The Relationship Between Nurses' Knowledge And Skills In Carrying Out Mucus Suction In The Intensive Care Unit (ICU) Room Of Haji Hospital Medan In 2023

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Article Info	ABSTRACT
	The act of suctioning is an action that is often performed by nurses to avoid complications from the act of suctioning, nurses must perform suctioning actions according to the procedure of the procedure. Related factors include nurse knowledge, action skills. This study aims to determine the relationship between Nurses' Knowledge and skills in performing suction in the Intensive Care Unit (ICU) Room of the North Sumatra Hajj Hospital in 2023. This type of research is a quantitative research with a descriptive method of correlation with cross sectional. The population in this study is 20 nurses in the ICU Room. Sampling was done using the Total Sampling technique. The data collection method uses questionnaires and observations. The statistical test used in this study is chi square with a confidence level of 95% ($\alpha=0.5$). The results of the study based on chi square obtained a p-value of 0.003<0.05, the majority of nurses' knowledge in carrying out suction in the Intensive Care Unit (ICU) Room of Haji Hospital in 2023 was high, and the skills of nurses in carrying out suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023. The conclusion of the study showed that there was a relationship between Nurses' Knowledge and skills in Performing Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023. So it is hoped that the Hospital will provide training to nurses in the act of sucking mucus (Suction) and carried out in accordance with SOPs.
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INTRODUCTION

Suction is a way to remove secrets from the airway using a catheter inserted through the nose or oral cavity into a pharying or trachea. Mucus suction is used when the patient is unable to clear the secret by excreting or swallowing (Nizar & Haryati, 2015). Suction is an action to maintain the airway so that the possibility of an adequate gas exchange process occurs by secreting secrets in patients who are unable to excrete on their own which aims to clean the airway and meet the needs of oxygenation (RCNI, 2016).

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One of the efforts to maintain safety is to implement the Standard Operating Procedure (SOP) prepared with the aim of maintaining the overall quality of the implementation of nursing actions and becoming a systematic guide so that consistency in nurses' behavior to carry out care is created. The SOPs made are useful to make it easier for new nurses to implement nursing services with the principle of patient care, and to make it easier to explain procedures to patients if needed (Stella, et al. 2021).

The attitude of ICU nurses in carrying out SOPs includes SOPs for suction actions, washing hands before and after taking actions, awareness that has not been maximized in maintaining safety in an action for patients with ventilators. Based on research observations in the Siti Fatimah Palembang Hospital room on November 28, 2021, there are nurses who are still not optimal, there are still nurses who do not comply with sterile principles before suction, such as washing hands, changing clean gloves, changing suction catheters and providing high oxygen concentrations before and after suction. This is partly due to the rolling of room employees to the ICU, some of whom are still not often exposed to suction and have enough, besides that they also do not have a basic ICU certificate.

Basically, suction must be done with a sterile principle, but there are still many nurses who do suction with a non-sterile principle. Suction must be carried out with the right procedures to prevent respiratory bleeding infections, resulting in the entry of germs into the respiratory tract which has a higher risk of occurring resulting in nosocomial infections (Aprianty, et al., 2020).

According to Wilkinson in NANDA (2012), the most common nursing problem encountered in the ICU room is a problem with the respiratory system. Even respiratory problems are the trigger for death in patients. One of the most common in patients is the ineffectiveness of airway clearance. According to Wilkinson in NANDA (2012), the ineffectiveness of airway clearance is the inability to clear secretions or obstructions from the airways to maintain bronchial asthma. According to NIC NOC (2012), nursing interventions that can be carried out to overcome the problem of ineffective airway cleaning due to the accumulation of sputum, blood or fluid are to perform mucus suction or suctioning techniques (Setyaningsi, et al., 2020).

The lack of knowledge of nurses by preventing complications in patients who are fitted with ventilators when performing suction, is caused by the attitude of nurses who are not in accordance with the proper standard of care. This can cause several problems in these patients such as doing suction which should pay attention to sterile techniques but there are still many who ignore it, before the patient is suctioned should first be given high concentration O2, the use of suction catheters should be disposable, there is still a lack of caring for problems in patients, Patients who secrete a lot of secretions must immediately take suction action, To prevent problems in these patients, improper suction or not in accordance with existing SOPs can be fatal for patients who experience airway obstruction, due to a lot of secretions resulting in disrupted oxygen supply throughout the body (Rima, R 2022).

