



**“Nursing in the Time of COVID-19: Insights into Preparedness, Challenges, and Recommendations for Sustainable Healthcare Workforce”**

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**Abstract:**

**Background:** The COVID-19 pandemic placed unprecedented demands on healthcare systems globally, with nurses playing a critical frontline role. Ensuring their preparedness, safety, and psychological well-being became vital. This study examines the sources of information utilized by nurses, the perceived level of threats during the pandemic, and the key challenges they faced, in order to offer recommendations for improving healthcare workforce sustainability.

**Materials and Methods:** A cross-sectional survey was conducted among 340 nurses working in COVID-19 healthcare settings. Data collection focused on the sources of COVID-19 information, perceived threat levels, role changes, and complications experienced. Descriptive statistics were used to assess the distribution of responses, while qualitative feedback was collected to provide deeper insights into the experiences and needs of nurses during the pandemic.

**Results:** Approximately 98% of the respondents relied on non-hospital sources for COVID-19 information. A significant majority (79%) reported moderate to high levels of perceived threat, primarily related to fear of virus transmission and insufficient protective measures. Key challenges identified included lack of institutional support, insufficient access to up-to-date scientific resources, and knowledge gaps in infection control protocols.

Recommendations emerging from the data emphasize the need to enhance nursing staff competencies, streamline communication channels for timely information dissemination, and address staff shortages through policy reforms.

**Conclusion:** The study underscores the critical role nurses played during the COVID-19 crisis and highlights the need for systemic reforms to better support the nursing workforce. Enhanced preparedness strategies, improved access to information, and focused efforts to address psychological well-being are crucial for maintaining a resilient and sustainable healthcare workforce during and beyond pandemics.

**Keywords:** COVID-19, Nursing Preparedness, Healthcare Workforce, Pandemic Response, Nurse Challenges, Sustainable Healthcare, Infection Control.

**المخلص:**

الخلفية: فرض جائحة كوفيد-19 مطالب غير مسبوقة على أنظمة الرعاية الصحية على مستوى العالم، حيث لعبت الممرضات دورًا حاسمًا في الخطوط الأمامية. أصبح ضمان استعدادهن وسلامتهن ورفاهتهن النفسية أمرًا حيويًا. تدرس هذه الدراسة مصادر المعلومات التي تستخدمها الممرضات، ومستوى التهديدات المتصور أثناء الوباء، والتحديات الرئيسية التي واجهتها، من أجل تقديم توصيات لتحسين استدامة القوى العاملة في مجال الرعاية الصحية.

المنهجية: تم إجراء مسح مقطعي بين 340 ممرضة تعمل في بيانات الرعاية الصحية الخاصة بكوفيد-19. ركز جمع البيانات على مصادر معلومات كوفيد-19 ومستويات التهديد المتصور وتغييرات الأدوار والمضاعفات التي واجهتها. تم استخدام الإحصاءات الوصفية لتقييم توزيع الاستجابات، في حين تم جمع ردود الفعل النوعية لتوفير رؤى أعمق حول تجارب واحتياجات الممرضات أثناء الوباء.

النتائج: اعتمد حوالي 98% من المستجيبين على مصادر غير المستشفيات للحصول على معلومات كوفيد-19. وأفادت أغلبية كبيرة (79%) بمستويات معتدلة إلى عالية من التهديد المتصور، ويرتبط في المقام الأول بالخوف من انتقال الفيروس وتدابير الحماية غير الكافية.

وتضمنت التحديات الرئيسية التي تم تحديدها الافتقار إلى الدعم المؤسسي، وعدم كفاية الوصول إلى الموارد العلمية الحديثة، والفجوات المعرفية في بروتوكولات مكافحة العدوى. وتؤكد التوصيات الناشئة عن البيانات على الحاجة إلى تعزيز كفاءات طاقم التمريض، وتبسيط قنوات الاتصال لنشر المعلومات في الوقت المناسب، ومعالجة نقص الموظفين من خلال إصلاحات السياسات.

