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Personal Protective Equipment (PPE) and Nurses' Anxiety During the Covid-19 Pandemic

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Abstrak

Anxiety felt by nurses is a vague fear accompanied by feelings of uncertainty, helplessness, isolation, and insecurity when performing nursing care during the Covid-19 pandemic. Nurses need personal protective equipment as a barrier against substance penetration, solid, liquid, or airborne particles to protect against injury or the spread of disease. The purpose of this study is to identify characteristics, length of work, PPE training, Psychologic services, PPE access, booster vaccination, standard PPE nurse anxiety and the correlation between PPE and anxiety on nurses in the COVID-19 room. This research is a quantitative study using a causal - comparative study design that is non-experimental (ex post facto). The sampling method used is purposive sampling technique approach with a sample of 90 respondents using data entry with demographic data sheet, PPE completeness checklist sheet to determine PPE completeness and to determine nursing anxiety using the Hamilton Anxiety Rating Scale questionnaire. Results showed the majority of nurses were middle-aged, woman, diploma, married, working more than 2 years, have participated in PPE training, not aware of access to psychological service, experienced easy accessibility of PPE, has not received a booster vaccine, using standardized PPE and experienced mild anxiety. This study shows that there is no significant difference in mean (p value> 0.05), which means that PPE training, psychological services, access to PPE, booster vaccinations, standardized PPE did not correlate to nurses' anxiety. The government is expected to give intervention through policies to address nurses' anxiety and factors related to this, such as providing effective counselling services.

Key words: Anxiety; nurses; COVID-19; personal protective equipment

INTRODUCTION

The World Health Organization (WHO) officially declared Covid-19 a pandemic on March 9, 2020 and reported the total positive cases of Covid-19 as of June 8, 2020 reached 6,931,000 cases with 400,857 people died in 151 countries globally. Of the total cases in Indonesia, 32,033 with a total of 1,883 deaths (WHO, 2020). Meanwhile, according to North Sumatra Covid-19 Response for the North Sumatra region there were 993 positive cases with a total death of 67 people, among these cases the Medan area had the highest number of cases in North Sumatra with 657 cases with a total death of 40

people as of June 18, 2020 (Satgas Covid-19 Sumut, 2020). One source of nurses' anxiety during the COVID-19 pandemic is insufficient personal protective equipment (PPE) (Huang et al., 2020).

The Covid-19 virus is transmitted through contact and droplets. People who are most at risk with Covid-19 patients are people who care for Covid patients and one of them is nurses. Therefore, additional precautions are needed by nurses to protect themselves and prevent the spread of Covid-19. One of the precautions is to use PPE (WHO, 2020). PPE is a tool used to protect against transmission of the Covid-19 virus. Compliant PPE includes surgical masks, N95 masks, eye protection, face shields, examination gloves, surgical gloves, disposable gowns, medical gowns, durable aprons, waterproof boots, and shoe covers. (Directorate General of Pharmaceuticals and Medical Devices Ministry of Health of the Republic of Indonesia. 2020). PPE is important for healthcare workers, especially nurses, to prevent COVID-19.

Nurses utilizes PPE in providing nursing care. Research conducted in China on February 7-14, 2020 stated that anxiety occurred in health workers caring for Covid-19 patients as much as 23.04% (53 people out of 230 respondents) including severe anxiety 2.17 (5 people), moderate anxiety 4.78% (11 people) and mild anxiety 16.09%. (37 people) (Huang et al., 2020). Another study also found eight sources of anxiety in nurses. one is their access to adequate and standardized PPE (Shanafelt, Ripp, Trockel, 2020). Healthcare workers are suspected of being exposed to COVID-19 by caring for COVID-19 patients without proper personal protective equipment during the pandemic. Appropriate PPE is essential to prevent infection and protect caregivers from the risk of infection. (Mahrani et al., 2020). This situation is endorsed by the Indonesian National Nurses Association (PPNI) and the Indonesian Medical Association (IDI) issued a statement refusing to care for patients without PPE.

As of September 13, 2020, 21 nurses had died while caring for COVID-19 patients, and up to 80 nurses had tested positive for COVID-19 (PPNI, 2020). Findings from investigator interviews with nurses caring for patients during the pandemic show that nurses do not have personal protective equipment available and some personal protective equipment is purchased at their own expense. This indicates that the So much so that the nursing staff are so frightened and scared that they have to take care of the patients while crying.

On the basis of this background, the formulation of the main problem to be discussed is whether the standard of Personal Protective Equipment affects the anxiety of nurses who provide nursing care to patients during the Covid-19 pandemic? The special purpose of this study is to determine the anxiety faced by nurses so as to contribute anxiety data that will be useful for Medan Hospital in particular. Therefore, the urgency of the research is deemed necessary due to the management of nurses' anxiety in the hospital which will have an impact on nursing care provided later.

