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Nursing supervision and PPE compliance: The role of psychological safety

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Abstract

Background: The use of personal protective equipment (PPE) is one of the standard precautions in hospitals. The use of gloves aims to prevent cross-transmission of infection. Supervision serves as a management function in infection prevention and control by ensuring that glove use complies with established regulations.

Purpose: To analyze the relationship between supervision and nurses' compliance with glove use in the inpatient ward.

Method: A quantitative design with a cross-sectional approach. The study sample consisted of 121 inpatient ward nurses at Kariadi Hospital, Semarang, selected using a total sampling technique. Data were collected using a questionnaire that had been tested for validity and reliability. Most nurses demonstrated compliance with glove use and received good levels of supervision. A significant relationship was found between supervision and the level of nurse compliance in using gloves.

Results: The p-value was 0.002 (<0.05), indicating a moderate correlation strength with a positive correlation direction. Better supervision was associated with higher levels of nurse compliance in glove use.

Conclusion: More structured and continuous supervision regarding glove-use compliance needs to be developed as an effort to improve service quality and enhance patient safety.

Keywords: Compliance Level; Gloves; Nurses; Personal Protective Equipment; Supervision.

INTRODUCTION

The proper use of personal protective equipment such as gloves in accordance with regulations can reduce the risk of infection transmission. The use and removal of personal protective equipment (PPE) are regulated through standardized guidelines managed by the infection prevention and control team (Gopee, 2023). PPE is one of the hospital standard precautions that must be monitored and complied with in its use. The correct and appropriate use of gloves can contribute to the prevention of Healthcare Associated Infections (HAIs) (Rozenbojm, Nichol, Spielmann, & Holness, 2025).

The global level of nurses' compliance in using gloves ranges from approximately 60% to 90%. Previous studies have reported that nurses' compliance with the principles of glove use remains

low, including the practice of using one pair of gloves for different patients (Al-Bsheish, Jarrar, Al-Mugheed, Samarkandi, Zubaidi, Almahmoud, & Ashour, 2023). Nurses' compliance in using gloves is influenced by several factors such as the availability of PPE, the maturity of regulations and policies, the quality of PPE, and the provision of supervision (Kilminster, Cottrell, Grant, & Jolly, 2017). Supervisors play an important role in management functions by providing direction and monitoring nurses regarding competence and compliance in using gloves (Dahlia, Novieastari, & Afriani, 2020).

The provision of effective supervision is influenced by several factors such as perception, skills, and the workload of supervisors. A comfortable work environment also affects the supervisor's performance positively (Trimulyanto, Andriany, & Sujianto, 2023). Based on this explanation, this study

becomes increasingly important because nurses' compliance in using gloves and the provision of supervision are both essential components in improving the quality of hospital services. This study was conducted to analyze the relationship between supervision and the level of nurses' compliance in using gloves as personal protective equipment in inpatient wards (Neves, Souza, Medeiros, Munari, Ribeiro, & Tipple, 2021).

RESEARCH METHOD

A quantitative correlational design with a cross-sectional approach. The study with a sample size of 121 participants. The sample was selected using total sampling, with the inclusion criterion being nurses

who were actively providing nursing care to patients. The study was conducted over a 6-month period from May 2025 to October 2025. Data collection for the variables was obtained by distributing a questionnaire that had been tested for validity and reliability. The research data underwent a correlation test using Spearman's correlation coefficient to determine the p-value, correlation coefficient, and direction of correlation. This study adhered to research ethics by respecting the rights of respondents throughout the study. The study was deemed to meet ethical requirements, as evidenced by the issuance of an ethical clearance letter numbered 16604/EC/KEPK-RSDK/2025.

