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An optimization of role of a head nurses to hand hygiene compliance of nurses in outpatient clinic room

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Abstract

Background: The culture of infection prevention and control, including hand hygiene is often not implemented properly by nurses in health services in outpatient units throughout the world. One of the factors related to nurses' compliance behavior in carrying out hand hygiene at inappropriate moments is the quality and quantity of the direction function of the head of the room as the first line manager.

Purpose: To optimize the direction function of the head of the room regarding the implementation of nurse hand hygiene compliance in the outpatient room.

Method: A descriptive approach, specifically focusing on case report study. The study took place from September-Oktober 2024, in Hospital X, Jakarta. The independent variable was direction function of head nurse the dependent variables is nurses hand hygiene compliance. Using total sampling, 14 respondent were selected, who met specific inclusion and exclusion criteria. The analysis proceeded with a univariate test to determine the frequency distribution of quistioannare characteristics.

Results: The evaluation and optimization by the direction function of the head of the room using the WHO multimodal approach, supervision from 69.2% to 90%, motivation from 69.2% to 90%, effective communication from 76.9% to 90%.

Conclusion: The implementation of the directing function by the head of the room using the WHO multimodal approach has succeeded in improving the hand hygiene compliance of nurses in the pediatric outpatient room at X Hospital. This is evidenced by the results of the questionnaire survey which showed a significant increase.

Keywords: Compliance; Hand Hygiene; Infection; Nurse.

INTRODUCTION

Hand hygiene is an important step in infection prevention and control in health facilities including hospital. Proper hand hygiene is essential for healthcare workers because unclean hands can facilitate the transmission of microorganisms from patient to patient, leading to increased morbidity, and costs associated with infection that occur in health service (Fandizal, & Handiyani, 2020). Compliance by health workers, including nurses, with correct hand hygiene practices plays a crucial role in minimizing the risk of transmission of nosocomial infection. However, in reality the implementation of

hand hygiene compliance by nurses is still low even though nurses have the most frequent interaction with patient, this causes nurses to have more opportunities to implement hand hygiene in both inpatient and outpatient hospital units (Sands, & Auger, 2020).

Therefore, efforts to improve compliance with hand hygiene practices need to be a major concern in the management of infection prevention and control in health care facilities. Various factors can influence nurses' compliance with hand hygiene, including the availability of handwashing facilities,

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high workload, perception of infection risk, and support from hospital management (Patarru, Yosepfus, Secsaria Handini, & Heryyanoor, 2019). Continuing education, close supervision and constructive feedback can be effective strategies in improving nurses' awareness and compliance with hand hygiene. With the implementation of optimal hand hygiene, it is expected to reduce nosocomial infection rates, improve patient safety, and reduce the cost burden due to preventable infections in health facilities (Huber, 2017).

One of the factors related to nurses inappropriate behavior in carrying out hand hygiene or inappropriate moments is the quality and quantity of direction function of the head of the room as the first line manager. Through the directing function of the head of the room direction nursing staff, guiding effectively, communication effectively with staff, supervision, motivating in an effort to improve better performance for the organization (Budianto, Setyaningrum, & Prastiani, 2021).

Heads of rooms who perform their directive function well can play a role in improving nurses' compliance with hand hygiene practices by providing clear directions, reinforcing policies, and setting a good example in the application of hand hygiene. Consistent supervision and effective communication between the head of the room and nursing staff can also help identify barriers faced by nurses in implementing hand hygiene, so that appropriate solutions can be implemented (Jama, 2020). In addition, motivation and appreciation for compliance in hand hygiene can increase nurses' awareness of the importance of these actions in preventing nosocomial infections and maintaining patient safety. Thus, the role of the head of the room as a first-line manager is crucial in creating a work environment that supports a good hand hygiene culture in health care facilities (Gupta, Gunjiyal, Malhotra, Srivastav, & Mathur, 2023).

Hospital X is a government-owned tertiary hospital in Jakarta that is specifically a referral center for mothers and children. The average number of patient visits in this hospital reaches 250-300 patients per day, with one nurse serving up to 35 patients. Based on secondary data obtained from the Infection Prevention and Control Committee, nurse compliance with hand hygiene practices in this hospital has decreased from June to August 2024. In

June 2024, the hand hygiene compliance rate was recorded at 63.16%, then slightly decreased to 63.11% in July, and decreased significantly to 55.07% in August. This figure is still below the standard set by PPI and indicates that nurses' hand hygiene compliance is not optimal.

