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Readiness of nurses working in COVID-19 pandemic

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Abstract---Background: The demands placed on nurses during a pandemic are far greater than those of any other professional group. Therefore, this review was conducted to explore the readiness of nurses to work during the COVID-19 pandemic. Method: This study is a systematic literature review. Articles were obtained from five databases including Scopus, Wiley Online Library, PubMed, ProQuest and GARUDA which are databases recommended by the ministry of education, culture, research, and technology in Indonesia. Article searches were also carried out through Gray Literature. This review follows the guidelines based on PRISMA 2020. All included articles published in English and Indonesian which are the result of research and were published in the last four years (2019-2022). Results: There are nine articles obtained from all databases, each of which analyzes the findings descriptively about the readiness of nurses in dealing with the COVID-19 pandemic. Conclusion: These findings indicate that internal and external factors can affect nurses' readiness to work during the COVID-19 pandemic. Therefore, in increasing the competence of nurses, support is needed so that nurses' readiness in managing patients can be carried out optimally.

Keywords---Nurse, Readiness, Pandemic, COVID-19.

Introduction

Coronavirus Disease 2019 (COVID-19) is a type of infectious disease that has emerged since 2019. COVID-19 is an infectious disease caused by *Severe Acute Respiratory Syndrome Coronavirus-2* (SARS-CoV-2) (Lu et al., 2020). COVID-19 is

also the cause of a potentially fatal disease causing aggravation of other diseases so that it becomes a global public health concern (Rothan & Byrareddy, 2020). Individual infected with the virus will generally experience mild to moderate respiratory system disease and recover without requiring special treatment. However, some cases of patients with COVID-19 will become very severe and require medical attention (WHO, 2020). Therefore, the handling of this disease must really get special attention from the whole community, especially health workers.

During the COVID-19 pandemic, the demands placed on nurses are far greater than those of other professional groups. The COVID-19 pandemic requires nurses from various countries to be directly involved in handling health (Rothan & Byrareddy, 2020). The role of nurses in health services is very complex, such as being involved in triage of patients, providing preventive measures, being involved in handling emergencies, coordinating with other health workers, providing holistic nursing services to patients directly and fostering good communication relationships with the patient's family (Xie et al., 2020). However, in dealing with COVID-19 emergency cases, various problems among nurses such as a shortage of staff, uncomfortable use of personal protective equipment, shortage of medical supplies and the emergence of psychological problems in the form of fear of being infected with the virus (Abdullah Al Thobaity & Alshammari, 2020).

Previous research has shown that most nurses in hospitals have less responsiveness to disasters. The responsiveness of nurses to disasters is related to the previous experience of nurses and their training in disasters (Tzeng et al., 2016). Disaster training can improve nurses' knowledge and skills in responding to emergencies (Abdulallah Al Thobaity et al., 2015). Good knowledge and skills possessed by nurses can increase the readiness of nurses on duty during a pandemic.

Knowledge of nurse readiness during the COVID-19 pandemic can be useful to support nurses so that they are ready to work. Good work readiness of nurses will support the creation of safe and quality nursing services. Therefore, this study aims to determine the readiness of nurses to work during the COVID-19 pandemic.

Methods

Design

This systematic literature review is based on the PRISMA Checklist 2020 guidelines (Page et al., 2021). The first author conducted a search for research articles from various databases and filtered articles and extracted data related to the readiness of nurses working during the COVID-19 pandemic. The second and third authors evaluated the included articles and discussed the analyzed findings.

Search Strategy

Search articles using Medical Subject Heading (Mesh) on five databases including Scopus, Wiley Online Library, PubMed, ProQuest and GARUDA. Article searches

were also carried out through Gray Literature. Search for articles in each database using the search keywords Nurse AND Readiness AND COVID-19. In addition, the PICO Formula Combination (Patient, Intervention, Comparison, Outcome) is used to develop research questions that can answer questions as well as article searches conducted (Page et al., 2021). PICO acronyms used include P as Nurse, I Nurse working, C as No, and O as Nurse Readiness. The search results and the consultation stages of the articles found were carried out in May 2022.

In the article search process, a total of 1870 studies were identified. After the duplicate article in the 1854 exclusion the article still remained. Articles were then filtered based on title and abstract, availability of full text, suitability of topics until the remaining 199 articles and 190 studies were also excluded because they did not meet the inclusion criteria. Finally, nine articles were included in this literature review which can be seen in Figure 1.

Inclusion criteria

- 1 All research articles that contain nurses working in health care centers during the COVID-19 pandemic
- 2 English and Indonesian articles
- 3 Articles published in the last Four years (2019-2022).

