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ARTICLE

Knowledge of Inpatient Nurses on The Implementation of Handwashing Standard Operating Procedures

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ABSTRACT
The nurse is one of the medical personnel in the hospital who is most often in contact with patients and has the potential for disease or infection. Therefore, health care facilities including in RS X Purwodadi usually have Handwashing Standard Operational Procedure as part of the infection prevention and control guidelines. However, based on reports at RS X Purwodadi, there were inpatient nurses who did not wash their hands according to the procedure, namely 40% in rooms I and II and 20% in rooms III, IV and V. The independent variables are knowledge. The dependent variable is the implementation of the hand washing SOP. This type of study is analytic observational with cross sectional approach. The population in this study is 77 inpatient nurses, and sample of this study is 65 inpatient nurses. The sampling technique in this study used proportional random sampling method. Data analysis was performed univariate and bivariate using the chi square test. Most of the nurse implementation SOP washing hands is well, namely 83.1%. Nurses with good knowledge are 80%. The results of the chi square test variables related to the implementation of hand washing SOP were knowledge (p value = 0.014). The conclusion obtained from this study that there is a relationship between knowledge with the implementation of hand washing SOPs in inpatient nurses in X Purwodadi.

1. INTRODUCTION

A hospital is a place of health services for the community in the context of preventing and curing disease (1). Health services have the goal of curing patients frofheir illnesses and keeping their employees healthy and safe at work (2). Patients who are being treated with a single disease or complex disease certainly cannot be separated from the treatment and care activities carried out by medical personnel (3). Medical personnel who are working in hospitals have the potential to be exposed to disease or infection due to germs, viruses and so on that are at risk of disrupting occupational health (4).

Nurses are one of the medical personnel in hospitals who have the most contact with patients (5). Nurses are tasked with helping care for the patient's healing process and are responsible for preventing disease for the patient and himself (6). Nurses have a significant contribution to preventing nosocomial infections. Nurses are one of the most vulnerable health workers in transmitting infections to patients because they accompany patients for 24 hours (5). Many nurses do not wash their hands according to the procedure. This is based on research in various hospitals such as the inpatient installation of Dr. Hospital. Tadjuddin Chalid Makassar City as much as 64%, in the Immanuel Hospital in Bandung as much as 51.7%, in the Raudhah ward and emergency room at PKU Muhammadaiyah Hospital in Yogyakarta as much as

86.23%, in the inpatient room at X Malang hospital as much as 64%, at PKU RSU Muhammadiyah Bantul as much as 42.9% and in Klaten Islamic Hospital as much as 57.4% (7-12). Some of the reasons nurses are not obedient in carrying out hand washing procedures are infrastructure and the location of hand washing equipment is less strategic, busy, hands do not look dirty, already use gloves, spend a lot of time and irritated skin when washing hands too often (7),(8).

The Ministry of Health of the Republic of Indonesia has long developed hand washing as an infection control effort as part of universal precautions. Regular hand hygiene by washing hands with soap or using an alcohol-based hand rub during health care will help reduce the risk of infection. Clean hands are an easy and effective solution to minimize the spread of infection and multiresistant germs (13). Therefore, healthcare facilities usually have a Standard Operating Procedure for hand washing as part of the infection prevention and control guidelines in hhealthcarefacilities required by the government (14).

The implementation of hand washing according to the procedure is influenced by knowledge because good knowledge tends to apply SOPs well, while less knowledge tends to apply SOPs less (15),(16). Research conducted at Prof. Dr. RD Kandou Hospital Manado showed the results that nurses with a good level of knowledge carried out hand washing procedures which were higher at 73.75% (15). Another study regarding knowledge of the implementation of postoperative wound care SOPs also showed that nurses with good knowledge were obedient in implementing SOPs as much as 72.7%, while nurses with less knowledge were obedient in implementing SOPs as much as 10.5% (17). Knowledge will affect the attitude of workers so that it will form changes in behavior to comply with the rules at work (18),(19).