الخلاصة: تؤكد الدراسة على الدور الحاسم الذي لعبته الممرضات خلال أزمة كوفيد-19 وتسلط الضوء على الحاجة إلى إصلاحات منهجية لدعم القوى العاملة التمريضية بشكل أفضل. تعد استراتيجيات الاستعداد المعززة، وتحسين الوصول إلى المعلومات، والجهود المركزة لمعالجة الرفاهية النفسية أمرًا بالغ الأهمية للحفاظ على قوة عاملة مرنة ومستدامة في مجال الرعاية الصحية أثناء الأوبئة وما بعدها.

الكلمات الرئيسية: كوفيد-19، استعداد التمريض، القوى العاملة في مجال الرعاية الصحية، الاستجابة للوباء، تحديات التمريض، الرعاية الصحية المستدامة، مكافحة العدوى.

### Introduction:

In March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic, which profoundly impacted healthcare systems globally. Nurses were thrust into the frontlines, providing critical care to patients under rapidly evolving and challenging conditions. Their role was indispensable in the fight against COVID-19, but the demanding circumstances imposed significant physical, mental, and emotional burdens on them due to the need for strict infection control protocols, fear of virus transmission, and increased workloads.

Previous research has explored the psychological and occupational toll of caring for COVID-19 patients, including heightened job stress and occupational fatigue. For instance, a study evaluating job stress factors in nurses during the pandemic highlighted significant stressors such as lack of personal protective equipment (PPE), fear of infection, and emotional exhaustion. Other studies have noted nurses' declining job satisfaction, often linked to inadequate staffing and support, which impacts both the quality of patient care and nurses' mental health. [1]

Moreover, research on occupational fatigue recovery in COVID-19 wards found that nurses experienced higher levels of physical and mental fatigue due to the increased demands and prolonged work hours, further affecting their capacity to provide optimal care. These findings underscore the importance of ensuring nurses are well-supported, physically and emotionally, to maintain a sustainable workforce. [2]

Despite these insights, significant gaps remain in understanding how nurses navigate the complex demands of working during a pandemic. There has been limited exploration of the specific challenges nurses encounter in terms of information access, their perceived threat levels, and how their roles evolved throughout the crisis. Additionally, barriers to effective patient education in COVID-19 wards, a crucial aspect of pandemic response, have not been fully addressed from nurses' perspectives. [3]

To prepare for future pandemics and enhance the healthcare system's resilience, it is essential to understand the factors influencing nurses' willingness and ability to work during such crises. This study aims to fill this gap by comprehensively exploring nurses' firsthand experiences, including their sources of information, perceived threats, role changes, complications, and their willingness to provide care for COVID-19 patients. By evaluating these factors, the study seeks to provide actionable recommendations for building a more sustainable and prepared healthcare workforce. [4]

### Materials and Methods:

#### Research Design and setting:

This study employed a mixed-methods approach, combining both quantitative and qualitative methodologies to comprehensively explore the experiences of nurses caring for patients with COVID-19. A descriptive, exploratory design was utilized for the quantitative component, while a naturalistic, descriptive qualitative approach was employed to gain deeper insights into the factors influencing nurses' readiness and willingness to provide care. The study was conducted in the Taif region of Saudi Arabia, where three Armed Forces Hospitals played a critical role in providing healthcare services during the COVID-19 pandemic. These hospitals were equipped with dedicated COVID-19 care units, making them an ideal setting for studying the unique challenges faced by frontline nurses.

#### Sample and Sampling:

The target population comprised all nurses directly involved in the care of COVID-19 patients at the Armed Forces Hospitals in Taif. An open invitation was extended to all eligible nurses who met the study criteria. Participation was voluntary, and nurses were informed of their right to withdraw from the study at any time. A total of 600 hard copies of the study questionnaire were distributed from October to December 2020. Additionally, 25 semi-structured interviews were conducted with nurses who agreed to participate in the qualitative phase. This sampling strategy ensured a comprehensive representation of nurses working in various roles within the COVID-19 units.

