Individual Factors Related to Compliance with Standard Wisdom Implementation in Nurses At Rsud Dr. Rasidin Padang

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Abstract

Background: It is difficult to control the behavior of health workers implementing standard precautions when providing services to patients which results in infection rates in hospitals being difficult to make zero percent. This can be detrimental to the hospital and the client. Reducing this problem requires efforts by the hospital to increase the compliance of health workers, especially nurses in implementing standard precautions.

Objective: This study is to identify individual factors associated with standard precautions in nurses at RSUD dr. Rasidin Padang.

Method: This type of research is descriptive analytic with a cross sectional approach. The sample amounted to 45 nurses in the ICU, CVCU, NICU who were taken by total sampling. Data were collected using a questionnaire, data were analyzed univariate and bivariate.

Results: The results showed that almost all nurses were compliant in implementing standard precautions, almost all nurses aged 20-35 were female, had a Ners education and had training. There is a significant relationship between attitude factors, nurse motivation with compliance with the implementation of standard precautions (p <0.05) while there is no significant relationship between factors of education level, age, gender, training with compliance with the implementation of standard precautions in nurses with (p <0.05).

Conclusion: It is necessary to supervise the obligation to implement standard precautions by nurses and there is an agenda for training on standard precautions on an ongoing basis.

Keywords: HAIs, IOP, ICU nurses, nosocomial, standard precautions

INTRODUCTION

Nosocomial infections or Health Care Associated Infections (HAIs) are infections acquired by patients after 72 hours of hospitalization. HAIs can lead to a significant increase in mortality, length of stay, and cost of care (1). Prevention of HAIs through Infection Control Management (ICM) involves various strategies such as surveillance, education, training, and judicious use of antimicrobials (2). Hospital accreditation standards require that the rate of HAIs does not exceed 15% of total patients (3).

A study in Ethiopia showed a prevalence of HAIs of 14.9%, with an increased risk of infection in ICU patients due to invasive measures taken (1). A WHO study in 55 hospitals from 14 countries showed an average of 8.7% of patients experienced HAIs, with the highest prevalence in Southeast Asia reaching

10% (4). In Indonesia, data from the Ministry of Health shows that patient safety incidents reached 14.5%, with 48% of Near Injury Events and 46% of Unexpected Events (5).

In West Sumatra, nosocomial infection rates varied in several hospitals, such as RSAM Bukittinggi (9%), RSUD Lubuk Sikaping Pasaman (16.24% phlebitis, 3.78% surgical infections), RSUD Padang Pariaman (12.01% phlebitis), RS Bhayangkara Padang (4.8% phlebitis, 6.6% surgical infections), and RSI Siti Rahmah Padang (1.27% phlebitis, 1.5% UTI, 0.18% VAP, 0.63% IADP) (6, 7). At RSUD Dr. Rasidin Padang, the incidence of phlebitis in the ICU in 2018-2019 varied with a peak of 7.04% in August 2018 and fluctuations between 0% and 4.49% in 2019.

A WHO study in 55 hospitals from 14 countries showed an average of 8.7% of patients had nosocomial infections, with Southeast Asia reaching 10% (4). WHO estimates healthcare-associated infections (HAIs) affect hundreds of millions of people and are a major global issue for patient safety (1). Infection prevention and control in hospitals is important because it is estimated that in less than a decade there will be 1.7 million cases and nearly 99,000 deaths related to HAIs which is the sixth leading cause of death in the United States and Europe, with one-third of infections being preventable. The CDC reports 2 million patients suffer from HAIs each year causing approximately 100,000 deaths (5).

Indonesia recorded 145 patient safety incidents with 46% adverse events (AEs) and 48% near misses (KNCs), the majority due to healthcare worker (85%) and equipment (15%) errors. In one Jakarta hospital (2009-2011) there were 171 Patient Safety Incidents (PSIs) with 60% in hospitalization. The rate of care-associated infections (HAIs) in Indonesia is 15.74% (Indonesian Ministry of Health 2020). In West Sumatra, nosocomial infection rates from various studies are: RSAM Bukittinggi 9% (6), RSUD Lubuk Sikaping Pasaman 16.24% phlebitis, 3.78% surgical infection, RSUD Padang Pariaman 12.01% phlebitis, RS Bhayangkara Padang 4.8% phlebitis, 6.6% surgical infection, RSI Siti Rahmah Padang 1.27% phlebitis, 1.5% UTI, 0.18% VAP, 0.63% IADP (7).

Based on research the incidence of Ventilator Acquired Pneumonia (VAP) in the NICU of M. Djamil Hospital Padang in 2017 ranged from 6.41% to 15.54%. At RSUD Rasidin Padang the incidence of phlebitis in the ICU in 2018-2019 varied with a peak of 7.04% in August 2018 and fluctuations between 0% to 4.49% in 2019. According to the Ministry of Health (2017) patient safety involves risk management and solutions to prevent injury from medical actions. Nosocomial infection control includes six components of the chain of transmission: infectious agent, reservoir, exit, transmission method, entry point, and susceptible host (8).