However, adequate nurse knowledge is not enough to overcome the problems experienced by patients with ventilators if it is not followed by a positive attitude from nurses

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working in the ICU room, a positive attitude of action tendency is to approach, like, expect something (Fajarnita & Sidabutar, 2021)

According to Prayitno's research (2008), it is explained that there is a relationship between the level of knowledge of nurses and the behavior of nurses in performing mucus suction actions in accordance with procedures. This is inseparable from the hospital's efforts in providing ICU training to nurses which is manifested in carrying out the fixed procedures that have been set by the hospital.

The death rate in the ICU room is quite high. Based on data available in the United States, about one in five patients who die occurs in the ICU where more than 500,000 deaths occur every year. The results of a study conducted by (Adamski, et al. 2015) found that the lowest ICU mortality rates were found in Australia and New Zealand (9%) and Scandinavia (9.1%), significantly higher mortality rates were reported in Italy (16.9%) and Saudi Arabia (20%). The highest death rate in Indonesia is caused by non-communicable diseases that end up being treated in the ICU.

Based on the level of knowledge of suction action in the ICU Room of dr. soekardjo Hospital, Tasikmalaya city, it can be seen that most nurses (85.7%) or 6 people manage suction actions well or according to SPO and the management of suction is not good or not according to SPO as many as (14.3%) or 1 person. Meanwhile, in the sufficient category, only the management of suction actions is not good or not according to SPO as many as (100%) or 3 people (Mulyati & Ariyani, 2018).

The Intensive Care Unit (ICU) is a part of an independent hospital, with specialized staff and specialized equipment intended for the observation, treatment and therapy of patients – patients suffering from acute or disabling diseases – life-threatening complications with an expected reversible prognosis. ICU provides facilities and infrastructure as well as special equipment to support vital functions by using medical staff, nursing staff and other staff who are experienced in managing the situation (Septimar & Novita, 2018).

Haji General Hospital Medan is one of the type B Provincial General Hospitals located on Jalan Haji Hospital, Medan Estate, Kec, Percut Sei Tuan, Deli Serdang Regency, North Sumatra. The results of observations made by the researcher in the ICU room of Haji Hospital Medan in February 2023 conducted a survey of nurses saying that they had carried out suction actions based on SOPs and last year who already had ICU certificates 6 people researchers also made observations and found that nurses who worked in the ICU of Haji Hospital Medan where 2 nurses washed their hands before and after the suction procedure, 2 nurses used gloves, 1 nurse did not use personal protective equipment during the procedure, the catheter tube could only be used 1 time in use after it was discarded, and it was found when the procedure was tried for 4 times of suction without success.

Based on the initial survey that has been carried out on February 13, 2023, data obtained from the Medical Records of Haji Hospital, especially in the ICU room, in 2021 the overall patient data was 222 patients, in 2022 there were 271 patients. In the initial observation carried out in the ICU room of Haji Hospital, there were 20 nurses consisting of S1 Nurses and 9 people. D3 nursing 11 people, ICU Certificate 18 people. Based on the above

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phenomenon and considering that there are still nurses who ignore sterility and compliance in carrying out suction procedures where there is a risk of other infections.

METHODS

This research was carried out with the author by using a descriptive method of correlation with a quantitative method, namely looking for relationships between other variables in the same population, systematically connected trying to find a relationship between variables, this research was carried out with a cross sectional design, namely examining an object of observation during the research. This study was conducted to determine the relationship between nurses' knowledge and suction in the intensive care unit (ICU) room of Haji Hospital Medan in 2023 (Soekidjo, Notoadmojo.2010).

The population in this study is all nurses in the ICU Room of Haji Hospital Medan as many as 20 people. This is because the researcher wants to know the relationship between nurses' knowledge and suction in the intensive care unit (ICU) room must be able to handle patients quickly, precisely and correctly based on the SOPs that apply at the Medan Hajj House. In this study, the sample was 20 ICU nurses at Haji Medan Hospital. According to Arikunto (2002) that if the population is less than 30 people, the whole is taken. The sampling technique is Total Sampling with a total of 20 people.

These research instruments are also tools for collecting data or research measurement tools. The measuring instrument consists of 3 parts, namely:

a. Demographic data of respondents includes: respondent number, age, gender, marital status, education, length of work, icu training, from sources of knowledge.

b. Questions about Suction Knowledge consist of 8 questions in the form of multiple choice choosing the correct answers a, b, c and d. The total number of knowledge questions is 8 questions using the gutmen scale when correctly answering questions 6 - 8 is categorized as good, when answering 3 - 5 is categorized as sufficient, when answering 0 - 2 is categorized as poor.

c. Measurement of skills in performing suction actions, equipment preparation (9 items), patient preparation (4 items), implementation (14 items) and decommentation (2 items) that will be observed by the researcher. When answering 0 – 14 Not Done in the Low category, when answering 15 – 28 Done in the High category.

