



FACTORS RELATED TO HEALTH WORKER COMPLIANCE IN IMPLEMENTING INFECTION PREVENTION AND CONTROL IN HOSPITALS

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ABSTRACT

Based on a 2019 report, Bhayangkara Hospital Level III Banda Aceh had an HAI or nosocomial infection incidence rate of 1.97%. There were no other cases of infection. In 2020, out of 91 healthcare workers, only 5 (5.49%) had received training on how to prevent and control infections. The purpose of this study was to determine factors related to healthcare worker compliance in implementing infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. Quantitative research was used with a cross-sectional study design. A sample of 91 healthcare workers was selected using a total sampling method. Data collection used an instrument created by the researcher from available literature. Data were analyzed descriptively and inferentially. The results showed a partial significant relationship between knowledge ($p = 0.004$), attitude ($p = 0.016$), and experience ($p = 0.0001$) with compliance in infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. Logistic regression analysis showed that knowledge ($P = 0.002$) and experience ($P = 0.0001$) were significant predictors related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. The conclusion of the study was that experience was the most significant predictor related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh (OR: 14.327).

Keywords: attitude; experience; infection; knowledge; prevention

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INTRODUCTION

Hospital-acquired infections (HAIs) are a major health concern for healthcare workers and patients in hospitals. Due to the associated morbidity, mortality, longer lengths of stay, and costs, measures must be taken to ensure that hospitals are safe for patients. In developed countries, the prevalence of HAIs ranges from 3.5% to 12%. In Europe, the average HAI prevalence is 7.1%. An estimated 4,544,100 HAI incidents are reported annually by 4,131,000 patients in Europe. An estimated 4.5% HAI rate in the US in 2019 affected 1.7 million patients, representing 9.3 infections per 1,000 patients per day. Fifty-one percent of patients in intensive care units develop infections, and the majority of these cases occur in hospitals. Thirty percent of ICU patients have experienced at least one HAI incident. Patients are at risk of acquiring infections the longer they stay in the ICU. The use of invasive devices, especially central lines, urinary catheters, and ventilators, is associated with high infection rates (Andersen, 2019).

WHO (2019) also stated that in 2019, the prevalence of HAI in low- and middle-income countries ranged between 5.7% and 19.1%. The proportion of HAI patients in ICUs ranged between 4.4% and 88.9%, with a total of 42.7 infection episodes per 1,000 patients per day. This figure is almost three times higher than in high-income countries. Furthermore, infection rates associated with the use of invasive devices such as central lines and ventilators can be up to 19 times higher in some developing countries than those reported in Germany and the United States

Newborns are also more vulnerable, with infection rates 3–20 times higher in developing countries compared to high-income countries. Approximately 4% to 56% of all neonatal deaths are among babies born in hospitals in developing countries, and 75% in Southeast Asia and Africa. In resource-limited countries, surgical site infections are common in general patients. These affect up to two-thirds of patients undergoing surgery and occur nine times more frequently than in developed countries (Andersen, 2019). There is no information on the incidence of nosocomial infections or HAIs in Indonesia as a whole. However, out of 1,000 inpatients at Setjonegoro Regional Hospital in Wonosobo Regency, the incidence of nosocomial infections in the second semester of 2009 was 2.67, in the first and second semesters of 2010 were 3.12 and 4.36, and in the first and second semesters of 2011 were 9.68 and 19.71, according to a survey conducted at several hospitals (Nugraheni & Winarni, 2017).

For nosocomial infections, the highest proportion was found in Setjonegoro Regional Hospital, Wonosobo Regency for the Edelweiss room (VIP Room) in 2009 (47.36%), in the Bougenville room (Inpatient Room) in 2010 (65.3%), and in the Anggrek room (VIP Room) in 2011 (19.47%). For infections during hospitalization, the highest proportion was found in July 2009 (36.84%), in March and August 2010 (16.32%), and in November 2011 (19.47%). By gender, the highest proportion was found in women in 2009 and 2010 (78.94%), and in 2013 (63.6%) (Nugraheni & Winarni, 2017). According to Duerink et al. (2016) study, the total HAI rate at Hospital A was 5.9%, including phlebitis (3.1%) and surgical site infections (5.1%). At Hospital B, the total HAI rate was 8.3% and surgical site infections (8.9%). Furthermore, a study by Widodo and Astrawinata (2014) at Dr. Cipto Mangunkusumo General Hospital in Jakarta found that the incidence rates of nosocomial infections in 2009, 2010, 2011, and 2012 were 1.1, 0.9, 0.6, and 0.4, respectively. Urinary tract infections, catheter infections, and respiratory tract infections ranged between 0 and 5.6%.

