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The Relationship of Nurses' Knowledge in the Use of Personal Protective Equipment (PPE) with the Incidence of Nasocomial Infections at the Dr. Rom. Djoelham Binjai 2020

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ABSTRACT

Knowledge is the result of "knowing" that occurs after people sense a certain object, especially through the eyes and ears. Personal protective equipment is a tool used to protect oneself or the body against the dangers of work accidents. Infection is the entry and multiplication of microorganisms in the host's body that can cause illness. This type of research is a descriptive study using a cross sectional study design. The purpose of this research is to determine the relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020. In this study, the number of samples was 32 people. The results of hypothesis testing to see the relationship between variable X and variable Y are with a significant level (α) = 5% (0.05) and df = 1, the results are p.value = 0.000 at df = 1 where sig < (0.000 < 0 0.05), it can be seen that there is a relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020. This research is expected to provide input to the hospital management, which is expected to provide information on how important it is to use personal protective equipment to prevent infection. 05) it can be seen that there is a relationship between the knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020. This research is expected to provide input to the hospital management, which is expected to provide information on how important it is to use personal protective equipment to prevent infection. 05) it can be seen that there is a relationship between the knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020. This research is expected to provide input to the hospital management, which is expected to provide information on how important it is to use personal protective equipment to prevent infection.

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1. Introduction

The hospital is a health service institution in which there are buildings, equipment, humans (officers, patients and visitors) and health service activities, apparently in addition to being able to produce a positive impact in the form of good health care products for patients, it can also have a negative impact in the form of a negative impact on the patient. bad for humans such as environmental pollution, sources of disease transmission and hindering the healing and recovery process of patients (Putra, 2016).

In addition to potential hazards in the form of infectious diseases that generally come from patients, hospitals also have other potential hazards that affect the situation and conditions in hospitals, namely explosions, fires, accidents related to electrical installations, radiation, hazardous chemicals, anesthetic gases, psychosocial disorders, and ergonomics (Aditama, 2016).

The high incidence of infection in hospitals is an indicator of the importance of an infection control effort by applying standard infection precautions (Standard precaution). Standard Precaution is basically a transformation of universal precaution, which is a form of the first precaution which aims to prevent nosocomial infections. In increasing efforts to prevent infection, it is necessary to have knowledge and attitudes of nurses in the use of personal protective equipment (PPE) to avoid the risk of disease transmission from both patient to nurse and fellow patients (Kathryn, 2017).

Nurses have a high risk of receiving exposure to diseases due to infections that can threaten their safety at work. WHO noted that in 2015 there were 66,000 cases of nosocomial infection in the world in the form of hepatitis B transmission, 16,000 cases of hepatitis C and 10,000 cases of HIV transmission. This does not rule out the possibility for health workers to be infected. It has been estimated that there is transmission of hepatitis B (39%), hepatitis C (40%), and HIV (5%) in health workers worldwide. According to Maja (2016) in Precautions used by occupational health nursing students during clinical plans, he explains about the application of PPE. This study shows a high level of application of hand washing, the use of PPE and the level of training that is more than 80% of respondents.

In addition, this study also explains that 17.8% of respondents fail to use PPE when practicing due to the limited number of PPE provided in the practice. In addition, it also explained that the negative attitude shown by refusing to use PPE because they felt uncomfortable prompted the response to behave without using PPE. while Habni's research (2016) entitled Nurse Behavior in Prevention of Nosocomial Infections at the Haji Adam Malik General Hospital Medan in terms of preventing nosocomial infections involving nurses in inpatient rooms, emergency rooms, ICUs, and outpatients as respondents. The results showed that 76% of nurses who did not receive training on preventing nosocomial infections tend to have bad behavior in preventing nosocomial infections.
Nurses' knowledge about infection prevention by performing septic and aseptic measures as well as the ability to prevent infection transmission in hospitals is the first action in providing quality services. This can be pursued through increasing nurses' attitudes about awareness of using PPE in carrying out every nursing action. According to Nasution's research (2017) on 34 ICU room health workers in two hospitals, the results of behavior towards the actions and attitudes of health workers towards PPE were moderate (60%).

Nurses in providing health services to patients must have good knowledge and attitudes about the use of PPE in every provision of health services to patients. considering the function of PPE has an important role in efforts to eliminate the transmission of infectious disease agents both from the hospital environment, from patients to nurses and from patients to other patients as well as infections that occur in patients themselves. To be able to use PPE correctly, it must be supported by good knowledge and attitude, in terms of knowledge, nurses must be able to understand the potential risk of infection hazards and the entrance of the transmission of the infectious agent so that they can choose the type and material of PPE that is in accordance with the potential hazards that exist.

From the results of the bivariate test using the Chi-square statistical test at the 95% significance level, the results obtained = 0.026 <α = 0.05 this indicates that there is a relationship between nurses' attitudes about PPE with infection prevention measures in the ICU TK II Putri Hijau Hospital. . A good attitude supported by good knowledge will be a motivation for nurses in the ICU to take infection prevention measures (Suharto, 2016).

