

Conference Paper

Snapshot of Nurse Readiness for the Covid-19 Pandemic in Indonesia: A Qualitative Study

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Abstract

During the Covid-19 pandemic, nurses who served as frontline healthcare providers are experiencing issues with extreme workload demand and under-provision of protective resources. This study aims to understand nurse readiness for the Covid-19 pandemic in Indonesia. The study uses a qualitative phenomenology approach with purposive sampling. Participants were recruited from the regional hospital in East Java, Indonesia. The criteria of participants were nurses who worked face-to-face with Covid-19 patients from various wards. The total sample size is 20 participants. In-depth interviews were conducted to gather the data, which was analyzed using Colaizzi's phenomenological method. Five themes emerged: (1) fear of getting infected; (2) PPE adequacy supply; (3) unclear patient distribution flow; (4) nurse supporting ecosystem; (5) education and training in infectious diseases. The evaluation of nurses' readiness concerned their knowledge, the supply of safety equipment, and support from various ecosystems. Nurses were concerned about various elements including catching the disease themselves, adjusting to the environment and new work procedures, physical discomfort due to special protective equipment, witnessing the suffering and death of patients, and long-term separation from family members. They need an integrated support system to help them fighting Covid-19. Attention from fellow nurses who help each other in crises, family support, and institution support are the support systems that determine the readiness of nurses.

Keywords: covid-19, nurse readiness, pandemic, qualitative study

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1. Introduction

The Coronavirus Disease-19 (Covid-19) currently ongoing and has an impact on almost all aspects of human life such as economic, political, social and health throughout the world [1]. This pandemic is rapidly changing health conditions, daily life, social relations and economic prospects around the world [1]. The World Health Organization (WHO) stated that the transmission of Covid-19 is an international health disaster [2]. The rapid human-to-human transmission of Covid-19 has resulted in confirmed cases of close to 200,000 patients with more than 8,000 deaths in 160 countries [3]. In Indonesia, in March 2020 there were 790 cases that were cumulatively confirmed positive, of which 58 died, 31 recovered, and 701 were in treatment. this number keeps increasing while the health care provider who is appointed as covid center treatment is limited. Human mobility is a factor in the transmission of this virus [4]. The increasing number of covid 19 patient is a challenge to all health care provider to be ready facing this pandemics. All health care facilities must prepare for a pandemic situation.

Hospitals as health care centers and their parts are the most vulnerable to exposure to Covid-19 [5]. Adequate health personnel resources are also a factor in resilience against a pandemic [2]. Nurses have the highest intensity and duration of time with patients, so they have a much greater risk of infection than the general population [6]. Nurses readiness against pandemic will determine the success of the service system and the high quality of care provided to COVID-19 patients. This study aims to explore the readiness of nurses against COVID-19 pandemic. The results of this research will be forwarded to stakeholders used as initial information in formulating policies to preparation of nurses against pandemic.

2. Methods and Equipment

2.1. Methods

The study used qualitative phenomenology approach with purposive sampling technique. Participants were recruited from regional hospital in East Java, Indonesia. The criteria of participants were nurse who worked in the face to face with the Covid-19 patients from various wards, such as: Emergency Room, Intensive Care Unit, Isolation Room, Operating Room, and Recovery Room. Total sample size is 20 participants (table 1). In-depth interviews were conducted to gather the data until saturated, that is no longer developed or the same as the data previously obtained.

The data were analyzed using Colaizzi's phenomenological method. The validity process of research is the validity and reliability in qualitative research, including: credibility, dependability, confirmability, transferability [7].

Participants' rights are protected with an ethical license obtained from the hospital where the research was conducted No. 070/16.984/303/2020. Anonymity, and coding systems are used in the analysis of research data to respect the rights and privacy of participants. During the study, Participants were not forced to undergo research and the research did not have any impact on the participants.

2.2. Equipment

The researcher made a field note that contains a description of the date, time, and basic information about the arrangement of the place, the position of the participant with the researcher at the interview, a description of the participant at the interview, the atmosphere of the interview place, social interactions and activities that took place during the interview [8]. The team of researchers are practitioner nurses who actively work in surgical wards, infection prevention and control unit, emergency room physicians and nursing lecturers.

