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Nurses' motivation, knowledge and perception on compliance with standard precautions

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Abstract

Background: Standard precautions practice is the main action in preventing and controlling infections in hospitals. Nurse compliance with standard precautions is influenced by various factors, including knowledge, perception, and motivation.

Purpose: To analyze the relationship between the level of knowledge, perception, and motivation of nurses with the practice of standard precautions.

Method: A quantitative approach, specially focusing on analytical survey and cross-sectional method. The study took place from December 2024-February 2025 in Islamic Hospital of Muhammadiyah Medical Care Center, Pekajangan. The independent variable was knowledge, risk perception, and motivation of nurses, dependent variable is standard precautionary practices in hospitals. Using systematic random sampling and slovin formula, 173 respondents were selected, who met specific inclusion and exclusion criteria. The analysis proceeded with a univariate test to determine the frequency distribution of respondent's characteristics, followed by bivariate analysis using spearman rank test

Results: The study revealed significant factors influencing the practice of standard precautions. It showed a gender-based difference in adherence ($p = 0.008$), a positive relationship between the level of perception and practice ($p = 0.033$), and a significant association with motivation level ($p = 0.01$).

Conclusion: Nurses generally had good to fair levels of knowledge, perception and motivation regarding standard precautions, indicating effective implementation of patient safety. Perception and motivation significantly influenced compliance, while knowledge without significant influence.

Keywords: Knowledge; Motivation; Nurses; Perception; Standard Precautions.

INTRODUCTION

Nosocomial infections or Healthcare-Associated Infections (HAIs) are a major concern in healthcare facilities as they contribute to increased morbidity, mortality, and cost of care. Common types of HAIs include catheter-associated urinary tract infections (CAUTIs), central line-associated bloodstream infections (CLABSIs), surgical site infections (SSIs), and ventilator-associated pneumonia (VAP). The primary causes of HAIs are often linked to inadequate infection control practices, such as improper hand hygiene, overuse or misuse of antibiotics, and failure to sterilize medical equipment adequately (Friedman, Levit, Taleb, Marcus,

Michaeli, Broide, & Marchaim, 2018).

According to the World Health Organization (WHO), nosocomial infections are infections acquired during hospitalization and are not present or not in the incubation period when the patient enters the hospital, usually occurring ≥ 48 hours after treatment begins (Millah, Triatmoko, & Nugraha, 2022). These infections can prolong hospitalization, increase the risk of complications, and reduce the patient's quality of life. HAIs place a significant financial burden on both healthcare systems and patients due to extended treatments. They can lead to antimicrobial resistance, making infections harder

to treat. Early detection and prompt intervention are crucial to minimize impact. Strengthening infection control measures is key to prevention (Kurniawansyah, Warya, Rahayu, & Putri, 2015).

Various pathogens, including bacteria, viruses, and fungi, cause nosocomial infections that often occur in intensive care units such as ICU, NICU, IMC, and operating rooms. Various pathogens, including bacteria, viruses, and fungi, cause nosocomial infections that often occur in intensive care units such as ICU, NICU, IMC, and operating rooms (Djasfar, & Pradika, 2023). WHO reports that the prevalence of nosocomial infections in developing countries ranges from 5.7% to 19.1%, with an average rate of 10.1%, while in Indonesia it reaches 7.1%. This prevalence indicates a significant burden on the healthcare system, especially in resource-limited settings. In Indonesia, the 7.1% rate reflects challenges in infection control practices and healthcare infrastructure. Strengthening surveillance systems and compliance with infection prevention protocols is crucial. Continuous education and monitoring can help reduce the incidence of HAIs (Lelonowati, Koeswo, & Rochmad, 2015).

Factors that contribute to the prevalence of these infections include the type of microorganism, patient resistance, environmental conditions, and antimicrobial resistance, human resources and management factors, such as lack of infection surveillance, limited medical personnel, and suboptimal medical waste management, also contribute to the increase in nosocomial infection cases (Ratnaningtyas, Indah, Ismaya, & Alwiati, 2021).

Prevention and control of nosocomial infections can be done through the implementation of antimicrobial stewardship programs, adherence to infection control protocols, and improvement of education and training programs for medical personnel (Seaton, Gibbons, Cooper, Malcolm, McKinney, Dundas, & Sneddon, 2020). Standard precautions are one of the main strategies in infection prevention efforts by implementing hand hygiene practices, the use of personal protective equipment (PPE), and proper waste management (Pradnyana, & Muliawan, 2021).

Health workers' adherence to this protocol plays an important role in reducing the spread of infection in health care facilities. Non-compliance with

protocols, such as hand hygiene and the use of personal protective equipment (PPE), can significantly increase the risk of HAIs. Continuous monitoring and feedback are essential to improve adherence. Organizational support, including leadership commitment and adequate resource allocation, also enhances compliance. Ultimately, a strong safety culture fosters consistent and effective infection control practices (Sholekhah, Suryawati, Setiawan, & Rahfiludin, 2021).

