



- Psychosocial Status Equality between Familial and Non-Familial Breast Cancer Patients
- Response, Emotional Impact and Expectation of Family Caregiver in Caring For Family Member with Covid-19: A Qualitative Study
- Preceptorship Program and Recruitment Process on Improving the Behavior of Professional Nurses in the Inpatient Room of Hospital C Jakarta
- The Effect of Five-Finger Hypnosis Relaxation Educational Videos as Psychosocial Support on Reducing Anxiety Levels in Student Chronotype during Distance Learning during the COVID-19 Pandemic
- Conflict Management Strategies on the Learning Process of Nursing Undergraduate Students During the Covid-19 Pandemic
- Factor Affecting Treatment Compliance in TB Patients
- The Effect of Murottal Al-Quran Therapy on Anxiety Level of Chronic Kidney Disease Patients Undergoing Hemodialysis
- The Effect of Deep Breathing Relaxation on Changes of Blood Pressure on Hypertention Patients
- The Description of Alexithymia in Nursing Students at Padjadjaran University with Social Media Addiction
- Job Satisfaction Analysis Of Nurses Using Science And Cano Integration
- The Effect of Health Education in Postpartum Mothers on Colostrum on the Intensity of Early Breasfeeding in Newborn Babies
- The Use of Trauma Healing in Treating PTSD in Post-Disaster Victims: A Narrative Review
- Is Acupressure Effective To Treat Pruritus In Hemodialysis Patients? A Literatur Review
- Nurse's Competency Toward Covid-19: A Systematic Review
- Home-based Pediatric Palliative Care: A Narrative Review
- The Effect of Disaster Education of Increasing Earthquake Disaster Preparedness : A Narrative Review

JURNAL KEPERAWATAN KOMPREHENSIF	VOL. 8	NO. 4	Page 433 - 576	Bandung October 2022	ISSN 2354-8428 e-ISSN 2598-8727
------------------------------------	--------	-------	-------------------	----------------------------	--

## Review Article

# Nurse's Competency Toward Covid-19: A Systematic Review

Hikmat Pramajati<sup>1\*</sup> | Nunung Siti Sukaesih<sup>1</sup> | Reni Nuryani<sup>1</sup> |  
Emi Lindayani<sup>1</sup> | Ahmad Purnama<sup>1</sup> | Heri Ridwan<sup>1</sup> | Thaofik Fauzi  
Nugraha<sup>1</sup> | Irawan Danismaya<sup>2</sup> | Halimatusyadiah<sup>2</sup>

<sup>1</sup>Program Studi  
Keperawatan, Universitas  
Pendidikan Indonesia,  
Indonesia

<sup>2</sup>Program Studi Ilmu  
Keperawatan, Universitas  
Muhamadiyah Sukabumi,  
Indonesia

<sup>2</sup>Program Studi Ilmu  
Keperawatan, STIKes Budi  
Luhur, Indonesia

### \*contact

hikmatpramajati@upi.edu

Received : 12/09/2022

Revised : 23/10/2022

Accepted : 25/10/2022

Online : 31/10/2022

Published : 31/10/2022

### Abstract

**Aims:** Since the spread of the Covid-19 outbreak, nurses have been actively involved for 24 hours in providing nursing care to Covid-19 patients both in hospital and public health centers. As part of the front liner, the role of nurses during fighting against Covid-19 requires good knowledge and competence. This review describes the articles regarding nurses' knowledge and competency toward Covid-19 that have been published.

**Methods:** The research articles were retrieved from the Scopus database and Science direct database.

**Results:** The major findings of the review showed that nurses almost have a good knowledge regarding the Covid-19 outbreak. However, it is widely reported that nurses are insufficiently trained. Most of them only read guidelines that have been established by the government. Furthermore, the nurses do not feel confident responding effectively to the Covid-19 pandemic. The other issues according to the articles were the need for support, motivation, material especially personal protective equipment so that the nurses would perform their role better. The result of the study contributes to the competency of Covid-19 pandemic preparedness among nurse professions.

**Conclusions :** The findings of the study also would be evidence-based for the government, nurse managers to prepare nurses for fighting against outbreak response. According to the review, it is recommended that all nurses must be facilitated to get training or education periodically regarding Covid-19.

### Keywords:

covid-19, nurse, competency, systematic review

## INTRODUCTION

Since December 2019, Covid-19 has been a major public health emergency. The Covid-19 pandemic spread quickly to every country around the world since it was reported in China on December 12<sup>th</sup>, 2019. The number and the severity of Covid-19 has become a triggered enormous community health challenge in many countries (1). In light of the virus's unprecedented rapid and widespread transmission, which has made it exceptionally challenging to contain (2).

