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ORIGINAL ARTICLE

Relationship Between Level of Knowledge and Nurse Compliance in the Implementation of Standard Operational Procedures (SOP) for Infusing in the Emergency Installation Unit.

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ABSTRACT

Introduction: *Emergency Department is the main entry point for hospital services in providing first aid to patients. One of the common infections in hospitals is nosocomial infection. The success of controlling nosocomial infections in infusion procedures is not determined by advanced equipment but by the behavior of healthcare workers in properly caring for patients..* ***Objectives:*** *This study aims to analyze the relationship between knowledge level and nurses' compliance with the Standard Operating Procedure (SOP) for Infusion Placement in the Emergency Department of RSU dr. H. Koesnadi Bondowoso..* ***Methods:*** *The study was conducted in January 2016 at the Emergency Department of RSU dr. H. Koesnadi Bondowoso. A correlational design with a cross-sectional approach was used. The population consisted of all nurses in the Emergency Department, with a total sample of 18 participants, selected using total sampling technique. Data were collected through questionnaires and observation sheets, then analyzed using SPSS "Spearman Rho" with a significance level of 5%.* ***Results:*** *The Spearman Rho test results at a 5% significance level (α) showed a P value of 0.001, concluding that p ≤ 0.05, so H1 is accepted, and Ho is rejected. This indicates a significant relationship between knowledge level and nurses' compliance with the SOP for Infusion Placement in the Emergency Department of RSU dr. H. Koesnadi Bondowoso.* ***Conclusions:*** *The findings demonstrate that nurses' knowledge is fundamental in adhering to the SOP for Infusion Placement, thereby preventing nosocomial infections.*

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A. Introduction

Emergency Department serves as the primary entry point for hospital services in providing first aid to patients. In patient care, one of the most common procedures performed by nurses is the insertion of an intravenous (IV) cannula. This procedure requires sterility due to its direct connection with blood vessels. The insertion of an IV cannula can lead to infection due to various factors, including the host, equipment, and solutions used, as well as person-to-person transmission (Yani Firda T, 2013).

Nosocomial infections are among the most common infections found in hospitals, often resulting from diagnostic procedures, including phlebitis. Dr. Curtis J. Donskey, involved in a study at Cleveland Veterans Affairs Medical Center, noted that many healthcare workers are unaware of spreading germs and increasing the risk of infection. The study involved recruiting doctors, nurses, and other healthcare workers from four different hospitals to simulate certain events. Out of 435 simulations, more than half were performed by nurses (Dinkes Jogja, 2015).

In IV infusion procedures, infections in patients with IV cannulas are indicators of potential infections such as phlebitis caused by improper infusion procedures. In Indonesia, the incidence of infections from IV insertion is 17.11%, and RSSA Malang reported 148 cases of phlebitis from IV insertion in 2014 (RSU Saiful Anwar, 2014). Field observations also indicate misconceptions and improper attitudes in performing IV insertion procedures.

Data from IGD RSU Dr. H. Koesnadi Bondowoso reports that in 2015, 4,616 out of 8,000 patients received IV insertion, with 785 cases in October 2015. On average, emergency nurses perform 9–12 IV insertions per shift, with 10–15 patients per shift. The emergency department has 16 nurses, with 3–4 nurses per shift. This data shows that emergency nurses have significant responsibility in performing IV insertions according to standard procedures to prevent infections.

Success in controlling nosocomial infections during IV insertion is not determined by advanced equipment but by the proper behavior of healthcare workers in patient care. Many workers operate based on habits that may not align with established procedures, and the work environment also influences their performance (Priharjo, R. 2008).

Infections from IV insertion can be prevented by nurses with adequate knowledge. Therefore, in providing nursing care, nurses must possess cognitive knowledge, affective, and psychomotor skills (A.Wawan and Dewi M. 2010). These diverse conditions prompted the researcher to examine whether emergency nurses' knowledge about compliance with standard IV insertion procedures aligns with the established protocols. This research aims to identify the relationship between knowledge levels and nurses' compliance with IV insertion procedures in the emergency department, which can help find solutions to enhance adherence to existing procedures.

B. Methods

This study utilized a cross-sectional approach to identify the relationship between knowledge level and nurses' compliance with the Standard Operating Procedure (SOP) for IV insertion in the Emergency Department of RSU dr. H. Koesnadi Bondowoso. The population in this study consisted of all 16 nurses working in the Emergency Department of RSU dr. H. Koesnadi Bondowoso.

For data collection, the study employed a questionnaire that included demographic information about the respondents, such as educational level, age, and work experience, along with questions assessing their knowledge. Additionally, direct observations were conducted by the researcher using a format aligned with the established procedures in the Emergency Department of RSU dr. H. Koesnadi Bondowoso. This format consisted of 12 items for preparation criteria and 16 items for implementation criteria.

After all the data was collected through the questionnaires, it was processed by coding and scoring, followed by tabulation and grouping according to the variables being studied. To analyze the relationship between knowledge and nurses' compliance with the SOP for IV insertion, a statistical analysis was performed using the "Spearman Rho" test.