Data was collected by virtually in-depth interviews using software and was recorded, using smart phones, field notes, notebooks, and writing instruments. Smart phone, is a tool used to contact participants. Notebook is a tool used for conducting online interviews, using a software application available on the video recorder menu during the interview.

All participants were informed about the study. Researchers made field notes containing descriptions of the date, time, and basic information on the position of the participants with the researcher during the interview, descriptions of participants during the interview, the atmosphere of the interview venue, social interactions and activities that took place during the interview [7]. The information extracted was based on the readiness of nurses in facing the Covid-19 pandemic. Interview notes were transcribed into verbatim and there was a member check for verbatim clarification. Verbatim analysis was performed by two researchers with regular inputs from all the research team members and had consensus on themes and sub-themes.

The validity and reliability of this study include: credibility, dependability, confirmability, transferability. Trustworthiness in qualitative analysis to ensure credibility of findings, reliance of research on the logical process of data analysis, interpretation of findings clearly separated from data, and generalizability of investigations. Triangulation and

member check techniques are used for data validity by using more than one data collection technique which includes interviews, observation, and documentation [8]. Researcher using Colaizzi's phenomenological method to understand and identify the themes. The data analysis consists of seven essential steps, began with (a) familiarization; (b) identifying; (c) formulating meaning; (d) clustering theme; (e) develop an exhaustive description; (f) producing the fundamental structure: (g) seeking verification of fundamental structure [9, 10].

Through this qualitative analytical approach researchers identify the coded elements from the data and then iteratively develop explanatory and comprehensive themes, and then present a final holistic thematic framework of the phenomenon under investigation. As the analysis proceeded, the themes and contents that were gradually developed were discussed by the members of the research team to ensure agreement and enhance rigour. The inclusion of participants' quotations under their relevant thematic headings strengthened the trustworthiness and confirmability of the analysis.

3. Result

All participants consisted of 12 female nurses and 8 male nurses with average age 38,0 years old and average working experience 13.7 years, the participant characteristic showed in table 1.

This study found 5 themes:

1. Fear of getting infected;

"Yes, I was afraid, it was just the first time in this area and the cases started to increased, we have to anticipate it from ourselves, friends, the environment around our workplace itself and after work we also anticipate the family at home "(P2).

"The fear is that patients who have PDP (patient under observation) have not confirmed positive or the rapid test is negative but instead have confirmed positive. Then, the fear is that if we pass a patient who is on a ventilator because of that the aerosol is high "(P7)

"Not all covid patients are reactive. If the infection is IgG or IgM, it will be positive. So actually, we are not sure whether we are still relying on it "(P6)

"I'm afraid getting infected" (P8)

"My Child is 4 years old, I am afraid come home with the disease" (P11)

TABLE 1: Participant Characteristic

No.	Partisipant	Age (years)	Education	Gender	Working experience	Ward	Position
1	P1	45	Bachelor Nursing	Female	15 years	Emergency Room	Nurse
2	P2	40	Diploma of Nursing	Male	17 years	Emergency Room	Nurse
3	P3	32	Diploma of Nursing	Female	11 years	Emergency Room	Nurse
4	P4	34	Diploma of Nursing	Male	11 years	Emergency Room	Nurse
5	P5	35	Diploma of Nursing	Female	11 years	Intensive Care Unit	Nurse Team Leader
6	P6	29	Diploma of Nursing	Female	7 years	Intensive Care Unit	Nurse
7	P7	32	Bachelor Nursing	Female	5 years	Intensive Care Unit	Nurse
8	P8	34	Diploma of Nursing	Female	11 years	Intensive Care Unit	Nurse Team Leader
9	P9	29	Bachelor Nursing	Male	6 years	Isolation Room	Nurse
10	P10	33	Diploma of Nursing	Male	6 years	Isolation Room	Nurse
11	P11	33	Bachelor Nursing	Female	7 years	Isolation Room	Nurse Team Leader
12	P12	38	Bachelor Nursing	Female	13 years	Isolation Room	Nurse
13	P13	38	Diploma of Nursing	Female	15 years	Isolation Room	Nurse
14	P14	51	Bachelor Nursing	Male	30 years	Isolation Room	Nurse
15	P15	42	Bachelor Nursing	Male	18 years	Operating Room	Nurse
16	P16	39	Bachelor Nursing	Female	18 years	Operating Room	Nurse
17	P17	47	Bachelor Nursing	Female	23 years	Operating Room	Head of Nurse
18	P18	49	Master of Medical Law	Male	26 years	Recovery Room	Nurse Team Leader
19	P19	46	Bachelor Nursing	Male	12 years	Recovery Room	Nurse
20	P20	35	Diploma of Nursing	Female	12 years	Recovery Room	Nurse