Furthermore, Widodo and Astrawinata (2014) stated that the gram-negative bacteria that most often cause nosocomial diseases are *Pseudomonas* sp, *Enterobacter aerogenes*, *Escherichia coli*, and *Proteus mirabilis*. *Staphylococcus epidermidis*, *Staphylococcus aureus*, and *Streptococcus anhemolyticus* are gram-positive bacteria. Most gram-negative bacteria have lost sensitivity to penicillin, co-amoxicillin-clavulanic acid, and third-generation cephalosporins, but remain sensitive to fourth-generation cephalosporins and aminoglycosides. Evidence-based infection prevention strategies can prevent many hospital infections. Infections can occur between patients and healthcare workers if healthcare workers adhere to standard precautions such as hand hygiene, aseptic procedures, and the use of personal protective equipment such as gloves, gowns, masks, and eye and face protection (Kenneley, 2012). There is no specific concept or theory regarding factors related to healthcare worker compliance with infection prevention and control practices. However, several previous studies have examined various aspects of healthcare workers' compliance with infection prevention and control practices, particularly in hospitals. Research conducted by Russell et al. (2018) found that people working in healthcare have high compliance, extensive knowledge, and positive attitudes toward infection control. Positive attitudes are associated with healthcare worker compliance. However, knowledge of infection control techniques is not associated with compliance. According to research conducted by Aung, Nursalam, and Dewi (2017), almost every respondent (91.18%) had a good understanding of standard precautions, and 73.5% of respondents demonstrated good compliance with standard precautions. However, healthcare workers do not always properly recap used syringes in practice. This study aims to analyze factors related to healthcare workers' compliance in implementing infection prevention and control.

METHOD

This type of research is quantitative with a correlation approach using a cross-sectional study design. The population was all health workers at Bhayangkara Hospital Level III Banda Aceh, totaling 91 people. The sampling technique used was total sampling, so that the entire population

was included as respondents. Data collection was carried out from June to July 2025 using a structured questionnaire developed by the researcher based on literature review. The instrument consisted of statements measuring knowledge, attitudes, experience, and compliance with infection prevention and control. Prior to use, the questionnaire was tested for validity and reliability. The validity test showed that all items had an r-count value greater than r-table (0.207), so all items were declared valid. The reliability test using Cronbach's Alpha obtained a value of 0.873, which is greater than 0.70, indicating that the questionnaire is reliable. Data analysis used descriptive statistics and non-parametric inferential statistical tests; chi-square test to analyze bivariate relationships, and Binary Logistic Regression with the Stepwise method to determine the most dominant predictor.

RESULT

Based on table 1, it is known that the average age is 31.43 years, the most common gender is male, namely 88 people (96.7%), the most common educational background is diploma graduate, namely 50 people, the most common employment status is civil servant, namely 58 people (63.7%), the most common work period is ≥ 5 years, namely 86 people (94.5%) and the most common training status is having attended training, namely 71 people (78.0%).

Table 1.

Characteristics of Nurses (n = 91)

Characteristics	f	%	$\bar{x} \pm SD$
Age	-	-	31.43 Years $\pm$ 5.252
Gender			
Man	88	96,7	
Woman	3	3,3	
Education			
Bachelor	40	44,0	
Diploma	50	54,9	
Master	1	1,1	
Employee Status			
Indonesian National Police	21	23,1	
Civil Servant	58	63,7	
Government Employees with	5	5,5	
Employment Agreements			
Casual Daily Worker	7	7,7	
Years of service			
≥ 5 Years	86	94,5	
< 5 Years	5	5,5	
Training			
Once	71	78,0	
Never	20	22,0	

Based on Table 2, it is known that of the 91 health workers, 51 (56.0%) had a good attitude towards infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. Furthermore, 51 (56.0%) had a good attitude towards infection prevention and control. 54 (59.3%) had good experience regarding infection prevention and control. Finally, 46 (50.5%) complied with disease prevention and control at Bhayangkara Hospital Level III Banda Aceh.

