Analysis of Factors Affecting Nurse's Skills in the Management of Infusation at Rumah Sakit Haji Medan 2021

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Article Info	ABSTRACT
	Health workers who are an element of health resources also have an obligation to carry out their service duties professionally. The initial survey at Haji Medan Hospital, Tembung District, showed that the number of inpatients who underwent infusion in the last 4 months was 2,185 patients and 8 (0.5%). The research design used an analytical survey research method (analytic research) with a cross sectional approach. The population in this study were 226 patients who were given intravenous infusion. The sample used a cluster random sampling system of 144 patients. Data analysis used univariate, bivariate and multivariate analysis. The results showed that there was an influence between knowledge variables p = 0.000, attitude p = 0.000, leadership p = 0.010, experience p = 0.000, career path p = 0.002 and years of service p = 0.000. The conclusion of this study is that there is an influence of knowledge, attitude, leadership, work design structure, experience, career path and years of service in the administration of infusion installation at Haji Medan Hospital, Tembung District. It is recommended to Medan Haji Hospital that nurses should be trained and supervised so that nurses can know the job descriptions and regulations that apply at Medan Haji Hospital correctly.

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1.   INTRODUCTION

Hospital is a health service institution that provides complete individual health services that provide inpatient, outpatient and emergency care services. A general hospital is a hospital that provides health services in all fields of disease. The basic essence of the hospital is the fulfillment of the needs and demands of patients who expect the resolution of their health problems at the hospital. Patients perceive that only hospitals are able to provide medical

services as an effort to heal and recover from the pain they suffer. Patients expect services that are ready, fast, responsive, and comfortable for patient complaints (1).

Health workers who are an element of health resources also have an obligation to carry out their service duties professionally. Given that these health workers are legal subjects, in essence the relationship that occurs between health workers, patients and health facilities is a legal relationship. Legal relations always give rise to reciprocal rights and obligations, the rights of one party being the obligations of the other party and vice versa. As legal subjects who have carried out their service duties within the correct legal corridor, in essence health workers are entitled to legal protection from the applicable positive legal rules (2).

Data from the World Health Organization (WHO) in 2011, the incidence of phlebitis per year is 5%. A prevalence survey conducted in 55 hospitals from 14 countries representing 4 regions (Europe, Eastern Mediterranean, Southeast Asia, and Western Pacific) showed an average of 8.7% of hospital patients had phlebitis (WHO, 2011). The incidence of phlebitis in four regions, namely Europe (7.7%), Western Pacific (9%), Eastern Mediterranean (11.8%), and Southeast Asia (10%). The incidence of phlebitis in several developing countries such as Iran (14.20%), Malaysia (12.70%), the Philippines (10.10%), Taiwan (13.8%), Nigeria (17.5%) and Indonesia (9.80%) (WHO, 2016) (3).

According to surveillance data from the World Health Organization (WHO) it is stated that the incidence of infusion in the Emergency Room is quite high, namely 85% per year, 120 million people out of 190 million patients treated in hospitals use IVs and 70% of nurses are not obedient. in carrying out standard infusions based on established standards (4).

Phlebitis data in Indonesia has not been found much and there are only data in 10 public hospitals, namely 16,435 phlebitis events from 588,328 patients (approximately 2.8%) and 293 phlebitis events from 18,800 patients at risk in special or private hospitals in 2011 (approximately 1.5%) (Ministry of Health RI, 2012). The number of phlebitis incidences according to the distribution of blood circulation system diseases in inpatients in Indonesia in 2013 amounted to 744 people (17.11%)(3).

The results of the preliminary study of nosocomial data on infusion wounds at Tugurejo Hospital were 2.22% in January, 4.31% in February, 5.55% in March, decreased again to 1.85% in April, and increased again 3 ,41% in May. The incidence continues to increase every month. Based on the previous background, the incidence of nosocomial infections greatly affects the image of the hospital, for patients it can cause disability, complications, high infectious disease infections, death and the economic impact this results in losses for the patient. So far, no research on phlebitis has been found and there is no complete information about the incidence of phlebitis in Tugurejo Hospital, so prevention is not optimal due to lack of information (5).

Professional nurses in charge of providing health services cannot be separated from the compliance of nurses' behavior in every invasive procedural action such as infusion. Infusion is done by each nurse. All nurses are required to have the ability and skills regarding infusion installation according to standard operating procedures (SOP) (6).