“At first, I was afraid when the patient come, we didn’t know in the ER, so was suspicious because didnt know” (P3)

2. PPE adequacy supply;

"I ever, because of, what the name called for footwear? thats ran out, didn't exist. Then finally we use plastig bag"(P5)

"PPE is enough, never lacks, enough hazmat suits, so far there is no shortage" (P1)

"God willing, there is no lack of PPE" (P8)

"Now, PPE has been paid by the patient. So each patient has prepared PPE for us. So we will go to the pharmacy directly" (P11)

"God willing, everything is safe, PPE is also fulfilled" (P18)

3. Unclear patient distribution flow;

"The first time the patient comes in, there is no preparation, there is no flow in out, so the users are still for all average. We were told this... like this... this... the procedure was not clear at first, right?" (P10)

"There is no manual flow from the hospital. At first my friend accepted the patient with a positive rapid test from Magetan district, the patient left alone using an ambulance that was delivered from the regional health office." (P9)

"The protocol or flow actually exists every time there is an operational activity or every time there is a handling that wants to be operated, there must be problems that arise. Even though there are who are training there, there are covid workers who work as volunteer there, they have provided a flow path whether they'll leave or go home" (P18)

4. Nurse supporting ecosystem;

(a) Nurse help each other

"My friends who evaluate the PPE we are use are correct or not there are still holes or not. We will cross check with our friends if it is perfect" (P6)

"My friends are all working together and helping each other" (P10)

"Give support and other friends too" (P3)

"Keep reminding yourself and your friends, this virus is dangerous, even the consequences are fatal until death" (P4)

"Listening to the stories that might be from other friends sometimes affects our calmness" (P7)

(b) Family Support

“My family is also very cooperative. For 6 months not going home to my parents to prevent it, because the hospital staff such as myself have high risk of getting covid” (P1)

“Incidentally the wife’s family is also a nurse, the child is also work in the health sector” (P18)

“First, I’m afraid and worry, thank God my family supported me. Some of my friends did not go home, but they were given hospital facilities but I didn’t choose it because from my family, especially husband support me to going home.” (P6)

“They understand and allow me to board. Yes, reminds me to get plenty of rest, eat”. (P10)

(c) Institutional Support

“Yes, support, I have already explained that support from hospital to my friends in Covid’s room are sufficient, such as infrastructure, logistics, and multivitamins. That is what is in Covid’s room, if it another room, maybe are taken into make consideration to given like covid’s room.” (P18)

“Yes, for the room we always get nutritional assistance from the hospital already.” (P9)

“To provide support in the form of nutrition, whether it is in the form of vitamins, God willing, all is fulfilled or the tools needed are all fulfilled.” (P7)

5. Education and training in infectious disease.

“Never before get PPI (Infection Prevention and Control) training” (P10)

“So far, it happens that I haven’t received training like those with infectious diseases. Only basic trainings such as BLS (Basic Life Support), PPI (Infection Prevention and Control), and K3 (Occupational Health and Safety), SKP (Employee Credit) are mandatory. All basic training has been done. Only if something specific like infectious disease has never been” (P7)

“Only ever participated in the training for Hepatitis B Hepsisi” (P11)

“Initially, before entering there, we first discussed how to put on and take off PPE, besides that we were browsing on YouTube to find the appropriate one” (P8)

4. Discussion

The results of this study found that the nurse readiness was beyond the knowledge and supply of safety equipment. Nurses were facing fear from many aspects. They

need integrated supporting systems to help them fighting together the Covid-19. The personal themes underline fear of getting infected; PPE adequacy supply; unclear patient distribution flow; nurse supporting ecosystem; and education and training in infectious disease.

