Systematic Review

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Experiences of nurse practitioners working during the COVID-19 pandemic: A metasynthesis of qualitative studies

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ABSTRACT

Background: The impact of the COVID-19 pandemic forced global changes to how nurses practice. Nurse practitioners adjusted their scope, changed how they delivered their service, and worked with limited resources. For some services, patient access was also compromised.

Objectives: To synthesize, combine, and present current evidence on the experiences of nurse practitioners working during the COVID-19 pandemic.

Data sources: CINAHL, Embase, and MEDLINE electronic databases were used to perform a structured search strategy.

Conclusion: During the COVID-19 pandemic, health care services had to leverage their workforce skills to accelerate COVID-19 identification, treatment, and care. Nurse practitioners rapidly found themselves at the forefront and were concerned about infecting others. They also identified the need for support and were able to adapt to the changing environment. Nurse practitioners also recognized the impact on their well-being. Having insight into nurse practitioner's experiences during the pandemic is valuable for future health care workforce planning. Understanding how they coped will help with critical preparedness and response actions to other health care crises.

Implications for practice: Having insight into nurse practitioner's experiences during the pandemic is valuable for future health care workforce planning because, as we know, the nurse practitioner workforce is one of the most rapidly growing professions in primary health care. Any future work in this space will help inform future nurse practitioner education and also help by informing critical preparedness and response actions to future health care crises, whether global or local or clinical or nonclinical.

Keywords: COVID-19; metasynthesis; nurse practitioner; Nurses'experiences; pandemic; qualitative systematic reviews.

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Introduction

The COVID-19 pandemic presented health care providers with unprecedented challenges, requiring them to work in exceptionally difficult circumstances. Nurse practitioners in particular have had to adjust to working with limited resources and operate beyond their usual scope of practice, necessitating significant changes in how they provide care. These changes have affected the delivery of their services and may have led to compromised patient access in some cases. Understanding the extent of these challenges and their implications on the practice of nurse practitioners during the pandemic is crucial. This knowledge can inform future workforce planning, education, and practice policies to support and safeguard nurse practitioners during future health crises.

The novel coronavirus disease (COVID-19) is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and was declared a worldwide pandemic by the World Health Organization (WHO) on March 11, 2020. As of March 7, 2023, WHO reports that there are 758,390,564 confirmed (cumulative) cases of COVID-19, including 65,859,093 deaths globally. At the time of this publication, the COVID-19 pandemic remains active.

Stevens and Donohue-Ryan (2021) explain that throughout the pandemic, health care workers relied on laboratory data, more than usual, to assess patients. Although many people became seriously ill and required medical attention, most infected people recovered without specific treatment. As the pandemic took hold, the increasing volume of people presenting for care started to become unmanageable, and it became evident

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that vulnerable populations such as older people and those with underlying medical conditions and comorbidities such as cardiovascular disease, diabetes, chronic respiratory disease, or cancer were more likely to develop serious illness (Stevens & Donohue-Ryan, 2021; WHO, 2022). Nurse practitioners feared becoming infected as countries reported high percentages of health care workers being infected with COVID-19 (Abdel Wahed et al., 2020). This fear was justified as the number of infected health care workers rose well into the millions (Ayton et al., 2022; PanAmerican Health Organization/WHO, 2020).

Frontline health care workers were unprepared for the volumes of unwell patients, and as Zhang et al. (2021) point out, along with the overwhelming workloads, the increased risk of COVID-19 exposure to personnel, the depletion of the supply of personal protective equipment, the unavailability of specific treatment, and feelings of inadequate support affected health care workers worldwide. Nurses expressed particular safety concerns and emphasized the importance of addressing these issues to ensure the well-being of health care workers (Fernandez et al., 2020). The overwhelming burden of illness and mortality undoubtedly threatened operations of health care institutions across the globe, and health care workers' physical, emotional, and financial health were affected negatively (Croghan et al., 2021). Frontline health care workers in hospitals and the community have had to respond quickly to many challenges, including heavy workloads, large volumes of new information, new work practices and roles, redeployment and job insecurity, social change, and increased risks to their own lives and that of family members (Smallwood et al., 2021). Some of these frontline health workers are nurse practitioners.