#### Data Collection Tool and Technique:

**Quantitative Data Collection:** A structured questionnaire was used to collect quantitative data. The questionnaire was distributed in hard copy format to 600 eligible nurses across the three hospitals. It included items related to nurses' sources of information, perceived threats, role changes, and complications experienced while caring for COVID-19 patients

**Qualitative Data Collection:** For the qualitative component, semi-structured interviews were conducted with 25 nurses. Each interview lasted between 30 to 60 minutes and was facilitated by trained researchers to ensure consistency. The interviews aimed to explore the nuanced experiences of nurses, focusing on the “who,” “what,” and “where” of their experiences in caring for COVID-19 patients. The interviews were audio-recorded with participants' consent and later transcribed verbatim to preserve the authenticity of the responses. This qualitative approach allowed for a richer, in-depth understanding of nurses' challenges, motivations, and personal perspectives.

#### Ethical Considerations

The study was conducted in accordance with ethical standards as outlined by the relevant institutional review boards (IRBs) and adhered to the principles of the Declaration of Helsinki. All participants provided informed consent before participating in the study, ensuring they were fully aware of the purpose, procedures, and their right to withdraw at any point. Confidentiality was maintained throughout the study, with all personal data anonymized during analysis and reporting. Audio recordings and transcripts from the qualitative interviews were securely stored and only accessible to authorized research team members to ensure data integrity and participant privacy.

#### Statistical and Qualitative Analysis

Quantitative data were analyzed using IBM SPSS Software (version X), applying descriptive statistics to assess the distribution of responses and identify patterns in nurses' sources of information, perceived threats, and challenges. For the qualitative data, thematic analysis was employed to uncover recurring themes and gain insights into the experiences of nurses. This approach allowed for a comprehensive analysis that integrated quantitative findings with the rich, context-dependent data from the qualitative phase. The combination of these methods provided a holistic understanding of the factors influencing nurses' willingness and ability to care for COVID-19 patients in a demanding healthcare environment.

## RESULTS

### 1. Quantitative Analysis

Table 1: The demographic variables of the participants

Table 1: Demographic Variables (n=340)		
Demographic	Categories	Results
Nationality	Saudi	4%
	Non- Saudi	96%
Gender	Male	16.5%
	Female	83.5%
Marital Status	Single	50.5%
	Married	48%
	Widow/Divorced	1.5%
Educational Level	Diploma	5%
	BSN	91%
	MSN	4%
Working Area	ER	36.5%
	Medical Surgical Units	16.5%
	Critical Care Units	26%
	Pediatrics	4%
	OR	7%
	Others	10%
Age (Year)	Min	22
	Max	58
	Mean	34.5
Experience (Year)	Min	1
	Max	34
	Mean	11.5

The study included 340 nurses who were directly involved in the care of COVID-19 patients in the Taif region. The majority of the participants (96%) were non-Saudi, with a smaller proportion of Saudi nationals (4%). In terms of gender, females accounted for a significantly higher percentage (83.5%) compared to males (16.5%). Regarding marital status, just over half of the participants were single (50.5%), while 48% were married, and 1.5% were either widowed or divorced.

When examining the educational qualifications of the participants, the overwhelming majority (91%) held a Bachelor of Science in Nursing (BSN), while 5% had a diploma, and 4% had a Master of Science in Nursing (MSN). The distribution of participants across various working areas showed that the largest group worked in the Emergency Room (ER) (36.5%), followed by those in Critical Care Units (26%) and Medical-Surgical Units (16.5%). Other participants were distributed across Pediatrics, the Operating Room (OR), and other areas.

The age of the participants ranged from 22 to 58 years, with a mean age of 34.5 years. Their work experience ranged from 1 to 34 years, with an average of 11.5 years. These demographic details provide a clear understanding of the background and diversity of the study participants, which is crucial for interpreting the findings.