Covid-19 causes respiratory and gastrointestinal symptoms from mild and self-limiting to severe pneumonia, acute respiratory distress syndrome, septic shock, and even systemic and multiple organ failure syndromes [11]. Asymptomatically infected patients can also be a source of transmission of infection, especially through aerosols from the respiratory tract, as well as through direct contact. Currently, there is no specific cure for this disease [12]. Increasing disease progression and uncertainty about the pandemic become stressors for health workers, especially nurses. Nurses were recruited suddenly with less than optimal preparation to treat Covid-19 patients. Contact between the nurse and the Covid-19 patient occurred directly and for a longer time than the other staff.

The findings from this study that fear getting infected. Covid-19 has been a source of great stress for nurse. Different individuals experience different levels of psychological crisis, but it is especially harder for those at the core of the crisis. The previous study found that nurses at the frontline exhibit stronger anxiety, fear, sadness, and anger than [11]. Although, when facing an epidemic, also undergo extreme psychological stress and get concerned about their career ahead. They also experience a range of feelings such as excitement, doubt, and helplessness disease [13, 14]. However, nurses face far more psychological stress due to their working environment. Concerns about being infected during close contact with patients, unfamiliarity with new specialized working environments and procedures, physical discomfort caused by special protection, witnessing patient suffering and death, and long-term separation from family members all these factors cause extreme psychological stress to medical staff. This results consistent with during the SARS outbreak, many nurses had conflicting roles as medical service providers and parents. On the one hand, they felt altruistic and professionally responsible [14, 15]. On the other hand, they were afraid and guilty that they might infect their families [14, 15]. Nickell (2004)'s study found that about 20% of the population suffered from depression during SARS, and the incidence of nurses is as high as 45% in Toronto [13, 14].

The fear againts by nurses forces nurses to better prepare for these stressors. In this situation are the critical shortage of nurses and medical supplies, including personal protective equipment and, as reviews indicate, psychological changes and fears of infection among nursing staff. The previous study explain that hospital management must be support nurses and develop protocols and plans to improve their preparedness

[17]. The implications of these findings might help to provide support and identify the needs of nurses in all affected countries to ensure that they can work and respond to this crisis with more confidence. Moreover, this will help enhance preparedness for pandemics and consider issues when drawing up crisis plans. The recommendation is to support the nurses, since they are a critical line of defense. Indeed, more research must be conducted in the field of pandemics regarding nursing [17].

Nurses are recruited from the Infectious Diseases Department or other wards to enter the Covid-19 ward which has negative pressure after only undergoing short or basic training on Covid-19. Inadequate preparation emerges the psychological response related to the possibility of contagious.. Besides, most nurses think that preventing the transmission of Covid-19 only limited to providing adequate Personal Protective Equipment (PPE) for employees [12] lead to misperceptions. While detailed rules regarding that the application and management of PPE can improve nurses' safety

The hospital made the Covid-19 protocol which must be implemented by all personnel working in the hospital. All health workers who handle patients other than Covid-19 or otherwise must comply with precautions, hand hygiene, and use of PPE. Hospitals must provide extra protection and be able to stop transmission to other parts [13]. Infrastructure preparations such as a special evacuation route for Covid-19 patients are needed to prevent transmission. Health care resources (human and material) require reorganization because the number of patients requiring increased intensity, artificial ventilation, and in some cases varies [14]. The availability of sufficient nurses will reduce the workload of nurses and improve performance. Moreover, hospital management must focus to make a preparation plan for nursing to, in providing their care at the frontline. Besides, They must ensure that nurses respond effectively to the pandemic and that all medical supplies be available, such as PPE, to help keep the lives of nurses and patients safe. Finally, more research is required on the exploration of the experiences of nurses, and more research on pandemic crises involving preparedness, responsiveness, and recovery in general; more studies must focus on nurses' levels of knowledge, preparedness, and risk perception, which affects their adherence to precautionary behaviors, as these are critical issues in the context of epidemics with no treatment [17].