Nurses play an important role facing complex Covid-19 cases (1). Nurses as one of components of the health care system play an important role in providing high quality health care services (3). In accordance with their role, it is important that nurses have competencies compatible with the health care service demands (4).

During the pandemic, nurses need to be competent in order to deal with disastrous situations. Competency refers to the actual performance of a person in a specific role in a given situation (5). Competence in

nursing requires a wide range of abilities and perspectives to be brought together. It's a set of smart, usable abilities that allows you to mix or integrate many aspects and challenges in intricate ways, depending on the context (4). It was also described as a professional capability or combination of knowledge, skills, personal qualities, and understanding employed effectively in not only predictable specialist context but also unexpected and unstable circumstances (6). Because the pandemic of Covid-19 is an unexpected and unstable situation, this is challenging nurse competence in every country. Large surges of Covid-19 patients stretch health care staff, and resources thin. In these moments, nurses are demanded to play their role with the competencies they have to fight against the pandemic. Competency of nurses, if not properly measured to ensure conformity to the established standard in the management of Covid-19 infection in terms of ensuring adherence to Infection Preventive Control (IPC) measures and risk identification, can become a non-conformity, thereby promulgating the spread among health workers. Therefore, it is necessary to understand the current status of the competency of nurses toward Covid-19, to provide evidence-based findings to improve and maintain competency levels to handle the pandemic in the future.

## AIMS

The purpose of this systematic literature review is to determine nurses' knowledge, attitudes, and skill or practice regarding Covid-19 by synthesizing evidence from quantitative and qualitative studies. More specifically, the following research questions guided this review:

- *What are the knowledge, attitudes, and skills or practices levels among nurses regarding Covid-19?*
- *What factors contribute to a nurse's knowledge and attitude regarding Covid-19?*

- *What suggestions can be offered in improving nurses' competency regarding Covid-19?*

## METHODS

The PRISMA-P (preferred reporting items for systematic reviews and meta-analyses protocols) was used as this systematic review guideline. The steps of the systematic review have been conducted as the following:

### Searching

A search strategy was developed to identify published studies describing nurses' knowledge levels and attitudes toward covid1. The search took place between November 25th and November 27th, 2020. The following keywords were searched in two databases (Scopus and ScienceDirect): "nurses," "knowledge," "attitudes," "skills," and "covid19." The inclusion criteria listed below guided the search efforts to identify all relevant studies.

### Inclusion Criteria

The article was chosen only if it met all of the following criteria: the study's subjects were nurses with any level of experience who worked in hospitals or community health care facilities during the Covid-19 outbreak and focused on knowledge, attitude, skills, or practices related to Covid-19. The range of years for publication was 2019–2020, but this was changed because of the Covid-19 outbreak. The article had to be full text and free to read. The studies' research methods were not used to decide whether or not to include them.

### Screening

The article was chosen only if it met all of the following requirements: the people in the study were nurses with any level of experience, they worked in hospitals or community health care facilities during the Covid-19 outbreak, and it focused on knowledge, attitude, skills, or practices related to Covid-19. The range of years for publication was 2019 to 2020, which was

changed because of the Covid-19 outbreak. The article had to be full text and free to read. The research methods of the studies were not used to decide whether or not to include them.