The research steps in collecting the data.

a. Request a permit from the Nursing Study Program of Haji University of North Sumatra as a research recommendation letter to Haji Hospital Medan

b. Waiting for a letter from the Medan Hajj Hospital as a form of reply that research is allowed

c. The research explains the purpose of the research and assures the respondents that the research is voluntary and will be kept confidential

d. The researcher provides a letter of approval as a respondent and is signed

e. The researcher submits all questionnaire sheets to be filled in

f. The nurse fills out the questionnaire, the researcher is next to the nurse, if the nurse asks the researcher, the researcher immediately answers and explains

g. The completed questionnaire is collected, when it is complete, the researcher ends the meeting and thanks the nurse for his willingness to help the research

b. Filling out the observation sheet is carried out without the knowledge of the nurse with a maximum observation time of 10 minutes for each respondent.

After the data is collected, the data is processed using computer facilities with the Wilcoxson Statistical Test program with the help of computerization. After all the data is collected, the researcher conducts data entry using computerized facilities using the SPSS program.

RESULTS AND DISCUSSION

Univariate Analysis

Univariate analysis was used to explain the frequency and percentage disparities in the variables of this study, namely age, gender, education, having an ICU certificate, and length of work.

Table 1. Distribution of Frequency of Respondent Characteristics Based on Religion, Age, Gender, Education, Education, Having an ICU Certificate, and Length of Work in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023

Demographic Data	Frequency	Percentage %
Gender		
Man	1	5,0%
Woman	19	95,0%
Total	20	100%
Age		
20-30	1	5,0%
31-40	8	40,0%
41-50	9	45,0%
51-60	2	10,0%
Total	20	100%
Education		
Nurse	9	45,0%
S.Kep	2	10,0%
D 3	9	45,0%
Total	20	100%
ICU Certificate		
Yes	18	90,0%
No	2	10,0%
Total	20	100%
Length of Work		
6-10 Years	3	15,0%

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Demographic Data	Frequency	Percentage %
11-15 Years	1	5,0%
16-20 Years	7	35,0%
21-25 Years	7	35,0%
26-30 Years	2	10,0%
Total	20	100%

From the table above, it was obtained that the respondents in this study amounted to 20 people, of which the majority gender was 19 women (95.0%) and 1 man (5.0%). The majority age of 41-50 years is 9 people. Nurse Education as many as 9 people (45.0%), S,kep as many as 2 people (10.0%), D3 as many as 9 people (45.0%). There are 18 people (90.0%) who have ICU certificates and 2 people (10.0%) do not have ICU certificates. The majority of working time is 16-25 years old, as many as 7 people (35.0%).

Table 2. Distribution of Nurses' Knowledge Frequency by Carrying Out Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023

Nurse Knowledge	Frequency	Percentage %
Less	5	25%
Enough	7	35%
Good	8	40%
Total	20	100%

Based on the table above, it shows that the results of the score of each statement in the questionnaire, the percentage of nurses' knowledge by carrying out mucus suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan that nurses' knowledge is less than 5 people (25%), nurses' knowledge is sufficient as many as 7 people (35%) and good nurses' knowledge is 8 people (40%).

Table 3. Frequency Distribution of Nurse Skills by Carrying Out Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023

Nurse Skills	Frequency	Percentage %
Low	5	25%
Tall	15	75%
Total	20	100%

Based on the table above, it shows that the results of the score of each statement on the observation, the percentage of Nurse Skills by Carrying Out Mucus Sucking Actions (ICU) in the Intensive Care Unit (ICU) Room of Haji Hospital Medan that the actions of nurses are low as 5 people (25%), the actions of high nurse skills are 15 people (75%).

Bivariate Analysis

The bivariate analysis aims to determine the relationship between nurses' knowledge and skills in carrying out mucus suction in the intensive care unit (ICU) room of the Medan Hajj Hospital.