Nurse practitioners (NPs) are highly experienced registered nurses with advanced practice skills and who are authorized to practice autonomously after meeting strict education and credentialing criteria set by national professional regulatory bodies. The nurse practitioner's role has evolved enormously since their first introduction to health care in the 1960s in the United States (McComiskey, 2018). Nurse practitioners have become an integral part of health care teams internationally because of their demonstrated cost-effectiveness, quality care, and increased patient satisfaction outcomes (Bourdeanu et al., 2020). Pre–COVID-19, the nurse practitioner role was implemented in various specialties to help care for vulnerable populations such as people in aged care and those with cardiovascular disease, diabetes, chronic respiratory disease, and cancer (Middleton et al., 2016). Nurse practitioners were burdened with the increased volume of critically ill vulnerable patients due to COVID-19, affecting their ability to practice autonomously. Autonomy is essential for NPs to practice to the full extent of their advanced education, using their experience, clinical judgment, and responsibility to practice independently (Peacock & Hernandez, 2020). As Moore et al. (2020) explain, the pandemic compromised this autonomy.

As well as the increased impact to clinical services, nurse practitioners globally were affected in other ways. Nurse practitioners describe how they were deployed to various clinical areas and took on other roles to ensure patient care during staff shortages and stress. Feyereisen and Puro (2020), Stucky et al. (2021), and Poghosyan et al. (2022) explain the impact of policy and regulatory changes because some jurisdictions in the United States temporarily removed scope of practice restrictions leaving nurses without a safety net. This is particularly concerning because when transparent organizational policies and regulations are removed, nurses cannot deliver good quality, safe care. (Kieft et al., 2014). In Australia, Boase (2021) highlights the exclusion of privately practicing nurse practitioners from the COVID-19 vaccine rollout, and Dangwa et al. (2022) explain how Canada's response to the pandemic focused primarily on acute health care, affecting vulnerable long-term care facility residents. Finally, Wood et al. (2021) describe how advanced practice nurses in the United Kingdom were further burdened by their perception of their employers' lack of ability to prioritize their safety. These are just some examples that highlight what nurse practitioners around the world were managing.

During the COVID-19 pandemic, nurse practitioners faced numerous challenges that significantly negatively affected their well-being. The increased workload and high patient acuity resulted in physical exhaustion, anxiety about safety, and manual nursing obligations, which contributed to burnout, compassion fatigue, and job dissatisfaction (Hochuli et al., 2020). Burnout is a common occupational hazard among health care providers, significantly decreasing the quality of care provided (Shanafelt et al., 2016). Feeling supported can serve as a protective mechanism against burnout and can help nurses manage workplace stressors (Mannix, 2021).

The COVID-19 pandemic has had a varied personal and professional impact on nurse practitioners, and limited knowledge exists regarding their experiences during this time. This meta-synthesis aims to conduct a primary search on CINAHL, Embase, and MEDLINE databases to identify qualitative reviews that focus on nurse practitioners' experiences during COVID-19. In this review, the term "experience" refers to the subjective perceptions, thoughts, and feelings of nurse practitioners concerning their work during the pandemic. This includes various aspects of their work, such as roles, responsibilities, challenges, coping mechanisms, and support systems. The search resulted in only six articles addressing nurse practitioners' experiences during COVID-19.

