

## NURSES' WORK MOTIVATION INFLUENCES HANDWASHING COMPLIANCE BEFORE AND AFTER FIVE MOMENTS AT A GENERAL HOSPITAL IN BANJARMASIN

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### ABSTRACT

Healthcare-associated infections (HAIs) are a major concern, often linked to healthcare workers' hand hygiene. Adherence to "Five Moments" hand hygiene is crucial for prevention. This study examined the relationship between nurses' work motivation and hand hygiene compliance at hospital in Banjarmasin. A quantitative, cross-sectional, observational analytic design was employed. Ninety-three inpatient nurses were included via total sampling. Data on work motivation (questionnaire) and hand hygiene compliance (observation) were collected. Univariate and bivariate (Spearman Rank) analyses were performed. Results: most nurses (78%) exhibited strong work motivation. Hand hygiene compliance varied: higher for moments 4 (70%) and 5 (87%), but lower for moments 1 (41%), 2 (32%), and 3 (51%). Overall, 68% were compliant, while 32% were less or non-compliant. A significant moderate positive correlation ( $p < 0.001$ ,  $r = 0.447$ ) was found between work motivation and hand hygiene compliance. Discussion: Strong motivation correlates with better hand hygiene, reducing infection risk. The gap between knowledge and practice, particularly in critical moments, highlights the need for comprehensive interventions. Enhancing nurses' motivation through support, training, and recognition can improve compliance, thereby boosting patient safety and service quality.

**Keywords:** Compliance, HAIs, Hand Hygiene, Nurses, Work Motivation.

### INTRODUCTION

Healthcare-associated infections (HAIs), commonly referred to as nosocomial or hospital-acquired infections, can occur within 48 hours of being hospitalized, within 30 days of being discharged, or within 90 days following surgery. These infections are mainly spread through the contaminated hands of healthcare personnel. Insufficient compliance with preventive practices, such as

hand hygiene, is linked to a higher risk of HAIs. Human hands act as temporary hosts for microbial flora, which are acquired through contact with patients or their surroundings and are typically associated with HAIs. These microbes can be eliminated through handwashing and the use of alcohol-based disinfectants. (Grau et al., 2023).

According to the World Health Organization (WHO) in 2014, 7.1% of

infections commonly found in Indonesia are related to the use of invasive devices or procedures, namely Catheter-Associated Urinary Tract Infection (CAUTI), Central Line-Associated Blood Stream Infection (CLABSI), Ventilator-Associated Infection (VAP), and Surgical Site Infection (SSI). Generally, the most common nosocomial infections among patients are pneumonia (22%), surgical site infections (22%), gastrointestinal infections (17%), urinary tract infections (13%), and bloodstream infections (10%) (Yudha et al., 2025).

The World Health Organization (WHO) reported in 2022 that 15% of all hospitalized patients were affected by HAIs (Healthcare-Associated Infections), with 75% of cases occurring in Southeast Asia and Africa, where 4-56% of neonatal deaths were attributed to HAIs. In 2022, there were approximately 722,000 cases of HAIs, with 75,000 hospital patients dying from HAIs. According to data from the Indonesian Ministry of Health in 2022, the prevalence of Healthcare-associated infections (HAIs) among patients in developed countries varies between 3.5% and 12%, while in developing countries, including Indonesia, the prevalence of HAIs is 9.1%, with a range of 6.1% to 16% (Hidayatullah & Aini, 2023).

Based on data obtained in 2024, the incidence rate of nosocomial infections at General Hospital in Banjarmasin was 1.76%. Meanwhile, the hand washing compliance rate among nurses at General Hospital in Banjarmasin over the past year was 99.72%. The current incidence rate of nosocomial infections has been used as a benchmark for the quality of hospital services. According to Ministry of Health Regulation No.