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Table 4. The Relationship between Nurses' Knowledge and Skills in Carrying Out Mucus Sucking in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023

Nurse knowledge	Skills to Carry Out Suction Actions				Total		P-Value
	Low		Tall				
	N	%	N	%	N	%	
Good	0	0%	8	0	8	40%	0,003
Enough	1	5%	6	30%	7	35%	
Less	4	20%	1	5%	5	25%	
Total	5	25%		75%	15	100%	

Based on the above results between Nurses' Knowledge and Skills in Carrying Out Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023. It was shown that out of 20 respondents there were 8 nurses with good knowledge and good skills, 1 nurse with sufficient knowledge and low skills and 6 nurses with sufficient knowledge and high skills, 4 nurses with low knowledge and low skills and 1 nurse with low knowledge and high skills.

Based on the results of the Chi-Square test, the value of p = 0.000 is obtained, if the p-value ≤ 0.05 then the hypothesis is accepted. The results of the statistical test p-value 0.003 which means that it is smaller than the alpha (α) value of 0.05, it can be concluded that there is a relationship between Nurse Knowledge and Skills in Carrying out Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023.

Discussion

Knowledge of Nurses Performing Sucking Mucus (Suction) in the Intensive Care Unit (ICU) Room of Haji Hospital Medan

Based on the results of the research in Table 2. showed that the results of the score of each statement on the questionnaire, the percentage of nurses' knowledge by carrying out mucus sucking in the Intensive Care Unit (ICU) Room of Haji Hospital Medan was obtained that the knowledge of nurses was less than 10 people (50%), the knowledge of good nurses was as many as 10 people (50%).

The results of the previous research conducted in the Room of Prof. Dr. Margono Soekarjono Purwokerto Hospital showed that nurses' knowledge about suction was mostly in the high category (68.2%) and the least in the low category (4.5%) (Paryanti, Haryati, & Hartati, 2018).

Knowledge is the result of learning and this happens after people perform actions on certain objects. Manipulation occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. Most of human knowledge is obtained through the eyes and ears (Wawan & Dewi, 2017)

Adequate nurse knowledge is not enough to overcome the problems experienced by patients if it is not followed by a positive attitude from the nurse who works in the room, a positive attitude tendency to act is to approach, like, expect something (Nurmiati, Karim & Jumaini, 2017). Behaviors based on knowledge are more lasting than behaviors that are not based on knowledge (Notoamodjo, 2018).

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Relationships affect knowledge, according to Notoamodjo (2018), Knowledge owned by a person is related by gender when doing suction with the majority of women with a frequency of 19 people with presentations (95%) and men with a frequency of 1 person with a percentage (5.0%). Age Relationship of Nurses Knowledge 20 – 30 with a frequency of 1 person with presentations (5.0%), age 31 – 40 as many as 8 people (40.0%), age 41 – 50 as many as 9 people (45.0%) and age 51 – 60 as many as 2 people (10.0%). Relationship of Knowledge at Education Level where a person's education level is still there are those who are educated in D3 with a frequency of 9 people with presentations (45.0%), S.Kep Education 2 people (10.0%), and Nurse education 9 people (45.0%). The relationship between nurses having ICU certificates where they do not have ICU certificates with a frequency of 2 people with presentations (10.0%) nurses already have ICU certificates with a frequency of 18 people with a percentage (90.0%), . The relationship of knowledge of nurses doing suction in the Long Working Experience of 6 – 10 years was 3 people (15.0%), the length of work was 11 – 15 years as many as 1 person (5.0%), the length of work was 16 – 20 as many as 7 oarang (35.0%), the length of work was 21 – 25 years as many as 7 people (35.0%), the length of work was 26 – 30 years as many as 2 people (10.0%).

Nurse Skills Actions Performing Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan

Based on the results of the research on Nurse Skills Actions Performing Mucus Sucking (ICU) in the Intensive Care Unit (ICU) Room of Haji Hospital Medan, 10 people (50%) had low nurse skills, 10 people (50%) had high nurse skills. Previous research found that the skills of nurses in carrying out the fixed suction procedure (suction) in the ICU Room of Prof. Dr. Margono Soekarjo Purwokerto Hospital were mostly in the good category (77.3%) and the least in the adequate category (22.7%) (Paryanti, Haryanti & Hartati, 2018).

Skills about SOPs are very important in supporting patient safety efforts which are standard for hospitals where the standard criteria for leadership roles in improving patient safety include: there is an interdisciplinary team to manage patient safety; proactive activities or programs are available for the identification of safety risks and incidents minimization programs; a working mechanism is in place to ensure that all components of the health patient care facility are integrated and participate in health; Rapid response procedures to incidents are available, including care for patients affected by disasters, limiting risks, and delivering correct and clear information for analysis purposes; have internal and external reporting mechanisms related to incidents including the provision of correct and clear information (Ministry of Health of the Republic of Indonesia, 2017).