RESEARCH METHOD

A quantitative approach, specially focusing on analytical survey and cross-sectional method. The study took place from December 2024-February 2025 in Islamic Hospital of Muhammadiyah Medical Care Center, Pekajangan. The independent variable was knowledge, risk perception, and motivation of nurses, dependent variable is standard precautionary practices in hospitals. Using systematic random sampling and slovin formula, 173 respondents were selected, who met specific inclusion and exclusion criteria.

The inclusion criteria required namely having an official license, working period of at least one year, and willing to participate by signing informed consent. Exclusion criteria included nurses who were on leave (maternity, illness, or other permissions) during the data collection time, nurses who did not complete the questionnaire, nurses who were undergoing further education or training outside the institution during the study period.

Data obtained from questionnaire sheet was designed by the researcher using a multiple choice scale. The knowledge questionnaire consisted of 10 questions about hand hygiene, personal protective equipment, medical waste disposal, and handling of used equipment. Indicators of assessment of knowledge are divided into 3 categories, namely, good if the score obtained is 76-100%, moderate 56-75%, and poor <56%.

The perception questionnaire consisted of 3 questions about the risk of cross-infection with 5 answer options, namely strongly disagree, disagree, undecided, agree and strongly agree. Indicators of perception assessment, if the score > 9 is a good category, if the score < 9 poor category. The motivation questionnaire consisted of 36 questions about Physical, age maturity, self-desire, self-

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management, level of knowledge, environment and religion/beliefs. Questions were expressed with 4 answer alternatives namely strongly agree, agree, disagree and strongly disagree. Motivation assessment indicators are divided into High > 90 Moderate 54-90 and Poor <54.

The analysis proceeded with a univariate test to determine the frequency distribution of respondent's characteristics, followed by bivariate analysis using spearman rank test. This research has obtained permission from Health Research Ethics Committee Faculty of public health Diponegoro University with number No.349/EA/KEPK-FKM/2024.

RESEARCH RESULTS

Table 1. Characteristic of Respondents (N=173)

Variable	Results	Mean Rank	Coefficient Correlation	p-value
Age (Mean±SD)(Range)(Year)	(36.25±7.305) (20-55)			
Age (n/%)				
20-25 years old	6/3.5			
26-30 years old	36/20.8			
31-35 years old	47/27.2			
36-40 years old	35/20.2			
41-45 years old	25/14.5			
46-50 years old	20/11.6			
51-55 years old	4/2.3			
Gender (n/%)				
Male	38/22.0	90.55		0.008
Female	135/78.0	86.00		
Length of Employment (n/%)				
1-5 years	65/37.6	86.00		0.347
5-10 years	42/24.3	86.00		
10-15 years	30/17.3	88.88		
>15 years	36/20.8	88.40		
Treatment Room (n/%)				
Amarilis	21/12.1	90.12		0.893
Bougenvil	16/9.2	86.00		
Edelweis	11/6.4	86.00		
Flamboyan	22/12.7	86.00		
HD	8/4.6	86.00		
ICU	11/6.4	86.00		
IGD	15/8.7	91.77		
IPCN	1/0.6	86.00		
Kenanga	15/8.7	86.00		
Nursing committee	1/0.6	86.00		
Management	3/1.7	86.00		
Matahari	14/8.1	86.00		
OK	8/4.6	86.00		
Perinatalogi	8/4.6	86.00		
Policlinic	19/11.0	86.00		

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Variable	Results	Mean Rank	Coefficient Correlation	p-value
Knowledge (n/%)				
Good	92/53.2		0.115	0.218
Moderate	81/46.8			
Poor	0/0			
Perception (n/%)				
Good	1/0.6		0.253	0.033
Moderate	146/84.4			
Poor	26/15.0			
Motivation (n/%)				
Good	96/55.5		0.166	0.001
Moderate	75/43.4			
Poor	2/1.2			
Implementation of Standard Precautions (n/%)				
Appropriate	171/98.8			
Inappropriate	2/1.2			

Tabel 1. characteristics of respondent with a mean age and standard deviation (36.25 ± 7.305) ranging from 20-55 years. Indicate Most respondents were 31-35 years old as many as 47 people (27.2%), female gender as high as 135 people (78%), and had a length of work of 1-5 years as high at 66 people (37.6%). The majority of respondents were treated in the Flamboyan room with 22 people (12.7%), had a moderate level of knowledge totaling 81 people (46.8%), moderate perceptions totaling 146 people (84.4%), and good motivation was 96 people (55.5%). Most respondents have implemented the prevention standards appropriately, as many as 171 people (98.8%).

Difference in standard precautions practice by gender ($p=0.008$). The mean ranking of standard precautions was higher for male nurses (90.55). There was no significant difference in standard precautionary practices based on years of employment ($p = 0.347$), although the group with 10-15 years of employment showed the highest mean rating (88.88). Showed no significant difference in the practice of standard precautions based on workspace ($p = 0.893$). The average ranking was highest in the emergency room (91.77).