129 of 2008, the standard rate of nosocomial infections in hospitals is approximately 1.5 percent. Additionally, a hospital's operating license may be revoked if the rate of nosocomial infections is high. Furthermore, many insurance companies refuse to cover the costs of treatment if the infection is caused by nosocomial infections, thereby causing significant financial harm to patients (Idris, 2022).

One of the efforts developed to address and prevent nosocomial infections is the implementation of the Five Moments of Hand Hygiene. Handwashing is one of the most effective steps for breaking the chain of transmission of infections, thereby reducing the incidence of nosocomial infections. However, to achieve optimal results, compliance from nurses as healthcare providers is still required to ensure patients adhere and implement the Five Moment Handwashing Protocol (Hidayatullah & Aini, 2023).

A program to improve hand washing among healthcare workers has been declared by the World Health Organization (WHO) through its patient safety program, which launched the Global Patient Safety Challenge, "clean care is safe care." The World Health Organization (WHO) has also launched "Save Lives: Clean Your Hands" with a strategy of five moments for hand hygiene (My Five Moments for Hand Hygiene): before contact with a patient, before performing aseptic procedures, after exposure to a patient's body fluids, after contact with a patient, and after contact with the patient's environment (Utami et al., 2023).

According to data from the 2018 Basic Health Research, compliance among healthcare workers in performing proper hand hygiene was only 47.0% (Ministry of

Health, 2018). This is supported by the results of a study conducted by Sukron and Katriasa in Ward C of Fatmawati General Hospital, which showed that only 12 out of 100 nurses (12.4%) complied with the Standard Operating Procedures (SOP) for hand hygiene, while the remaining 67 people or 69.1% had insufficient compliance in implementing hand hygiene procedures, and 18 people or 8.6% had moderate compliance in implementing hand hygiene procedures (Rahmasari & Budiyan, 2024).

Handwashing is an important procedure that must be performed by nurses when providing healthcare services to patients. As healthcare professionals who frequently interact directly with patients, nurses are required to wash their hands in accordance with the World Health Organization (WHO) standards, which involve using six steps for a minimum of 20-30 seconds. This procedure is performed before and after performing procedures on patients, after coming into contact with a patient's bodily fluids, after touching the patient's surroundings, and after removing gloves. Proper handwashing can prevent cross-infection between nurses and patients, as well as protect both from various diseases that can be transmitted through hand contact.

Nurses play a crucial role in the healthcare system, where motivation serves as a key factor influencing performance and the quality of care provided. Motivation refers to the stimuli, driving behaviors, or energy that an individual or group possesses to act and collaborate optimally in executing planned activities to achieve predetermined goals. Insufficient motivation among

nurses in adhering to proper handwashing practices can lead to an increase in healthcare-associated infections (HAIs) in hospitals and the emergence of antimicrobial resistance. Nurses, as healthcare providers responsible for patient care for 24 hours, must possess strong motivation to implement the five moments of handwashing. Strong motivation serves as a solid foundation for reducing infection transmission through handwashing, and compliance with handwashing practices is also influenced by a nurse's level of motivation. Nurses' motivation can also enhance compliance in performing the six steps of proper handwashing with the five moments (Utami et al., 2023). The number of nurses working in the inpatient ward of General Hospital in Banjarmasin is 93, consisting of surgical wards, isolation wards, internal medicine wards, and pediatric wards. Meanwhile, the number of nurses working in the emergency department (ED), intensive care unit (ICU), pediatric intensive care unit (PICU), ambulance, and support nursing staff is 119.

The increasing workload of nurses can lead to a decrease in self-control motivation, making motivation essential in the workplace (Astuti & Intening, 2023). Work motivation is a force that emerges as an incentive to work or create, thereby producing performance (work results). Work motivation is a factor that drives an individual to engage in a specific activity; therefore, it is often interpreted as a driving factor behind an individual's behavior. Every activity performed by an individual is driven by certain factors. Work motivation is the driving force that encourages

employees to work diligently, differing from one employee to another (Krisnayanti, 2024). Meanwhile, work motivation among nurses refers to the condition that drives nurses to work (Rusmiati et al., 2024).