Influencing Relationship from Nurse Skills Actions where nurse skills were obtained that the majority of nurse skills were high with a frequency of 15 with a percentage (75%), and nurses with low skills with a frequency of 5 with a percentage (25%). Where the relationship between gender and nurses' skills in carrying out suction is the majority in women with a frequency of 19 with a percentage (95.5%) and a minority in men, namely with a frequency of 1 with a percentage (5.0%). The relationship between age and skills in carrying out mucus suction (suction) with the majority of 41-50 years old with a frequency of 9 people with a percentage (45%), age 31-40 years with a frequency of 8 people with a percentage (40%),

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age 51-60 years with a frequency of 2 people with a percentage (10%), and minority with a frequency of 20-30 years with a frequency of 1 person with a percentage (5%). The relationship between education and nurses' skills in carrying out suction with the majority of nurses with a percentage of 9 people with a percentage (45%), D3 education with a percentage of 9 people with a percentage (45%), and S.Kep minority with a percentage of 2 people with a percentage (10%). The relationship between nurses who have certificates and nurses' skills in carrying out suction with the majority having a certificate with a frequency of 18 people with a percentage (90%), and a minority without a certificate with a frequency of 2 people with a percentage (10%). The relationship between the length of working of nurses and the skills of nurses in carrying out suction with the majority of 16-20 years with a percentage of 7 people with a percentage (35%), the length of work 21-25 years with a frequency of 7 people with a percentage (35%), the length of work 6-10 years with a frequency of 3 people with a percentage (15%), the length of work 26-30 years with a frequency of 2 people with a percentage (10%), and a minority of 11-15 years of working time with a frequency of 1 person with a percentage (5%).

Patient safety is a system that makes patient care safer, including risk assessment, identification with patient risk management, incident reporting and analysis, the ability to learn from incidents and their follow-up, and the implementation of solutions to minimize risks and prevent them from occurring due to mistakes due to taking an action or not taking actions that should have been taken (Ministry of Health of the Republic of Indonesia, 2018).

The aspects that are not carried out include: there are still nurses who do not prepare tongue spatels, do not prepare stethoscopes, do not record the results of actions and client responses with names/paraphrasing clearly, procedures are the majority of women as many as 19 people (95.0%), D3 education with 8 presentations with frequency (45%), the majority of working time 16-25 years as many as 7 people (35.0%), do not have ICU Certificate 2 presentations with frequency (10.0%).

The relationship between nurses' knowledge and skills in performing suction in the ICU Room of Haji Medan Hospital.

Based on the results of the research in table 4.4 of the Chi-Square test, the value of p = 0.000 is obtained, if the p-value ≤ 0.05 then the hypothesis is accepted. The results of the statistical test p-value 0.003 which means that it is smaller than the alpha (α) value of 0.05, it can be concluded that there is a relationship between nurses' knowledge and skills in carrying out suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023.

Based on the results of 4 above between Nurses' Knowledge and Skills in Carrying Out Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023 this study shows that out of 20 respondents there are 8 nurses with good knowledge with good skills, and 1 nurse with sufficient knowledge and low skills and 6 people with sufficient knowledge and high skills, 4 nurses with less knowledge and low skills and 1 nurse with less knowledge and high skills.

This is in accordance with the opinion of Sarwono Notoadmodjo (2019) that obedience is temporary, individuals tend to behave as originally if supervision is loose or not if they move/leave their group, Also agree with Sudjana in Nursalam (2017) efforts to help coach

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and improve the ability of those who carry out activities that have been determined efficiently and effectively. The researcher concluded that there is a relationship between Nurse Knowledge and Skills in Carrying Out Mucus Sucking (Suction) in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023.

Research Limitations

In this study, the researcher experienced time difficulties in observing the nurse's actions because it could not be ascertained, depending on the patient's condition in performing the suction action during this study.

CONCLUSION

Knowledge of Nurses Performing Mucus Sucking (Suction) in the Intensive Care Unit (ICU) Room in the ICU Room of Haji Hospital Medan In 2023, the majority of them were Good with free (40%). Skills in Performing Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2013 were the majority High with a frequency (75%). There is a Relationship between Nurse Knowledge and Skills in Performing Mucus Suction in the Intensive Care Unit (ICU) Room of Haji Hospital Medan in 2023 with a p-value of 0.003 (<0.5).

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