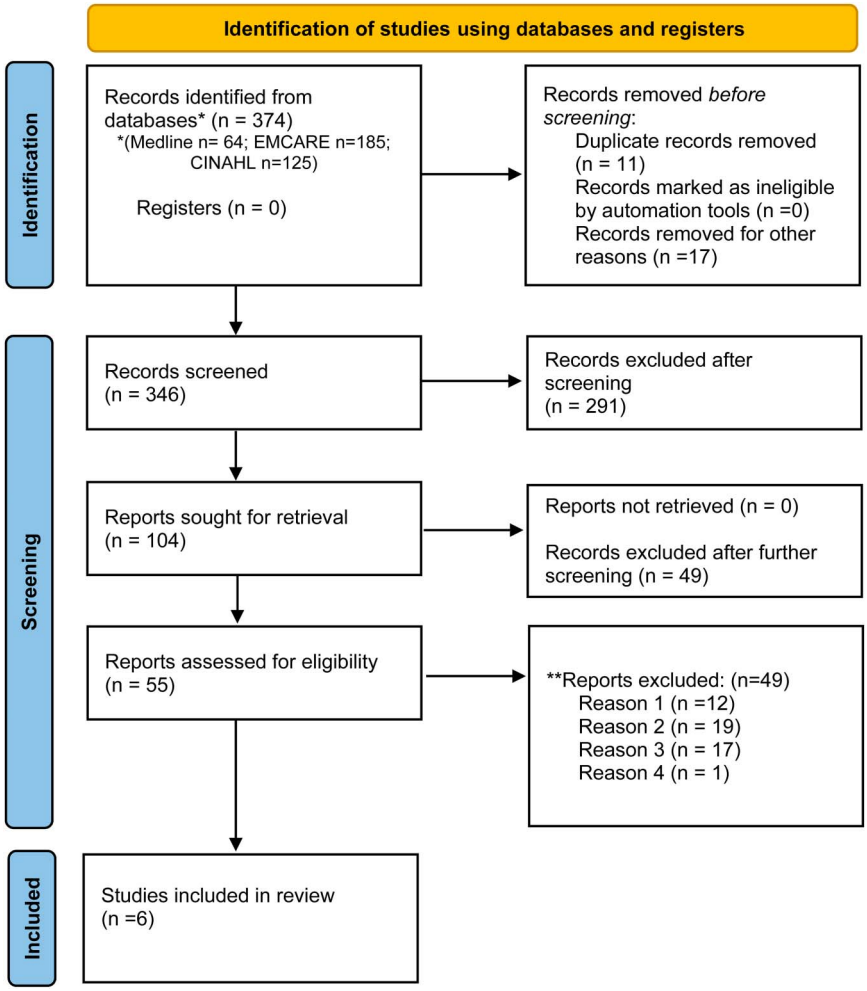

Figure 1. PRISMA Flow Diagram. **Reports excluded key; Reason 1 = not applicable for various reasons (such as was not NP-related, it did not describe NP experiences, NPs were not included in the sample, or the sample was student nurse practitioners); Reason 2 = not a primary study; Reason 3 = quantitative study; Reason 4 = mixed method studies. NP = nurse practitioner.

Methods

Design

A review was undertaken to combine evidence of nurse practitioners' experiences during the COVID-19 pandemic. The Joanna Briggs Institute (JBI) guidelines (Aromataris & Munn, 2017) and the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) systematic review reporting checklist (Page et al., 2021) were used as the foundations for guiding and reporting this review (**Figure 1**).

Search methods

In April 2022, electronic databases CINAHL (EBSCO), Embase (OVID), and MEDLINE were used to perform a structured search strategy. Keywords used in the search included "Nurse Practitioner" OR "Nurse Practitioners" OR "Advance practice nurses" OR "Advance practice Nursing" AND Occupational stress OR psychological adaptation OR psychological stress OR attitude OR attitude OR perception OR "quality of health" OR "delivery of healthcare" OR personal protective equipment OR "PPE" OR job stress OR job experience OR work experience OR health care delivery OR work environment OR burnout OR coping behavio$r* OR workload AND COVID-19 OR SARS-CoV-2 OR pandemic* OR Coronavirus OR Coronavirus disease 2019 OR HCoV or Corona*. Reference lists of articles were also browsed for potential articles.

This search strategy aimed to find peer-reviewed articles published in English from November 2019 to April 2022 that reported qualitative studies on the experiences of nurse practitioners working during the COVID-19 pandemic. While various types of qualitative study designs, including phenomenology, ethnography, grounded theory, and action research, were eligible for inclusion, case studies were the exception and were excluded from the review. Studies that identified licensed and endorsed nurse practitioners and studies that identified advanced practice nurses as nurse practitioners in their sample were included. This review included nurse practitioners working in any health care setting during COVID-19. There

were no limits on nurse practitioners' place of practice, patient population, or limitations regarding country or region. Studies that reported the experiences of registered nurses, other health care professionals, or student nurse practitioners were excluded. Studies that reported the experiences of nurse practitioners working during other pandemics or endemics, such as the Ebola outbreak, were also excluded. Quantitative studies were excluded.

Search outcomes

The searches yielded 374 citations, of which initially 11 duplicates and 17 others were removed. The remaining 346 citations were screened for relevance using the title and abstract, and 104 were retrieved for potential inclusion. Of these, 49 articles did not meet the inclusion criteria leaving 55 articles to assess for eligibility. These 55 articles were assessed, and an additional 49 were excluded from this group. Reasons for excluding these articles include 1) not applicable for various reasons (such as was not NP related, it did not describe NP experiences, NPs were not included in the sample, or the sample was student nurse practitioners), 2) not a primary study, 3) quantitative articles, and 4) mixed method studies. A total of six articles were appraised and included in the final review (diagram 1).

Quality appraisal

Using the JBI meta-aggregative approach (Lockwood et al., 2015), which uses a checklist for qualitative research to review the methodological quality, each study was appraised for methodological quality by four independent reviewers (I.T., L.M., S.T., and R.F.). Each reviewer allocated a code for each criterion of the appraisal tool (Yes = Y, No=N, Unclear = U, Not Applicable = N/A). The reviewers met to discuss the outcomes of the methodological quality of each study. The discrepancies among the reviewers were addressed to reach a consensus.