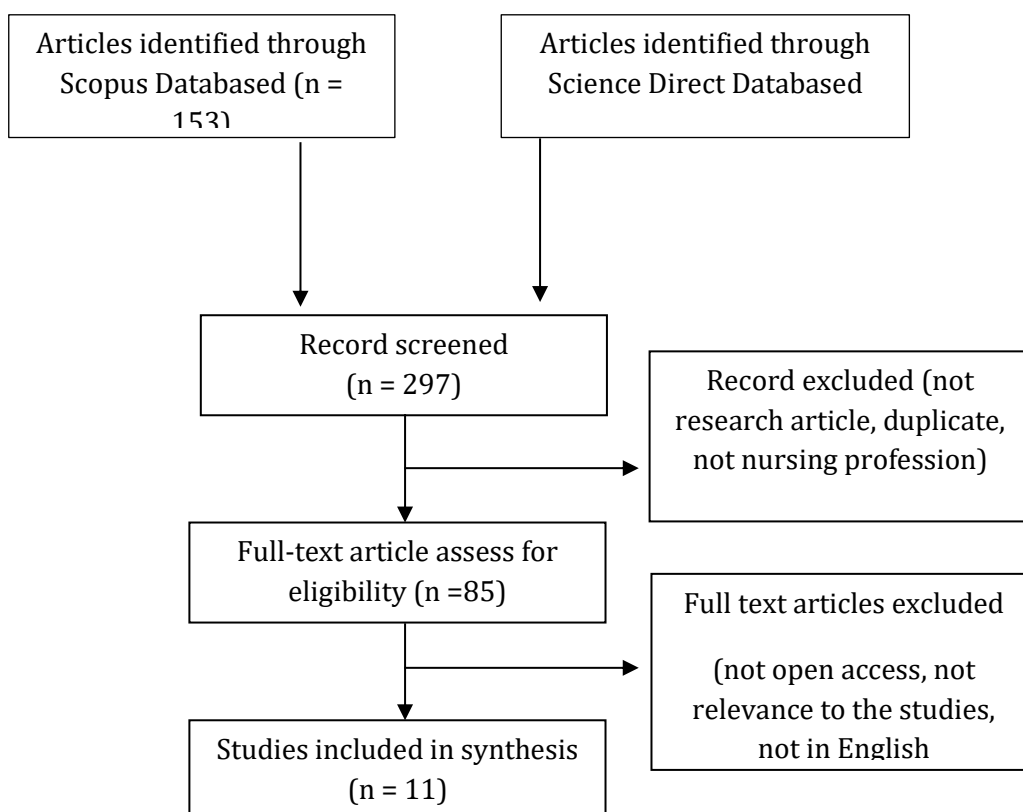
### Quality Appraisal

The Strengthening the Reporting of Observational Studies in Epidemiology Statement (STROBE) tool was used to assess cross-sectional studies and limit any possible bias from including inaccurate results in our review of the literature to evaluate the clearness and completeness of reporting. The framework has 22 parts that are related to the article's title, abstract, introduction, methods, results, discussion, and other things like funding and limitations. The Consolidated Criteria for Reporting Qualitative Research (COREQ)

tool was used to evaluate this study because two of the studies that were chosen were qualitative. The COREQ tool has 32 questions that fall into three main groups: the research team and reciprocity, the design of the study, and the analysis of data and results.

### Data Synthesis

The extracted data was generated, and the results were classified. The goal of data synthesizing was to categorize how the literature addressed the study question and to identify and assess core concepts. Two authors (HP, HR) retrieved and summed up research results in four major subject areas: nurses' knowledge level, attitudes and skill or practice against covid-9, and factors related with it.



**Figure 1. Flowchart the article searching**

## RESULTS

### **The nurse's knowledge, attitude, and skills or practice regarding Covid-19**

The majority of research (n=5) were carried out in the Middle East. (7) (8) (9) (10) (11), two studies in china (12) (13), a study in Africa, Australia, USA and Brazil (14) (15) (16) (17). [17]. Each of the studies examined used a cross-sectional or descriptive design, as well as a survey approach with interviews or questionnaires. Sample sizes ranged from 26 to 637 nurses from various practice areas such as medical, surgery, pediatric, surgery room, units for critical care and primary healthcare.

The knowledge, attitudes, and skills level among nurses regarding Covid-19

According to the findings of the study, the majority of nursing staff were well-versed in Covid-19.(9) (15) (11) (14) (8) (7). More than half of the nurses were knowledgeable about the sources, transmission, signs and symptoms, prognosis, and treatment of the disease), but it was different from the other study that Nurses found a lack of information about the disease, therapeutic interventions, rapid disease examination, appreciation, access to tests, and recognition were all lacking. (17) (13) (12) (16).

The attitude of nurses toward the covid-19 outbreak was declared favorable (13) (12) (7). It was reported that even the nurse faced psychological problems, they still showed a strong professional responsibility (13).

According to the review, the nurse's skills toward Covid-19 were sufficient and practiced good infection retention. This study showed that nurses were still lack of equipment (PPE) and other material in their work and needed more clinical experience (13) (15). Nurses also need emotional support to reduce the psychological problem they get during their providing nursing care to the patients with Covid-19.