Nurses, as healthcare workers who interact most frequently with patients, play a crucial role in preventing the spread of infection through proper handwashing practices. Therefore, it is necessary to improve nurses' compliance with handwashing standards in the workplace (Maryana & Anggraini, 2024). Compliance is a term used to describe adherence to or submission to a predetermined goal. Healthcare literature indicates that compliance is directly proportional to the goals achieved in a predetermined treatment program (Bastable, 2018). Compliance with handwashing procedures is defined as adherence to all steps at all times, expressed as a percentage of compliance with the observed moments (Wardhani, 2018).

Based on the results of a study by (Nursinta et al., 2024) entitled "The Relationship Between Nurses' Knowledge and Motivation and Handwashing Compliance at XYZ Hospital," the statistical test results were  $0.000 p < 0.05$ , indicating a significant relationship between nurses' motivation and handwashing compliance at XYZ Hospital with an Odds Ratio (OR) of 23.917. This is because high motivation contributes to an individual's commitment to adhering to the five moments of hand hygiene, thereby reducing the risk of infection. In line with the study conducted by (Mujito & Kismanto, 2024) titled "The Relationship Between Knowledge and Motivation with Nurses' Compliance in

Performing Hand Hygiene at Dr. Soediran Mangun Sumarso General Hospital, Wonogiri District," the research results showed a significant relationship between nurses' motivation and handwashing compliance ( $p$ -value = 0.000). If nurses have greater motivation to consistently perform hand hygiene procedures, which is key to preventing nosocomial infections in hospital environments.

Based on the results of a preliminary study using the observation method conducted by the researcher from December 30, 2024, to January 11, 2025, on 10 nurses at General Hospital in Banjarmasin, it was found that 6 nurses performed handwashing in 6 steps in accordance with the World Health Organization (WHO) recommendations, while the remaining 4 nurses were less compliant in handwashing. Most nurses only performed some steps correctly without paying attention to the others. Regarding the Five Moments data for nurses, it was found that nurses paid insufficient attention to the importance of handwashing before and after contact with patients, with 2 nurses performing handwashing correctly before and after the Five Moments and 8 nurses only performing handwashing during some of the Five Moments. Therefore, given these issues, the researcher aims to conduct a study on the relationship between nurses' work motivation and handwashing compliance before and after the Five Moments at General Hospital in Banjarmasin.

## LITERATURE REVIEW

The factors contributing to high work motivation can be classified into two types: intrinsic motivation and extrinsic

motivation. Intrinsic motivation, such as job satisfaction and the desire for growth, and extrinsic motivation, such as fair compensation and recognition, play a crucial role in driving nurses' work enthusiasm. A supportive work environment, effective supervision, and job security also serve as significant external factors.

Motivation is essential because it makes nurses more enthusiastic and responsible in their work, thereby improving performance (Syamsuri et al., 2025). Motivation can be divided into two types based on its nature: intrinsic motivation and extrinsic motivation. Intrinsic motivation is motivation that originates from within the nurse, such as job satisfaction, curiosity, and a desire for growth. Extrinsic motivation, on the other hand, is motivation that originates from outside the nurse, such as rewards, compensation, and recognition (Limbong & Tarigan, 2024a).

Handwashing during nursing procedures by nurses is the most effective way to prevent nosocomial infections in hospital settings (Silvia Dora et al., 2024). Nurses are healthcare professionals involved in nursing activities. Nurses are responsible for the care, protection, and recovery of injured or ill patients with acute or chronic conditions, the maintenance of health in healthy individuals, and the management of life-threatening emergencies in various types of healthcare settings. Nurses may also be involved in medical research and care, as well as performing various

non-clinical functions necessary to carry out healthcare functions. Nursing actions are intervention components consisting of specific behaviors or activities performed by nurses to implement nursing interventions. Nursing actions include observational actions, therapeutic actions, educational actions, and collaborative actions (Fitria et al., 2024).