**Table 2: Sources of Information regarding COVID-19:**

Information Source	RANK
Internet - CDC, WHO, or - other site	1 (49%)
News (TV, radio, or newspaper)	2 (42%)
Social Media (WhatsApp, Facebook)	3 (29.5%)
Employer	4 (12.5%)
Nursing colleague	5 (12%)
Nursing Conference	6 (10%)
Nursing journal	7 (9%)
Medical journal	8 (8.5%)

Understanding where nurses obtained information about COVID-19 during the pandemic is crucial for evaluating how well-prepared they were in adapting to the rapidly evolving healthcare environment. This table ranks the different sources of information that nurses relied on. The internet, particularly resources from the CDC and WHO, ranked as the most utilized source of information, with nearly half of the participants (49%) using it to stay informed. Traditional news media (TV, radio, newspapers) followed closely at 42%, demonstrating the importance of broad media coverage during the pandemic. Social media platforms like WhatsApp and Facebook ranked third at 29.5%, highlighting the increasing role of informal digital channels in disseminating information. Employers and nursing colleagues were used as direct sources by 12.5% and 12% of nurses, respectively. Interestingly, only a small proportion of nurses relied on professional gatherings, journals, or conferences for updates, indicating potential gaps in access to peer-reviewed or specialized information sources.

Table 3: Feeling of Threat from COVID-19:

What is your current feeling of threat from the COVID-19 pandemic	Result %
I do not feel threatened by pandemic COVID-19 at all	3.3%
I feel minimally threatened by pandemic COVID-19	16.5%
I feel moderately threatened by pandemic COVID-19	44%
I feel very threatened by pandemic COVID-19	35.7%

The table illustrates the varying levels of perceived threat felt by nurses during the COVID-19 pandemic. A large portion of the participants (44%) reported feeling moderately threatened, indicating that while they recognized the risks, the perceived threat was not overwhelming for many. Close to this, a significant proportion (35.7%) of nurses felt very threatened by the pandemic, reflecting a high level of concern about their safety and the risks associated with their frontline roles.

In contrast, 16.5% of nurses felt minimally threatened, suggesting that these individuals had lower anxiety or confidence in the protective measures in place. A very small minority (3.3%) stated that they did not feel threatened at all, indicating either a strong sense of security or a different personal perception of the pandemic's risks. This range of responses highlights the diverse emotional experiences of nurses during the pandemic, with most nurses feeling moderate to high levels of threat, which could impact their mental health and job performance.

Table 4: Demands and Challenges:

What are the Demands and Challenges Facing you?	YES%	NO%
Movement of patients increases the potential for the spread of the virus and requires teaching, assistance with PPE, and monitoring	74%	26%
Infectious waste must be handled in a way to avoid further infections	72%	28%
Nursing staff responds to patients' needs promptly	66%	34%
To reduce movement, and the number of people exposed to patients with the COVID-19 virus, nurses are required to fill some responsibilities that used to be covered by other health professions, technicians, and other	64%	36%
A nurse needs to keep up with current guidance about the epidemic and this requires frequent checks for the World Health Organization (WHO) and other official websites	61%	39%
Nurse acts in COVID -19 information resource person to the patients and their families, which requires nurses to be knowledgeable	58%	42%
Nurses need to respond to the very specific individualized needs of the patients and communicate their needs to their families	57%	43%
Nurses need to handle patients' stressors and respond to the patient's concerns about the safety of their families	52.5%	47.5%
Nurses need to respond to anxious, and worried families needing information and reassurance	48%	52%

The table presents a range of demands and challenges that nurses faced while caring for COVID-19 patients. The results highlight the multifaceted nature of their responsibilities, especially in maintaining safety protocols and managing patient care.

The most significant challenge identified by 74% of nurses was the increased risk of virus spread due to patient movement, which required education on infection control, assistance with personal protective equipment (PPE), and constant monitoring. Similarly, 72% of nurses reported the importance of handling infectious waste properly to avoid further infection, underscoring the critical nature of infection control in their daily tasks.

Another notable challenge, faced by 66% of nurses, was the need to promptly respond to patient needs, emphasizing the heavy workload and pressure to maintain high-quality care. The shifting responsibilities of nurses were also evident, with 64% of participants noting that they had to take on roles traditionally covered by other healthcare professionals to minimize exposure and movement within the hospital.

