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FACTORS INFLUENCING NURSES' COMPLIANCE WITH PROVIDING PHLEBITIS PREVENTION EDUCATION TO PATIENTS AND FAMILIES

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ABSTRACT

The abstract should be clear, concise and descriptive. It is written in 12 pts Times New Roman (single spacing) and preferably not more than 300 words. Abstract consists of:

Background: Phlebitis is an inflammation of a vein caused by chemical or mechanical irritation. This condition is characterized by the presence of warm, red blood around the insertion/injection site or along the vein, pain or tenderness at the insertion site or along the vein, and swelling (Istichomah, 2020). Nurses need to implement preventive measures to prevent phlebitis, including providing education on phlebitis prevention to patients and families.This study aims to determine the factors influencing nurses in providing phlebitis prevention education to patients and families at X Hospital, Bandung, in 2025. This study used a descriptive analytical method with a cross-sectional approach involving 76 nurses in the inpatient and outpatient wards. The results showed that 70 respondents (92.1%) complied with phlebitis prevention education, 50 respondents (65.8%) showed a positive attitude, 43 respondents (56.6%) had high motivation, and 74 respondents (97.4%) had good knowledge. The results of the Binary Logistic Regression test showed that the most influential variable affecting compliance with phlebitis prevention education was attitude,with a p-value of 0.016 (<0.05).Nurses' compliance with phlebitis prevention education was considered good and required management supervision to ensure consistent implementation.

Keywords: Education; Compliance

Introduction

Hospitals are community health institutions that serve the community by providing inpatient, outpatient, and emergency services. Various hospital services aim to improve the health status of the community. Every patient admitted to the hospital will undergo IV line installation. In addition to serving as a pathway for medication administration, the purpose of intravenous therapy is to correct or prevent fluid and electrolyte imbalances. Continuous and prolonged intravenous therapy increases the risk of complications, including phlebitis. The incidence of phlebitis in Indonesia is reported to be 50.11% in government hospitals and 32.70% in private hospitals (Depkes, 2017). If phlebitis occurs, then the therapy becomes ineffective, so it needs to be reintroduced.

Phlebitis is a nosocomial infection caused by microorganisms that patients acquire during their hospital stay, accompanied by clinical manifestations that occur at least 72 hours after exposure. Phlebitis is defined as inflammation of a vein caused by chemical or mechanical irritation. It is characterized by redness and warmth around the insertion site or along the vein, pain or tenderness at the insertion site or along the vein, and swelling. The triggering factors for phlebitis include chemical irritation, bacterial contamination, mechanical irritation, pH imbalance, fluid osmolarity, rapid infusion rates, or infection caused by microorganisms. Other contributing factors that may lead to phlebitis in patients, aside from poor aseptic technique, include excessive movement, restlessness, or changes in level of consciousness that cause inflammation at the insertion site.

Phlebitis can be prevented through hand washing, use of gloves during aseptic procedures, sterilization and disinfection, as well as patient education on the signs and symptoms of phlebitis. Patients and their families need to understand the early signs of phlebitis and the steps to take to prevent its occurrence. Nurses play a dual role as caregivers and educators who provide health education. Educational needs are a crucial aspect that nurses must address with patients and their families. Education begins at the patient's first contact with the nurse.

In hospitals, patients who are about to undergo intravenous therapy should receive education from nurses on the indications, purpose, and brief procedure of intravenous insertion. After the patient has been administered intravenous therapy, the nurse's education should focus on the signs and symptoms of phlebitis and ways to prevent its occurrence. The provision of phlebitis prevention education to patients depends on the nurse's behavior, which is influenced by predisposing factors such as knowledge, attitude, motivation, perception, awareness and commitment, personality, emotions/stress, and traditional values.

According to the Quality Nursing data at Hospital X, the achievement of phlebitis prevention education by nurses in May 2025 was only 13%, and the incidence rate of phlebitis was 0.79‰. Nurses' compliance with phlebitis prevention education is crucial in providing care to patients with IV lines to prevent the occurrence of phlebitis symptoms. Compliance with phlebitis prevention education refers to the extent to which nurses provide education according to established standards and the factors that influence nurses' provision of phlebitis

prevention education. The purpose of this study is to investigate the factors that influence nurses in providing phlebitis prevention education to patients.

Methods

This study employed a descriptive-analytic method with a cross-sectional approach, involving 76 nurses in inpatient wards to examine the relationship between independent variables (knowledge, attitude, and motivation) and the dependent variable (nurses' compliance with phlebitis prevention education).

To determine the characteristics of the respondents, a questionnaire consisting of 28 statements was administered, which had undergone validity and reliability testing. The validity test results showed that the calculated r-value was greater than the table r-value (0.349), and the reliability test results using Cronbach's Alpha yielded a value of 0.86.

Results and Discussion

1. Univariate Results

Univariate analysis to see the frequency distribution of each variable

Table 1. Frequency Distribution of Respondent Characteristics

Variabel	Frekuensi (n =76)	Presentase (%)
Compliance		
Compliant	70	92.1
Non-compliant	6	7.9
Atittude		
Positive	50	65.8
Negative	26	34.2
Motivation		
High	43	56.6
Low	33	43.4
Knowledge		
Adequate	74	97.4
Inadequate	2	2.6

Based on Table 1. This shows that the majority of the 76 respondents complied with the education on preventing phlebitis, with 70 respondents (92.1%) having a positive attitude, 50 respondents (65.8%) having positive motivation, 43 respondents (56.6%) having good knowledge, and 74 respondents (97.4%) having good knowledge..