Data from Haji Hospital Medan, Tembung District, patient complaints related to infusion are still common. At Haji Hospital Medan, Tembung District, every morning all patients were asked about their complaints, both about the services and the facilities available, one of the complaints that was often encountered was the problem of infusion. The data from officers who go around to all patients every morning to ask about patient complaints is still quite high. Initial data from April – June 2021 found 26 recorded complaints.

Although education and training have been implemented, significant results have not been achieved. From data obtained from the Medan Haji Hospital, Tembung District, it is known that the total number of nurses and midwives in December 2021 was 226 people. The number of nurses and midwives who have attended infusion installation training is 176 people.

Phlebitis data in April 0%, May 0.50% and June 1.14%. From the data, the number of phlebitis is increasing, and it may not be a whole data. Based on the data above, it supports the initial conclusion that infusion is still a problem at Haji Medan Hospital, Tembung District. Phlebitis is defined as inflammation of the walls of the veins or veins. Phlebitis is an infection by microorganisms experienced by patients obtained during hospitalization followed by clinical manifestations that appear at least 3x24 hours. The incidence of phlebitis is an indicator of the quality of hospital services with the standard set by The Infusion Nursing of Practice, which is 5%. Data on the incidence of phlebitis in Indonesia nationally has not been found, but the results of previous studies at the Tugurejo Regional General Hospital Semarang showed that the incidence of phlebitis in the hospital was 51.2%, which means the lift is relatively high. Phlebitis can be dangerous, because a blood clot or thrombophlebitis can cause an embolism, this can cause permanent damage to the vein. The incidence of phlebitis increases according to the length of time the infusion is installed, from this incident it can result in patients undergoing longer treatment so that patients have to pay more.

The infusion installation action will be of high quality if in its implementation it always adheres to the standards that have been set for the creation of quality health services. According to the Ministry of Health of the Republic of Indonesia in 2006 the number of infusions in hospitals in Indonesia was (17.11%). Data obtained from RSUP Prof.DR.RD Kandou Manado in the Emergency Room, obtained data, the number of implementing nurses was 69 people with the number of infusions performed in the non-trauma Emergency Room reaching 1,185 people in July, 1,164 people in August and the month of 1105 people in September (4).

From the results of the initial survey conducted by researchers at the Haji Medan Hospital, Tembung District, data obtained from the PPI Team of the Medan Haji Hospital, Tembung District, showed that the number of inpatients who underwent infusion in the last 4 months was 2,185 patients and 8 who had phlebitis. (0.5%) while in May, 474 patients underwent infusion and 2 (0.6%). The percentage of these incidents according to the minimum service quality indicator standards of the hospital can be said to be in accordance or even lower with an incidence standard of 1.5%, but these data are not in accordance with the results of interviews conducted with nurses in the Internal Medicine & Neurology Ward and Surgery Ward who said that the data on the incidence of phlebitis 3-5 patients every month.

Based on the results of the description above and realizing the importance of nurses working professionally, the researchers are interested in conducting research on "Analysis of Factors Affecting Nurse Skills in Management of Infusion Installation at Haji Hospital Medan, Tembung District in 2021

2. RESEARCH METHODE

The research design used a cross sectional approach. This research was carried out at Haji Medan Hospital, Tembung Medan District, North Sumatra with a population of 226 and a research sample of 114. The sampling technique used cluster random sampling. Collecting data using a questionnaire developed by the researcher. Techniques of data analysis using logistic regression.

3.   RESULT AND ANALYSIS

The results of the multivariate analysis test with logistic regression test are in accordance with the following table:

1.   Stage 1 (Enter Method)

Table 1.1. Results of Analysis of the Logistic Regression Test on Factors Affecting Nurse Skills in Administering Infusions at Haji Hospital Medan, Tembung District in 2021.

No	Variable	B	S.E.	Wald	df	Sig	Exp(B)	95%CI
1	Working Time	2.332	1.049	4.943	1	.026	10.302	1.318-90.515
2	Knowledge	3.681	.935	15.491	1	.000	39.672	6.346-248.028
3	Attitude	2.025	.917	4.873	1	.027	.132	.022-797
4	Leadership	2.706	.942	8.255	1	.004	14.975	2.364-94.871
5	Experience	4.402	1.273	11.952	1	.001	81.588	6.728-989.394
6	Career Development	-.621	.997	.388	1	.533	.537	.076-3.792