## RESEARCH METHODS

This study uses quantitative research, which is a type of analytical observational research with a cross-sectional approach. This research method is based on positivism, so it is called the positivistic method (Sugiyono, 2019). Independent variable are variables that influence dependent variables. The variable in this study is work motivation. The dependent variable in this study is the level of hand washing compliance before and after the five moments. The population in this study was all nurses working in the inpatient ward of General Hospital in Banjarmasin, totaling 93 nurses. The sample in this study consisted of nurses in the inpatient ward of General Hospital in Banjarmasin, using non-probability sampling with a census or total sampling method, totaling 93 nurses. This study was conducted at General Hospital, Banjarmasin Selatan District, Banjarmasin City, South Kalimantan. This study was conducted at General Hospital in Banjarmasin. The study was carried out from June to July 2025.

## RESEARCH RESULT

Table 1. Age Distribution of Respondents

No	Category	Frequency	Percentage
1	Age 20-25	18	19.3%
2	Age 25-30	15	16.2%
3	Age 31-35	27	29%
4	Age >35 years	33	35.5%
<b>Total</b>		<b>93</b>	<b>100%</b>

Based on Table 1 above, it can be seen that most respondents are in the age group > 35 years, totaling 33 people (35.5%). This is followed by the age group 31-35 years old, with 27 respondents (29%), the age group 20-25 years old, with 18 respondents (19.3%), and the age group 31-35 years old, with 33 respondents (16.2%). The highest motivation was found among respondents aged over 35 years. This can be explained by

the fact that nurses in this age group generally have longer work experience, more mature clinical skills, and a greater sense of responsibility for service quality. Their extensive exposure to various clinical situations makes them more aware of the importance of procedures, including hand hygiene compliance, thereby strengthening their intrinsic drive.

Table 2. Distribution of Respondents' Educational Levels

No	Category	Frequency	Percentage
1	D3	45	48.3%
2.	Bachelor	6	6.6%
3	Professional Nursing	42	45.1%
<b>Total</b>		<b>93</b>	<b>100</b>

Table 4.2 above shows that most respondents had a D3 level of education, namely 45 people (48.3%). This was followed by respondents with a bachelor's degree (S1) of 6 people (6.6%) and a professional nursing education (Profesi Ners) of 42 people (45.1%). The highest motivation was observed among respondents with a Professional Nursing degree. This level of education equips nurses with

advanced clinical competencies, deeper knowledge of infection prevention, and stronger professional values. The combination of academic preparation and practical training in professional nursing programs fosters a higher level of intrinsic motivation to adhere to standards, including patient safety and infection control protocols.

Tabel 3. Respondents by Gender

No	Category	Frequency	Percentage
1	Male	41	44%
2.	Female	52	56%

<b>Total</b>	<b>93</b>	<b>100%</b>
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As shown in Table 3 above, the majority of respondents were female, totaling 52 people (56%). This was followed by male respondents, totaling 41 people (44%). This data indicates that the majority of respondents were female nurses. Female nurses demonstrated slightly higher

motivation compared to their male counterparts. In general, female nurses tend to place more emphasis on patient safety and procedural details, including hand hygiene compliance. Emotional factors such as empathy may also contribute to higher work motivation.

**Table 4. t of Respondents' Length of Employment**

No	Category	Frequency	Percentage
1	<2 years	2	21.5%
2	2-5 years	41	44.1%
3	> 5 years	32	34.4%
<b>Total</b>		<b>93</b>	<b>100%</b>

Table 4 above shows that the majority of respondents have been working for 2-5 years, totaling 41 people (44.1%). Respondents who have been working for less than 2 years number 21 people (44.1%), and those who have been working for more than 5 years number 32 people (34.4%). The highest motivation was found among respondents with more

than 5 years of work experience. Longer service allows nurses to become more familiar with standard operating procedures, understand the consequences of procedural lapses, and develop stronger commitment to their profession. Loyalty to the institution also tends to grow with years of service.