In an effort to improve hand hygiene compliance in the pediatric inpatient room, the head of the room has implemented various directive strategies, including providing motivation through the provision of rewards. Rewards include praise and gifts for nursing staff who demonstrate compliance in implementing hand hygiene. This step is expected to increase nurses' awareness and compliance in carrying out hand hygiene practices, so as to minimize the risk of nosocomial infections and improve patient safety (Murray, 2017).

RESEARCH METHOD

A descriptive approach, specifically focusing on case report study. The study took place from September – Oktober 2024, in Hospital X, Jakarta. The independent variable was direction function of head nurse the dependent variables is nurses hand hygiene compliance. Using total sampling, 14 respondent were selected, who met specific inclusion and exclusion criteria.

The inclusion criteria required nurses who are officially employed in the outpatient department, those responsible for supervising and directing nursing staff, nurses with at least six months of work experience in the outpatient setting, nurses who have attended hand hygiene training or workshops. While exclusion criteria involved nurses with less than six months of work experience in the outpatient department, administrative or support staff who are not directly involved in patient care, those currently on extended leave (e.g., maternity, sick leave), nurses with medical conditions preventing adherence to hand hygiene practices.

Data obtained from the results of multimodal strategy to improve hand hygiene practices from WHO with five main components, system changes, education and training, monitoring and feedback, reminders and communication, and strong safety culture. The question is answered using four choices of strongly disagree, disagree, agree, strongly agree. Accumulated score when <60% indicates very low compliance and >70% conducts according to standard operating procedures.

The analysis proceeded with a univariate test to determine the frequency distribution of respondents characteristics.

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RESEARCH RESULTS**Table 1. Characteristics of Respondents (N=14)**

Variable	Results
Age (Mean±SD)(Range)(Year)	(30.571±8.702)(21-50)
Age (n/%)	
21-30	10/71.0
31-40	1/8.0
41-50	3/21.0
Gender (n/%)	
Male	1/10.0
Female	13/90.0
Education (n/%)	
D III Nursing	6/43.0
S1 Ners	8/57.0
Department (n/%)	
Head Of The Room	1/7.0
Team Leader	1/7.0
Proficient Nurse	12/86.0
Competency Level (n/%)	
PK 1	8/61.5
PK II	4/30.8
PK III	2/7.7

Tabel 1 shows characteristics of participants with a mean age and standard deviation (30.571±8.702) ranging from 21-50 years and most were female 13 (90%). Most of the respondents had a bachelor's degree in professional nursing with 8 (57%), and came from a professional nurse department of 12 (86%), the majority have PK 1 competency level totaling 8 (61.5%).

Tabel 2. Questionnaire Results

Direction function	Pre-Implementation	Post-Implementation
The head of the room builds the good communication with the team regarding the implementation of hand hygiene.	76.2%	90%
The head of the room provides motivation to nurses to apply infection prevention and control through hand hygiene compliance	69.2%	90%
The head of the room supervises the implementation of hand hygiene compliance with the team	69.2%	90%
The head of the room and management provided rewards and punishments to nurses regarding the results of the PPI audit of hand hygiene compliance	69.2%	90%

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Tabel 2. Shows WHO multimodal implementation effectively optimizes the head nurses direction function in improving nurses' hand hygiene compliance in the pediatric outpatient room at Hospital X. Observations show that the head nurse supervises the availability of necessary facilities, ensuring adequate and accessible resources. Monitoring results using the WHO observation sheet revealed that among four nurses, only one skipped hand hygiene on one of two occasions before patient contact. Respondents expressed positive feedback, highlighting the effectiveness of audio-visual reminders, morning briefings, and live simulations by the IPCN and head nurse in reinforcing compliance.

DISCUSSION

From the results of the evaluation and optimization by the direction function of the head of the room using the WHO multimodal approach, supervision from 69.2% to 90%, motivation from 69.2% to 90%, effective communication from 76.9% to 90%. This increase in the function of the head of the room will of course also have an impact on the implementation of hand hygiene compliance by nursing staff in the pediatric outpatient room based on the results of observations regarding the implementation of hand hygiene compliance in the children's outpatient room at Hospital X using the WHO observation sheet from 4 nurses, only 1 nurse skipped hand hygiene 1 out of 2 times before contact with patients.