2.   Step 2 (Backward Stepwise Method (Conditional)

No	Variable	B	S.E.	Wald	df	Sig	Exp(B)	95%CI
1	Knowledge	3.696	.931	15.769	1	.001	40.284	6.353-105.930
2	Experience	4.257	1.229	12.003	1	.000	70.632	6.500-249.674

Based on the logistic regression test, stage 2 (Backward Stepwise Method (Conditional) to determine the dominant influence of the independent variable with the dependent variable having a p value = < 0.05, namely years of service, knowledge, attitudes, leadership, experience and career paths. The magnitude of the relationship is shown with the value of EXP (B).The amount of EXP (B) in this study is as follows:

1. The knowledge variable has an Exp (B) value of 40.284, then respondents who lack knowledge have a tendency to be unskilled in administering the infusion installation of 40.284. The B value or natural logarithm of 3,696 is 15,769. Because the B value is positive, the knowledge variable has a positive effect on the infusion infusion manager or if the respondent has less knowledge, it tends to be 15,769 times in the infusion infusion manager.
2. The experience variable has an Exp (B) value of 70,632, then respondents who have less experience have a tendency to be unskilled.

The Effect of Working Period of Nurses in the Management of Infusion Installation at Haji Medan Hospital, Tembung District in 2021

The results of the statistical test showed that there was a significant effect between the nurse's tenure in the administration of infusion at the Medan Haji Hospital, Tembung District in 2021 with a p value = 0.26> 0.05, then Ho was accepted. This means that there is no relationship between the nurse's tenure and the infusion in accordance with standard operating procedures.

The results of this study are in line with the research conducted by Wahyuningsih. The results showed that most of the nurses who did the infusion had a working period of more than 5 years as many as 56.3%; almost half of the patients were over 30 years old as much as 28.1%; almost all nurses were successful in carrying out the infusion as much as 81.2%; there was no effect of the nurse's tenure on the success of infusion with a t-count of 1.941 < t-table 2.042; there is an effect of patient age on the success of infusion with a t count of 2,430 > t table 2,042; There is a simultaneous effect of the nurse's tenure and the patient's age on the success of the infusion with the Fcount 3.856 > Ftable 3.33.

Based on the results of research conducted by researchers that there is no relationship between work period and nurse compliance in implementing the SOP for infusion. The results of this study are in accordance with research conducted by Widhori (2014) on Factors Affecting Nurse Compliance in the Implementation of SOPs for Infusion Installation in the Padang Panjang Hospital Inpatient Room, which said that there was no relationship between length of work and nurse compliance in implementing the SOP for infusion. The causal factors that influence the non-compliance of nurses in carrying out SOPs for infusion based on research that has been carried out are habits, time constraints and inadequate hospital facilities. The habit of carrying out infusions that are no longer based on the SOPs that apply in hospitals, in this case the SOPs for infusions that have become a routine for every nurse. This data is supported by 22 respondents who do not comply with the SOP for infusion. The limited time to act affects the nurse's non-compliance so that the SOP is not paid too much attention.

Widhori (2014) regarding Factors Affecting Nurse Compliance in the Implementation of SOPs for Infusion Installation in the Padang Panjang Hospital Inpatient Room said that there was a relationship between facilities and infrastructure with nurse compliance in the implementation of SOPs for infusion installations because the lack of facilities in hospitals caused the health services provided to be less than optimal. This data is supported based on the results of research carried out there are still inadequate facilities and infrastructure such as handscones and tourniquets causing nurses not to use handcoons and tourniquets when performing infusions (7)

The Effect of Nurse Knowledge in Management of Infusion Installation at Haji Hospital Medan, Tembung District in 2021

The results of the statistical test showed that there was a significant effect between the knowledge of nurses in managing infusions at the Haji Medan Hospital, Tembung District in 2021 with a p value of 0.000 <0.05.

The results of the study are in accordance with research conducted by Wayunah in 2017 about the relationship between nurses' knowledge about infusion therapy with the incidence of phlebitis and patient comfort in the inpatient room at Indramayu Hospital, where the results showed that the level of knowledge of nurses about infusion therapy was 50.8% had poor knowledge. (8). The results of the analysis of the relationship between the level of knowledge of nurses about infusion therapy and patient comfort, it is known that there is a significant relationship between the level of knowledge of nurses about infusion therapy and patient comfort (p = 0.0005) nurses about infusion therapy and the incidence of phlebitis, it is known that there is a significant relationship between the level of knowledge of nurses about therapy

infusion with the incidence of phlebitis (p = 0.0005; OR = 9.5). Based on the results of the OR, it can be concluded that nurses who have poor knowledge have a 9.5 times chance of causing phlebitis than nurses who have good knowledge (OR = 11.6). The results of this study are in line with research by Qodriantri. using the chi-square test. P value = 0.04 < from 0.05, it can be concluded that there is a relationship between knowledge and skills of nurses in infusion. By getting the odds ratio value of 0.18, it means that nurses with poor knowledge have a 0.18 times greater chance of being unskilled in infusions than nurses with good knowledge.