METHOD

This research is a quantitative study using a causal - comparative study research design that is non-experimental (ex post facto). Comparative causal studies are used to account for existing conditions in order to complete the evidence for causality. The author chose purposive sampling technique because researchers can select accurate and cost-effective samples by selecting nurses based on what is known. The sample size in this study was taken using the rule of thumbs, namely the sample size is 10 times the number of independent variables selected (Burmeister & Aitken 2012). The inclusion criteria for this study are nurses who work in the Covid 19 room and are willing to become respondents. In this study there were 9 variables (age, gender, education, marital status, length of work, PPE training, PPE access, vaccination, anxiety) so that the sample size needed in this study was as large as: N = 10 x variables = 10 x 9 = 90 respondents.

This research was conducted at the Medan General Hospital. Researchers submitted licenses and ethics to the Research and Development department, then received permission from the Head of Nursing. This research was conducted in six Covid 19 treatment rooms. Measuring tools through questionnaires that are distributed using google form and supported by respondent interview data. The independent variables in this study are age, gender, education, marital status, length of work, PPE training, and psychological services. To find out the PPE standards, researchers used a questionnaire in the form of a google form about the completeness of PPE standards used by nurses. The dependent variable in this study was nurse anxiety.

Data were collected using the Hamilton Anxiety Rating Scale (HAM-A) questionnaire developed by Hamilton. The assessment of anxiety states by rating Br J Med Psychol. This questionnaire is used to measure anxiety in adults in health or research centers. This instrument has been tested for item construct validity based on Pearson correlation ranging from 0.529 to 0.727, Cronbach's alpha reliability was obtained at 0.756 (Ramdan, 2019). In addition, this measurement tool has been used in work practice to assess a person's occupational health in terms of anxiety because anxiety can be shown through a person's response to certain situations (Thompson. 2015).

The questionnaire in the form of a google form was given to the head of the room then the head of the room distributed to all members. The questionnaire contains a list of questions about nurse identity and anxiety which contains 14 question items.

Univariate analysis aims to describe the characteristics of each variable, namely age, gender, education, marital status, length of work, PPE training, psychological services, PPE access, booster vaccination, and standard PPE. Bivariate analysis will be carried out using chi square to answer the hypothesis

RESULT

Table 1. Distribution of Nurses by Age, Gender, Education, Marital Status, Length of Service, PPE Training, Psychological Services, PPE Access, Boster Vaccine, anxiety in the Covid-19 room

Respondent Characteristics	Total	
	N	%
Age (years)		
26-35	26	28,9
36-45	62	68,9
46-55	2	2,2
Gender		
Man	7	7,8
Woman	83	92,2
Education		
D III	61	67,8
S1/ D4	8	8,9
Ners	21	23,3
Marital Status		
Married	79	87,8
Single	7	7,8
Widow/Widower	4	4,4
Length of Work (years)		
< 2	8	8,9
> 2	82	91,1
PPE Training		
Yes	65	72,2
No	25	27,8
Psychology Services		
Yes	43	47,8
No	47	52,2
PPE Access		
Easy	83	92,2
Difficult	7	78
Booster Vaccination		
Yes	43	47,8
No	47	52,2
Standar PPE		
Yes	84	93,3
No	6	6,7
Anxiety		
None	19	21,1
Mild	27	30
Medium	16	17,8
Severe	16	17,8
Very Severe	12	13,3

Tabel 1 shows characteristic of nurses in the Covid-19 room were mostly aged 36-45 years, Women, diploma, married, worked more than 2 years, got training PPE, get psychological services, easy to access PPE, no booster vaccination, and mild anxiety

Table 2. Relation between PPE Training, Psychological Services, PPE Access, Booster Vaccine, standard PPE and anxiety in the Covid-19 room

Variabel	Anxiety										P value
	N		Mild		Medium		Severe		Very		
	n	%	n	%	n	%	n	%	n	%	
PPE Training											
Yes	15	23,1	19	29,2	11	16,9	11	16,9	9	13,8	0,95
No	4	16	8	32	5	20	5	20	3	12	
Psychological Service											
Yes	12	27,3	14	31,8	6	13,6	5	11,4	7	15,9	0,298
No	7	15,2	13	28,3	10	21,7	11	23,9	5	10,9	
PPE Access											
Easy	18	21,7	25	30,1	16	19,3	14	16,9	10	12	0,502
Difficult	1	14,3	2	28,6	0	0	2	28,6	2	28,6	
Booster Vaccination											
Yes	9	20,9	14	32,6	10	23,3	4	9,3	6	14	0.295
No	10	21,3	13	27,7	6	12,8	12	25,5	6	12,8	
Standard PPE											
Yes	17	20,2	26	31	15	17,9	14	16,7	12		0,632
No	2	33,3	1	16,7	1	16,7	2	33,3	0	0	

Table 2 shows that nurses who have attended PPE training, do not understand psychological services, have easy access to PPE, get vaccine boosters, use PPE standards experience mild anxiety. The conclusion of this analysis significant relationship between PPE training, psychological services, PPE access, booster vaccination, and standard PPE and nurses' anxiety ($p<0.05$).