Exclusion criteria

Articles published in the form of titles, abstracts, reviews, comments, letters of editors, theses, and dissertations.

Results

Study Characteristics

Full details of the included studies are shown in Table 1. A total of nine articles were obtained from the various databases reviewed and the interventions performed in primary, secondary, or tertiary care settings from different countries. One study was conducted in Spain (Garcia-Martin et al., 2021), One study from Egypt (El-Monshed et al., 2021), One study from Ireland (Ryder et al., 2022), Two studies from Indonesia (Intening et al., 2021; Tamsuri, 2021), One study from Saudi Arabia (Mubarak Al Baalharith & Mary Pappiya, 2021), One study from Taiwan (Chen et al., 2021), One study from Malaysia (Chua et al., 2021), and One study from Bangladesh (Gazi & Akhi, 2020).

Evaluation of the Readiness of Nurses working during the COVID-19 Pandemic

Nine studies assess readiness in the face of the COVID-19 pandemic carried out by existing nurses and new nurses. Five of the studies used the Cross-sectional Survey, Two studies used the Qualitative Study, and One study used the Mix-methods. Nurses' readiness to work during the COVID-19 pandemic is influenced by internal and external factors. Internal factors that can affect nurses who work during the COVID-19 pandemic are fear, worry, and stress (Chen et al., 2021; Garcia-Martin et al., 2021), Feeling Ready (El-Monshed et al., 2021),

Achievements, Interests (Tamsuri, 2021), Physical Condition, Mental (Intening et al., 2021; Tamsuri, 2021), Knowledge about COVID-19 (Gazi & Akhi, 2020; Mubarak Al Baalharith & Mary Pappiya, 2021), Attitude (Gazi & Akhi, 2020), and Commitment to work (Chen et al., 2021). Meanwhile, external factors that affect the readiness of nurses to work during the COVID-19 pandemic are organizational problems, support for treating patients, especially COVID-19 patients (García-Martín et al., 2021), Official information from the government side, the nature of the virus (El-Monshed et al., 2021), Documented contingency plan, collaborative decision making, ward design (Ryder et al., 2022), Nurse clinical skills (Chen et al., 2021; Ryder et al., 2022), PPE readiness and PPE standards (Intening et al., 2021; Mubarak Al Baalharith & Mary Pappiya, 2021).

Discussion

This review is discussed based on two factors that influence nurse readiness. The first factor is the internal factor of nurses working during the COVID-19 pandemic. Nurses are health workers who have an important role in monitoring the health condition of patients for 24 hours. The readiness of nurses to treat patients during the COVID-19 pandemic is very necessary to assist in maintaining the quality of service. However, caring for COVID-19 patients certainly has big challenges and can cause stress for nurses because of the rapid spread of the virus (Shechter et al., 2020; Wang et al., 2020). Stress that occurs in health workers during the COVID-19 pandemic is 17.5% higher than cases *Middle East respiratory syndrome coronavirus* (MERS-CoV) which has attacked the Middle East before (Temsah et al., 2020). The emergence of internal problems such as stress on nurses can interfere with the provision of nursing care so that it needs to be taken seriously.

Psychological and social responses to health workers during the COVID-19 pandemic are complex and not yet fully understood (Dubey et al., 2020). External factors in the form of crisis management such as training and education during the COVID-19 pandemic facilitated by emergency hospitals and disaster management will help improve preparedness among health workers in working during the COVID-19 Pandemic (Kholis et al., 2021). The recommendation method is a form of simulation to help manage global crises such as the COVID-19 pandemic in 2020 and in potentially similar pandemics in the future (Kholis et al., 2021). In order to better address psychosocial problems from various walks of life, such as health workers and the general public, a model of prevention and intervention for psychosocial crises must be developed immediately by the government, health workers and other responsible persons. Appropriate application of internet services, technology and social media to prevent the COVID-19 Pandemic and such information needs to be disseminated. Psychosocial preparedness by establishing special mental groups or organizations for the COVID-19 pandemic in the future is certainly needed (Dubey et al., 2020).

Conclusion

The findings in this review show that nurses' readiness to work during the COVID-19 pandemic is strongly influenced by Internal and External factors. This finding is clinically important because it has the potential to evaluate various

problems caused by the inability of nurses to prepare for work during the COVID-19 pandemic. The unpreparedness of nurses can ultimately affect the quality of service which has a negative impact on both health services and patients.

Limitations

The limitation of this review is that not all of the findings of the article report the significance value of the influence and relationship of nurses' readiness to work during the pandemic.

Ethical Approval

Ethical matters such as plagiarism, error, fabrication and falsification of data, double publication and submission, redundancy have been observed.