### **The factors contributing to a nurse's knowledge, attitudes, skills, or practices regarding Covid-19.**

According to the findings of study, age, marital status, information source and employment are all related to understanding, implying that clinicians have a higher level of expertise and behaviour. (18). The nurses were seeking information actively (WHO, health ministry, social application, and media). Social media were highly effective in delivering COVID19 pandemic news (18)

### **The suggestions for improving nurses' competency regarding Covid-19.**

The nurses' competency during a pandemic should be enhanced. It is necessary to increase Covid-19 prevention recognition and regulate guidance in order to improve self-care, and to endorse nursing staff who have been trained to take care of their patients and community members. It is important to provide a comprehensive training program regarding the Covid-19 outbreak (7) (17) (8). The program of training could be by online study or face-to-face so after pandemic control to enhance nurses' knowledge level (11). Providing more information among nurses could generate better control of Covid-19 (14). Furthermore, to reduce psychological exhaustion, We must provide clear and complete communication, protecting staff members, and to provide emotional and social support. (16) (8) (9) (13). Professional development training should be conducted to develop a more positive attitude, and knowledge (10), otherwise, nurses should be provided with professional technical training and sufficient equipment (PPE), thus evaluation of emergency response plans according to the Covid-19 outbreak is also important to make sure that nurses can respond effectively to the pandemic (13).

**Table 1. Summarize included articles**

Author & Year	Setting	Sample	Sampling Method	Research Purpose	Research Design	Instrument	Major Finding
Nemati et al (2020)	A General Hospital (Iran)	85 nurses	Purposive sampling	To evaluate nurses' expertise, attitude, and practices regarding Covid-19.	Descriptive study	A self-administered questionnaire containing knowledge questions	<ul style="list-style-type: none"> <li>- Over than half of the nurses were knowledgeable about the sources, transmission, indications and symptoms, progression, and therapeutic interventions.</li> <li>- The nurses seeking information actively (WHO, health ministry, social application, and media)</li> </ul>
Geos et al (2020)	Pediatric Care Unit (Brazil)	26 pediatric nurses	Snowball sampling	To define the difficulties of pediatric nurse face on the Pandemic Covid-19	Qualitative study	A semi-structure interview form	<ul style="list-style-type: none"> <li>- Nurses reported lack of knowledge concerning the disease, treatment, rapid advancement of the disease, appreciation, access to tests, and lack of recognition</li> </ul>
Tan et al (2020)	A Covid-19 designated hospital	30 nurses	Purposive sampling	To explore the work experience	Qualitative study	Semi-structured interview guide	<ul style="list-style-type: none"> <li>- Psychological experience; nurses</li> </ul>





	(China)			of nurses handling patients with Covid-19		(working experience, most impressed, most pressing need, self-evaluation)	felt exhaustion, felt under great psychological pressure, frustration, self-blame, extremely empathetic, depressed. - Difficulties; nurses felt the material deficiencies, lack of knowledge, and experience. - Needs of clinical practice; nurses described had no intensive care experience, need proper scheduling, need for psychological counseling. - Professional attitude; nurses showed strong professional responsibility.
Liu et al (2020)	A Covid-19 designated hospital (China)	149 nurses	Purposive sampling	To assess clinical nurses' attitudes toward hospice care during the Covid-19 pandemic.	Cross-sectional study	Questionnaire (demographic, The Jefferson scale of empathy, the Fromelt attitude toward care dying scale, and the General Self-Efficacy Scale.	- The vast majority of nurses lacked knowledge. - The attitudes of nurses were good. - The nurse's attitude toward hospice care is





							related to age, knowledge, level of empathy, and self-efficacy.
Schoreder et al (2020)	An Urban Medical Centre (USA)	15 nurses	Snowball sampling	To investigate nurses' experiences with Covid-19 patients.	Qualitative study	19 open-ended questions	<ul style="list-style-type: none"> <li>- Despite a lack of knowledge about the disease and concerns about personal health and family, nurses described a responsibility and readiness to care for patients with Covid-19.</li> <li>- Nursing staff perceived the treatment context to be unpredictable and dynamic.</li> <li>- During the work felt afraid, pride, and kinship with a member of the team</li> </ul>
Halcomb (2020)	Australia Primary Health Care (Australia)	637 primary health care nurses	Purposive sampling	To measure the expertise in the field of nurses working in Primary Health Care in Australia.	Cross-sectional study	The questionnaire consisted; personal and professional experiences since the Covid-19 outbreak (demographic, service provision, Covid-19 testing, PPE, knowledge, attitude,	<ul style="list-style-type: none"> <li>- Just over a third of nurses had experience in chronic infectious disease.</li> <li>- The majority of participants believed they knew enough about</li> </ul>







and support needs)

- Covid-19.
- The nurses are concerned about the work-related risk to themselves.
- The nurse described only sometimes getting sufficient PPE during work.
- The nurse felt they got support from the employer but a third of nurses felt the workplace was slightly worse than before the outbreak.