The reviewers unanimously agreed that all studies demonstrated congruity between the stated philosophical perspective and the research methodology, between the research methodology and the research question, and between the research methodology and the methods used to collect data. There was also consensus regarding congruity between the research methodology, the representation and analysis of data, and the interpretation of the results of each study. The research was ethical according to current criteria, and the conclusions drawn in the studies flowed from the data's analysis or interpretation for all articles. The main discrepancies for the reviewers were locating a statement by the researcher culturally or theoretically in five articles (Beebe et al., 2022; McGilton et al., 2021; Myers et al., 2022; O'Reilly-Jacob et al., 2022; Patton, 2022), identifying whether the researcher's influence on the research was addressed in six articles (Beebe et al., 2022; McGilton et al., 2021; Myers et al., 2022; O'Reilly-Jacob et al., 2022; Patton, 2022; Waizinger et al., 2022) and if participants and their voices were adequately represented in five articles (Beebe et al., 2022; McGilton et al., 2021; Myers et al., 2022; O'Reilly-Jacob et al., 2022; Waizinger et al., 2022). These discrepancies were discussed and resolved.

Data extraction and synthesis

Relevant data were extracted using the standardized JBI System for the Unified Management, Assessment and Review of information (SUMARI) data extraction tool. This included geographical location, the method for data collection, the phenomenon of interest, setting, sample size, participant characteristics, and study findings.

During the data extraction process, participant quotations were incorporated to provide support and clarity to the findings. The qualitative findings were extracted verbatim by a sole reviewer (I.T.) and evaluated for credibility according to the JBI Levels of Credibility by all four reviewers (I.T., L.M., S.T., and R.F.) (Munn et al., 2014). Using the meta-aggregation approach, the same four reviewers collaboratively compiled the findings at the subtheme level and then categorized them based on their shared meaning. The resulting categories yielded comprehensive synthesized findings (**Figure 2**), which were used to determine the characteristics of expected coping-related outcomes and to develop a plan for preparing clinical personnel in unforeseen disasters, such as pandemics. To address any disagreements, a process of deliberation was undertaken in which all parties discussed their differences and worked toward reaching a unanimous outcome. It is important to note that participant quotes were extracted to synthesize the findings rather than to discuss them specifically. As previously mentioned, the credibility of the quotes from the included articles was assessed by all reviewers using the JBI Levels of Credibility. Consequently, we did not feel it necessary to share the specific quotes in this review, given that they were not the primary focus of our analysis.

Results

Study characteristics

This review includes six phenomenological qualitative studies reflecting the experiences of 296 nurse practitioners. The studies were published in 2021 (McGilton et al., 2021; Patton, 2022; Waizinger et al., 2022) and 2022 (Beebe et al., 2022; Myers et al., 2022; O'Reilly-Jacob et al., 2022). The studies identified that nurse practitioners were employed in various settings, including long-term care homes, hospitals, outpatient clinics, and the community. Among the cohort were 10 newly graduated nurse practitioners (Beebe et al., 2022). The studies were conducted in the United States (Beebe et al., 2022; Myers et al., 2022;