Table 3 shows a significant relationship between knowledge and compliance in infection prevention and control at Bhayangkara Hospital Level III Banda Aceh ($p=0.004$). Furthermore, there is a significant relationship between knowledge and compliance in infection prevention and control at Bhayangkara Hospital Level III Banda Aceh ($p=0.016$). Then, there is a significant relationship between experience and compliance in infection prevention and control at Bhayangkara Hospital Level III Banda Aceh ($p=0.0001$).

Table 2.

Distribution of knowledge, attitudes, experience and compliance of health workers regarding infection prevention and control (n=91)

Variables	f	%
Knowledge		
Good	54	59,3
Not enough	37	40,7
Attitude		
Good	51	56,0
Not enough	40	44,0
Experience		
Good	54	59,3
Not enough	37	40,7
Compliance		
Good	46	50,5
Not enough	45	49,5

Table 3.

Analysis of the relationship between knowledge, attitudes and experience with health workers' compliance in infection prevention and control (n = 91)

Variables	Compliance				p-value
	Obedient		Not Obey		
	f	%	f	%	
Knowledge					
Good	28	68,3	13	31,7	0,004
Not enough	18	36,0	32	64,0	
Attitude					
Good	32	62,7	19	37,3	0,016
Not enough	14	35,0	26	65,0	
Experience					
Good	39	72,2	15	27,8	0,0001
Not enough	7	18,9	30	81,1	

Table 4.

Analysis of knowledge, attitudes and experience as predictors of infection prevention and control (n = 91)

Predictor	B	OR	p-value	95% CI	
				Lower	Upper
Knowledge	1,785	5,957	0,002	1,894	18,735
Attitude	0,970	2,638	0,077	0,899	7,735
Experience	2,521	12,435	0,0001	3,850	40,166
Constant	-2,412	0,090	0,0001		

Table 4 shows that knowledge ($P = 0.002$) and experience ($P = 0.0001$) obtained a P Value < 0.05 so that H_0 was rejected, which means that these factors are significant predictors related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. While attitude ($P = 0.077$) obtained a P Value > 0.05 so that H_0 was accepted, which means that attitude is not a significant predictor related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. The next step is to re-test the significant factors until no more P Value > 0.05 is found.

Table 5.

Analysis of knowledge and experience as predictors of infection prevention and control (n = 91)

Predictor	B	OR	P-Value	95% CI	
				Lower	Upper
Knowledge	1,697	5,456	0,003	1,791	16,618
Attitude	2,662	14,327	0,0001	4,525	45,362
Constant	-1,999	0,135	0,0001		

Table 5 shows that knowledge ($P = 0.003$) and experience ($P = 0.0001$) are significant predictors related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh. Based on the results of this study, it is known that the better the knowledge and experience, the more compliant the health workers at Bhayangkara Hospital Level III Banda Aceh are in carrying out infection prevention and control. The results of this study also provide the conclusion that the experience factor is the most significant predictor related to compliance with infection prevention and control at Bhayangkara Hospital Level III Banda Aceh (OR: 14.327).

DISCUSSION

The Relationship Between Knowledge and Compliance with Infection Prevention and Control

Many factors could contribute to this low level of knowledge. First, there may be a lack of consistent training or updates on infection prevention and control information. Due to their heavy workload, healthcare workers—especially nurses and other support staff—may not have as much access to regular training or continuing education. Second, it's possible that infection prevention and control materials aren't fully incorporated into hospital new employee orientation programs, resulting in an uneven distribution of foundational knowledge that should be readily available from the start. Furthermore, healthcare professionals' motivation to understand and implement infection prevention and control practices is strongly influenced by a strong patient safety culture in the workplace. Healthcare workers who work in environments that do not place a strong emphasis on infection prevention are less likely to engage with standard disinfection techniques, hand hygiene protocols, or the use of personal protective equipment (Sartelli et al., 2020).