The results of the study stated that there are unclear patient distribution flow. As the Covid-19 pandemic continues to evolve, so too will our understanding of the best patient care and management strategies. Each patient encounter represents a unique decision making scenario and should be treated as such. Pandemic triage can have numerous pitfalls including misclassification of patients, underuse of resources, and

inappropriate disposition recommendations. This study shows that algorithm was not intended to replace clinical gestalt and medical decision making but rather to augment it. The algorithm also assumes that a facility will have nursing providers available for use in triage as well as a physician or advanced practice providers readily available for further stratification of patients. We recognize that many EDs will not have equivalent capabilities and some aspects of the algorithm may have to be adapted to local circumstances. Supporting the use of an experienced nursing provider in place of a physician or APP in the triage setting if necessary. The algorithm was designed with thoughtful resource allocation in mind and aims to provide adequate protection for the most providers in the setting of limited resources and PPE, an unfortunate and continued reality of the Covid-19 pandemic. The proposed triage algorithm was designed to facilitate the timely evaluation of PUIs (Patients under investigation) in an organized fashion that optimizes patient triage, minimizes unnecessary clinician exposure, standardizes care, and maximizes appropriate resource use in the setting of an ongoing PPE shortage health [16].

According to the participant, nurse supporting ecosystem themes is an important factor to nurse against the pandemic Covid-19 with the sub themes nurse help each other, family support, and institutional support. Internal and external ecosystem, is a factor that supports the resilience of nurses against the pandemic. Family factors are very important in the decision of health workers to work in facing a pandemic [12]. Nurses find positive strength by expressing gratitude for the support and concern from the family for their health [11]. As well as for consistent social support from fellow health workers and people around them.

The readiness of knowledge and skills of nurses is an indispensable support and influences nurses against the pandemic. Education and training for nurses in pandemic management is needed. Crisis management such as pandemic training and education by emergency hospitals and disaster management will help improve preparedness among health workers [12]. The readiness of nurses in facing a pandemic will prevent transmission and speed up patient recovery.

One of the recommendation methods is simulation, simulations have a huge potential to help manage the global COVID-19 crisis in 2020 and in potentially similar future pandemics. Simulation can rapidly facilitate hospital preparation and education of large numbers of healthcare professionals and students of various backgrounds and has proven its value in many settings. It can be utilized to scale-up workforce capacity through experiential learning. Simulation and simulation facilitators can also contribute to the optimization of work structures and processes [18]. The rapid onset of Covid-19 and its huge burden

on resources requires coordinated action across many areas of the healthcare system including staffing, equipment supply chains, bed management, diagnostic capabilities nursing and medical treatment, infection control, and hygiene skills compliance [19, 20].

Therefore, novel ways of increasing and upskilling a workforce, locating and supplying equipment, and optimizing work systems are needed. Simulation can play a vital role in solving these problems, and simulation educators often possess valuable capabilities to facilitate the necessary analytical work required to match (learning) needs, content, and methods to implement effective interventions. Given the urgency of the situation, careful analysis of learning needs and simulation focus points are critical, so that procedures are followed correctly and that there is an appropriate use of resources to enable effective patient care [19].

general comments: Please re-arrange your discussion and providing more support articles for each theme derived from your study. Defining the context of nurses' readiness might be necessary to make it clear and differentiate from the fear of contagion that mainly discusses in the discussion section. Please avoid the use of "we" "they" since it was not clear who's the subject of the sentence that you referred.

5. Conclusion

Our study has highlighted the impact of COVID-19 on the nursing workforce, emphasizes the phenomena of unreadiness among nurses who forced taking care patients with Covid-19 to increasing the knowledge, supply of safety equipment and support from various ecosystems Education and training for nurses in pandemic management is needed. Crisis management such as pandemic training and education by emergency hospitals and disaster management will help improve preparedness among health workers. Recommendation method is simulation to help managing the global COVID-19 crisis in 2020 and in potentially similar future pandemics

The implication of our study need an integrated support system to help them fighting Covid-19 together. A disaster plan for pandemics be kept in place that aims to guide nurses before, during, and after any health-related crises

Limitation and Recommendation

The generalization of the finding still to be tested using other research methods. Relationship between responses and nurse coping strategies, we must provide more psychological support to nurses, adopt better training in coping strategies, arrange for

adequate medical protective equipment, and develop a broad range of interventions to block the spread of infectious diseases so as to form a safe environment where COVID-19 stops spreading in hospitals. Furthermore to optimize the readiness against the Covid-19, pandemic training and education by emergency hospitals and disaster management will help improve preparedness among health workers by simulation.

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