The results of this study are not in accordance with Septy Rahayu's 2018 research on the Relationship between Knowledge and Attitude of Nurses with Infusion Installation in the Dahlia Inpatient Room, RSI Gondanglegi Malang, where the results showed that nurses who had good knowledge by taking sufficient action were 11 people by 37%. The p value obtained is 0.274 > 0.05, then H0 is accepted, meaning that there is no relationship between knowledge and infusion (9).

The results of this study are not in line with research by Rizkiana, the relationship of knowledge to the application of S.O.P infusion is not proven in bivariate analysis using the chi-square test. So it cannot be continued with multivariate analysis because there is no relationship between knowledge of the application of SOPs for infusion and from the results of bivariate analysis, the chi-square value is 0.835 and the p value = 0.361, it can be concluded that there is no relationship between knowledge and the application of infusion SOPs which is a variables that have no effect on the SOP for infusion in the Inpatient Unit of the H.Adam Malik Central General Hospital, Medan.

Knowledge or cognitive is a very important domain for the formation of one's actions. From experience and research, it turns out that behavior based on knowledge will be more lasting than behavior that is not based on knowledge (Wawan and Dewi, 2010). A nurse should ideally have a basic knowledge of various theories related to infusion therapy. This will affect their behavior, especially regarding the principles related to implementation protocols and implementation for the prevention of complications. Therefore, nurses must have in-depth knowledge of the principles of aseptic technique, stability, storage, labeling, interactions, dosage and calculations as well as appropriate equipment so that they can safely provide infusion therapy to patients.

The Influence of Nurses' Attitudes in Management of Infusion Installation at Haji Hospital Medan, Tembung District in 2021

The results of the statistical test showed that there was a significant influence between the attitudes of nurses in the administration of intravenous infusion at the Medan Haji Hospital, Tembung District in 2021 with p value = 0.000 <0.05.

The results of this study are in line with research by Rizkiana in 2017 the effect of attitude on the application of S.O.P infusion of evidence in bivariate analysis using the chi-square test. the chi-square value is 9.097 and the p value = 0.003 then it can be concluded that there is a relationship between attitude and the application of S.O.P infusion < 0.25. By getting the prevalence ratio value of 1.37, it means that nurses with a less supportive attitude are 1.37 times the estimated probability of applying S.O.P infusion is less compared to nurses who have a good attitude.

The results of this study are in accordance with Septy Rahayu's 2018 research on the Relationship between Knowledge and Attitude of Nurses with Infusion Installation in the Dahlia Rsi Gondanglegi Inpatient Room, Malang, where the results of the study showed that the attitude of nurses who supported the infusion in the good category of 30% tended to be less.

Statistical data about the relationship between attitudes and fitting actions did not show a significant relationship (10).

The Influence of Nurse Leadership in Management of Infusion Installation at Haji Hospital Medan, Tembung District in 2021

The results of the statistical test showed that there was a significant influence between leadership in managing infusions at the Haji Medan Hospital, Tembung District in 2021 with a p value = 0.010 <0.05.

This study is in accordance with Alvin Nur Fadhilah's research on the Relationship between Head of Room Leadership Style and Nurse Compliance in Implementing Infusion Infusions at Sakinah Hospital, Mojokerto Regency, where the Spearman Rho test results show that pvalue = 0.028 < = 0.05, so H1 is accepted, meaning that There is a relationship between the leadership style of the head of the room and the nurse's compliance in carrying out the infusion installation at Sakinah Hospital, Mojokerto Regency.

Improved hospital performance is influenced by leadership characteristics that are able to influence the group to achieve a set of goals. A leader will greatly affect the success of the organization in achieving its goals. According to Mangkunegara leadership is one of the factors that can affect work behavior and performance. Motivating is a management process to influence human behavior based on knowledge of what makes people move. Motivation has a close relationship with the attitudes and behaviors possessed by a person. Motivation itself can be interpreted as a condition in a person's self so that the person is driven to do something or activity.