The results of this study are in accordance with Daeli's research (2016) regarding the relationship between the level of knowledge, attitudes, actions and years of service with the prevention of nosocomial infections. =0.038, action =0.001 and tenure =0.04 when compared to =0.05. This is also in accordance with the research of Salawati, Taufik and Putra (2017) on infection prevention in the ICU Room at Tk II Putri Hijau Hospital (p = 0.024 < 0.05). There is a relationship between attitude and infection prevention measures in the ICU room at Putri Hijau Tk II Hospital (p=0.026<0.05). Furthermore, based on the results of interviews conducted by researchers with the head of the PPI (Infection Prevention and Control) Working Group in the RSUD. Dr. RM. Djoelham, Binjai City, the incidence of infection percentage (0.02%) this happened because nurses did not use PPE (Personal Protective Equipment) correctly when providing services to patients. Based on the events or phenomena mentioned above, the researchers are interested in conducting research on the Relationship of Nurse Knowledge in the Use of Personal Protective Equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai Year 2020.

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2. Method

2.1. Conceptual Framework and Research Variables

The conceptual framework in this study was prepared based on a literature review where the researchers wanted to know the relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai Year 2020 with research objectives, the variables can be described as follows.

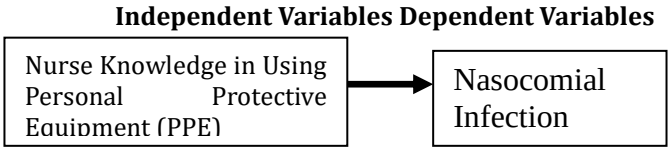

Image 1. Research Concept Framework

2.2. Research Hypothesis

The hypothesis is a temporary answer that must be tested for truth in the proposed hypothesis research.

a. Ho : There is no Relationship between Nurse's Knowledge in Using Tools Peronal Protective Equipment (PPE) with Nasocomial Infections at the Dr. RM. Djoelham Binjai
b. Ha : There is a relationship between knowledge of nurses in the use of personal Protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham

2.3. Types of research

This type of research is a descriptive study using a cross sectional study design. The purpose of this research is to determine the relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020.

2.4. Place and time of research

The research will be carried out at the Regional General Hospital Dr. RM. Djoelham and Binjai Research was carried out starting in April 2020.

2.5. Population and Sample

The population taken in this study were civil servant nurses (PNS) who worked at the Dr. RM. Djoelham Binjai as many as 156 people and According to Arikunto (2016) if the number of subjects is large, it can be taken between 10-15% or 20-25%, in this study a sample of 30% of the total population was taken with the following formula: 20/100 x 156 = 31.2 people, so the number of samples in this study was rounded off to 32 people. The sample criteria include inclusion criteria and exclusion criteria, where these criteria determine whether or not the sample can be used. The inclusion and exclusion criteria in this study are

a. Inclusion criteria are criteria where research subjects can represent in research samples that meet the requirements as samples (Notoatmodjo, 2016), namely:
   1) Civil Servant Nurse (PNS) who works at the Regional General Hospital Dr. RM. Djoelham Binjai.
   2) Willing to be a respondent.
b. Exclusion Criteria
   The exclusion criteria were non-civil servant nurses (PNS), the criteria where the research subjects could not represent the sample because they did not meet the requirements as the research sample (Notoatmodjo, 2016). The exclusion criteria for this study were that the respondents did not fill out the questionnaire completely:

2.6. Method of collecting data

The data collection method used in this research is to use a questionnaire or questionnaire (questionnaires). Arikunto (2016) states that questionnaires are a number of written questions that are used to obtain information from respondents in terms of reports about their personalities,

or things they know. To facilitate the analysis, a score (scoring) is given to each answer for the independent and dependent variables as follows:

a. Nurse Knowledge Questionnaire About Personal Protective Equipment (PPE)
   According to Arikunto (2016), the research instrument is a tool when research uses a method. The data collection tool used in this study was a Nurse Knowledge Questionnaire about Personal Protective Equipment (PPE) where the questionnaire consisted of 10 statements. The criteria for giving a score of 1 if you answer yes and a score of 0 if you answer no
b. Nasocomial Infection Questionnaire
   The questionnaire on Nasocomial Infections consists of 10 statements. The criteria for giving a score of 1 if you answer yes and a score of 0 if you answer no

3. Results and Discussion

3.1 Univariate Analysis

The results of data collection from respondents through this study were about the relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai with 32 respondents can be presented in the form of a table as follows:

TABLE 1
FREQUENCY DISTRIBUTION OF NURSE KNOWLEDGE IN GENERAL HOSPITAL
DR. RM DJOELHAM BINJAI IN 2020 (N=32)

No	Category	Total (n)	Percentage (%)
1	Not good	10	**31.3**
2	Well	22	**68.8**
	Total	**32**	**100**

In table 4.1.1 it can be seen that of the 32 respondents the majority of good knowledge are 22 respondents (68.8%) and the minority is not as many as 10 respondents (31.3%).

