Zoom). Systematic text condensation methodology was used for the analysis</p>	<ul style="list-style-type: none"> - Data for this study was collected 6–9 months after the COVID-19 pandemic, which may influence the results 	<ul style="list-style-type: none"> -Being proactive and finding new ways of working to adapt to the situation - Information dissemination, education, and training in new procedures and routines -NMs encouraged togetherness

						to secure a good psychosocial work environment during the pandemic -Strategies and adaptations to ensure proper staffing and care for service users during the pandemic
Sugianto, et al. (2022) Indonesia	To explore the experiences of nurse managers in managing schedules during the COVID-19	Qualitative descriptive	Nurse managers (n=11)	Purposive sampling. Data were collected using online semi-structured interviews.	Not stated	-Nurse shortage -Strategically looking for ways to fulfil the workforce -Change of shift schedule -Expecting guidance from superiors and compliance from staff.
Sutejo et al. (2022) Indonesia	To explore nurse managers'	Qualitative	Nurse managers (n=20)	The study was conducted in 10 hospitals	Not stated	-Requires extra high discipline to carry out nursing

	experience in implementing the nursing management system in the COVID-19 wards.			- Collaizzi data analysis method.		management functions -There is a psychological disorder for nurse managers to carry out nursing management -Requires moral and material support in carrying out their duties -More benefits in implementing nursing management in the COVID-19 ward
Vázquez - Calatayud, et al. (2022) Spain	To explore the experiences of frontline nurse managers during COVID-19.	Qualitative	Nurse managers (n=10)	-Semi-structured interviews audio-recorded -A systematic analysis of transcripts	The sample can be considered small	-Constant adaptation to change participation in decision-making - Management of uncertainty - Prioritization of biopsychosocial well-

						being of staff
White (2021) USA	To understand the experiences of hospital nurse managers and assistant nurse managers during the COVID-19 pandemic in the United States.	Qualitative	Nurse managers (n=13)	-audio–video teleconferencing -semi-structured interview guide. - Consolidated Criteria for Reporting Qualitative	Number of participants was a limitation.	-Being there for everyone -Leadership challenges -Struggles, support and coping - Strengthening my role.

Table 3: Themes, subthemes, categories, and direct quotes emerged from studies included

Themes	Subthemes	Categories	Sources
Challenges related to the COVID-19 pandemic	Demanding situations	Psychosocial stress	<ul style="list-style-type: none"> Abu Mansour, and Abu Shosha, 2022 Freitas, et al 2021 Sutejo et al. (2022) Apsay, & Alalag,2022
		Physically demanding situations	<ul style="list-style-type: none"> Abu Mansour and Abu Shosha, 2022 Freitas, et al 2021 Apsay, & Alalag,2022
		Unpreparedness of the hospital surge of COVID-19 patients	<ul style="list-style-type: none"> Apsay, & Alalag,2022 Hølge-Hazelton et al,2021 Freitas, et al , 2021 Sutejo et al. (2022)
	Shortage of human and non-human resources	Lack of material/ resources in COVID-19 pandemic	<ul style="list-style-type: none"> Abu Mansour and Abu Shosha, 2022 Moyo et al. 2022 Apsay, & Alalag,2022

Opportunities and lessons learned during COVID-19 pandemic			<ul style="list-style-type: none"> · Sutejo et al. (2022) · Freitas, et al (2021) · Ozmen & Arslan Yurumezoglu (2022) · Sugianto, et al. (2022)
		Increased Workload	<ul style="list-style-type: none"> · Freitas, et al 2021 · Apsay, & Alalag,2022 · Deldar, et al. (2021) · Ozmen & Arslan Yurumezoglu (2022) · Moyo et al 2022 · Abu Mansour, and Abu Shosha, 2022
		Lack of knowledge regarding crisis management	<ul style="list-style-type: none"> · Sutejo et al. (2022) · Cunha et al. (2023)
	Copying mechanisms	Colleagues' support	<ul style="list-style-type: none"> · Hølge-Hazelton et al,2021 · Ozmen & Arslan Yurumezoglu (2022) · Jónsdóttir et al. (2022) · Abu et al. (2022) · Sutejo et al. (2022) · White (2021) · Vázquez-Calatayud, et al. (2022) · Ree et al. (2022) · Bianchi et al. (2021)
		Received Proper training	<ul style="list-style-type: none"> · Apsay, & Alalag,2022 · Sutejo et al. (2022) · Ozmen & Arslan Yurumezoglu (2022)
	Benefits of implementing nursing management	Job satisfaction and Recognition	<ul style="list-style-type: none"> · Sutejo et al. (2022) · Bianchi et al 2021 · Jónsdóttir et al. (2022) · Vázquez-Calatayud, et al. (2022) · Jackson & Nowell (2021)
		Opportunities for growth and maturity	<ul style="list-style-type: none"> · Abu Mansour and Abu Shosha, 2022 · Freitas, et al 2021 · Ree et al. (2022) · Mollahadi et al. (2021)