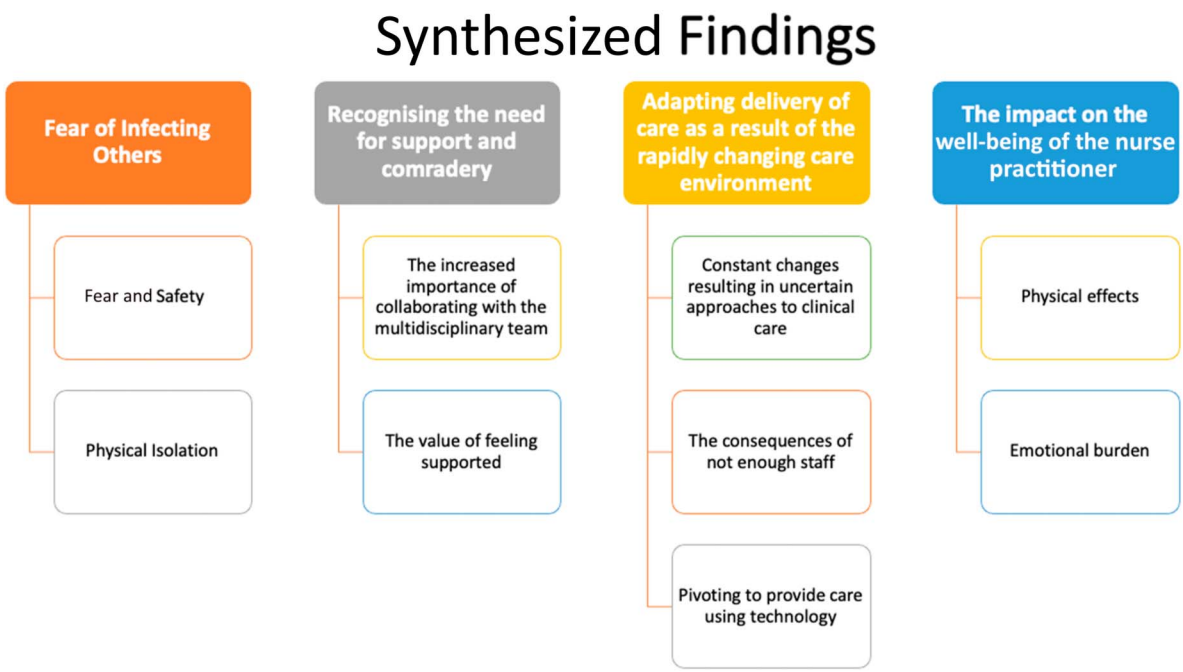

Figure 2. Synthesized findings.

O'Rielly-Jacob et al., 2022; Patton, 2022), Canada (McGilton et al., 2021), and Israel (Waizinger et al., 2022) (**Table 1**).

The review incorporated a total of 175 findings and created nine categories based on similarity of meaning. Four synthesized findings were established from these categories: fear of infecting self and others, recognizing the need for support and comradery, rapidly adjusting care delivery in response to the increasingly changing care environment, and the impact on the well-being of the nurse practitioner (**Figure 2**). The nine categories of similar meanings were identified by extracting findings from the included studies, and their credibility was evaluated using the JBI Levels of Credibility. These findings were then synthesized within each category to identify themes and subthemes, which were subsequently synthesized to develop overarching synthesized findings. The accuracy and clarity of these statements were ensured through a team review and refinement process. Our linear process for arriving at the final synthesized findings is depicted in **Figure 3**, which illustrates the series of steps taken to aggregate the findings into categories of similar meanings and synthesize them into four overarching findings.

Fear of infecting self and others

Nurse practitioners' fears of infecting others were derived from two categories: fear and safety and isolation.

Fear and safety. The review found that nurse practitioners feared for the safe provision of care and feared infecting their families and patients. Nurse practitioners had limited access to personal protective equipment, and some resorted to self-supply (Beebe et al., 2022; Myers et al., 2022; Patton, 2022). Nurse practitioners acknowledged that they were at high risk of infecting their families and tried to mitigate this by trying to clean themselves after their shifts (Patton, 2022). Inconsistent or rapidly changing information on the use of protective equipment was difficult to keep up with (Myers et al., 2022).

Physical isolation. To reduce the risk of infecting their loved ones, nurse practitioners resorted to physical isolation. Nurse practitioners described how they moved out of their usual residence, away from loved ones, to reduce the risk of infecting them, while others chose to restrict physical contact (Beebe et al., 2022). Nurse practitioner participants described how uncomfortable they felt seeing friends and family because they were in fear of potentially infecting them with COVID-19 (Beebe et al., 2022).

Recognizing the need for support and comradery

Nurse practitioners recognizing the need for support and comradery was derived from two categories: the increased importance of collaborating with the multidisciplinary team and the value of feeling supported.

The increased importance of collaborating with the multidisciplinary team. During the pandemic, multidisciplinary interactions became particularly important to nurse practitioners, and some took the opportunity to develop new interdisciplinary professional relationships (Beebe et al., 2022; Waizinger et al., 2022). Nurse