In the context of Bhayangkara Hospital Level III Banda Aceh, the figure of 54.9% of healthcare workers lacking knowledge is a warning sign. Because hospitals are highly vulnerable to the spread of nosocomial infections, every healthcare worker should ideally have a good understanding of the principles of infection prevention and control. This lack of knowledge not only potentially endangers patients but also the safety of the healthcare workers themselves. Interestingly, the analysis results in Table 3 ($P = 0.004$) also show a statistically significant relationship between knowledge and adherence to infection prevention and control. Healthcare workers' compliance behavior in implementing infection prevention and control protocols in hospitals is significantly influenced by their knowledge, as evidenced by the P value being significantly smaller than the 0.05 significance level. These findings are consistent with previous research showing that knowledge plays a significant role in influencing healthcare workers' professional attitudes and behaviors. According to a literature review, healthcare workers with a good understanding of pathogen transmission and the consequences of nosocomial infections are more likely to adhere to infection prevention and control protocols, including hand hygiene and the use of personal protective equipment (Khatrawi et al., 2023).

Knowledge can psychologically enhance risk perception. In other words, someone who is aware of the risk of infection is more likely to take precautions. Conversely, people are more likely to ignore or inconsistently use infection prevention and control protocols if they are unaware of the negative consequences of violating them (Cooper, Wiyeh, Schmidt, & Wiysonge, 2020). Hospital administrators should heed these findings, particularly as they relate to patient safety and quality management. First and foremost, it is crucial to strengthen internal learning systems and regularly train healthcare workers to enhance their capacity. Hospitals can use infection prevention and control as a quality performance indicator by conducting regular internal audits to evaluate healthcare staff compliance and understanding of these measures.

Education-based interventions should be implemented not only in theory but also in practice, including through simulation-based training. This method can strengthen adherence behavior while improving practical understanding. Third, if hospital top management commits to providing adequate infrastructure and facilities, such as gloves, masks, alcohol-based hand sanitizers, and

hands-on training on how to use them, compliance can be improved (Kulju et al., 2024). Furthermore, improving patient safety culture and unit leadership participation have a significant impact on behavioral change. Leaders can foster a work environment that supports consistent infection prevention and control practices by actively modeling and providing feedback (Huang, Wu, Lee, & Li, 2024).

It's worth noting that while knowledge has been linked to compliance, many other factors also play a role. Internal motivators, workload, availability of PPE, organizational support, and supervision and evaluation from direct superiors are just a few examples. According to a study by Hartanti and Nurjanah (2020), supervision and motivation played equally important roles in determining compliance with infection prevention and control protocols in a type B hospital in Jakarta (Syamsuriadi, 2019). In other words, increasing knowledge alone does not necessarily guarantee behavioral change. Therefore, to ingrain healthcare worker compliance in the organizational culture, knowledge-building initiatives must be supported by managerial tactics that encourage workplace change.

The Relationship Between Attitude and Compliance with Infection Prevention and Control

The results of this study provide a significant insight into how healthcare workers at Bhayangkara Level III Hospital in Banda Aceh view the infection prevention and control program. Of the 91 healthcare workers who responded, 51 (56.0%) had a positive attitude toward the implementation of infection prevention and control. Furthermore, there was a significant correlation between attitudes and adherence to infection prevention and control protocols ($P = 0.016$), as shown in Table 5.6. This study significantly contributes to our understanding of the factors influencing healthcare workers' adherence to efforts to reduce the prevalence of nosocomial infections.

A person's attitude is their tendency to consistently react positively or negatively to a situation or object. In this regard, healthcare professionals' attitudes toward infection prevention and control reflect how much they value, accept, and are dedicated to the importance of infection prevention and control in the hospital environment (Rankin et al., 2018). The finding that 56% of healthcare professionals have positive attitudes is encouraging, as it indicates that the majority of employees have behavioral orientations that support infection prevention and control policies. Concern for patient safety, knowledge of infection risks, and a willingness to consistently follow health procedures are just a few examples of positive attitudes. Despite this, 40 individuals, or approximately 44% of healthcare workers, still held less-than-ideal attitudes. This illustrates that despite the widely recognized importance of infection prevention and control, not all healthcare professionals have demonstrated attitudes consistent with expected standards of practice. Work experience, organizational culture, workload, and opinions regarding the efficacy of infection prevention and control policies are just a few of the variables that may have an impact. These results are consistent with social behavioral theory, which states that one of the main internal elements influencing an individual's behavior is their attitude. According to the Theory of Planned Behavior (Ajzen, 1991), attitudes toward a behavior will generate intentions to act, which in turn encourage the actualization of that behavior in real life. In this regard, healthcare workers with positive attitudes toward infection prevention and control are more likely to follow relevant protocols, including managing medical waste, using PPE, sterilizing equipment, and practicing hand hygiene (Bosnjak, Ajzen, & Schmidt, 2020).