The quality and quantity of the directing function of the head of the room as the first line manager is one of the factors that influences nurses not to perform hand hygiene properly or at the wrong moment. The directing function of the head of the room in the form of motivation, supervision of the head of the room is a supporting factor that can influence nurses in carrying out the five moments and 6 steps of hand hygiene. In addition, the lack of positive role models and social norms in health services is a factor that influences nurses' hand hygiene compliance (Webster, Bishop, Scott, Oppy, Heishman, Stevenson, & Arnold, 2023).

The absence of effective direction from the head of the room can lead to low awareness and compliance of nurses in implementing hand hygiene practices. The room manager as the first-line manager has an important role in ensuring that hand

hygiene practices become part of the work culture in the hospital environment. When the head of the room does not provide sufficient guidance, does not supervise consistently, or lacks proper motivation, then it is likely that nurses will ignore or not apply hand hygiene procedures properly (Saharman, Aoulad, El-Atmani, Sedono, Aditjaningsih, Karuniawati, & Severin, 2019). The presence of positive role models in the work environment greatly influences nurses' behavior. If senior health workers or the head of the room himself does not demonstrate compliance with hand hygiene, then nurses are likely to follow the same habits. Social norms in healthcare also play a crucial role in shaping nurses' behavior regarding hand hygiene. When the work environment does not emphasize the importance of hand hygiene or does not penalize non-compliance, this bad habit will continue (Radhakrishnan, & Anucithra, 2016).

To improve nurses' hand hygiene compliance, a strategy is needed that includes an educational approach, close supervision, and rewards for nursing staff who are disciplined in implementing hand hygiene. Periodic training on the importance of hand hygiene and its impact on preventing nosocomial infections can improve nurses' understanding and awareness. The implementation of a regular hand hygiene compliance audit system can help identify obstacles faced by nurses and find appropriate solutions (Kim, & Han, 2019).

Motivation provided by the head of the room must also be sustainable, either in the form of praise, awards, or other incentives that can increase the enthusiasm of nurses in implementing hand hygiene. The use of posters, visual reminders and digital technology such as compliance monitoring applications can also help increase nurses' awareness of the importance of hand hygiene (Filion, KuKanich, Chapman, Hardigree, & Powell, 2011). With a comprehensive approach and full support from the head of the ward as the first line manager, it is expected that hand hygiene compliance among nurses can be significantly improved. This will not only have an impact on patient safety, but also on improving the overall quality of health services (Baffour, 2021).

Efforts to implement the directing function carried out by the head of the room, namely by supervising the availability of hand hygiene facilities in the

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children's outpatient room using a check list sheet. That nurses' limited hand hygiene facilities are an obstacle in implementing hand hygiene compliance. Adequate facilities support a better health care culture, as nurses are more likely to perform hand hygiene when these facilities are available in a timely and easy to access manner (Ahmadipour, Dehghan, Ahmadinejad, Jabarpour, Mangolian, & Ebrahim, 2022). Apart from that, the head of the room supervises efforts to increase the implementation of nurse hand hygiene compliance, Supervision is carried out on an academic basis through the E. book which contains the importance of compliance with the implementation of hand hygiene according to procedures and journals related to the implementation of hand hygiene (Hughes, Kirk, & Dixon, 2017).

Academic-based supervision, namely by providing guidance or teaching, support to health workers in carrying out hand hygiene according to procedures, so as to increase knowledge and compliance of health workers in carrying out hand hygiene, the importance of continuous supervision carried out by the head of the room to increase nurses' compliance in maintaining hand hygiene, supervision carried out by the head of the room and the habits of implementing nurses in carrying out hand hygiene in hospitals (Shirey, 2013). The head of the room carries out effective communication including promotion and reinforcement of messages carried out in meetings with staff, direct discussions about hand hygiene standards. Communication plays an important role to strengthen hand hygiene practices among health workers. Ongoing communication helps ensure that messages regarding hand hygiene remain a priority and consistent communication ensures that hand hygiene remains a priority and encourages long-term behavior change (Sari, Rizal, & Sihura, 2024).