In addition to their clinical responsibilities, 61% of nurses felt the need to stay updated on the latest epidemic guidance from sources like the World Health Organization (WHO), highlighting the need for continual learning and information access during the crisis. About 58% of nurses also reported that they had to serve as information resources for patients and families, which required them to be well-informed about COVID-19.

Further challenges included responding to the individualized needs of patients (57%) and addressing patients' concerns about the safety of their families (52.5%), adding an emotional strain to their workload. Finally, just under half of the nurses (48%) reported the challenge of responding to anxious families needing reassurance and information, which reflects the broader psychological toll on both patients and their families during the pandemic. This table captures the wide-ranging demands and pressures faced by nurses, not only in terms of clinical care but also in their roles as educators, communicators, and emotional support providers during the COVID-19 pandemic.

#### Impact on Nurse's Well-being:

- A majority of nurses expressed fear, anxiety, and challenges while caring for COVID-19 patients.
- Protective measures like PPE, social distancing, and staff clustering were reported.
- Suggestions for improving safety included proper spacing, psychological support, and Arabic-speaking health educators.
- Challenges affected nurse-patient interactions and confidence in care.
- Caring for COVID-19 patients resulted in exhaustion, burnout, and physical strain.
- Some nurses became more health-conscious.
- Fear and homesickness were common psychological impacts.
- Commitment to the nursing profession drove nurses to care for COVID-19 patients.

#### Discussion:

The findings of this study offer crucial insights into the experiences of nurses caring for COVID-19 patients during the pandemic. The challenges nurses face encompasses physical, psychological, and emotional domains, and these experiences provide important guidance for developing strategies to support nurses during similar healthcare crises in the future.

#### Psychological and Emotional Impact

The psychological toll of caring for COVID-19 patients emerged as a significant theme, with many nurses reporting feelings of anxiety, fear, and mental exhaustion. Our findings are consistent with previous studies that have identified similar psychological stressors. For example, a study conducted by Zhang et al. (2020) in China highlighted the increased levels of anxiety and depression among healthcare workers during the pandemic, with nurses reporting higher levels of stress compared to other healthcare professionals due to their close contact with infected patients. Similarly, research by Lai et al. (2020) found that frontline nurses were more likely to experience symptoms of burnout, anxiety, and depression compared to non-frontline nurses.

In contrast, some studies reported different levels of psychological stress. For example, a study conducted by Finstad et al. (2021) found that while nurses experienced significant stress, some also exhibited resilience and adaptability, particularly in hospitals with strong psychological support systems. These contrasting findings highlight the importance of institutional and peer support mechanisms in mitigating the emotional toll of the pandemic.

### Protective Measures and Suggestions

In our study, nurses emphasized the importance of Personal Protective Equipment (PPE) as a critical safeguard, consistent with findings from several other studies. For instance, research conducted by Kim et al. (2021) also underscored the protective role of PPE in reducing infection rates among nurses. However, it is concerning that, similar to our study, other research (e.g., Sharma et al., 2020) reported that nurses faced difficulties in accessing adequate PPE, which contributed to feelings of vulnerability and stress. This parallel finding across different healthcare settings highlights a global challenge that must be addressed through improved logistics and preparedness in future outbreaks.

Nurses in our study also suggested measures such as providing proper spacing and adequate cubicles for patients, which mirrors the recommendations in research by Feng et al. (2021), where healthcare workers identified similar infrastructure improvements to reduce infection risks. Moreover, the need for mental health support for nurses, as emphasized in our study, aligns with findings by Pappa et al. (2020), who advocated for increased psychological interventions and support systems to alleviate burnout and emotional distress among nurses.

### Impact on Patient Care and Nurse Health

The physical and emotional exhaustion reported by nurses in this study is a widely documented issue in the literature. The increased workload, stress of PPE usage, and long shifts have been cited in several studies as contributors to burnout. For example, a study by Alharbi et al. (2020) found that nurses caring for COVID-19 patients were at heightened risk of burnout, with negative consequences for both patient care and personal health. Additionally, our study revealed that many nurses felt that their ability to provide care was compromised by the challenges posed by the pandemic. This perception is consistent with findings by Yunitri et al. (2021), who found that nurses often felt that patient care quality was diminished due to time constraints, increased workloads, and frequent policy changes. However, some studies offer a slightly different perspective. For example, research by Walton et al. (2020) noted that despite the challenges, some nurses experienced a sense of pride and increased job satisfaction in their ability to contribute to the pandemic response, suggesting that individual responses may vary depending on personal resilience and institutional support.