C. Results and Discussion

1. Nurse Knowledge Level

   The study found that 6% of respondents (1 respondent) had low knowledge levels, and 6% (1 respondent) had moderate knowledge levels. Meanwhile, 88% (14 respondents) demonstrated good knowledge levels. Although nurses' knowledge of the standard procedure for IV insertion can be categorized as good, there are still some with insufficient knowledge. This may be due to limited information obtained by respondents, whether from training, research, or media, leading to inadequate implementation of the standard IV insertion procedure.

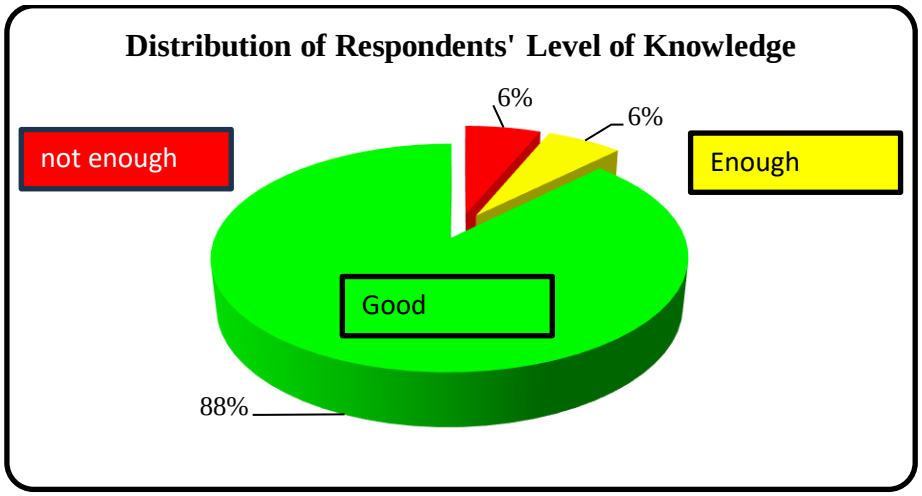

Figure 1 Diagram of Characteristics of Nurses' Level of Knowledge

Knowledge is the result of awareness, which occurs after an individual senses a particular object. It comprises impressions and information gathered from experiences that are ready to be used. Knowledge can be acquired from oneself or others.

Factors influencing knowledge are categorized into two: external and internal factors. Internal factors include experience and education.

The study revealed that 13% of respondents were aged 20–30 years (2 respondents), 74% were aged 31–40 years (12 respondents), and 13% were over 40 years old (2 respondents). This indicates that as individuals age, their knowledge of the standard procedure for IV insertion tends to improve.

This aligns with the theory that generally recognizes that as a person ages, their mental development processes become more refined. However, at certain ages, the rate of mental development does not progress as rapidly as it does in adolescence, and in very advanced age, further development practically ceases. As people mature, their thinking and working capabilities become more refined. Intelligence increases until around 20 years of age, reaches its peak between 20 and 30 years, declines gradually between 30 and 60 years, and then sharply after 60 years. This is a result of experience and psychological maturity (A. Wawan and Dewi M. 2010).

In terms of education, 31% of respondents (5 respondents) held a Diploma in Nursing, and 69% (11 respondents) held a Bachelor's degree in Nursing. It can be concluded that the higher an individual's education level, the better their knowledge of the standard procedure for IV insertion.

Similarly, a higher level of education automatically influences an individual's knowledge, both in thinking and acting. This aligns with the theory that those with higher education levels possess better knowledge. The higher the knowledge level, the easier it is to receive information, thus increasing the knowledge base. Conversely, a lack of education can hinder the development of attitudes toward newly introduced values (A. Wawan and Dewi M. 2010).