2. MATERIALS AND METHODS

This research is analytic observational, namely research that analyzes a relationship between variables. The approach used is cross-sectional. The population in this study were 77 nurses at the inpatient hospital X Purwodadi and the sample size calculation technique used the Slovin method with the formula:

Slovin Formula

$$\mathbf{n} = \frac{N}{1+N\,(d^2)}$$

description:

n = number of samples

N = population

d^2 = determination (5%)

Calculation of Sample Size

Number of samples = 77 respondent

determination (d^2) = $(0,05)^2$ = 0,0025

$$\mathbf{n} = \frac{N}{1+N\,(d^2)}$$

$$\mathbf{n} = \frac{77}{1+77\,(0{,}0025)}$$

$$\mathbf{n} = \frac{77}{1+0{,}1925}$$

$$\mathbf{n} = \frac{77}{1{,}1925}$$

n = 64,57 rounded to 65

A sampling of this research uses proportional random sampling technique

Table 1. Sampling

Room	Number of Nurses	Sample
I	19	15
II	15	13
III	14	12
IV	14	12
V	15	13

The independent variable in this study is knowledge. The dependent variable is the implementation of hand washing SOPs.

3. RESULTS

UNIVARIATE

This research was conducted on inpatient nurses at RS X Purwodadi which was held from July 21 to August 6, 2020. The variables studied included knowledge, attitudes, motivation, availability of hand washing infrastructure, and implementation of hand washing SOPs.

Table 2. Knowledge of Inpatient Nurses on the Implementation of Handwashing Standard OperatiDescriptive Distribution of Research Variablesng Procedures (SOP) at Purwodadi X Hospital

Variable	Min	Max	Average	Standar Deviation
Knowledge	6	15	12,22	2,058
Hand washing SOP	3	12	8,72	3,243

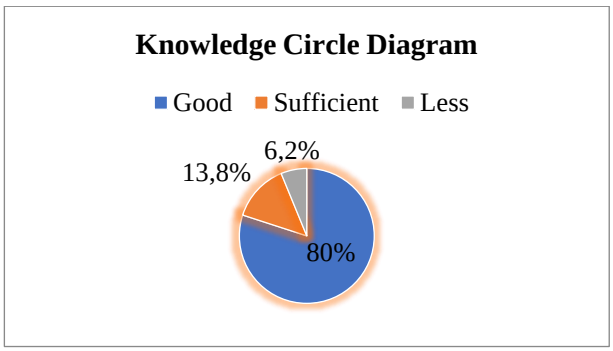

Figure 2. Knowledge Circle Diagram

The result that respondents who have good knowledge as much as 80%. However, it turns out that there are still respondents who have sufficient knowledge of 13.8% and 6.2% less. The results of the knowledge assessment in figure 2 show that the respondents with a minimum score of 6 and a maximum score of 15, while the average score was 12.22 and the standard deviation was 2.058.

Table 3. Frequency distribution of respondents' answers

Question	True		False	
	f	%	f	%
Definition of hand washing	47	72,3	18	27,7
How to keep hands clean	65	100,0	0	0,0
The duration of hand washing with an antiseptic solution is according to WHO recommendations	58	89,2	7	10,8
The duration of washing hands with soap is according to WHO recommendations	45	69,2	20	30,8
Which statement is true about hand washing	60	92,3	5	7,7
The primary purpose of hand washing	60	92,3	5	7,7
Indications for hand washing	42	64,4	23	35,4
Hand washing time	19	29,2	46	70,8
The purpose of the moment of hand washing	58	89,2	7	10,8
Method of washing hands after contact with patient's body fluids	56	86,2	9	13,8
How to wash hands according to WHO	57	87,7	8	12,3
How to wash your hands the right way	52	80,0	13	20,0
Hand washing time	47	72,3	18	27,7
The best type of soap for washing hands	63	96,9	2	3,1
Good water for washing hands	65	100,0	0	0,0

In question number 8 about the moment of washing hands, many respondents answered the question incorrectly, which was 70.8%. In addition to question number 7 regarding indications for hand washing, 35.4% of respondents answered incorrectly. This shows that there are still respondents who have less knowledge.