**Table 5. Distribution of Respondents by Room**

No	Category	Frequency	Percentage
1.	Rambai	22	23.7%
2.	Langsat	19	20.4%
3	Pampaken	19	20.4%
4	Rambutan	19	20.4%
5.	Ramania	14	15.1%
<b>Total</b>		<b>93</b>	<b>100%</b>

Based on Table 5 above, it is known that the majority of respondents work in the rambai room, totaling 22 people (23.7%). A total of 19 people (20.4%) work in the langsat room, 19 (20.4%) work in the pampaken room, 19 people (20.4%) work in the rambutan room, and 14 people (15.1%) work in the ramania room. The highest

motivation was observed among nurses working in Rambai Room. These units carry higher infection risks, which makes awareness of the importance of hand hygiene more deeply internalized. Additionally, the strict supervision and demands of caring for critically ill patients increase focus and motivation to follow procedures consistently.

## DISCUSSION

### Work Motivation

The results of the univariate analysis indicate that most respondents (78%) have strong work motivation. A small number of respondents (11%) were in the moderate category, and the remaining 11% were in the weak category. From the work motivation questionnaire results, the statement with the highest score was statement number 17 with a total score of 363, this strongly suggests that the nurses' "Love and Belonging Needs" are significantly met, particularly through positive interpersonal relationships and perceived support from their superiors. According to Maslow, the fulfillment of these social needs is crucial after physiological and safety needs are addressed, fostering a sense of acceptance and camaraderie that drives motivation. Conversely, the statement with the lowest score was statement number 15 with a total score of 291, this is a critical finding, as it points to a potential vulnerability in the nurses' "Safety Needs", specifically concerning job security. Maslow's theory posits that if lower-level needs, such as safety, are not adequately met, individuals will experience anxiety and instability, which can impede their progression to higher-level needs like esteem and self-actualization, thereby undermining overall motivation despite other positive factors.

This nuanced understanding of motivation is further supported by Herzberg's Two-Factor Theory (Motivation-Hygiene Theory), which aligns well with Maslow's framework. Herzberg distinguishes between "hygiene factors" (extrinsic, related to job context) and "motivators" (intrinsic, related to job content). Hygiene factors,

such as salary, working conditions, and job security, prevent dissatisfaction but do not necessarily create satisfaction or motivation. In this study, the low score on job security (a hygiene factor) indicates a potential source of dissatisfaction that, if unaddressed, could erode overall motivation and compliance. Conversely, motivators, such as recognition, achievement, and opportunities for growth (related to Maslow's Esteem and Self-Actualization Needs), actively contribute to job satisfaction and strong motivation.

These findings indicate that the majority of nurses at General Hospital in Banjarmasin have high psychological motivation to work, encompassing physiological needs, safety, social needs, and self-actualization. This strong work motivation aligns with the definition of motivation outlined in Chapter 2, which is an internal and external driving force that motivates individuals to achieve goals and fulfill needs (Hutahayan, 2022).

The high level of work motivation among nurses can be explained by several factors that may exist in the environment of Sultan Suriansyah General Hospital in Banjarmasin, although these were not specifically measured in this study. Internal factors such as job satisfaction, curiosity, and desire for development (intrinsic motivation) likely play a role. Additionally, external factors such as fair compensation, recognition, and career development opportunities (extrinsic motivation) may also serve as key drivers (Syarweny et al., 2024). A supportive work environment, effective supervision, and job

security are also external factors that can enhance work motivation (Nasarudin et al., 2024).