### Quantitative Insights

The study's quantitative findings provided further clarity regarding information sources and perceived threats. Nearly 98% of nurses relied on external sources, such as the internet and social media, to obtain information about COVID-19. This heavy reliance on non-hospital sources aligns with findings from a study by Cénat et al. (2021), which noted that the rapidly evolving nature of the pandemic led healthcare workers to seek information from a variety of channels. However, our study highlights a potential gap in hospital-based information dissemination, which has been noted in other studies as well. For instance, Shanafelt et al. (2020) emphasized that healthcare organizations must improve communication strategies to ensure that staff receive timely and accurate information internally, reducing reliance on potentially unreliable sources.

Regarding perceived threats, the fact that the majority of nurses reported moderate (44%) to high (35.7%) levels of threat is consistent with other studies. Research conducted by Kisely et al. (2020) found that healthcare workers, especially nurses, often felt personally at risk, which heightened their stress levels and affected job satisfaction. These feelings of threat can also be linked to the inadequate provision of PPE and the fast-changing nature of clinical guidelines, as highlighted in studies by Chow et al. (2020).

### Comparison with Non-Parallel Studies

While many studies highlight the significant emotional and psychological challenges faced by nurses, some research paints a less dire picture. For example, a study conducted in regions with lower COVID-19 caseloads, such as in New Zealand (Kane et al., 2021), found that nurses reported lower levels of stress and burnout compared to those in heavily impacted countries. This variation underscores the importance of considering regional context, available resources, and the severity of the pandemic's local impact when interpreting these findings.

### Conclusion

This study highlights the numerous challenges faced by nurses caring for COVID-19 patients, which include psychological, emotional, and physical burdens. The commitment of nurses to their profession and patient care is commendable; however, the substantial toll on their well-being underscores the urgent need for systemic support. The findings indicate a high reliance on non-hospital sources for information, significant feelings of threat, and numerous demands and challenges, which suggest that the current healthcare infrastructure may not adequately address the complexities of pandemic care.



# مجلة الآداب والعلوم الانسانية

## Journal of Arts and Humanities



To effectively manage infectious disease outbreaks, such as the COVID-19 pandemic, it is essential to implement strategies focused on enhancing emotional well-being, providing accurate information, and fostering effective communication. By prioritizing the support and development of nurses, healthcare systems can build a resilient workforce capable of navigating future health crises.

### Recommendations:

1. **Access to Reliable Information:** Ensure that nurses have continuous access to accurate and up-to-date information from trustworthy sources, such as the CDC and WHO. This should include training on how to assess the reliability of online resources.
2. **Addressing Staffing Challenges:** Implement measures to manage staff shortages effectively, including hiring additional staff and ensuring adequate nurse-to-patient ratios. Consider shorter shifts and providing mental health support to mitigate burnout.
3. **Feedback and Involvement in Decision-Making:** Establish channels for nurses to provide feedback regarding their working conditions and involve them in decision-making processes. This can enhance patient outcomes and build trust in leadership.
4. **Psychological and Emotional Support:** Develop and promote mental health programs specifically tailored for nurses, addressing the unique psychological stressors encountered during pandemics. Regular debriefing sessions and access to counseling services should be made available.
5. **Training and Development:** Invest in ongoing training and professional development to ensure that nurses are well-equipped to handle the evolving demands of patient care during pandemics. This should include simulation training for emergency situations.
6. **Community Support and Resources:** Create a network of support resources for nurses that includes peer support programs and access to community health services to manage stress and mental health.

By implementing these recommendations, healthcare systems can foster a supportive environment for nurses, ensuring they remain capable and healthy while providing high-quality care during pandemics. This proactive approach not only benefits nurses but ultimately enhances patient care and public health outcomes.



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