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Conflict of interest

All authors declare no conflict of interest.

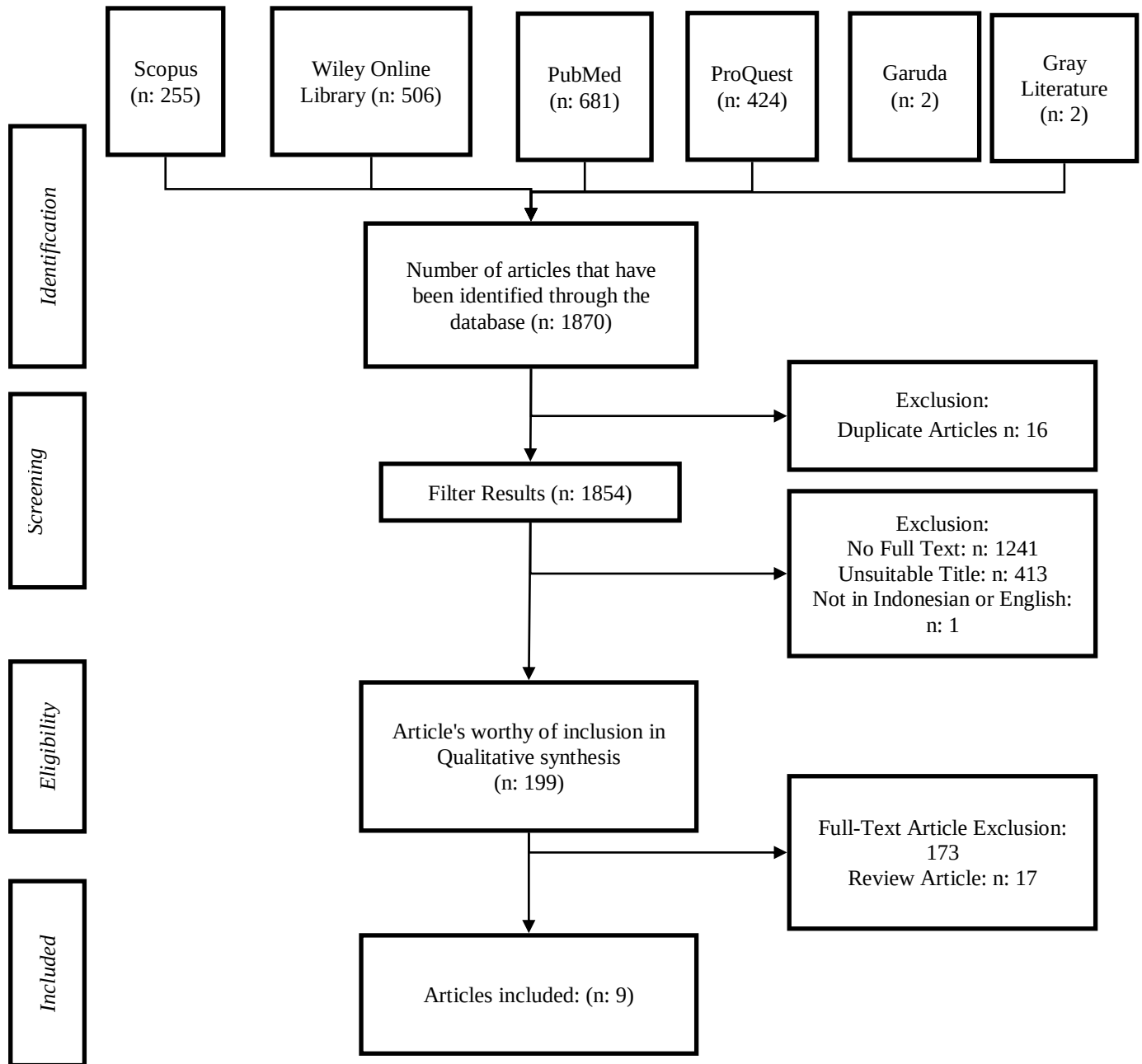


Figure 1. PRISMA Flowchart

Table 1. Synthesis Grid

Author, Year, Country	Title	Destination	Method	Results
(García-Martín et al., 2021), Spain	The transition of a novice nurse to an emergency nurse during the COVID-19 pandemic:	To explore the experiences and perceptions of new nursing graduates working in the emergency department during the COVID-19 outbreak.	Qualitative Study	Three main themes emerged from the data analysis: 1. Fear and worry. 2. Organizational problems. 3. Support for novice nurses These findings help in understanding how the pandemic period as a learning program for nurses, ongoing professional development, evidence based applications and better planning are needed to ensure the confidence of novice nurses in the emergency department and the ability of emergency room specialist nurses to cope with complications during critical situations.
(El-Monshed et al., 2021), Egypt	Knowledge, concerns, perceived impact, and preparedness of nurses for the COVID-19 pandemic	Assess the nurse's knowledge, concerns, perceived impact and preparedness for the COVID-19 pandemic.	A cross-sectional survey	About half of the nurses surveyed (51.2%) reported that the official websites and pages of the Ministry of Health and the World Health Organization were their main source of information. The majority of nurses (81.6%) were aware of the nature of the virus, 83.6% agreed that their job put them at risk for COVID-19 infection and 72% felt personally prepared for the pandemic.
(Ryder et al., 2022), Ireland	Readiness of nursing and midwifery staff during the global pandemic	To explore the mobilization of nurses/midwives in a designated group of hospitals in Ireland during the global pandemic.	Mixed-methods design	This study reveals that workforce readiness during the first wave of the global pandemic is influenced by many factors, for example, documented contingency plans, collaborative decision-making, ward design, and the improvement of nurses' clinical skills.
(Tamsuri, 2021), Indonesia	Readiness of New Graduated Nurses to Work in Health Care Facilities During the COVID-19 Pandemic Emergency	Identify factors related to the level of readiness of new Diploma III Nursing graduates in East Java who work in the COVID-19 Pandemic Situation.	A Cross-sectional Survey	The results showed that achievement, physical condition, interest and mental readiness were related to the readiness of graduates to work in health services.

(Mubarak Al Baalharith & Mary Pappiya, 2021), Saudi Arabia	Nurse preparedness and response to COVID-19	Assessing nurses' knowledge about preparedness and response to Corona Virus Disease (COVID-19).	A Descriptive Cross-sectional Survey	The results of our study found that overall knowledge of COVID preparedness was adequate. However, nurses' readiness for personal protective equipment is classified as moderate.