	Effective strategies in dealing with the crisis		<ul style="list-style-type: none"> · Jackson & Nowell (2021)
		Compensating for the shortage of materials and human resources	<ul style="list-style-type: none"> · Abu Mansour and Abu Shosha, 2022 · Ree et al. (2022) · Vázquez-Calatayud, et al. (2022) · White (2021) · Freitas et al. (2021) · Poortaghi et al. (2021)
		Strategies to prevent understaffing	<ul style="list-style-type: none"> · Poortaghi, et al 2021 · Apsay, & Alalag, 2022 · Mollahadi et al. (2021) · Jónsdóttir et al. (2022) · Freitas, et al 2021
		Staff development Mentoring the new generation of nurses.	<ul style="list-style-type: none"> · Abu Mansour and Abu Shosha, 2022 · Apsay, & Alalag, 2022 · Freitas, et al 2021 · Hølge-Hazelton et al, 2021 · Ozmen & Arslan Yurumezoglu (2022)
	Fundamental improvement in leadership style	Innovative solutions	<ul style="list-style-type: none"> · Freitas, et al 2021 · Sutejo et al. (2022) · White (2021) · Mollahadi et al. (2021) · Vázquez-Calatayud, et al. (2022) · Ree et al. (2022) · Bianchi et al. (2021)
		Participatory leadership style	<ul style="list-style-type: none"> · Bianchi et al. 2021 · Hølge-Hazelton et al, 2021 · Freitas, et al 2021 · Losty & Bailey (2021) · Sugianto, et al. (2022)
		Collaboration	<ul style="list-style-type: none"> · Abu Mansour, & Abu Shosha, 2022 · Bianchi et al 2021 · Apsay, & Alalag, 2022 · Freitas, et al 2021 · Hølge-Hazelton et al, 2021 · Sugianto, et al. (2022)

DISCUSSIONS

This systematic literature review aims to synthesize existing qualitative studies exploring the experiences of nurse managers during the COVID-19 pandemic. Nineteen reviewed articles revealed two broad themes, which are discussed in the subsequent section.

Challenges related to the COVID-19 pandemic

In support of this theme, several subthemes emerged from the studies: 1) Demanding situations; 2) Shortage of non-human resources; 3) Human resource-related challenges. Several challenges experienced by the nurse managers were highlighted in eight studies, namely: (Apsay & Alalag, 2022; Abu et al., 2022; Deldar et al., 2021; Moyo et al., 2022; Sugianto et al., 2022; Freitas et al., 2021; Hølge-Hazelton et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Sutejo et al., 2022). The three subthemes encore this theme: 1) Demanding situations, 2) Shortage of non-human resources, and 3) Human resource-related challenges.

Demanding situations

The nurse managers in these studies experienced a demanding situation because of the COVID-19 pandemic. The demanding situation was further described as psychosocial stress (Abu et al., 2022; Freitas et al., 2021; Apsay & Alalag, 2022; Sutejo et al., 2022). Nurse Managers perceived Covid 19 pandemic as physically demanding (Abu et al., 2022; Freitas et al., 2021; Apsay & Alalag, 2022). Simultaneously, there was a sense of unpreparedness for the hospital surge of COVID-19 patients (Apsay & Alalag, 2022; Hølge-Hazelton et al., 2021; Freitas et al., 2021; Sutejo et al., 2022). The COVID-19 pandemic significantly impacted both the physical and psychological aspects of healthcare workers. Understandably, the nurse

managers were equally affected as they were responsible for optimizing systems and adequately managing the demanding situation to alleviate the impact of the pandemic.

Shortage of human and non-human resources

Nurse Managers need adequate resources to ensure good work-life and eminence patient care. However, this study identified that the nurse managers were challenged by a dire shortage of resources during the COVID-19 pandemic. This subtheme also manifested in a lack of material/resources during the COVID-19 pandemic; increased workload; lack of knowledge regarding crisis management (Abu et al., 2022; Moyo et al., 2022; Apsay & Alalag, 2022; Sutejo et al., 2022; Freitas et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Sugianto et al., 2022; Deldar et al., 2021; Cunha et al., 2023). According to Rydenfält, Persson, Erlingsdóttir, Larsson, and Johansson (2023), nurse managers had to deal with more responsibilities that increased their work's complexity and shared similar sentiments. According to Blaugh and Searle (2020), nurse managers must also be trained to manage pandemics. Hoffmann and Battaglia (2020) echoed that nurses should be skilled in leadership to effectively and efficiently manage emergencies.