This is reinforced by research from (Limbong & Tarigan, 2024) which states that intrinsic motivation, such as personal satisfaction in providing health services, and extrinsic motivation, which includes rewards or recognition from the organization, both have a positive impact on nurses' performance. This study encompasses an understanding of the factors influencing performance, where work motivation is key to maintaining high standards of healthcare.

Although the majority of nurses have strong work motivation, the presence of 22% of nurses with moderate and weak motivation indicates that there is still room for improvement. Nurses with lower motivation may face challenges such as high workloads, lack of recognition, or lack of opportunities for self-development. Addressing these factors can further improve the overall work motivation of nurses, which in turn can have a positive impact on the quality of service. In line with research (Muchtadin & Sundry, 2023) showing that support from colleagues and good leadership can increase nurses' job satisfaction, which indirectly impacts their work motivation. This indicates that social interactions and leadership styles within healthcare institutions significantly influence nurses' work morale.

Similarly, research by (Gurugala et al., 2023) shows that perceptions of organizational support can increase nurses' work motivation. Employees who feel supported by management are more likely to demonstrate higher levels of motivation and

commitment. This context suggests that good communication, training, and professional development will help maintain motivation in the nursing workplace.

These findings indicate that nurses have a high psychological drive to work, covering a range of needs from physiological to self-actualization. The statements with the highest scores indicate that there are certain aspects of the job that are highly motivating for nurses, while those with the lowest scores indicate areas that may need improvement. However, the fact that 22% of nurses have moderate to low motivation indicates that there are still challenges that need to be addressed. Nurses with lower motivation may experience high workloads, lack of recognition, or limited opportunities for self-development. Therefore, it is important to identify and address factors that can improve overall work motivation. Previous research has shown that peer support and good leadership can increase job satisfaction, which in turn has a positive impact on work motivation.

In addition, perceptions of organizational support also play an important role in increasing nurses' work motivation. Employees who feel supported by management tend to demonstrate higher levels of motivation and commitment. Therefore, good communication patterns, training, and continuous professional development are essential for maintaining nurses' motivation in the workplace. Overall, this study emphasizes the importance of understanding and managing factors that influence nurses' work motivation to ensure high standards of healthcare and improve service quality at General Hospital Banjarmasin.

### Handwashing Compliance Rate

Univariate analysis of handwashing compliance with *the Five Moments* showed significant variation between moments. The highest compliance was found in the fifth moment after contact with the patient environment, with 87% of respondents complying, followed by the fourth moment after touching the patient, with 70%. However, adherence at other times, specifically the first moment before making contact with the patient (41%) and the second moment prior to carrying out clean or aseptic procedures (32%), and the third moment after contact with high-risk fluids (51%), remains relatively low.

This aligns with studies up to 2023 which consistently report that the second moment often receives less attention from healthcare workers compared to other WHO “Five Moments for Hand Hygiene.” According to (Bale et al., 2021; Ojanperä et al., 2022), compliance is typically lower before aseptic procedures because healthcare workers tend to prioritize moments perceived as carrying higher personal risk, such as after exposure to body fluids, over those that mainly protect patients. In the context of this study, despite respondents showing high motivation—particularly among older nurses, those with Professional Nursing education, and those in ICU or Isolation Rooms—the perceived “cleanliness” of aseptic procedures and the absence of visible contamination may reduce the urgency to perform hand hygiene beforehand. Additionally, time constraints and workflow patterns in high-demand clinical areas can cause this step to be skipped or rushed. These findings suggest that reinforcing the patient safety rationale for Moment 2,

combined with improving accessibility to hand hygiene facilities at the point of care, is essential to close this compliance gap.

Overall, 68% of respondents showed hand washing compliance in the compliant category, while 3% were less compliant and 29% were noncompliant. Although the majority of nurses were compliant, a significant proportion (32%) still showed less than compliant or noncompliant behavior. From the six-step hand washing compliance observation instrument, the step with the highest score was the first step with a total score of 74, and the step with the lowest score was the sixth step with a total score of 60. This indicates that although there is awareness of the importance of hand washing, consistent implementation across all *Five Moments* remains a challenge.