2. Bivariate Analysis

Bivariate analysis aimed to examine the relationship between independent variables consisting of attitude, motivation, and knowledge with the dependent variable, namely compliance with phlebitis prevention education, using the Chi-Square test with a significance level of 5%.

Table 2. Analysis of the relationship between attitudes and compliance with phlebitis prevention education

Variable	Phlebitis Prevention Education Compliance (n=76)				p-value
	Compliant		Non-compliant		
		%	n	%	
Attitude					
Negative	5	19.2	21	80.8	**0.016**
Positive	1	2.0	49	98.0	
Total	6	7.9	70	92.1	

Based on Table 2, statistical testing shows that there is a significant relationship between attitude and compliance with plebitis prevention education, with a p-value of 0.016 (< 0.05).

Table 3. Motivation Analysis with Compliance in Preventive Education for Phlebitis

Variabel	Phlebitis Prevention Education Compliance (n=76)				p-value
	Disobey		Obedient		
	n	**%**	**n**	**%**	
Motivation					
Low	5	15.2	28	84.8	**0.08**
High	1	2.0	42	98.0	
Total	6	7.9	70	92.1	

Based on Table 3, statistical testing shows that there is no significant relationship between motivation and compliance with phlebitis prevention education, with a p-value of 0.08 (> 0.05).

Table 4. Motivation Analysis with Compliance in Preventive Education for Phlebitis

	Compliance with phlebitis prevention education (n=76)				p-value
Variabel	Compliant		Non-compliant		
	n	**%**	**n**	**%**	
Knowledge					**1.00**
Inadequate	0	2	2	100	
Adequate	6	2.0	68	98.0	
Total	6	7.9	70	92.1	

Based on Table 4, statistical testing shows that there is no significant relationship between knowledge and compliance with phlebitis prevention education, with a p-value of 1.00 (> 0.05).

This study found that there is a significant relationship between attitude and compliance with phlebitis prevention education, with a p-value of 0.016 (< 0.05). This is in line with Notoatmodjo (2020), who states that attitude indicates the appropriateness of a reaction to a particular stimulus, which in everyday life is an emotional reaction to social stimuli. Attitude can be assumed to be an evaluative predisposition that largely determines how individuals act. Respondents who have a positive attitude will tend to act compliantly in providing phlebitis prevention education to patients, whereas respondents who have a negative attitude will tend to act non-compliantly in providing phlebitis prevention education to patients. Conducting education on the prevention of phlebitis is the responsibility of the nurses to all patients who have an intravenous line inserted. This activity can be seen when nurses provide education to new inpatients. The results of this study are also in line with Finni Fitria T (2019), who stated that there is a relationship between attitude and the compliance of nurses in conducting education on the prevention of phlebitis.

This study obtained statistical results showing that there is no significant relationship between motivation and compliance with phlebitis prevention education, with a p-value of 0.08 (> 0.05). Motivation is a drive that arises from internal or external stimuli, causing a person to want to change their behavior/activities for the better compared to their previous state (Uno, 2016). In this study, it was found that there were still respondents who had low motivation but were compliant in carrying out phlebitis prevention education, totaling 28 respondents, and respondents who had high motivation and were compliant in carrying out phlebitis prevention education, totaling 42 people. Motivation should provide a good stimulus for a person to do something, but from the results of this study, the researchers argue that the good compliance of nurses is due to massive support, socialization, and monitoring from management and nurses who are aware and understand the consequences of not providing phlebitis prevention education to patients and families. This is in line with the research (Ritonga & Halawa, 2019) that there is a relationship between the head of the room and nurse compliance in increasing drug safety.

From the above study, statistical results show that there is no significant relationship between knowledge and compliance with phlebitis prevention education, with a p-value of 1.00 (>0.05). According to Laurence Green's theory in Notoatmodjo (2020), knowledge influences a person's behavior or attitude, including behavior that does not comply with regulations. An individual's knowledge is one of the factors that can influence attitude. Knowledge has two aspects, namely positive and negative aspects. The more positive aspects there are, the more positive the attitude towards the object will be. Conversely, the more negative aspects there are, the more negative the attitude towards the object will be.

According to Anwar (2012), nurses' knowledge will influence their level of compliance in carrying out actions to reduce complications in patients. This study, it was found that 89.5% of respondents with good knowledge and obediently carried out education on the prevention of phlebitis had no relationship with the nurses' compliance in carrying out education on the prevention of phlebitis. This is consistent with the research by Alfira N and Nurhidayah (2021), which also showed that there was no significant relationship between knowledge and nurses' compliance in performing hand hygiene.

Conclusion

The study found that there was a significant relationship between attitude and compliance with phlebitis prevention education with a p-value of 0.016 (< 0.05). There was no significant relationship between motivation and compliance with phlebitis prevention education with a p-value of 0.08 (> 0.05). There was no significant relationship between motivation and compliance with phlebitis prevention education with a p-value of 0.08 (> 0.05) and no significant relationship between knowledge and compliance with phlebitis prevention education with a p-value of 1.00 (> 0.05).

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