Semerci et al (2020)	Turkish Oncology Nursing Society (Turkey)	185 oncology Nurses	Random sampling	To assess Turkish oncology nurse's knowledge regarding the Covid-19 outbreak	Descriptive study	Covid-19 Nurse Information Form and Nurse Information Scale	<ul style="list-style-type: none"> <li>- A higher proportion of oncology nurses were knowledgeable.</li> <li>- The knowledge level was influenced by the nurse's educational qualification, the presence of a corresponding diagnosed with Covid-19, and the nurse's adherence to the Covid-19 guidance.</li> </ul>
----------------------	---	---------------------	-----------------	--	-------------------	---	---





Tadesse et al (2020)	A General Hospital (Ethiopia)	415 nurses	Simple random sampling	To measure the understanding, behaviour, skill, and psychological response among nurses during the pandemic Covid-19.	Cross-sectional study	A self-administered questionnaire.	<ul style="list-style-type: none"> <li>- The majority of nursing staff were knowledgeable, practiced infection prevention, and had a positive attitude.</li> <li>- The majority of nurses had a disturbing psychological response.</li> </ul>
Saadeh et al (2020)	Lebanese Governorates (Lebanon)	311 nurses	Snowball sampling	To measures the understanding, behaviour, and skills toward Covid-19	Cross-sectional study	The questionnaire was divided into four sections: demographics, knowledge, attitudes, and practice with Covid-19.	<ul style="list-style-type: none"> <li>- The most of nursing staff have had sufficient understanding.</li> <li>- The majority of nurses have followed the infection prevention</li> </ul>
Dossary et al (2020)	Government and non-government Hospital (Saudi Arabia)	500 nurses	Convenience sampling	to look into nurses' understanding, prevention, attitudes, and perceptions during the Covid-19 pandemic.	Cross-sectional descriptive study	Five domain Nurse's awareness-questionnaire (demographic, awareness/knowledge, prevention, attitude, perception)	<ul style="list-style-type: none"> <li>- Nurses had excellent awareness (98%)</li> <li>- Nurses had the highest prevention (83,2%)</li> <li>- Nurses had high attitude (60,4%)</li> <li>- Nursing staff had a favorable opinion of Covid-19.</li> </ul>





(69,7%)

Imanipour et al (2020)	Hospitals with functional intensive care (Uganda)	116 intensive care nurses	Census sampling	To investigate the level of family nursing practice and nurses' behaviours toward the importance of families in care among nurses.	Cross-sectional descriptive study	The family nursing practice scale and the importance of the family in nursing care-nursing care.	- The majority of ICU nurses were optimistic about the role of family in patient care.
------------------------	---	---------------------------	-----------------	--	-----------------------------------	--	--



## DISCUSSION

During the pandemic, the nurse profession is one of the frontline health workers that provide healthcare to the covid-19 patients. The study found that the majority of nursing staff's knowledge, attitude, and skill about Covid-19 were sufficient, but according to the study, the majority of nurses were not given Covid-19 management intervention training before being placed to provide nursing care to covid-19 patients. Even the majority of the nurses felt that their profession was good, Nonetheless, they affirmed a lack of faith in caring for Covid-19 patients.

Competency in nursing includes the knowledge, skills, and attitudes essential for performing one's job effectively. Competency is the ability of a professional to apply their practice or skills, knowledge, experience, and attitude to perform a particular task correctly while competency assessment is the documentation and observation of a professional to ensure the task or duties are completed as required. Knowledge is an important aspect of competency as it tends to assess how much nurses understand about the disease condition and preventive measures. This will help to decrease the spread of infection among health workers and also reduce false omission results. In practice, hospitals must develop a strategy the control of HCWs, area, and materials in order to provide the best possible care to patients during a pandemic. The poor competencies among healthcare workers have led to delayed control efforts and further rapid spread, leading to risk to the lives of patients as well as healthcare workers themselves. Moreover, healthcare workers with more knowledge were more confident in managing coronavirus cases, which can be an asset to any healthcare delivery system (19). The majority of emergency nurses and medical staff with good knowledge could handle emergencies in the identification of SIRS and Sepsis better than those with low knowledge (20). Therefore, delivering

competencies through the provision of reliable information for healthcare workers amidst the challenges can be a critical factor in successfully preventing and controlling the Coronavirus pandemic. For the poor knowledge of COVID-19 due to its recent discovery combined with the wide existing knowledge gap, "capacity building is a must in the area of skill acquisition for effective care"(21). Among these, healthcare employees are the most precious and want to be deployed in every region in particular for the care of those patients. These wishes are to be cautiously planned, due to the fact there might be a demand for trained employees in big numbers for deployments in addition to replacements for people who may also fall ill or want quarantine. This can also additionally contain the identity of the workforce from different regions, and the provision of primary skills education for the health workers (22).

