

The Factors Affecting Surgical Room Nurse's Compliance in Performing Sterile Handwashing in the Central Surgery Installation of RSUD Banyumas

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ABSTRACT

Background: Surgical site infection, as a part of Healthcare-Associated Infections (HAIs), can be prevented by proper handwashing among the surgical team members. Compliance with handwashing has been proven to reduce healthcare associated infections. Method: This was quantitative research with a descriptive correlation design using a cross sectional approach. A total sampling technique was used with a sample size of 35 surgical room nurses's in the central surgery installation of RSUD Banyumas who met the inclusion and exclusion criteria. The research instrument was aquestionnare. Data analysis was conducted using the chi-square test. Results: The study result show that the majority of nurses have good knowledge (45,7%), high motivation (77,1%), perceive good supervision (74,3%) and are compliant in performing sterile handwashing (71,4%). There is a correlation between knowledge, motivation and supervision with the compliance of surgical room nurses in performing sterile handwashing in the central surgery installation of RSUD Banyumas. Conclusion: Factor such as nurses knowledge and motivation in the surgical room and supervision from the department head are related to the compliance of surgical room nurses in performing sterile handwashing.

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1. INTRODUCTION

According to Law of the Republic of Indonesia No. 44 of 2009 concerning Hospitals, it is stated that the obligation of hospitals is to provide safe, anti-discrimination and effective health services by prioritizing the interests of patients in accordance with hospital service standards[1].Surgical services are one part of hospital services that aim to save lives, prevent disability and complications[2].

One of the complications of surgery is Surgical Site Infection (SSI) which accounts for about 20% of all healthcare-related infections or HAIs [3]. This can result in delayed wound healing, increased days of treatment, antibiotic use, increased pain and in extreme cases can lead to death [4]. Based on data from the PPI team at Banyumas Hospital, in 2022 from January to September the number of surgery patients was 1525 with an IDO incidence rate of 15 patients (0.98%), while in 2021 the number of surgery patients was 1405 and the IDO incidence rate was 27 patients (1.92%) [5].

Infection of the surgical area as part of HAIs can be prevented, one of which is by washing hands properly on surgical team members [6]. Sterile hand washing is the most effective and efficient way to prevent infection, and failure to perform sterile hand washing will provide opportunities for infection transmission [7]. Adherence to handwashing measures has been shown to reduce the number of healthcare-related infections [8][9].

The results of a study conducted by ([10]) showed a relationship between hand washing discipline behavior with the number of germ colonies on the nurse's palms after washing hands with a value of $p = 0.005$ ($\alpha = 0.05$). The study was in line with [11] which identified the presence of *Staphylococcus aureus* on the hand swab of operating room nurses before washing hands with antiseptic soap. *Staphylococcus aureus* is the main cause of surgical site infection [12].

A surgical nurse is a professional nurse who is authorized and assigned during the surgery [13]. Some of the duties of the surgical nurse are to prepare sterile instruments according to the type of surgery and wash sterile hands properly and correctly. Research conducted by [14] shows a significant relationship between the compliance of surgical room nurses with the risk of infection of the operating area. There are several things that affect a person's compliance in doing work, including ability, motivation, attitude, knowledge, education, length of work and age [15].

Research on factors affecting nurse's handwashing compliance has been widely conducted. The novelty of this study is that this study took a sample of surgical room nurses. Based on the background above, the researcher is interested in conducting research with the title "The Factors Affecting Surgical Room Nurse's Compliance in Performing Sterile Handwashing in the Central Surgery Installation of RSUD Banyumas".

2. RESEARCH METHOD

This type of research is quantitative research using a correlation descriptive design with a cross sectional approach. Total sampling technique is used with a total of 35 surgical nurses in the Central Surgical Installation room of Banyumas Hospital in accordance with inclusion and exclusion criteria. The research instrument used questionnaire sheets. Data analysis using *chi square* test.

3. RESULT AND DISCUSSIONS

This study uses univariate and bivariate analysis. Univariate analysis aims to describe the characteristics of each variable, bivariate analysis used to obtain the meaning of the relationship (correlation) between the independent variable and dependent variable. The table below shows the results of univariate and bivariate analysis.

3.1. Univariate

Table 1. Frequency Distribution of Nurse Characteristics in the Central Surgical Installation of RSUD Banyumas (n: 35)

Characteristics of Respondents	n	%
Age		
20-30	8	22,9
31-40	14	40
>40	13	37,1
Gender		
Male	10	28,6
Woman	25	71,4
Education		
DIII Nursing	25	71,4
Ners	10	28,6
Length of working		
1-5 years	17	48,6
6-10 years	5	14,3
> 10 years	13	37,1
Training basic surgical skill		
Yes	23	65,7
No	12	34,3

Table 1 shows that most respondents have the age of 31-40 years as many as 14 respondents (40%), male as many as 25 respondents (71.4%), DIII Nursing education level as many as 25 respondents (71.4%), have a working period of 1-5 years as many as 17 respondents (48.6%) and have attended training as many as 23 respondents (65.7%)

Table 2. Frequency Distribution of Compliance, Knowledge, Motivation and Supervision of the head of the room at the Central Surgical Installation of RSUD Banyumas (n:35)

Variable	n	%
Compliance		
Disobedient	10	28,6
Obedient	25	71,4
Knowledge		
Good	16	45,7
Enough	12	34,3
Less	7	20
Motivation		
High	27	77,1
Moderate	8	22,9
Low	0	0
Supervision		
Good	26	74,3
Enough	9	25,7
Less	0	0
Bad	0	0

Table 2 shows that most respondents had compliance in conducting sterile hand washing in the compliance category as many as 25 respondents (71.4%), have good knowledge as many as 16 respondents (45.7%), high motivation as many as 27 respondents (77.1%) and say if supervision is good as many as 26 respondents (74.3%).