The Effect of Nurse Experience in the Management of Infusion Installation at Haji Medan Hospital, Tembung District in 2021

The results of the statistical test showed that there was a significant effect between the experience of nurses in managing infusions at the Haji Medan Hospital, Tembung District in 2021 with a p value of 0.000 <0.05.

The results of this study are in accordance with Julita Legi's research on the relationship between education and tenure with nurses' compliance with carrying out SOPs for Infusion Installation in the Inpatient Room at Pancaran Kasih General Hospital GMIM Manado, where the statistical test results obtained a p value of 1,000 which means that there is no relationship between period The results of this study are in accordance with research in accordance with Tirsa Yuniske Kaloa's research on the Relationship between Nurse Characteristics and Compliance with Standard Operating Procedures for Infusion Installation in the Emergency Room, RSUP PROF. DR. RD Kandou Manado, where the results of statistical tests show P value = 0.369, this P value is greater than (0.05) indicating that there is no relationship between years of service and compliance with standard operating procedures for infusion in the Emergency Installation Prof.Dr. .RDKandou Manado (4).

The results of this study are not in line with research by Utomo. The results showed that there were 4 themes that emerged: perceptions related to patients and infusions, the purpose of infusions, problems in using infusions, and how to handle infusion problems. Nurses need to explain infusions given to patients completely and correctly and provide appropriate care to minimize problems that arise due to the use of infusions in order to improve the quality of nursing care for patients who are on infusion therapy.

Nofiarsyah and Labbase's research states that work experience has a positive and significant influence on the career development of an employee. Mcllveen's research found that work experience has a positive and significant influence on career development. Jayanti's research also

states that work experience has a significant effect on career development. Sekiguchi mentions that there is a direct relationship that can be seen between the skill and job variables and the level of career development of part-time workers (12).

The skill of nurses in performing infusions can be influenced by several factors such as patient characteristics, level of experience and level of competence of nurses. Patient characteristics such as age and medical condition. Nurses will take longer to put infusions to children than adults. Nurse's experience level is like career path. Career path is a system to improve performance and professionalism in accordance with the field of work through increasing competence. The level of competence of vocational nurses and professional nurses is regulated by PPNI in 2005 (13).

The Effect of Career Paths for Nurses in the Management of Infusions at Haji Hospital Medan, Tembung District in 2021

The results of the statistical test showed that there was a significant influence between the career paths of nurses in administering infusions at the Haji Medan Hospital, Tembung District in 2021 with a p value = 0.002 < 0.05. According to Keith Davis, there were 4 performance indicators, namely work quality, work quantity, implementation of duties and responsibilities. Infusion installation skills are a measure of the quality of work. Factors that influence work stress on nurses in the emergency room at RSUD Cianjur, it is known that the condition of high mental workload for emergency room nurses includes variations in patient conditions and types of disease, time demands for each action against patients and having to deal with the patient's family. This is also in line with research conducted by Haryanto and Rosa regarding the effect of nurse workload and fatigue on infusion care at Sukoharjo Hospital, which shows that nurses' workload affects infusion care. Excessive workload will cause fatigue both physically and mentally which results in a lack of concentration on work so that there is a risk of making mistakes or forgetting to do things that should be done (14)

The feedback factor according to the researcher's observations is considered to be lacking. With the increasing demands of the job, the greater the possibility that nurses will experience work stress. Therefore nurses need a way to solve or adjust the conditions for these problems which is usually called coping so that they can carry out their nursing profession. The factors that influence a person in choosing a coping strategy are age, education, socioeconomic status, social support, gender, personality characteristics, and experience. In order to improve the quality of service and improve the ability of nurses in dealing with their work situations, in this case the infusion installation, a continuous learning process has been carried out even though it has not yet been distributed to all nurses. This learning process has not been accompanied by feedback after the nurse performed the infusion setting on the patient. The feedback process can accurately assess the skills of nurses in infusion so that nurses who are considered unskilled can be re-educated. This is in accordance with the research of Croxson et al., which involved 34 respondents in the UK stating that someone who is responsible for managing the workload will often use innovative coping, where innovative coping is not only beneficial for himself but also for the environment.

4.   CONCLUSION

Nurses should be trained and supervised so that nurses can know the job descriptions and regulations that apply at Haji Medan Hospital correctly and carry out SOPs for infusion

installation. The results of this study are expected to be basic data and information for further researchers and it is recommended that observations of actions can be carried out on patients directly to know the skills of nurses in infusion installation

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