In related research, Rahmawati, Mamlukah, Suparman, and Iswarawanti (2024) found that healthcare workers with positive attitudes toward infection prevention initiatives tended to be more compliant than those with neutral or negative attitudes. This suggests that improving attitudes through interventions can be a successful tactic for improving the implementation of infection prevention and control. For hospital management, these findings have strategic implications, particularly when developing interventions to improve service quality. Improving compliance

requires addressing attitudes and developing collective awareness in addition to knowledge. Therefore, infection prevention and control training must be designed in a way that influences healthcare professionals' personal values and beliefs about the importance of infection control and patient safety, in addition to providing material (Cooper et al., 2020).

Relationship between Experience and Compliance with Infection Prevention and Control

Of the 91 responding healthcare workers, 54 (59.3%) had good experience in infection prevention and control at Bhayangkara Level III Hospital in Banda Aceh. Based on this percentage, most of the hospital's healthcare workers had direct experience with various infection prevention and control procedures, including training, workshops, hand hygiene audits, and care of infected patients. A person's willingness to follow healthcare procedures meticulously is largely determined by their level of experience. Experience in infection prevention and control enhances clinical sensitivity, strengthens technical skills, and improves decision-making in situations requiring accurate and timely infection prevention. Therefore, experience influences adherence to patient safety standards and is not only a demographic variable but also a determinant of professional behavior (Vilpert, 2022). Although approximately 40% of healthcare workers still have minimal experience in infection prevention and control, this 59.3% percentage can be viewed as quite positive. This opens up room for hospital management intervention to improve experiential learning-based training programs, strategic job rotations, and mentoring practices. With a significance value of $P = 0.0001$, Table 5.7 shows a highly significant correlation between healthcare workers' experience and their level of adherence to infection prevention and control protocols. The notion that experience is more than just hours worked and is closely related to the quality of healthcare workers' preventive behavior in the workplace is strongly supported by these findings.

Statistically, this very low p-value (less than 0.05) indicates that the relationship between the variables is real and not a coincidence. The likelihood that healthcare workers will consistently adhere to protocols such as the use of personal protective equipment (PPE), equipment disinfection, hand hygiene, and patient isolation increases with the quality of their infection prevention and control experience. In the context of infection prevention and control, "good experience" encompasses more than just length of service; it also refers to the quality of exposure to a variety of clinical scenarios, training, and active involvement in hospital-sponsored infection prevention and control programs. Generally, experienced healthcare professionals have handled a variety of infections, understand transmission dynamics, and are familiar with standard protocols designed to stop the spread of infection. Furthermore, they may have personally experienced the benefits of following infection prevention and control procedures and the drawbacks of non-compliance, which indirectly influences how they view and support infection prevention and control (Cooper et al., 2020).

Theoretical knowledge is strengthened and practical skills are refined through repeated experience in implementing hands-on infection control practices. Long-term exposure to various infection scenarios makes healthcare workers more skilled at recognizing risks, making wise decisions, and implementing preventive measures appropriately. They increase their ability to manage spills of infectious materials, don and doff personal protective equipment (PPE) according to protocols, and practice good hand hygiene (Alhumaid et al., 2021). Regularly implemented infection prevention and control procedures tend to become ingrained into daily tasks and even habits. Experience helps healthcare professionals internalize the process, transforming compliance into a necessary component of daily tasks, rather than a burden or a burden. They understand the "why" and "how" of each procedure (Munoz-Price et al., 2019). Experienced healthcare professionals often witness firsthand how healthcare-associated infections affect patients and colleagues. This experience heightens their awareness of the risk of transmission and the importance of preventive measures. Higher levels of compliance result from their heightened sense of urgency and responsibility to protect others and themselves (Monegro, Muppidi, & Regunath, 2017).