The level of knowledge was not significantly associated with the practice of standard precautions ($p = 0.218$), out of 92 respondents who had good

knowledge, all were compliant (53.1%). The Spearman correlation coefficient of 0.115 indicated a moderate and positive relationship, but was not statistically significant. There was a significant relationship between the level of perception and the practice of standard precautions ($p = 0.033$). The 147 respondents with perceptions had good perceptions (84.4%). The Spearman correlation coefficient of 0.253 indicates a weak but positive relationship, the better the perception of nurses, the higher the trend to compliance with standard precautionary practices.

Significant association between motivation level and the practice of standard precautions ($p = 0.01$). Of the 96 respondents with good motivation (55.5%). The Spearman correlation coefficient of 0.166 indicates a poor but positive relationship.

DISCUSSION

The study showed that there was no significant relationship between nurses' knowledge level and the practice of standard precautions. Although knowledge is often considered a major factor in the effective implementation of standard precautions, some studies reveal that nurses with high levels of knowledge do not always apply them consistently (Loudoe, 2019). While knowledge is associated with patient safety, other factors such as motivation and managerial support play a greater role in the

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implementation of standard precautionary practices. High workload and fatigue can lead to lapses in concentration, increasing the risk of non-compliance with infection control measures. Nurses under pressure may unintentionally bypass protocols to save time. Regular supervision helps reinforce proper practices and identify areas needing improvement. Motivation through recognition and support boosts morale and encourages consistent adherence (Elhanim, & Oktavianti, 2023).

Attitudes play a crucial role, as nurses who possess a positive attitude toward infection control and patient safety are more likely to adhere to recommended practices. The availability of adequate facilities, such as personal protective equipment (PPE) and sanitation resources, also greatly impacts compliance. Without sufficient resources, even well-informed nurses may face challenges in adhering to standard precautions (Hanita, Nazurah, Khatijah, Shafinaz, & Yahaya, 2023). Social and organizational factors, such as workplace culture, support from leadership, and team collaboration, contribute to the effectiveness of safety protocols. A supportive environment fosters a sense of responsibility and accountability, leading to better adherence to safety measures. The implementation of standard precautions is a multifaceted issue that involves not just knowledge, but also the broader organizational and environmental context in which nurses operated (Kim, & Lee, 2022).

The study reveals an important finding: the higher the nurses' perception of standard precautions, the more effectively they implement them in their practice. This suggests that awareness and education around these standards play a crucial role in promoting compliance (Wassie, Gintamo, Mekuria, & Gizaw, 2022). Nurses who view standard precautions as essential to patient care and safety are more likely to follow them rigorously, thus reducing the risk of healthcare-associated infections (HAIs). This perception also aligns with a proactive approach to personal and patient safety, underscoring the importance of continuous training and reinforcing the relevance of such practices (Hafni, Nasution, & Sudaryati, 2022). Positive perceptions increase confidence and promote adherence to hospital safety procedures. Positive perceptions of infection and control programs are directly correlated with compliance in the use of

personal protective equipment. Well-perceived patient safety culture contributes to improved safety competence in nurse practice (Rahmadiana, & Mulyana, 2020).

Negative perceptions of hospital duties and responsibilities may decrease adherence to standard precautions. Nurses who understand the benefits of vigilance procedures are more likely to comply with them, while negative perceptions can hinder the implementation of safety standards. According to the researchers, nurses' perceptions are an important factor in adherence to standardized vigilance practices, so a supportive work environment is needed to reinforce positive perceptions and improve the quality of health services (Faridah, & Winarni, 2022).

High work motivation encourages nurses to be more proactive in carrying out their duties, including in consistently implementing patient safety procedures. Internal factors such as job satisfaction, sense of responsibility, and commitment to the profession, as well as external factors such as management support, rewards, and a conducive work environment, can significantly increase nurses' motivation (Harasanti, Setiabudi, & Wijaya, 2020). Nurses feel appreciated and supported, they tend to have higher morale, which has a direct impact on their compliance with standard operating procedures (SOPs). Therefore, efforts to increase work motivation need to be an integral part of management strategies to improve safety and quality of care in health facilities (Limbong, & Tarigan, 2024).

High motivation is directly related to nurses' compliance in practicing standard precautions. Motivation influences nurses' behavior in infection prevention and control. In addition, team support can strengthen motivation, encouraging cooperation in the implementation of safety procedures (Mita, Maulana, Sukarni, & Pramana, 2022). When nurses are highly motivated and supported by their team, they are more likely to adhere to infection prevention protocols consistently and accurately. This combination of intrinsic drive and external reinforcement fosters a positive work environment where safety becomes a shared responsibility (Ardila, 2015). Motivated nurses tend to take initiative, remain vigilant, and model best practices for their peers, which contributes to a culture of safety within the healthcare setting. Fostering motivation

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through recognition, training, leadership support, and effective communication is essential in enhancing compliance with standard precautions and ultimately reducing the incidence of healthcare-associated infections (Nuraevindah, Sabilu, & Irma, 2023).

CONCLUSION

The study concluded that nurses generally had good to fair levels of knowledge, perception and motivation regarding standard precautions, indicating effective implementation of patient safety. Perception and motivation significantly influenced compliance, while knowledge without significant influence.

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