Table 1. Characteristics of included articles

Study/Country	Data Collection	Phenomena of Interest	Study Characteristics & Sample Size	Description of Main Results
Beebe, et al., 2022 The United States	Semistructured interviews	Experiences of new NPs working in primary care in the United States during COVID-19.	10 new (9 f) NP graduates employed prepandemic in primary care. Experience 4–18 yrs Age 29–59 yrs	Themes: 1) emotional burden and 2) coping and support. 11 codes related to themes. Participants experienced new fears and stresses related to own and that of patient's and family, professional and personal isolation, clinical uncertainty.
McGilton, et al., 2021 Canada	Semistructured interviews	NPs' experiences of providing services during the COVID-19 pandemic.	14 NPs (11 f) working in TLC homes. 4 rural locations, 10 urban Experience 2–21 years Age 45.46 years (mean)	Experiences related to containing the spread of COVID-19, stepping in where needed, supporting staff and families, and establishing links between fragmented systems of care.
Myers, et al., 2022 The United States	Semistructured interviews	How prepandemic APRN practice barriers, executive orders, and pandemic affected APRN practice in Tennessee.	14 NPs (13 f) completed the national APRN's practice and pandemic study. 13 outpatient/community, 4 hospital, 2 nurse education. Years of experience and age not reported	Practice changes, impact of executive orders, and ongoing care barriers. Underlying theme of frustration. Patients, APRNs, and other health care providers were stressed in new and profound ways.
O'Reilly-Jacob et al., 2022 The United States	Open-ended survey questions	NPs' perception of care regarding temporarily waived state practice restrictions.	230 NPs Employment areas, age, and experience not reported	Two metathemes: 1. the impact of pandemic-related changes on care and 2. scope of practice changes.
Patton, 2022 The United States	Semistructured interviews	Experiences of nurses and NPs caring for patients with COVID-19.	4 NPs in 8 hospitals during early weeks of pandemic. Years of experience and age not reported.	Themes: 1) fear for well-being of self, family members, colleagues, and patients; 2) caring for patients with COVID-19 led to physical exhaustion; and 3). sleep deprivation.
Waizinger, et al., 2021 Israel	Semistructured interviews	Contribution to quality of care of people with diabetes during the pandemic, including benefits and barriers of using telemedicine.	24 DiNPs Age 37–58 years 12 diabetes clinics, hospital, and community Experience not reported	Themes: 1) benefits and barriers of remote treatment; 2) teamwork; 3) technological challenges, resourcefulness, and creativity; 4) changed perception of role; and 5) cultural diversity and improving communication skills. Telemedicine should become an integral part of diabetes management to enable wider access.

Note: 296 NPs in total. APRN = advanced practice registered nurse; DiNPs = diabetes nurse practitioners; NP = nurse practitioner.

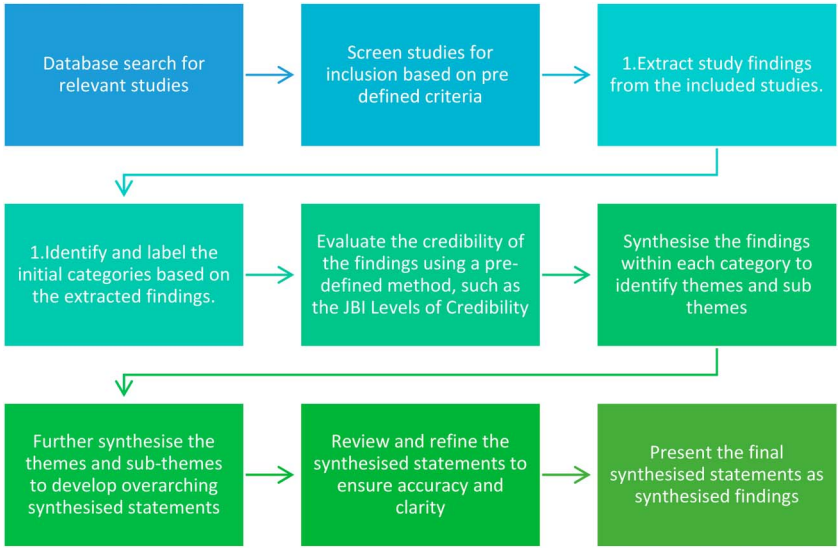

Figure 3. The process of the aggregation of the findings into categories and synthesized findings.

practitioners acknowledged that interprofessional collaboration helped engage in new approaches and clarify potential misinformation (McGilton et al., 2021; Waizinger et al., 2022).

The value of feeling supported. Nurse practitioners depended on the support of their colleagues to help them cope during the pandemic. Professional support resulted in positive outcomes with nurse practitioners describing how leadership teams intently worked on getting more staff to help alleviate the excessive workload (Beebe et al., 2022; Patton, 2022). While some nurse practitioners became skilled in identifying non-nursing supports, some describe feelings of abandonment, feeling disempowered, and felt devalued (Bebee et al., 2022; O'Reilly-Jacob et al., 2022). There were several experiences of nurse practitioners being the only provider physically *on-site* in their place of work (Beebe et al., 2022). When they were the only clinical staff *on-site*, nurse practitioners provided support to their *on-site* colleagues and helped support the decisions of staff working from home (McGilton et al., 2021).

Adapting delivery of care as a result of the rapidly changing care environment

Adapting delivery of care because of the rapidly changing care environment was derived from three categories. These categories included constant changes resulting in uncertain approaches to clinical care, the consequences of not enough staff, and pivoting to provide care by using technology.