Opportunities and lessons learned during the COVID-19 pandemic

The majority of the studies unanimously highlighted that amidst the COVID-19 pandemic, nurse managers encountered opportunities and, at the same time, learned some lessons. This theme resonated with the four subthemes: 1) Copying mechanisms, 2) Benefits in implementing nursing management, 3) Effective strategies in dealing with the

crisis, and 4) Fundamental improvement in leadership style.

Copying mechanisms

Nine out of nineteen articles identified that the copying mechanisms used by the nurse managers included the colleagues' support and proper training (Hølge-Hazelton et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Jónsdóttir et al., 2022; Abu et al., 2022; Sutejo et al., 2022; White, 2021; Vázquez-Calatayud et al., 2022; Ree et al., 2022; Bianchi et al., 2021). The nurse managers experienced high work pressures in managing resources, dealing with many acutely ill patients, and prompt decision-making. The knowledge gap regarding the COVID-19 pandemic is understandable since the pandemic was new. These factors caused a lot of emotional and physical stress. Notably, the nurse managers required support from colleagues, administrative staff, and their family members (Aydogdu, 2023).

Benefits of implementing nursing management during COVID-19

Nine out of nineteen research articles documented the benefits of implementing nursing management during the COVID-19 pandemic (Sutejo et al., 2022; Bianchi et al., 2021; Jónsdóttir et al., 2022; Vázquez-Calatayud et al., 2022; Abu et al., 2022; Freitas et al., 2021; Ree et al., 2022; Mollahadi et al., 2021; Jackson & Nowell, 2021). The following categories further support the subthemes: 1) Job satisfaction and Recognition; 2) Opportunities for growth and maturity. The nurse managers acquired much intrinsic motivation during the COVID-19 pandemic. The source of this motivation could be related to the fact that they were able to make complex decisions while providing support to all other staff members and ensuring quality

patient care amidst the COVID-19 pandemic. In that regard, this resulted in the challenging work and the recognition of the nurse managers. Factors such as Achievement, Recognition, and work itself have been described as contributing to the job satisfaction and motivation of an employee (Ayalew et al., 2021; Khunou & Davhana-Maselesele, 2016; Keith et al. et al., 2021). Ample prospects were available for the nurse managers to acquire more skills and knowledge, especially with the opportunities for growth and maturity (Jackson & Nowell, 2021).

Effective strategies in dealing with the crisis

The majority of the studies (n=11) out of nineteen revealed the nurse managers employed effective strategies in dealing with the crisis (Abu et al., 2022; Ree et al., 2022; Vázquez-Calatayud et al., 2022; White, 2021; Freitas et al., 2021; Poortaghi et al., 2021; Apsay & Alalag, 2022; Mollahadi et al., 2021; Jónsdóttir et al., 2022; Hølge-Hazelton et al., 2021; Ozmen & Arslan Yurumezoglu, 2022; Sutejo et al., 2022; Bianchi et al., 2021). The strategies used by the nurse managers included compensating for the shortage of materials and human resources, strategies to prevent understaffing, Staff development and mentoring the new generation of nurses, and innovative solutions. To avert the impact of the COVID-19 pandemic, nurse managers strategized by being proactive and thinking about possible scenarios and solutions (Ree et al., 2022). Because there was a high demand for nurses, managers had to develop contingencies such as hiring temporary employees. Dealing with new challenges daily could be why nurse managers are proactive (Ree et al., 2022).

Fundamental improvement in leadership style

Most studies (n=8) revealed fundamental improvement in the leadership style of nurse managers during the COVID-19 pandemic (Bianchi et al., 2021; Hølge-Hazelton et al., 2021; Freitas et al., 2021; Losty & Bailey, 2021; Sugianto et al., 2022; Abu et al., 2022; Apsay & Alalag, 2022). This subtheme is supported by the following categories: participatory leadership style and collaboration. Jónsdóttir et al. (2022) emphasized that mutual respect and teamwork are fundamental during crises. The assertion is that collaboration would assist the staff members to assist one another and share ideas and resources. In addition, the managers encouraged togetherness and collaboration within and across units and being available and present as managers to secure a good psychosocial work environment during the pandemic.

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