Such as posters regarding hand hygiene, can play a role in increasing hand hygiene compliance. A study conducted in a hospital showed that poster intervention at the entrance to the hospital cafeteria increased hand hygiene efforts from 3.16% to 6.17%. Although the increase is small, the use of posters is considered effective in reminding people to clean their hands, especially when equipped with easily accessible hand cleaning facilities (Tartari, Garlasco, Mezerville, Ling, Marquez, Seto, & Pittet,

2024). Therefore, visual reminders such as posters and stickers, when used in conjunction with regular education and training, can help improve hand hygiene compliance practices in healthcare facilities, although additional strategies are needed to obtain more significant and sustainable results. a combination of visual reminders (posters and stickers) and verbal reminders during health staff meetings to comply with hand hygiene at crucial moments (Seferi, Parginos, Jean, Calero, Fogel, Modeste, & Madaline, 2023).

The use of mobile technology can be an effective tool in creating personalized and easily accessible reminders for caregivers at all times. the application on the nurses smartphone is set to issue a voice notification reminding the nurse to clean hands according to WHO guidelines such as "5 moments of hand hygiene". This notification is in the form of an audio alarm that reminds you with a clear but friendly voice. reminders are set hourly from 08:00-14:00 or as long as the nurse is on duty (Abou, Saliba, Merhi, Rahi, & Nabulsi, 2020). Was an increase in hand hygiene compliance from 7.6% to 49.9% ($P < 0.001$) with the use of audio reminders of hand hygiene compliance. another study showed that the use of voice reminders directly resulted in sustained hand hygiene compliance of $\geq 90\%$. when alerts and vibrations were disabled, HH compliance dropped to $\geq 74\%$ (range, 62%-78%). Once warnings resumed, HH compliance returned to $\geq 90\%$ (Haenen, Greeff, Voss, Liefers, Hulscher, & Huis, 2022). Hand hygiene compliance increased significantly from 86.47% to 89.68% using an automated hand hygiene reminder system (Pan, Tien, Hung, Lin, Sheng, Wang, & Chen, 2013).

Through empowering room heads by motivating and mobilizing themselves and others to achieve positive results in nursing practice and the work environment. Feedback is given to staff who are less compliant, as well as giving praise to staff who consistently comply with procedures. Data-based feedback is very helpful in providing a real picture of nurse behavior and areas that need improvement (Kantanen, Kaunonen, Helminen, & Suominen, 2017). Through empowerment, room leaders motivate and mobilize themselves and others to achieve positive outcomes in nursing practice and the work environment. Feedback is given to staff who are less compliant, as well as giving praise to

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staff who consistently adhere to procedures. Data-driven feedback is helpful in providing a real picture of nurses' behavior and areas for improvement. With accurate data analysis, the ward manager can design more effective strategies to improve hand hygiene compliance (Pratiwi, Khotimah, & Supriyadi, 2020).

As an effort to cultivate compliance with nurses' hand hygiene, the head of the room together with IPCN Hospital X carried out a hand hygiene simulation in the pediatric outpatient room. Providing regular training and ongoing visual and verbal reminders to encourage hand hygiene habits as well as monitoring and feedback based on direct observations and collected data, ensures that health workers receive relevant and timely feedback (Tartari, Kilpatrick, Allegranzi, & Pittet, 2022). Through this approach, an increase in awareness and behavior change among nurses and other health workers is expected. The hand hygiene simulation conducted in the pediatric ward also aims to create an interactive learning environment, where nurses can practice proper hand hygiene techniques in real-life scenarios. Regular training and visual and verbal reminders help remind staff of the importance of hand hygiene, while structured monitoring and feedback ensure that any deviations are immediately identified and corrected (Thakur, Sharma, & Singh, 2025).

The results of these efforts are expected to significantly improve hand hygiene compliance rates, reduce the risk of nosocomial infection transmission, and create a stronger patient safety culture at Hospital X. In addition, this approach can also serve as a model for other units in the hospital, so that good hand hygiene practices can be adopted across the entire healthcare facility (Constantinou, Leontiou, Mpouzika, Michail, Middleton, & Merkouris, 2024).

CONCLUSION

The implementation of the directing function by the head of the room using the WHO multimodal approach has succeeded in improving the hand hygiene compliance of nurses in the pediatric outpatient room at X Hospital. This is evidenced by the results of the questionnaire survey which showed a significant increase. By consistently implementing the directing function, the room manager can create a work environment that supports hand hygiene compliance among nursing staff.

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