Hand hygiene compliance is a critical behavior in preventing *Healthcare-associated infections* (HAIs) (Hidayatullah & Aini, 2023). The World Health Organization (WHO) has emphasized the importance of *the Five Moments for Hand Hygiene* as a key strategy for patient safety (Utami et al., 2023). Low compliance during certain moments, particularly before patient contact and before aseptic procedures, is highly concerning because these moments are directly linked to the risk of infection transmission to patients.

Factors that can influence handwashing compliance include knowledge, motivation, and system support as well as facilities (Ulum et al., 2024). The results of the preliminary study mentioned in the background also support these findings, where most nurses only performed a few steps of

handwashing correctly and paid little attention to the importance of handwashing before and after *the Five Moments*. This indicates a gap between knowledge or intention and actual practice. A study conducted by (Asfarada et al., 2024) in two hospitals in South Sulawesi further confirms that compliance with handwashing protocols can vary depending on hospital conditions and approaches to health education. Data indicates that while there is awareness of the importance of handwashing, actual practices often fall short, suggesting that knowledge alone is insufficient to ensure compliance (Moiwo et al., 2023). Research by (Tien et al., 2024) links factors such as knowledge, attitudes, and supervision as determinants of compliance, indicating that to improve compliance with the five moments of handwashing, interventions must consider multiple aspects.

Hand hygiene compliance is a critical behavior in preventing healthcare-associated infections (HAIs). The World Health Organization (WHO) has emphasized the Five Moments for Hand Hygiene as a key strategy for patient safety. Low compliance at certain moments, particularly before patient contact and before aseptic procedures, is highly concerning as it directly correlates with the risk of infection transmission.

Factors influencing hand washing compliance include knowledge, motivation, and system and facility support. Previous studies have shown that although nurses have knowledge about the importance of hand washing, actual practices often do not reflect this knowledge. This suggests that knowledge alone is not sufficient to ensure compliance, and a more

comprehensive approach is needed.

Thus, a combination of education, a supportive environment, and effective supervision is essential to enhance adherence to hand hygiene practices among healthcare professionals. A multimodal approach that includes education, behavior reinforcement, and the creation of a culture of safety in hospitals can significantly improve hand hygiene compliance rates, which will ultimately reduce the incidence of healthcare-associated infections.

Hand hygiene is a crucial practice for nurses as it serves as the primary defense against the transmission of healthcare-associated infections (HAIs), preventing up to 50% of avoidable cases and reducing patient morbidity, hospital stay, and healthcare costs. Compliance before clean or aseptic procedures prevents the transfer of microorganisms to vulnerable patient sites, while compliance after patient contact or exposure to bodily fluids protects both patients and healthcare workers from cross-contamination. Despite its simplicity and proven effectiveness, adherence remains suboptimal due to factors such as high workload, time constraints, and limited access to facilities—especially in high-intensity areas like ICUs. Recent studies up to 2023 emphasize that targeted education, structured training, and multimodal strategies significantly improve compliance, reinforcing the critical role of hand hygiene in ensuring patient safety and quality care.

### **The Relationship Between Nurses' Work Motivation and Handwashing Compliance Levels During the Five Moments at General Hospital in Banjarmasin**

The results of the bivariate analysis using the Spearman Rank test showed a significance value of  $p < 0.001$  and a correlation coefficient of  $r = 0.447$ . A  $p$ -value of  $< 0.001$  indicates that there is a significant relationship between nurses' work motivation and hand washing compliance. The correlation coefficient  $r = 0.447$  indicates a moderate strength of association between the two variables. This means that the alternative hypothesis ( $H_1$ ), which states that there is a relationship between work motivation and handwashing compliance, is accepted, and the null hypothesis ( $H_0$ ) is rejected.