To achieve high quality care, healthcare providers must improve their knowledge as well as their attitude. A high level of knowledge has a direct impact on emergency clinicians' attitudes toward identifying and managing patients, and as a result, to improve the outcome of patients (20). Studies conducted in the Middle East and elsewhere have shown that nurses have a positive outlook on the treatment and prevention of COVID-19. This finding suggests that nurses have faith in the efficacy of current infection control and preventive measures. This is consistent with prior research that found healthcare providers in Saudi Arabia to be upbeat about dealing with a MERS epidemic (7). High levels of enthusiasm and strong administrative support from politicians are likely responsible for the generally upbeat disposition of health care employees, which correlates well with sufficient expertise. The other study proved that positive attitudes are significantly correlated with an increase in knowledge of SIRS and sepsis (20). Attitude is the temptation to act in a specific way; all health workers are aware of the aseptic method and have the skills to

teach it; however, when working alone, they might well be encouraged to take abbreviations and be cautious (23).

As with any case of emergencies, nurses have been at the frontline of the pandemic, making a significant impact on patient health and outcomes. Their clinical skills, such as gathering medical histories, taking vital signs, and performing tests, have been critical to successful patient treatment. Because of the COVID - 19 pandemic, nurses are at a higher risk of viral exposure. A lack of knowledge, attitude, and practice in nurses can result in subpar performance when it comes to caring for epidemic patients. Nurses are crucial in COVID-19 pandemic management. Inadequate knowledge, an inappropriate attitude, and a lack of practice response among nurses may result in delayed care and the rapid spread of infection (24). This study discovered that all nurses have good practice dealing with the covid-19 Pandemic in the skill domain. In this research, nursing staff with work experience outperformed all other respondents in regards to awareness, prevention, and behaviours. Experienced nurses should always be trained and equipped with the standard of nursing care or better PPE. Several studies indicate that nurses with more nursing experience are more likely to be confident in implementing Evidence - based practice (25). It is possible that consistent strengthening of health information and training courses will result in improved recognition, prevention, and behaviours. Nurses must know how to prevent surgical site infections and have the skills to do so. They must also be able to assess a patient's risk, clean the environment, disinfect and sterilize equipment, give patients antibiotics before surgery, and follow standard precautions (7). However, nurses with a higher level of education, on the other hand, have been shown to provide better nursing services with greater safety standards for their patients. Such competent performance necessitates the incorporation of nursing knowledge in order to account for decision

making as well as improvement in clinical reasoning and outcomes(26).

According to the findings of the study, age, marital status, information source and employment are influenced to that clinicians have a higher level of expertise and behaviour. Differences in age and marital status were likely a good indicator of a nurse's ability to handle the COVID-19 pandemic at first. According to the review, a nurse's ability to do her job could be affected by her marital status. Similar study result showed that a statistical significance was found between the marital status and disaster preparedness among nurses (27). It is because family was a concern for healthcare professionals in special situations such as disasters and home an important factor that reduces nurses' willingness to participate in disaster response in their workplaces (28). Reasons such as fear of getting sick and fear of infecting family members and loved ones may be a barrier for nurses to apply effective nursing care to the covid-19 patients. The other factors would be contributed was gender. Females were more likely to have adequate knowledge and a favorable attitude toward COVID-19, whereas males were more likely to adhere to proper COVID-19 practices (29). Other studies have shown that most HCWs have a positive attitude, which is likely due to high levels of motivation and good administrative support from policymakers. Our study also showed that HCWs with the right amount of knowledge were more likely to have a good attitude (29).

Adequate information also related to the competency of nurses during covid-19 pandemic. The nurses were seeking information actively (WHO, health ministry, social application, and media). This was the case. A chance for nurses to learn enough about new infectious diseases and get enough experience with them can encourage them to help in a pandemic or similar crisis. In order to prepare for future pandemics, it will be important to provide



information and training on new infectious diseases. This will need to be done by both the government and nursing services (30). Despite the fact that clinical experience does not assure effective performance in crisis situations, nurses with emergency or intensive care nursing skills were more likely to be prepared for a disaster response. (31)

This is critical in the case of COVID-19 because these health care workers with a lower level of education and training may be more susceptible to becoming infected or continuing to spread it to others in their workplace or housing. (29). According to the study, making or revising plans and relocating the nursing resources during and future of the pandemic must be a priority for all nurse managers, employers, and policymakers (15). With attention to providing training, emotional support and sufficient material Nurses can help improve patient achievements during a public health crisis. (16).