Low rates of nosocomial infections indicate the success of the hospital. The 2012 accreditation standards emphasize patient safety and infection prevention through standard operating procedures (SPOs) that include 10 components of standard precautions (2). Universal precautions reduce the risk of infection by managing medical devices, washing hands, and using PPE. Every hospital unit must have SOPs as work guidelines. Standard precautions protect patients and staff from infection (9).

To achieve the implementation of universal precautions in infection control, appropriate knowledge, attitudes, and behaviors of staff are required. Nurse compliance is influenced by education, skills about HAIs, and employment status (10). Other factors include availability of protective equipment, ward design, technology, infrastructure, and hospital policies (9). According to Donabedian, IOP organizational structure, adherence to procedures, and supervision also influence infection control. In Songwe, Tanzania, nurses' 66% compliance was influenced by work experience, IOP supervision, and inadequate facilities (11). Poor compliance is also caused by carelessness, attitude, lack of motivation, inadequate knowledge, and insufficient equipment (12).

WHO (2021) recommends supervision by PPI to improve skills, motivation, job satisfaction, and performance of healthcare workers through technical advice. Management evaluation with qualitative and quantitative research such as planning, organizing, directing, coordinating, and controlling is important to prevent HAIs and achieve complete health services. According to L. Green's (1980) behavioral theory in Notoatmodjo (2018), behavior is influenced by predisposing factors (community characteristics, occupation, education, knowledge, attitudes, and health service benefits), supporting factors (income level, insurance membership, place of residence), and driving factors (health worker attitudes, officer behavior, family support). Factors affecting compliance with the implementation of standard precautions for nosocomial infection control include internal factors of individual nurses (age, gender, education level, knowledge, attitudes, motivation, training, length of service), organizational factors (availability of facilities and infrastructure, employment status, work environment comfort, organizational structure), and managerial factors (policy, leadership supervision, leadership figures) (13).

OBJECTIVE

This study aims to determine the relationship between individual factors that influence standard precautions for infection control (HAIs) in nurses at RSUD dr. Rasidin Padang.

METHODS

This study used a non-experimental observational design with a cross-sectional approach. Measurement of nurse performance in the prevention of nosocomial infections (dependent variable) was carried out simultaneously with the measurement of independent variables to identify factors that influence executive nurses in infection prevention. Data collection for independent and dependent variables was carried out simultaneously (HR, 2018). The study population was all nurses in the Intensive Care Unit Installation (ICU, NICU, CVCU) of RSUD dr. Rasidin Padang, totaling 50 nurses. The sampling technique used was total sampling. The initial sample size was 50 nurses, but at the time of the study, the sample size was 45 nurses. This change was caused by several factors: two ward heads (karu) from three rooms, one nurse attended training at M. Djamil Hospital Padang, and three other nurses were transferred to other rooms.

The research instrument consisted of Questionnaire A, which contained data on respondents' demographic characteristics such as age, gender, education level, length of service, and training received. Questionnaire B consisted of questionnaires on motivation, nurse attitude, nurse knowledge, and nurse compliance. This questionnaire has been tested for validity and reliability with valid and reliable results. Data analysis was conducted using SPSS software, including univariate and bivariate analysis. Univariate analysis describes the frequency distribution of each variable studied, such as knowledge, education level, age, training, tenure, attitude, and motivation. Bivariate analysis was used to analyze the relationship between knowledge, education level, motivation, and attitude with nurse compliance in infection control. The test used was Chi-Square with an alpha value of <0.05.

RESULT

Table 1. Frequency Distribution of Respondents' Characteristics at RSUD dr. RasidinPadang 2024 (n=45)

No	Characteristics Responden	F	%
1	Age • 20 – 35 years old	29	64,4

No	Variable		F	%
	• ≥ 35 years		16	35,6
2	Gender			
	• Men		7	15,6
	• Woman		38	84,4
3	Education Level			
	• D3 Nursing		20	44,4
	• Nurses		25	55,6%
4	Length of Work			
	• 1-5 years		25	55,6
	• > 5 years		20	44,4
5	Training			
	• Ever Trained PPI		38	84,4
	• Never PPI Training		7	15,6

Table 1 shows that most were aged 20-35 (64.4%), almost all were female (84.4%), more than half had an Ners education (55.6%), more than half had 1-5 years of service (55.6%), and more than half had received training (84.4%).

Table 2: Frequency Distribution of Factors Affecting Compliance with the Implementation of Standard Precautions for Nurses at RSUD dr. Rasidin Padang 2024 (n=45)

No	Variable	F	%
1	Compliance		
	• Obedient	34	75,6
	• Non-Compliance	11	24,4

Table 2 shows that most nurses are compliant in the implementation of standard precautions.