(Chen et al., 2021), Taiwan	Factors Relating to Nursing Competence, Workplace Stress, and Persistent Intention of Beginner Nurses during the Corona Virus Disease (COVID-19) Pandemic	to explore the competence of registered nurses in nursing care and their intention to stay in their current workplace		The nurse's level of commitment to the workplace and clinical stress were positively correlated with the experience of working with patients. The competence of novice nurses who are responsible for infectious diseases, especially COVID-19, depends on the experience of nursing care and the competence of nursing in a professional career, which may have an impact on the nurse's intention to be in the room. Therefore, clinical stress, frequency of caring for patients, and training have a relationship with novice nurses' intention to continue their professional career.
(Chua et al., 2021), Malaysia	Nurses Preparedness, Readiness, and Anxiety in Managing the COVID-19 Pandemic	1. Knowing the level of preparedness, readiness, and anxiety of nurses during the COVID-19 outbreak. 2. Examine the effect of various differences in preparedness and readiness among nurses. 3. Testing the effect of COVID-19 preparedness on anxiety among nurses	A Cross-sectional Survey	The results showed that nurses were quite competent in managing the COVID-19 care situation. Each of the 3 differentiating characteristics (age, work experience, and previous disaster experience) did not significantly predict how nurses would manage COVID-19 preparedness. In addition, we also found that only 2 dimensions of preparedness (familiarity with epidemiology and surveillance and familiarity with psychological problems) significantly predicted nurses' anxiety levels. Familiarity with epidemiology and surveillance predicts nurse anxiety positively; conversely, familiarity with psychological problems negatively affected nurses' anxiety.
(Gazi & Akhi, 2020), Bangladesh	Nurses Readiness to Provide Nursing Care for COVID-19 Patients	Assessing the level of knowledge, attitudes and practices of nurses	Cross-sectional descriptive	A significant negative correlation was found between knowledge and attitudes ($r = -0.178$, $p = .000$). However, no significant relationship was found between attitudes

	in COVID	on readiness to provide nursing care to COVID-19 patients.	study	and practice with knowledge and practice related to nurse readiness in providing nursing care to COVID-19 patients.
(Intening et al., 2021), Indonesia	Readiness of Hemodialysis Unit Nurses in Facing New Habits of the COVID-19 Pandemic	Knowing the readiness of nurses in the face of adaptation to the new habits of the COVID-19 pandemic	Qualitative Study	The readiness of nurses to continue to be able to carry out nursing care for CKD patients with routine hemodialysis therapy includes physical and psychological readiness, readiness of Personal Protective Equipment (PPE) and PPE standards used in HD units, thus creating a commitment to remain on duty during the pandemic. COVID-19 is heading for an era of adapting to new habits.

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