

Relationship Between Nursing Length of Work and Nursing Workload with Completeness of Using Personal Protective Equipment among Nurses in Hospital Infection Room

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ABSTRACT

Nursing care for infectious diseases should only be carried out by trained nurses. This is because nurses need experience and precision, especially skills in using Personal Protective Equipment (PPE). Length of work and workload are possible factors that cause problems in the use of PPE. The purpose of this study was to explain the relationship between length of work and workload with the completeness of PPE use during infectious disease care. This study used a correlation research design with a cross-sectional approach. The sample of this study was 72 respondents. Respondents in this study were nurses who treated patients with TB and Pneumonia infections. Sampling was carried out using a purposive sampling technique. Data were collected in 2 months using recording of the results of direct observation and interviews. Data were analyzed using the Spearman rho test with a significance level of <0.05 . The results showed a p-value between length of work and completeness of PPE use >0.05 , while the p-value between workload and completeness of PPE use <0.05 . This means that there is no relationship between length of work and completeness of PPE use, while workload has a relationship with completeness of PPE use. Length of work does not make a nurse able to use PPE properly. This is because nurses have less opportunity to care for infectious patients. Infectious cases with complete PPE are quite rare. While the workload is related to the completeness of the use of PPE. The higher the workload will require nurses to install PPE quickly. Therefore, in order for nurses to use complete PPE, the nurse's workload should not be too high.

Keywords: length of work; nursing workload; PPE

INTRODUCTION

Nursing management of infectious diseases is an effort full of cross-infection risk between nurses and patients (Diani et al., 2022). Various control methods can be carried out to reduce the dangers caused, including personal protective equipment (PPE) (Sujarwadi et al., 2021). Personal protective equipment (PPE) is special clothing or equipment worn by officers to protect themselves from physical, chemical, biological/infectious material hazards. The use of personal protective equipment by nurses on duty ensures safety and prevents work accidents. The possibility of exposure to nurses is very high. This can occur due to direct contact with the skin, inhalation, swallowing, injection errors, spills, and exposure to feces and urine. Therefore, it is necessary to provide protective equipment for nurses in every action (Musta'adah et al., 2024; Suhariono et al., 2020).

The use of PPE in various hospitals in Indonesia still needs to be improved. Nurse compliance in using PPE is still low (Nursalam, 2018). Based on preliminary studies, many nurses were found to be less able to use PPE because they were in a hurry and uncomfortable. This can be caused by age, education, training, length of service, and workload. The longer a person works in a hospital, the more experienced the person will be. In addition, the burden affects the completeness of the use of PPE; a high workload requires fast and precise working conditions (Ezdha et al., 2020).

The results of initial observations and interviews with 10 nurses who care for infected patients showed that 50% of the nurses still did not use PPE. Incomplete PPE will result in the risk of contracting the disease; in addition, it will affect the quality of nursing actions provided because it can create discomfort when near the patient (Sari et al., 2021). Seeing

the problems above, an appropriate solution is needed that can be done to improve the ability and willingness of nurses to use complete PPE when managing nursing actions on infectious patients. To find out the best solution, further identification is needed regarding the main factors that make nurses refrain from using complete PPE, namely length of work and workload. This research aims to determine the relationship between the length of work and workload with the complete use of PPE.

METHOD

This study used a correlation research design with a cross-sectional approach. This study will analyze the relationship between length of work and workload (independent variable) and the completeness of PPE use by nurses (dependent variable). This study used 72 people as samples. Respondents in this study were nurses who treated patients with TB and Pneumonia infections. Sampling was carried out using a purposive sampling technique. The research was conducted for 2 months. Data were collected using recording of the results of direct observation and interviews. Data on length of work was collected using documentation studies and direct interviews with nurses. While workload data is carried out by observing when nurses do their work. Observations were conducted in 1 shift involving the head nurse and team leader. Data were analyzed using the Spearman Rho test.

RESULTS

Table 1. Respondent Characteristic

Characteristics	Frequency	Percentage (%)
Age (years)		
26-35	38	52.8
36-45	22	30.6
>45	12	16.7
Level of Study		
D3	56	77.8
S1	16	22.2

Table 2. Cross-tabulation between Length of Work and Completeness of PPE

Length of work	Completeness of PPE		Total
	Not Complete	Complete	
Middle	2	2	4
Long	28	40	68
Total	30	42	72
Analyze value of spearman rho		0.812	

Table 3. Cross-tabulation between Nursing Workload and Completeness of PPE

Nursing Workload	Completeness of PPE		Total
	Not Complete	Complete	
Low	0	2	2
Middle	0	40	40
High	30	0	30
Total	30	42	72
Analyze value of spearman rho		<0,001	

DISCUSSION

The results of the study showed that there was no relationship between the length of service of nurses and the completeness of the PPE used. The results of this study are supported by Agus et al. (2018) who stated that there was no relationship between length of service and compliance with the use of PPE. Length of service does not always go hand in hand with the abilities possessed. Ability from experience is part of the direct learning process where this requires various

stimuli to be able to make someone recognized as an expert. A nurse who does not receive various stimuli at work will not become a professional. Thus, it can be interpreted that experience-based learning is greatly influenced by the environmental factors obtained (Lany, 2021). Many nurses with decades of experience are found but have incomplete competencies. This is because the work environment tends to be the same (Nursalam, 2018). The high demands on new nurses for skills make the knowledge of new nurses able to compete with more senior nurses. Length of work can indeed be a factor that impacts a nurse's ability, but the same environmental conditions will prevent the nurse's ability from developing. This can be exacerbated if the nurse is less motivated to develop their abilities.

The results of the study showed that there was a relationship between the workload of nurses and the completeness of the PPE used. This is in line with research conducted by Fitria (2022), which found that there was a significant relationship between workload and compliance with the use of PPE. Workload greatly affects nurse performance. High workloads make nurses stressed which results in reduced nurse performance. This can make nurses less suitable in providing nursing services. Negligence at work often occurs in nurses with high workloads. Including negligence in taking care of themselves such as the use of PPE. The use of PPE requires more time in providing nursing services to patients because it takes extra time for nurses to use PPE before the procedure is carried out (Dewi, 2021). Another study by Salma (2018) showed that high workloads can increase the mental burden of nurses which results in decreased quality and compliance of nurses with the procedure. High physical workloads also cause high psychological burdens on a nurse. Work demands, complaints, and environmental conditions add to the mental burden that makes nurses often negligent in their work. It is important for a nurse to work in safe and comfortable conditions. Nurse actions that require high precision and accuracy are basically stressful. This can be made worse by the risks that arise if an error occurs. Nurses in nursing services not only pay attention to patient recovery but also their own safety. However, with a high load, this is often neglected, which harms both nurses and patients (Nursalam, 2020). Attention to the workload of nurses needs to be observed in order to improve the ability and willingness of nurses to work in accordance with applicable regulations such as the suitability of the installation of PPE.

CONCLUSION

There is no relationship between the length of service and the completeness of PPE use when providing nursing care to infected patients. This is because the variation of patients faced by each nurse is different. Even though they have worked for a long time, nurses do not necessarily have the opportunity to meet patients with TB and pneumonia infections. This makes nurses less experienced and accustomed to using PPE which causes incompleteness when installing PPE. Meanwhile, workload shows a significant relationship with the completeness of PPE use when providing nursing care to infected patients. This is because a high workload will reduce accuracy and precision. In addition, a high workload can reduce the willingness of nurses to use PPE.

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