Table 3 Frequency Distribution of Motivation, Attitude and Knowledge Factors affecting Implementation of Standard Precautions for Nurses at RSUD Dr. Rasidin Padang 2024 (n=45)

No	Variable	f	%
1	Motivation		
	• Tall	13	28,9
	• Low	32	71,1
2	Attitude		
	• Positive	33	73,3
	• Negative	12	26,7
3	Knowledge		
	• Good	27	60,0
	• Less	18	40,0

Table 3 shows that most nurses have more motivation, attitude and knowledge, namely more than half of the nurses have low motivation (71.1%), positive attitude (73.3%), and have good knowledge (60.0%).

Table 4 Analysis of the Relationship between Individual Factors of Nurses and Compliance with the Implementation of Standard Precautions at RSUD dr. Rasidin Padang 2024

	Standard Compliance		Vigilance		Total		p
	Compliant		Non-compliant				
	f	%	f	%	f	%	
Education Level							
D3							
Ners	15	75,0%	5	25,0%	20	100	1,000
	19	76,0%	6	24,0%	25	100	
Age							
20 – 35 years old	23	79,3%	6	20,7%	29	100	0,670
≥ 35 years	11	68,8%	5	31,3%	16	100	
Gender							
Men	5	71,4%	2	28,6%	7	100	
Woman	29	76,3%	9	23,7%	38	100	1.000
Working Period							
1-5 years	15	75,0%	5	25,0%	20	100	1,000
>5 years	19	76,0%	6	24,0%	25	100	
Training							
Never	4	57,1%	3	42,9%	7	100	0,337
Ever	30	78,9%	8	21,1%	38	100	

Table 4 shows that there is no significant relationship between the factors of education level, age, gender, tenure and training with compliance with the implementation of standard precautions in nurses, namely (p value>0.05).

Table 5 Analysis of the Relationship between Motivation, Attitude, Level of Knowledge with Compliance with the Implementation of Standard Precautions for Nurses at RSUD dr. Rasidin Padang 2024 (n=45)

	Standard Compliance		Vigilance		Total		p
	Compliant		Non-compliant				
	f	%	f	%	f	%	
Motivation							
High	13	100,0%	0	0,0%	13	100	0,019
Low	21	65,6%	11	34,4%	32	100	
Attitude							
Positive	28	84,8%	5	15,2%	33	100	0,044
Negative	6	50,0%	6	50,0%	12	100	
Level of Knowledge							
Good	23	85,2%	4	14,8%	27	100	0,086

Less	11	61,1%	7	38,9%	18	100

Table 5 shows that there is a significant relationship between the factors of motivation, attitude and compliance with the implementation of standard precautions in nurses (p-value = 0.019, p-value = 0.044), and there is no significant relationship between the level of knowledge and compliance with the implementation of standard precautions in nurses (p-value = 0.086).

DISCUSSION

This study shows that the majority of nurses at RSUD Dr. Rasidin Padang, especially in the ICU, CVCU, and NICU, are compliant in implementing standard precautions to prevent nosocomial infections. This is supported by research by Kustian et al. (2021) which showed that 78.3% of nurses at the Buton Regency Hospital were compliant with the 5 moments of handwashing (14). Factors that influence compliance include age, gender, education, length of service, training, knowledge, attitude, and motivation.

There is a significant relationship between motivation and attitude factors with compliance with standard precautions. High motivation and positive attitude contribute to increased nurse compliance with standard precautions (15). Nurses' positive attitude towards standard precautions increases their awareness and compliance in carrying out infection prevention procedures.

However, this study showed no significant relationship between age, gender, education level, length of service, and training with compliance with the implementation of standard precautions. This result is consistent with a study that found no relationship between demographic factors and nurses' performance in infection prevention (9). This may be due to other more dominant factors such as perception of infection risk, management support, and availability of protective equipment.

Although training is an important component in improving nurses' knowledge and skills, this study shows that training is not always effective in improving compliance if it is not followed by strict supervision and support from hospital management (16). The study recommends that training programs be accompanied by regular evaluation and feedback to ensure their effectiveness.

The increased compliance at RSUD Dr. Rasidin Padang may be due to the strict regulations and supervision of the hospital's IOP team. Training and continuing education are also important to improve nurses' knowledge and compliance with standard precautions. In addition, intrinsic and extrinsic motivation such as rewards and incentives from hospital management may also improve nurses' compliance with standard precautions (17). This study recommends increasing training and continuing education programs for nurses to improve knowledge and compliance with standard precautions. In addition, there should be regular evaluation and supervision to ensure that nurses apply standard precautions correctly and consistently.