Constant changes resulting in uncertain approaches to clinical care. Nurse practitioners had varying experiences while working in a rapidly changing and largely unknown clinical environment. Some experienced a heightened duty of care and embraced the diversity that was required in care delivery, while others had concerns for patient outcomes and questioned their own clinical capabilities in this dynamic environment (Beebe et al., 2022; Waizinger et al., 2022). Some nurse practitioners described their experiences of deployment with feelings of vulnerability and intensified responsibility (McGilton, et al., 2021; Patton, 2022).

The consequences of not enough staff. Some nurse practitioners believed that the staff shortages, as a result of colleagues who were unwell or were working from home, resulted in their ability to work more efficiently and independently, while others believed that less staff meant that they could only provide patients with task-orientated care (Beebe et al., 2022; Patton, 2022). Nurse practitioners acknowledged that the specialized skills they possessed for specific areas were ineffective during their deployment and that they had to rely on their previous, more general registered nursing experience to cope with staff shortages (Beebe et al., 2022). Nurse practitioners who avoided deployment commented that their colleagues recognized the comprehensive individualized care they provided during staff absenteeism (Waizinger et al., 2022).

Pivoting to provide care using technology. Nurse practitioners acknowledged that a creative way to deliver care during isolation needed to be adopted; however, technology was met with mixed sentiments. Some nurse practitioners were grateful for the opportunity to provide telemedicine. For example, it decreased the risk of potential infection for their patients by avoiding contact with the health care facility, continuity of care could be maintained

despite the isolation, the sessions could be more practically focused, and they were able to reach those who were geographically disadvantaged (Myers et al., 2022; O'Reilly-Jacob et al., 2022; Waizinger et al., 2022). Alternatively, some nurse practitioners felt that using technology required more emotional and mental investment than a face-to-face consultation. Some believed it was not as comprehensive as a face-to-face consultation, that telehealth was not clear enough for health education to be delivered or to engage in adequate assessments. Some nurse practitioners expressed that patients who were from non-English speaking backgrounds or who did not have access to technology or the internet were disadvantaged (Myers et al., 2022; Waizinger et al., 2022).

The impact on the well-being of the nurse practitioner

The impact on the well-being of the nurse practitioner was derived from two categories: physical effects and emotional burden.

Physical effects. Physical exhaustion and sleep deprivation among nurse practitioners who worked during the pandemic were high (Patton, 2022). Feelings of physical exhaustion and trying to physically recover were highlighted by the nurse practitioners as common (Patton, 2022). Nurse practitioners described how their sleep patterns were significantly affected with some research participants indicating that they slept for days while others had significantly decreased hours of sleep and poorer sleep quality (Patton, 2022).

Emotional burden. Similar to negative physical effects, working during the pandemic resulted in a heightened emotional burden for nurse practitioners (Beebe et al., 2022; Myers et al., 2022; Waizinger et al., 2022). Concerns for their family, trying to protect them against the possibility of infection and juggling the balance between being needed at home and work caused stressful emotions (Beebe et al., 2022). Observing the increased emotional stress of their patients also contributed to the nurse practitioners' emotional burden (Myers et al., 2022).

Discussion

This review resulted in nine categories that produced four synthesized findings. These included 1) fear of infecting self and others, 2) recognizing the need for support and comradery, 3) adapting delivery of care as a result of the rapidly changing care environment, and 4) the impact on the well-being of the nurse practitioner.

Nurse practitioners' fear of infecting others was not a surprising finding because 89% of health care workers believed they were at a greater risk of contracting COVID-19 than non–health care workers (Abdel Wahed et al., 2020). During the early days of the pandemic, many countries reported a high percentage of health care workers infected by COVID-19, and by December 2020, at least 1.6 million health care workers had become infected (Ayton et al., 2022; Rucker et al., 2021). Over the course of the pandemic and on September 2, 2020, the WHO Pan American Regional Office in Washington, DC, reported that 570,000 health care workers were infected and 2,500 were dead due to COVID-19 (PanAmerican Health Organization/WHO, 2020).

Nurse practitioners recognized that they had to protect themselves, their patients, and their families from infection, but they did not know how to. Health care workers globally reported inadequate personal protective equipment (PPE), poor training, and fit testing, with 47% reporting that they did not receive any formal PPE training at work (Ayton et al., 2022). Limited access to PPE also heightened nurse practitioners' fears of transmission.

In their systematic review, Fernandez et al., (2020) found that nurses had concerns around safety, infecting others, care delivery, and PPE. This review also identified these issues and found that these concerns accentuated the need for support and comradery that nurse practitioners wanted. The nurse practitioners' autonomy allows them to practice to the full extent of their advanced education by using their experience, clinical judgment, and responsibility to practice without restriction (Peacock & Hernandez, 2020). However, this cannot be achieved without collaboration with other health care professionals. Nurse practitioners believed that the loss of collegial support during the pandemic resulting from isolation, deployment, staff absenteeism, and constant changes to practice was amplified and adversely affected their ability to deliver good clinical care.