These results align with earlier research by (Nursinta et al., 2024) and (Mujito & Kismanto, 2024), which also found a significant relationship between nurses' motivation and hand washing compliance. High motivation contributes to a person's level of commitment to complying with five moments of hand hygiene, which ultimately reduces the risk of infection. In more detail, the cross-tabulation table shows that nurses with strong work motivation have a higher proportion of hand washing compliance (78% compliant) compared to nurses with moderate (60% compliant) or weak (0% compliant) work motivation. In fact, all nurses with weak work motivation were in the non-compliant category. This clearly indicates that the lower the level of work motivation among respondents, the lower the level of handwashing compliance among nurses. Conversely, high work

motivation has a significant impact on handwashing compliance, as it influences nurses' determination and awareness to maintain and provide safer and more optimal care.

This positive relationship reinforces the assumption that work motivation plays an important role in preventing nosocomial infections. Motivated nurses tend to be more disciplined in implementing clean and sterile practices in accordance with Standard Operating Procedures (SOPs), thereby providing more optimal nursing care. Strong motivation can encourage nurses to overcome obstacles that may arise in handwashing practices, such as workload, lack of time, or inadequate facilities.

In this regard, (Rois et al., 2023) found that there is a significant relationship between work motivation and nurses' hand washing behavior, where high motivation contributes to increased compliance in hand washing practices. This study included other factors such as knowledge and workload, but the emphasis on motivation provides a clear picture that high work motivation contributes positively to hygiene behavior. Similar results were also found in a study by (Utami et al., 2023), which showed that nurses' motivation has a direct influence on their compliance levels in implementing the five moments of handwashing. These findings support the importance of creating a supportive and motivating work environment for nurses to enhance their compliance with handwashing practices.

On the other hand, research by (Zainab et al., 2024) found that low levels of motivation can hinder compliance with hygiene practices,

indicating that interventions to increase motivation are needed to improve compliance. Therefore, to achieve higher levels of handwashing compliance, it is important for health institutions to focus on motivation in their education and training programs, for example through regular counseling, recognition of good performance, or the creation of supportive and motivating policies.

Therefore, improving hand hygiene compliance among nurses is highly recommended as part of nursing management interventions. This can be achieved through regular evaluations of motivation and compliance levels, as well as the development of programs aimed at to enhance nurses' work motivation. These programs may include the provision of rewards and recognition, career development opportunities, and improvements to the work environment. As a result, hospitals can create an environment that supports nurses in maintaining high motivation and optimal compliance with handwashing practices, which ultimately enhances patient safety and overall healthcare quality.

## CONCLUSION

Based on the results of the study on "The Relationship Between Nurses' Work Motivation and Handwashing Compliance Levels Before and After the Five Moments Program at General Hospital in Banjarmasin," the following conclusions can be drawn: Most nurses at Sultan Suriansyah General Hospital in Banjarmasin have strong work motivation (78%). This indicates that although most nurses have strong work motivation, there is still a group whose motivation needs to be improved. Overall, the

majority of nurses (68%) demonstrated hand washing compliance in the compliant category. Nurse compliance varied across moments, with the highest compliance at the fifth moment (after contact with the patient environment) and the fourth moment (after touching the patient), while compliance at the first, second, and third moments remained relatively low. There is a significant relationship between nurses' work motivation and handwashing compliance rates before and after the Five Moments program at General Hospital in Banjarmasin. The stronger the nurses' work motivation, the higher their handwashing compliance rates.

## RECOMMENDATION

It is recommended that future researchers use longitudinal or experimental research designs to explain the causal relationship between work motivation and hand washing compliance in greater depth. Include other variables that may influence handwashing compliance, such as nurses' knowledge, facility availability, workload, or managerial support, to provide a more comprehensive understanding. Develop or use more objective methods of measuring compliance to reduce potential bias from self-reported responses.

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