This study has some limitations. Firstly, the articles included did not focus on the domain of competency. Secondly, the low number of subjects from public health nurses was lower than that of hospital nurses, giving difficulties to figure out the competency of both of them. Future research should consider alternative methods of reaching out to more participants in this subgroup, as their expertise, behaviour, and technique or practice as front-line health care workers are critical. In addition, further studies are needed to investigate the preparedness of nurses toward covid-19 both in hospital and public health settings. Despite these constrictions, the varied methodology strengthens this study. Another strength of this study also described the factors that contribute to nursing competency toward Covid-19. In addition, the study provides evidence on knowledge, attitude, skill, and practice of nurses during a pandemic. Addressing the finding, it is important to build an education or training program

among nurses regarding the Covid-19 pandemic, so most nurses could be prepared for a possible pandemic in the future.

## CONCLUSION

With the Covid-19 disease outbreak sweeping the globe, the requirement for nursing staff to be prepared for the pandemic work - force has never been greater. Nurses should be prepared to work in a pandemic with the necessary skills and knowledge. The study's findings illuminate nurses' knowledge, attitude, and skills regarding the Covid-19 disease outbreak. However, nurses should receive regular and adequate instruction in order to effectively deal with the disease outbreak in the future. All nurse managers need to provide a regular training or education program for all nurse staff to increase their competency, especially for pandemic preparedness.

## REFERENCES

1. Peiró T, Lorente L, Vera M. The covid-19 crisis: Skills that are paramount to build into nursing programs for future global health crisis. *International Journal of Environmental Research and Public Health*. 2020;17(18):1-14.
2. Gao X, Jiang L, Hu Y, Li L, Hou L. Nurses' experiences regarding shift patterns in isolation wards during the COVID-19 pandemic in China: A qualitative study. *Journal of Clinical Nursing*. 2020;29(21-22):4270-80.
3. Leonardsen AC, Gulbrandsen T, Wasenius C, Fossen LT. Nursing perspectives and strategies in patients with respiratory insufficiency. *Nursing in Critical Care*. 2020;1(June):1-9.
4. Fukada M. CNCSS, Clinical Nursing Competence Self-Assess-ment Scale Nursing Competency: Definition, Structure and Development. *Yonago Acta Medica*. 2018;61:1-007.



5. Daily E, Padjen P, Birnbaum M. A review of competencies developed for disaster healthcare providers: Limitations of current processes and applicability. *Prehospital and Disaster Medicine*. 2010;25(5):387-95.
6. R.Nagarajan, R.Prabhu. COMPETENCE AND CAPABILITY - A NEW LOOK. *International Journal of Management*. 2015;6502(6 June 2015):7-11.
7. Al-Dossary R, Alamri M, Albaqawi H, Al Hosis K, Aljeldah M, Aljohan M, et al. Awareness, attitudes, prevention, and perceptions of covid-19 outbreak among nurses in saudi arabia. *International Journal of Environmental Research and Public Health*. 2020;17(21):1-17.
8. Saadeh D, Sacre H, Hallit S, Farah R, Salameh P. Knowledge, attitudes, and practices toward the coronavirus disease 2019 (COVID-19) among nurses in Lebanon. *Perspectives in Psychiatric Care*. 2020;1(May).
9. Nemati M, Ebrahimi B, Nemati F. Assessment of iranian nurses' knowledge and anxiety toward covid-19 during the current outbreak in iran. *Archives of Clinical Infectious Diseases*. 2020;15(COVID-19).
10. Imanipour M, Kiwanuka F. Family nursing practice and family importance in care - Attitudes of nurses working in intensive care units. *International Journal of Africa Nursing Sciences*. 2020;13(October):100265.
11. Semerci R, Kudubes AA, Eşref FÇ. Assessment of Turkish oncology nurses' knowledge regarding COVID-19 during the current outbreak in Turkey. *Supportive Care in Cancer*. 2020;76-82.
12. Liu Q, Tao J, Gao L, He X, Wang Y, Xia W, et al. Attitudes of Front-Line Nurses Toward Hospice Care During the COVID-19 Pandemic. *American Journal of Hospice and Palliative Medicine*. 2020;(1095):1-7.
13. Tan R, Yu T, Luo K, Teng F, Liu Y, Luo J, et al. Experiences of clinical first-line nurses treating patients with COVID-19: A qualitative study. *Journal of Nursing Management*. 2020;28(6):1381-90.
14. Tadesse DB, Gebrewahd GT, Demoz GT. Knowledge, attitude, practice and psychological response toward COVID-19 among nurses during the COVID-19 outbreak in northern Ethiopia, 2020. *New Microbes and New Infections*. 2020;38:100787.
15. Halcomb E, McInnes S, Williams A, Ashley C, James S, Fernandez R, et al. The Experiences of Primary Healthcare Nurses During the COVID-19 Pandemic in Australia. *Journal of Nursing Scholarship*. 2020;52(5):553-63.
16. Schroeder K, Norful AA, Travers J, Aliyu S. Nursing perspectives on care delivery during the early stages of the covid-19 pandemic: A qualitative study. *International Journal of Nursing Studies Advances*. 2020;2(June):100006.
17. Góes FGB, da Silva ACSS, Dos Santos AST, Pereira-Ávila FMV, da Silva LJ, da Silva LF, et al. Challenges faced by pediatric nursing workers in the face of the covid-19 pandemic. *Revista Latino-Americana de Enfermagem*. 2020;28:1-9.
18. Qadah T. Knowledge and attitude among healthcare workers towards COVID-19: a cross sectional study from Jeddah city, Saudi Arabia. *Journal of infection in developing countries*. 2020;14(10):1090-7.
19. Dharmagunawardene PVDS. Delivering Competencies to Sri Lankan Health Care Workers in the era of Corona Virus Epidemic. 2020;10(5):2020.
20. Rahman N 'Inayati A, Chan CM, Zakaria MI, Jaafar MJ. Knowledge and