TABLE 2
DISTRIBUTION OF FREQUENCY OF NASOCOMIAL INFECTION IN GENERAL HOSPITAL
DR. RM DJOELHAM BINJAI IN 2020 (N=32)

No	Category	Total (n)	Percentage (%)
1	Not occur	24	**75.0**
2	Occur	8	**25.0**
	Total	**32**	**100**

In table 4.1.2 it can be seen that of the 32 respondents the majority of nasocomial infections did not occur as many as 24 respondents (75.0%) and the minority occurred as many as 8 respondents (25.0%).

3.2 Bivariate Analysis

TABLE 3
FREQUENCY DISTRIBUTION RELATIONSHIP OF NURSE KNOWLEDGE IN THE USE OF PERSONAL PROTECTION EQUIPMENT (PPE) WITH THE EVENT OF NASOCOMIAL INFECTION IN THE REGIONAL GENERAL HOSPITAL OF DR. RM. DJOELHAM BINJAI YEAR 2020 (N=32)

No	Nurse Knowledge	Nasocomial Infection				Total		*p.value*	*df*
		Not occur		Occur					
		n	%	N	%	n	%		
1	Not good	9	37.5	1	12.5	10	31.2		
2	Well	15	62.5	7	87.5	22	68.8	0.000	1
	Total	24	100	8	100	32	100		

Based on table 4.3, it can be seen that of the 32 respondents with good knowledge of nurses as many as 22 respondents (68.8%) and the minority is not as much as 10 people (31.2%). The results of hypothesis testing to see the relationship between variable X and variable Y are with a significant level (α) = 5% (0.05) and df = 1, the results are p.value = 0.000 at df = 1 where sig < (0.000 < 0 0.05), it can be seen that there is a relationship between knowledge of nurses in the use of personal

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protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai in 2020.

3.3 Discussion

The results showed that of the 32 respondents the majority of good knowledge were 22 respondents (68.8%) and the minority was not as many as 10 respondents (31.3%) and the majority of nasocomial infections did not occur as many as 24 respondents (75.0%) and the minority occurred as many as 8 respondents (25,0%). The results of the statistical test showed that by using a significant level of 0.05 and the statistical test results obtained showed that there was a relationship between the knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai can be seen from the significant value of 0.000 < 0.05.

The results of hypothesis testing to see the relationship between variable X and variable Y are with a significant level (α) = 5% (0.05) and df = 1, the results are p.value = 0.000 at df = 1 where sig < (0.000 < 0 0.05), it can be seen that there is a relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai. The hospital is a health service institution in which there are buildings, equipment, humans (officers, patients and visitors) and health service activities, apparently in addition to being able to produce a positive impact in the form of good health care products for patients, it can also have a negative impact in the form of a negative impact on the patient. bad for humans such as environmental pollution, sources of disease transmission and hindering the healing and recovery process of patients (Putra, 2016).

The high incidence of infection in hospitals is an indicator of the importance of an infection control effort by applying standard infection precautions (Standard precaution). Standard Precaution is basically a transformation of universal precaution, which is a form of the first precaution which aims to prevent nosocomial infections. In increasing efforts to prevent infection, it is necessary to have knowledge and attitudes of nurses in the use of personal protective equipment (PPE) to avoid the risk of disease transmission from both patient to nurse and fellow patients (Kathryn, 2017).

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From the results of the bivariate test using the Chi-square statistical test at the 95% significance level, the results obtained = 0.026 <α = 0.05 this indicates that there is a relationship between nurses' attitudes about PPE with infection prevention measures in the ICU TK II Putri Hijau Hospital. . A good attitude supported by good knowledge will be a motivation for nurses in the ICU to take infection prevention measures (Suharto, 2016). The results of this study are in accordance with Daeli's research (2016) regarding the relationship between the level of knowledge, attitudes, actions and years of service with the prevention of nosocomial infections. =0.038, action =0.001 and tenure =0.04 when compared to =0.05.

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Furthermore, based on the results of interviews conducted by researchers with the head of the

PPI (Infection Prevention and Control) Working Group in the RSUD. Dr. RM. Djoelham, Binjai City, the incidence of infection percentage (0.02%) this happened because nurses did not use PPE (Personal Protective Equipment) correctly when providing services to patients.

Based on this, it is hoped that the hospital management can provide information on how important it is to use personal protective equipment to prevent infection. Researchers assume that the better the knowledge of nurses related to the use of personal protective equipment, the nurses will be more careful in taking action to patients, and if the knowledge is good, nurses will use personal protective equipment every time they take action to patients.

4. Conclusion

The majority of good knowledge as many as 22 respondents and the minority not as much as 10 respondents. The majority of nosocomial infections did not occur as many as 24 respondents and the minority occurred as many as 8 respondents. There is a relationship between knowledge of nurses in the use of personal protective equipment (PPE) with the incidence of Nasocomial Infections at the Dr. RM. Djoelham Binjai.

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