BIVARIATE

The relationship of knowledge with the implementation of hand washing SOPs

The results of the analysis of the relationship between knowledge and the implementation of hand washing SOPs based on table 4 it is known that respondents who have good knowledge of implementing hand washing SOPs well are 53 people (86.9%) and respondents who have less knowledge of implementing hand washing SOPs properly are 1 person. (25%). Data analysis using Fisher Exact obtained a p-value of 0.006 (<0.05), which means that there is a relationship between knowledge and the implementation of hand washing SOPs.

Table 4. Descriptive Distribution of Research Variables

Knowledge	Hand washing SOP				Amount		*p value*
	Good		Less				
	f	%	f	%	f	%	
Good	53	86,9	8	13,1	61	100	0,014
Less	1	25,0	3	75,0	4	100	
Amount	54	83,1	11	16,9	65	100	

4. DISCUSSION

The results showed that the respondents who had good knowledge were 80%. The data shows that most of the respondents have good knowledge about hand washing SOPs. However, there are still respondents who have sufficient knowledge (13.8%) and less (6.2%). Knowledge is the result of human sensing / the result of someone knowing about objects through their senses, so that a person's knowledge of objects has different intensities or levels. This can be seen from the results of respondents' answers regarding handwashing indications, some respondents know this by giving correct answers as many as 64.4%, and some who answer incorrectly (35.4%).

Knowledge of work procedures is something that workers need to know that is applied in each work area. The Standard Operational Procedure (SOP) aims to ensure that the steps taken for each job are safe and secure (19). This study shows that there are nurses who still have less knowledge and do not implement hand washing SOPs, as many as 3 respondents (75%), even though the hand washing SOPs must be known and implemented consistently so that working nurses remain safe from the risk of infection transmission.

Knowledge is related to how a person behaves in acting. Based on the results of this study, it was stated that respondents with good knowledge carried out more hand washing SOPs as many as 45 people (86.5%), but if you look at respondents with sufficient knowledge category more respondents carry out hand washing SOPs well (88.9%) than less (11.1%). This shows that a person's behavior is not necessarily based on his knowledge alone, but there may be other factors, such as preventing certain diseases because the person feels threatened by the disease and not because of his knowledge of the disease (20). The results of data analysis using Chi Square which was carried out between the variables of knowledge and the implementation of hand washing SOPs showed that there was a relationship between knowledge and the implementation of hand washing SOPs for inpatient nurses at RS X Purwodadi with a value of p = 0.038 which means that knowledge is a factor that is related to significantly with the implementation of the SOP for hand washing on inpatient nurses at RS X Purwodadi.

The data shows that the knowledge of nurses at Purwodadi X Hospital is different, some nurses have good knowledge and there are nurses who have less knowledge so the level of knowledge of each nurse is not the same and varies. Knowledge is all information that is known or realized by a person but differs from one individual to another (20). A person's knowledge can be formed from how often the person gets information or in this case, knowledge about good and correct hand washing procedures. From this, it is most likely related to the implementation of hand washing SOPs because knowledge is related to how a person's behavior acts.

A person's knowledge in general can influence that person's behavior. Someone who has good knowledge will behave well, but on the contrary, if someone's knowledge is lacking, he is likely to behave less (22),(23). Behavior that is based on good knowledge will last longer than behavior that is not based on good knowledge (24).

The results of this study are supported by research conducted on nurses in the intensive care unit at Taman Husada Bontang Hospital. In his research, it was concluded that there was a relationship between the level of knowledge and the behavior of nurses' hand washing (24). Previous research conducted on inpatient nurses at the Pidie Jaya Hospital also stated that knowledge affected nurse compliance in carrying out hand hygiene (7). This study is also in line with research conducted on nurses at the Immanuel Hospital in Bandung that knowledge is related to nurses' compliance with hand hygiene (9).

5. CONCLUSIONS

The conclusion obtained from this study is that there is a relationship between knowledge with the implementation of hand washing SOPs in inpatient nurses in X Purwodadi Hospital, there is no relationship between the availability of hand washing infrastructure facilities with the implementation of hand washing SOPs in inpatient nurses in X Purwodadi Hospital.

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