2. Nurse Compliance in Implementing Standard Operating Procedures (SOP) for Infusion Installation.

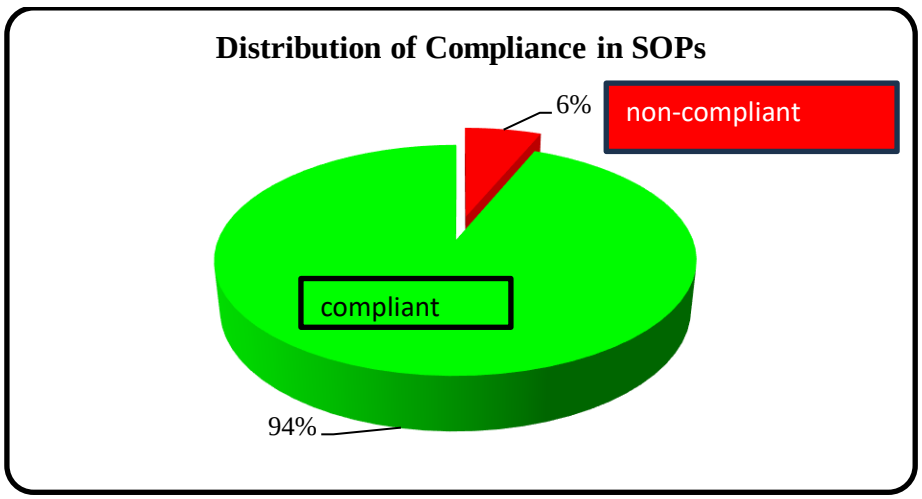

Figure 2 Nurse Compliance Characteristic Diagram

Identification of nurse compliance with the Standard Operating Procedure (SOP) for IV insertion revealed that 6% of respondents (1 respondent) were non-compliant, while 94% (15 respondents) were compliant. The data obtained by the researcher indicates that while most nurses comply with the SOP for IV insertion, there are still some who do not. The Emergency Department serves as the primary entry point for hospital services, where nurses frequently perform IV insertion through an intravenous cannula. This procedure requires sterility due to its direct connection with blood vessels, which directly impacts the quality of nursing care provided.

Nurse compliance refers to the behavior of nurses as professionals in adhering to recommendations, procedures, or regulations that must be followed or observed. In the

documentation of nursing care, nurse compliance is measured based on the standard criteria of each stage of nursing care, namely assessment, planning, implementation, and evaluation (Suparyanto, 2010).

Several factors may influence compliance, one of which is education. From the results, it can be concluded that knowledge or cognition is a critical domain in shaping an individual's actions (overt behavior). Behavior based on knowledge is more enduring than behavior that is not. An individual's knowledge status will influence their ability to choose and decide on the tasks they will perform.

Therefore, the education level of nurses significantly influences their thinking and behavior, which is reflected in their attitudes. The higher the nurse's education level, the easier it is to accept and implement information or values in their environment (Muchlas, M. 2008).

3. Tingkat Pengetahuan Dengan Kepatuhan Perawat Dalam Pelaksanaan Standart

Tabel.1
Cross tabulation of the relationship between knowledge level and nurse compliance in the implementation of standard operating procedures (SOP) for infusion in the emergency room.

Knowledge Nurses	Compliance in Implementation SOP	Non-compliant		Compliant		Total	
		Σ	%	Σ	%	Σ	%
both		1	6%	0	0%	1	6%
enough		0	0%	1	6%	1	6%
less		0	0%	14	88%	14	88%
Total		1	6%	15	94%	16	100%

N = 16 ; *p value* = .001; α ≤ 0.05

Table 1 shows that 6% (1 respondent) of those with low knowledge did not comply with the Standard Operating Procedure (SOP) for IV insertion. Among those with moderate knowledge, none were non-compliant (0 respondents), and 6% (1 respondent) were compliant. Meanwhile, 0% of respondents with high knowledge were non-compliant, and 88% (14 respondents) were compliant.

The Spearman rho statistical test with a 5% significance level (α) yielded a P value of 0.001, indicating that when p ≤ 0.05, H1 is accepted, and Ho is rejected. This confirms a relationship between the level of knowledge and nurse compliance with the SOP for IV insertion in the Emergency Department of RSU dr. H. Koesnadi Bondowoso.

From the results, it can be concluded that the better a person's knowledge, the higher their compliance with the SOP for IV insertion. A standard procedure is a set of established steps or activities within an organization or institution. IV insertion involves administering fluids into the body through an IV cannula into a vein to replace lost fluids or nutrients.

Thus, the SOP for IV insertion is a hospital-established procedure outlining the steps for IV insertion.

It is crucial for nurses to have knowledge of the SOP for IV insertion, as it is fundamental in preventing phlebitis infections in patients and is a key aspect of providing professional nursing care. Hospitals must focus on facilitating knowledge enhancement and providing the necessary resources for implementing these standard procedures.

This finding aligns with the study by Pasaribu, M. (2008), titled "Analysis of SOP Implementation for IV Insertion in Relation to Phlebitis Incidents in the Inpatient Ward of Haji Medan Hospital," which found a relationship between nurses following the SOP for IV insertion and the incidence of phlebitis in patients, with a p value of 0.008. Among 100 observed samples, 52% (52 patients) experienced phlebitis, while 48% (48 patients) did not (Pasaribu, M. 2008).

The research at the Emergency Department of RSU dr. H. Koesnadi Bondowoso demonstrates a significant relationship between knowledge levels and nurse compliance with the SOP for IV insertion, confirming that nurse knowledge strongly influences adherence to the SOP and can help prevent nosocomial infections.

D. Conclusion

From the results of the study, it was found that the level of knowledge of nurses was mostly good as much as 88% (14 respondents), the level of compliance of nurses in the implementation of Standard Operating Procedures (SOP) for infusion was compliant as much as 94% (15 respondents), and there was a relationship between the level of knowledge and compliance of nurses in the implementation of Standard Operating Procedures (SOP) for infusion in the emergency room of dr. H. Koesnadi Bondowoso Hospital.

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