CONCLUSION

There is a significant relationship between motivation and attitude factors with compliance with the implementation of standard precautions in nurses at RSUD Dr. Rasidin Padang. However, there was no significant relationship between the factors of age, gender, education level, length of service, knowledge, and training with compliance with the implementation of standard precautions.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest in connection with the research, authorship, and/or publication of this article.

REFERENCES

1. Yallew WW, Kumie A, Yehuala FM. Risk factors for hospital-acquired infections in teaching hospitals of Amhara regional state, Ethiopia: A matched-case control study. PLoS One. 2017;12(7):1–11.

2. Kemenkes. Pedoman Teknis Pencegahan dan Pengendalian Infeksi di Fasilitas Kesehatan Tingkat Pertama. Book. 2020. p. 1–207.

3. Sundoro T. Program Pencegahan dan Pengendalian Healthcare Associated Infections (Hais) di Rumah Sakit X. J Ilmu Kesehat Masy Berk. 2020;2(2):25.

4. Isnaeni LMA, Puteri AD. Faktor yang berhubungan dengan kepatuhan perawat dalam penggunaan alat pelindung diri di RSUD X. J Ners [Internet]. 2022;6(1):14–22. Available from: http://journal.universitaspahlawan.ac.id/index.php/ners

5. Appiah EO, Appiah S, Menlah A, Baidoo M, Awuah DB, Isaac NB. Experiences of infection prevention and control in clinical practice of nursing students in the Greater Accra Region, Ghana: An exploratory qualitative study. SAGE Open Med. 2021;9.

6. Notoadmodjo S. Promosi kesehatan teori dan aplikasi. Banten: Rineka Cipta; 2018.

7. Delima M, Andriani Y, Gustinawati G. Penerapan Cuci Tangan Five Moments dengan Angka Kejadian Infeksi Nosokomial. Pros Semin Kesehat Perintis. 2018;1(2):8–16.

8. Destalia D. Faktor Risiko Infeksi Nosokomial Dirumah Sakit Umum Daerah Lubuk Sikaping Kabupaten Pasaman Tahun 2019. 2019;2.

9. Elytisia C, Ginting M. Pengaruh Pengetahuan Dan Sikap Perawat Terhadap Pelaksanaan Universal Precaution Upaya Memutus Rantai Infeksi di Rumah Sakit. 2020;

10. McCauley L, Kirwan M, Matthews A. The factors contributing to missed care and non-compliance in infection prevention and control practices of nurses: A scoping review. Int J Nurs Stud Adv [Internet]. 2021;3(July):100039. Available from: https://doi.org/10.1016/j.ijnsa.2021.100039

11. Mitchell BG, Gardner A, Stone PW, Hall L, Pogorzelska-Maziarz M. Hospital Staffing and Health Care–Associated Infections: A Systematic Review of the Literature. Jt Comm J Qual Patient Saf [Internet]. 2018;44(10):613–22. Available from: https://doi.org/10.1016/j.jcjq.2018.02.002

12. Bahegwa RP, Hussein AK, Kishimba R, Hokororo J, German C, Ngowi R, et al. Factors affecting compliance with infection prevention and control standard precautions among healthcare workers in Songwe region, Tanzania. Infect Prev Pract [Internet]. 2022;4(4):100236. Available from: https://doi.org/10.1016/j.infpip.2022.100236

13. Naik TB, Bhageerathi L. A Cross-Sectional Study of Staff Nurses' Awareness and Practices about Standard Precautions in a Tertiary Care Hospital in South Karnataka. Issues Dev Heal Res Vol 4. 2021;6(2):49–56.

14. Setyaningrum MO, Nursalam, PK RF. EFEKTIFITAS FAKTOR ORGANISASI DAN MOTIVASI TERHADAP KINERJA PERAWAT DALAM PELAKSANAAN PENCEGAHAN DAN PENGENDALIAN INFEKSI (PPI). J Telenursing. 2023;4(1):88–100.

15. Trisnawati NL, Krisnawati KMS, Made Rini Damayanti. Gambaran Pelaksanaan Pencegahan Infeksi Nosokomial Pada Perawat Di Ruang Hcu Dan Rawat Inap Rumah Sakit X Di Bali. Bimik. 2018;6(1):11–9.

16. Baljoon R, Banjar H, Banakhar M. Nurses' Work Motivation and the Factors Affecting It: A Scoping Review. Int J Nurs Clin Pract. 2018;5(1).

17. Suhendi. Pengaruh Kepemimpinan Kepala Sekolah, Motivasi Guru Dan Budaya Akademik Terhadap Kompetensi Dan Komitmen Afektif Serta Implikasinya Pada Kinerja Guru Sma Negeri Di Kota

Bandung, Kota Cimahi, Kab. Bandung Dan Kab. Bandung Barat Pengaruh Kepemimpinan Sekola. 2020; Available from: https://repository.unpas.ac.id/47826/