More experienced healthcare professionals often serve as mentors or role models for their less experienced colleagues. Their adherence behavior reflects their understanding of the ethics and values underlying infection prevention and control practices. A strong safety culture where everyone adheres can be fostered by a workplace dominated by experienced and compliant healthcare professionals. Healthcare professionals gain the ability to recognize potential barriers to infection prevention and control implementation (such as the availability of personal protective equipment (PPE) and heavy workloads) and devise solutions through experience. Furthermore, they become more adept at leveraging existing facilitators (such as management support and ongoing training) to ensure consistent adherence (Rankin et al., 2018). These findings have significant implications. Through ongoing training, varied job rotations, and exposure to diverse clinical scenarios, they demonstrated that investing in healthcare workforce experience development not only improves individual competency but also directly correlates with higher institutional adherence to infection prevention and control practices.

Factors Related to Infection Prevention and Control

The safety of patients and healthcare workers is highly dependent on infection prevention and control. This is especially true in hospitals that handle a wide range of infectious disease cases. According to this study, healthcare workers' compliance with infection prevention and control procedures at Bhayangkara Level III Hospital in Banda Aceh was significantly influenced by two factors: knowledge and experience. Experience had a stronger relationship with a P value of 0.0001 and an odds ratio (OR) of 14.327, while knowledge showed a significant relationship with a P value of 0.003, according to the analysis results shown in Table 5.10. Thus, healthcare workers with more experience in infection prevention and control were 14 times more likely to comply than those with less experience. This knowledge encompasses conceptual, procedural, and contextual knowledge about nosocomial infections, their modes of transmission, personal protective measures, and preventive management procedures. Well-informed healthcare workers will be more aware of the importance of proper use of personal protective equipment (PPE) in the hospital setting, the dangers of cross-infection and how it impacts patient safety, and the moral and legal consequences of ignoring infection prevention and control protocols (Sikora & Zahra, 2020).

Knowledge is a crucial prerequisite for developing preventive attitudes and behaviors, according to previous research. According to health behavior models such as the Health Behavior Model, pre-existing knowledge influences how people perceive the risk of infection and the importance of taking preventive measures. Without in-depth understanding, behaviors and attitudes will be merely formalistic or passive (Alyafei & Easton-Carr, 2024). Experience had the greatest impact on infection prevention and control compliance, based on an odds ratio of 14.327. Participation in infection prevention and control training and workshops, direct experience in caring for infectious patients, managing internal hospital outbreaks, and involvement in hygiene and quality control audits are examples of experiences discussed in this study (WHO, 2018).

These elements enable healthcare professionals to internalize protocols in a practical, rather than theoretical, way. People are more likely to be vigilant and follow protocols if they have seen the adverse consequences of violating infection prevention and control measures. Kolb's experiential learning theory, which states that meaningful and contemplative experiences lead to greater understanding and commitment than passive learning, also explains this high OR value. For example, failed attempts to control the spread of infection will teach healthcare professionals valuable lessons and encourage long-term compliance (Wijnen-Meijer, Brandhuber, Schneider, & Berberat, 2022). Knowledge and experience have a mutually reinforcing relationship, although experience is the most important predictor. Experienced healthcare workers typically have undergone direct supervision, case discussions, and formal training. Knowledge also provides a framework for reflectively analyzing these experiences (Forsetlund et al., 2021). This finding is

very important for hospital management because it shows that interventions to improve adherence to Infection Prevention and Control should focus on two things: increasing knowledge and creating meaningful experiences.

CONCLUSION

Compliance of healthcare workers in implementing infection prevention and control at Bhayangkara Hospital Level III Banda Aceh was significantly influenced by knowledge and experience factors, with experience being the most dominant predictor (OR: 14.327). This indicates that the better the knowledge and the more experience the healthcare workers have, the higher their level of compliance with infection prevention and control protocols. For future researchers, they can explore more deeply other factors that may have an influence, such as workload, availability of infrastructure, management support, and patient safety culture in the hospital, so that they can provide a more comprehensive picture in efforts to improve healthcare workers' compliance with infection prevention and control.

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