- attitude towards identification of systemic inflammatory response syndrome (SIRS) and sepsis among emergency personnel in tertiary teaching hospital. *Australasian Emergency Care*. 2019;22(1):13–21.
21. Alegbeleye BJ, Mohammed RK. Challenges of healthcare delivery in the context of COVID-19 pandemic in Sub-Saharan Africa. *Iberoamerican Journal of Medicine*. 2020;02:100–9.
  22. Elhadi M, Msherghi A, Alkeelani M, Zorgani A, Zaid A, Alsuyihili A, et al. Assessment of healthcare workers' levels of preparedness and awareness regarding Covid-19 infection in low-resource settings. *American Journal of Tropical Medicine and Hygiene*. 2020;103(2):828–33.
  23. Yari Y, Ramadany S, Hadju V, Ramba H La. Relationship of Knowledge , Attitude and Training with Nursing Readiness in Handling Emergency Patients in Maros District Health Center. *International Journal of Science and Healthcare Research (IJSHR)*. 2019;4(3):86–92.
  24. Nejadshafiee M. Attitude, Knowledge, and Practice Response of Nurses during COVID-19 Outbreak in Military Hospital, 2021. *Journal of Disaster and Emergency Research*. 2022;5(1):50–6.
  25. Al-Busaidi IS, Al Suleimani SZ, Dupo JU, Al Sulaimi NK, Nair VG. Nurses' knowledge, attitudes, and implementation of evidence-based practice in oman: A multi-institutional, cross-sectional study. *Oman Medical Journal*. 2019;34(6):521–7.
  26. Fennessey A, Wittmann-Price RA, Independent AN, For V. Physical Assessment: A Continuing Need. *Nursing forum*. 2011;46(1):45–50.
  27. Bayrak Aykan E, Eren Fidancı B, Yıldız D. Assessment of nurses' preparedness for disasters. *International Journal of Disaster Risk Reduction*. 2022;68(December 2021).
  28. Al Khalaileh MA, Bond E, Alasad JA. Jordanian nurses' perceptions of their preparedness for disaster management. *International Emergency Nursing*. 2012;20(1):14–23.
  29. Almohammed OA, Aldwihi LA, Alragas AM, Almoteer AI, Gopalakrishnan S, Alqahtani NM. Knowledge, Attitude, and Practices Associated With COVID-19 Among Healthcare Workers in Hospitals: A Cross-Sectional Study in Saudi Arabia. *Frontiers in Public Health*. 2021;9(July):1–11.
  30. Sun-a J, Kim J. Factors influencing nurses' intention to care for patients with COVID-19: Focusing on positive psychological capital and nursing professionalism. *PLoS ONE*. 2022;17(1 January):1–13.
  31. Öztekin SD, Larson EE, Altun Uğraş G, Yüksel S, Savaşer S. Nursing educators' perceptions about disaster preparedness and response in Istanbul and Miyazaki. *Japan Journal of Nursing Science*. 2015;12(2):99–112.