DISCUSSION

Nurses as respondents were mostly aged 36-45 years about 26 (28,9 %). In line with research conducted in three hospitals and nine health services in April 2020, it also stated that the majority of respondents were adults who were the group with the most anxiety (Fadli et al., 2020). Women are the majority who experience anxiety as many as 83 (92,2%). The prevalence of anxiety was 26.6% with women higher than men, namely 29.7% in women and 23.1% in men in Uganda, Africa (Abbo, et al., 2013). Women tend to use their emotions to solve a problem. This coping mechanism is thought to be the reason why the prevalence of women is higher than men (Waty, 2018). Generally, women experience anxiety more quickly than men. Women also have different biological responses when faced with stressors (Nasus et al., 2021).

The majority of nurses were Diploma Nursing education about 61 (67,8). Education has a relationship with the level of anxiety of nurses in handling emergency patients (Awaluddin, 2020). The majority of nurses were married as many as 79 people (87.8%). Meanwhile,

Haryanto and Septimar (2020) stated that the majority of nurses who are un married do not experience anxiety. This may be due to differences in family and neighborhood support, or worry about transmitting the disease to the family. However, further research needs to be done on this issue.

The majority of nurses in Covid-19 unit worked for more than 2 years about 82 (91.1%). Nurses have attended training on PPE about 65 people (72.2%). This is due to the routine work of nurses who are prone to work stress. In the meantime, nurses stated that workshop was obtained through zoom by online. This anxiety may occur because nurses do not feel enough without face-to-face training or other things that need to be studied further. Nurses stated that there were no psychological services. Nurses stated that support is obtained from colleagues, while the hospital provides support for psychological problems. Meanwhile, research states that the better hospital support, the level of anxiety in nurses will decrease (Haryanto & Septimar, 2020).

The majority of nurses stated easy access to PPE about 83 (92.2%) but 47 people (52.2%) had not received their third vaccination. At the beginning of the pandemic, nurses and the public had difficulty getting masks. Then the third vaccination cannot be carried out because most nurses tested positive for Covid19 so that the third dose could not be given. This dose is expected to specifically provide additional protection to health workers who are faced with a high risk of COVID-19 transmission on a daily basis.

Statistically, there is no significant relationship between PPE training, psychological services, PPE access, booster vaccination, and standard PPE and nurses' anxiety ($p<0.05$). This means that There is no effect of PPE training, psychologist services, PPE access, booster vaccination, and standard PPE on nurses' anxiety. Meanwhile, other studies state that there are eight sources of anxiety, one of which is the availability of adequate and standardized access to PPE (Shanafelt, Ripp, Trockel, 2020). This happened because the majority of nurses as many as 83 (92.2%) stated that it was easy to access PPE and had received PPE according to standards about 84 (93,3%). The majority of nurses experienced mild anxiety despite having received PPE training 19 (29.2%), knowing psychological services 14 (31.8%), easy access to 25 (30.1%), booster vaccines 14 (32.6%), and using standard PPE 26 (31%). Nurses verbally stated that at the beginning of the pandemic they did experience difficulties, but now there are no problems in fulfilling PPE standards. Nurses have also been exposed to information about Covid, causes, signs and symptoms and how to prevent it so that knowledge and alertness when providing nursing care to Covid patients19. Along with the increase in time, nurses have

attended training on Covid19 and PPE so that positive changes occur such as wearing masks, washing hands, maintaining distance, protecting families and people around by teaching the right things according to their own health. Anxiety about the risk of disease transmission to the family is reduced. Mild anxiety that occurs in nurses can be due to the tensions of daily life.

Nurses are the frontline in contact with Covid-19 patients. Nurses suspected of contact with COVID-19 patients were 93.4% in Iran, and experienced anxiety with a mean score of 8.64 ± 5.60 ranging from 38.8%. The nurses were 95% female. This nurse anxiety is associated with inadequate personal protective equipment (PPE) (Pouralizadeh et al., 2020). In another study conducted, it was stated that higher levels of anxiety occurred in health care workers compared to others during the COVID-19 outbreak. Even the anxiety level of nurses is so alarming, that there needs to be the availability of counseling services to improve the mental health of frontline nurses (Huang & Zhao, 2020). Therefore, minimizing the anxiety and worry of nurses is very important by providing PPE and convenience in fulfilling PPE, in addition to preventing self-contamination to provide continuity of medical services (Saricam, 2020). The hospital has supported the provision of PPE, it just needs to add support in intervening nurse anxiety such as the existence of a psychological service center for nurse psychological counseling.

CONCLUSSION

Nurses are the health workers who meet patients the longest. PPE training, psychologist services, PPE access, booster vaccination, and standard PPE has no effect on the anxiety of nurses caring for patients during the pandemic. Nurse anxiety and causative factors need to be studied further. This study has weaknesses, namely the observation of anxiety and the use of PPE standards has not been carried out optimally, such as not being seen directly by researchers. Suggestion: This study can be used as hospital information to intervene in nurse anxiety and provide psychological services, so that nurses have a place for counseling. The provision of PPE and easy access is maintained not only during a pandemic, but at all times if needed. For other studies that will conduct research on nurse's anxiety, it is recommended to conduct observations to see the nurse's anxiety response directly.

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