3.2. Bivariat

Table 3. Relationship of Knowledge, motivation and supervision with Compliance of Surgical Room Nurses in Conducting Sterile Handwashing at the Central Surgical Installation of RSUD Banyumas

Variable	Compliance				Amount		p value
	Disobedient		Obedient		f	%	
	f	%	f	%			
Knowledge							
Good	2	5,7	14	40	16	45,7	0,001
Enough	2	5,7	10	28,6	12	34,3	
Less	6	17,2	1	2,8	7	20	
Motivation							
High	4	11,4	23	65,7	27	77,1	0,003
Moderate	6	17,2	2	5,7	8	22,9	
Supervision							
Good	4	11,4	22	62,9	26	74,3	0,007
Enough	6	17,2	3	8,5	9	25,7	
Amount	10	28,6	25	71,4	35	100	

In the first variable, namely the level of knowledge based on the Chi-Square Test, the value of $P = 0.001$ (<0.05) then ($H_a 1$) is accepted, so there is a relationship between the level of knowledge and the compliance of surgical nurses in conducting sterile handwashing. Then in the second variable, namely motivation, the value of $P = 0.003$ (<0.05) then ($H_a 2$) is accepted, so there is a relationship between motivation and the compliance of surgical nurses in conducting sterile hand washing. Furthermore, the last variable, namely supervision, obtained a value of $P = 0.007$ (<0.05) then ($H_a 3$) is accepted so that there is a relationship between supervision and the compliance of surgical nurses in conducting sterile handwashing.

a. Relationship between knowledge and the compliance of surgical nurses in conducting sterile hand washing at the Central Surgical Installation of RSUD Banyumas.

The results showed that most respondents had good knowledge as many as 16 respondents (45.7%), most respondents who did not comply with hand washing had less knowledge (17.2%) and respondents who obeyed to wash hands had good knowledge (40%). The results of the chi square test obtained a p-value of 0.001 (p-value \leq

α) which means there is a relationship of knowledge with the compliance of surgical nurses in washing sterile hands.

Knowledge is very important, with knowledge, it can provide broad insight to each individual, and can apply it in certain situations [16]. A high level of handwashing knowledge is followed by a high handwashing compliance rate. This is in line with the results of this study, the higher the level of knowledge, the higher the level of compliance with hand washing.

This is in agreement with the results of previous research related to knowledge with the level of handwashing compliance conducted by [17] stated that the level of knowledge has a meaningful relationship with the level of handwashing compliance where there is a difference in the proportion of handwashing behavior in health workers who have good knowledge and those who have less knowledge

b. Relationship between motivation and the compliance of surgical nurses in washing sterile hands at the Central Surgical Installation of RSUD Banyumas.

The results showed that most respondents had high motivation as many as 27 respondents (77.1%), most respondents who did not obey to wash hands had moderate motivation (17.2%) and respondents who obeyed to wash hands had high motivation (65.7%). The results of the chi square test obtained a p-value of 0.003 ($p\text{-value} \leq \alpha$) which means there is a relationship between motivation and surgical nurse compliance in washing sterile hands.

Motivation is the main thing that makes a person work and perform all actions effectively and work motivation is what directs behavior in a good direction or not in doing his job (Asmuji et al., 2016). This result is in line with research conducted in the Surgical Room of Indramayu Regency Hospital from 30 respondents, 20 respondents (66.7%), were included in the high motivation category (Suwanto, 2017). The results of research conducted by Parwa et al., (2019) showed that there was a strong relationship between nurse motivation and nurse compliance in washing hands with a value of $p = 0.012 (<0.05)$, $r = 0.43$

c. Relationship between supervision and the compliance of surgical nurses in washing sterile hands at the Central Surgical Installation of RSUD Banyumas.

The results showed that most respondents said that supervision was good as many as 26 respondents (74.3%). Most respondents who do not comply with handwashing have sufficient supervision (17.2%) and respondents who obey hand washing have good supervision (62.9%). The results of the chi square test obtained a p-value of 0.007 ($p\text{-value} \leq \alpha$) which means there is a relationship between supervision and the compliance of surgical nurses in washing sterile hands.

Supervision is a provider of assistance, guidance / teaching, support to nurses in carrying out handwashing practices according to policies and procedures. Supervision needs to be carried out on an ongoing basis which in turn can increase the knowledge and compliance of nurses in washing hands. Supervision carried out by the head of the room must be carried out objectively aimed at coaching. The implementation of supervision is not only to supervise whether nurses practice hand washing properly and correctly in accordance with policies and procedures, however, supervision also makes direct and periodic observations for later if problems are found immediately given direct assistance. This opinion is in line with Nursalam in conducting proper supervision, supervisors must be able to when and what to do supervision.

4. CONCLUSION AND RECOMMENDATION

Based on the results of the research that has been done, the following conclusions can be drawn There are correlations between knowledge, motivation and supervision with the compliance of surgical room nurses in performing sterile hand washing in the Central Surgery Installation of RSUD Banyumas.

Surgical room nurses as service professionals in the operating room are expected to optimize the implementation of sterile hand washing. The implementation of management roles and functions from the head of the room, and staff need support from various parties including the implementation of sterile hand washing which is part of efforts to prevent transmission of nosocomial infections.

RSUD Banyumas as research site is expected to be able to evaluate the implementation of sterile hand washing in accordance with Standard Operating Procedures (SPO) periodically to prevent discontinuity of information transfer that has an impact on patient safety and can determine the cause of non-implementation of sterile hand washing in compliance.

Researchers for future to be able to develop research on other factors that can affect compliance in sterile hand washing. In addition, researchers can further develop methods by conducting qualitative approaches related to factors that affect compliance in sterile hand washing.

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