The constant boundary changes to clinical care approaches, manifesting from staff shortages and the transition to telemedicine, resulted from the rapidly changing care environment. Nurse practitioners' experiences in this domain raised some key fundamental issues. Nurses operate in a complex environment, and the pandemic was no different. As some took advantage of changes to legislation to work more efficiently, particularly in some US states, the overall impact on their ability to operate efficiently and effectively was compromised. Traditionally, nurses flourish within a patient-centered care system where organizational policies focus on cost efficiency, transparency, and accountability (Kieft et al., 2014). As uncertainty about care processes and clinical practice expanded, nurse practitioners simultaneously fostered a heightened sense, regarding duty of care, as they raised concerns about clinical outcomes. Nurse practitioners experienced traditional roles and boundary challenges while working during the pandemic. They questioned their capabilities, particularly when asked to undertake tasks they were unfamiliar with at times of deployment. Technology, surprising, provided a positive solution for consultation for patients and staff isolated at home. Although the use of telemedicine was not without

its limitation, such as fostering an unknown type of fatigue, altering the patient–nurse relationship and a greater clinical dependency by some patients, nurse practitioners were empowered to provide clinical care creatively. Nurse practitioners were satisfied that continuity of care could be maintained. They reported more control over follow-up schedules and were more organized and thorough.

It is essential for nurse practitioners to feel supported because feelings of abandonment and being undervalued contribute to the development of burnout and negatively affect well-being (Mannix, 2021). Nurse practitioners experienced negative impacts on their well-being because of the physical and emotional burden of working during the pandemic. It is well recognized that stressed health care providers may suffer burnout, compassion fatigue, and job dissatisfaction, which create unintended harm to patients (Hochuli et al., 2020). Increased workloads and high patient acuity during COVID-19 resulted in nurse practitioner physical exhaustion with a particular impact on sleep. Anxiety about their safety, patient isolation, manual nursing obligations, and disordered sleeping patterns compounded their physical and emotional exhaustion. Nurse practitioners had little physical or emotional respite. Feeling supported contributes to the protective mechanisms against burnout, which in turn helps nurses manage workplace stressors (Mannix, 2021).

Conclusion

The six qualitative studies in this review demonstrated that nurse practitioners had diverse experiences while working during the COVID-19 pandemic. This review found that it was essential for nurse practitioners to feel supported, and nurse practitioners who were displaced, deployed, or professionally isolated did not feel valued. Clinical outcomes were compounded by staff shortages, which saw nurse practitioners deployed and stepping into other roles. The absence of other health care providers further burdened the workloads of nurse practitioners because they transformed their roles from traditional nurse practitioner roles to delegating, coordinating, managing, and providing care beyond the boundaries of their scope. The physical and emotional burden of infecting others and isolation was compounded by inconsistencies in clinical care approaches and isolation.

During the COVID-19 pandemic, health care services had to leverage their workforce skills to accelerate COVID-19 identification, treatment, and care. Nurse practitioners rapidly found themselves at the forefront, identifying and caring for patients with COVID-19. As Wood et al. (2021) points out, this was likely due to the recognition that experienced clinicians have a crucial role in responding to health emergencies. The review findings highlight several areas for improvement in NP practice during epidemics, including addressing the fear of infecting others, providing support and comradery, adapting care delivery to rapid changes in the care environment, and addressing the impact on the well-being of nurse practitioners. To facilitate such improvements, there is a need to develop a set of definitive recommendations based on these findings. Further studies should focus on identifying specific interventions to address these areas and evaluating their effectiveness in improving nurse practitioner practice during epidemics. Given the significant growth in the nurse practitioner workforce, the insights gained from this review can inform critical preparedness, education, and response actions to future health care crises. Policymakers can use this knowledge to develop policies that support and protect health care workers during such crises. In addition, these findings can guide future research and interventions to address the identified challenges and improve health care system preparedness.

Strengths and limitations

The present review synthesizes evidence from multiple studies to offer a comprehensive analysis of the experiences of nurse practitioners working during the COVID-19 pandemic. The review's rigorous methodology, involving a thorough literature search, transparent selection process, and standardized data extraction process, aims to minimize bias. While the small number of references may be a limitation, the transparency of the inclusion and exclusion criteria used by the authors is a strength. It is essential to consider the limitations of this review, including the availability and quality of evidence, publication bias, and heterogeneity of included studies, when interpreting its findings. Further research is needed in this area before evidence-based decision-making can be informed.

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