RESEARCH RESULTS

Table 1. Frequency Distribution of Respondents (N=121)

Variable	Results
Age (n/%) (Mean±SD) (Range) (Year)	(30.7±6.2) (20-55)
20-25	28/23.1
26-35	67/55.4
≥35	26/21.5
Gender (n/%)	
Male	39/32.2
Female	82/67.8
Education (n/%)	
Diploma	74/61.2
Bachelor	39/32.2
Professional Nurse (Ners)	8/6.6
Length of Work (n/%)	
<5 years	34/28.1
5-10 years	58/47.9
≥10 years	29/24.0
Supervision Level (n/%)	
Poor	2/1.7
Fair	36/29.8
Good	83/68.6
Compliance in Using Gloves (n/%)	
Less Compliant	7/5.8
Obedient	114/94.2

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The table presents the demographic characteristics of respondents and the distribution of supervision levels and compliance in using gloves among nurses (N = 121). The mean age of respondents was 30.7 ± 6.2 years, with an age range of 20–55 years. Most respondents were aged 26–35 years (55.4%), followed by those aged ≥ 35 years (21.5%) and 20–25 years (23.1%). Based on gender, the majority of respondents were female (67.8%), while male respondents accounted for 32.2%. In terms of educational background, most respondents held a diploma degree in nursing (61.2%), followed by bachelor degree holders (32.2%) and professional nurses/Ners (6.6%).

Regarding length of work, nearly half of the respondents had 5–10 years of work experience (47.9%), while 28.1% had worked for less than 5 years and 24.0% had more than 10 years of experience. The supervision level data showed that most respondents perceived good supervision (68.6%), while 29.8% reported fair supervision and only 1.7% reported poor supervision. In terms of compliance in using gloves, the majority of nurses were categorized as obedient/compliant (94.2%), whereas only 5.8% were classified as less compliant.

DISCUSSION

The respondents in this study belonged to the productive age group, which tends to have good physical condition and high work enthusiasm (Scanlon, 2018). Most individuals in the productive age category are able to support hospital work programs by providing innovative ideas for improving hospital services. On average, the respondents had considerable work experience as indicated by their length of employment. Workers with longer work experience generally possess greater experience and skills acquired over time (George, Shafqat, Verma, Patidar, & Patidar, 2023). Almost all respondents were female nurses. The different characteristics between male and female workers require management to be more careful in workforce placement. Male workers tend to have greater physical strength, whereas female workers tend to demonstrate more caring attitudes and emotional sensitivity in providing services (Equipment, 2021). The majority of respondents had vocational and professional educational backgrounds. Higher levels of formal and informal education indicate broader

knowledge and understanding. Such knowledge increases an individual's awareness of the importance of productivity in the workplace (Febianti, Shulthoni, Masrur, & Safi'i, 2023).

The implementation of supervision by supervisors toward inpatient nurses in using gloves as personal protective equipment was generally categorized as good, although a small proportion still fell into the fair to poor supervision categories. Supervision is considered effective when it fulfills several indicators related to the structure, process, and outcomes of supervision (Woodward & Bassett, 2025). The benefits of effective supervision include encouraging work motivation and creating a healthy and positive work environment, thereby improving employee well-being (Rafferty & Coleman, 2016). Supervision activities in nursing management aim to improve patient and family care by focusing on nurses' needs, skills, and abilities in carrying out their duties (Rangki, Hasan, & Haryanto, 2023). Supervisors are expected to be actively involved in the activities performed by the supervised staff so that guidance and instructions are not perceived merely as commands (Agil, Agustina, Judijanto, Ulfah, Nurhayati, & Fatma, 2025). The potential for high-quality nursing services is substantial, and effective supervision is expected to produce better quality healthcare services (Supriyati, 2026).

Overall, nurses' compliance was categorized as compliant. Compliance is reflected in several forms of behavior, including conformity, compliance, and obedience (Sariwulan & Ghofar, 2024). Compliance behavior is expected to become a positive culture within the workplace. Several factors influence the sustainability of compliance, including organizational support, repeated training, regular monitoring and feedback, resource availability, and commitment established by individuals and teams (Liu, Wang, Tan, Stewart, Chan, Eliseeva, & Zhao, 2022). Compliance serves as a positive asset in minimizing human resource-related compliance risks.

The provision of supervision plays a role in shaping nurses' compliance behavior, although other factors may also influence compliance behavior. Healthcare workers' adherence to patient safety procedures can be improved through effective supervision. Strengthening monitoring systems plays an important role in maintaining consistency in compliance behavior (Vaismoradi, Tella, Logan,

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Khakurel, & Vizcaya-Moreno, 2020). Supervision is part of the effort to improve nurses' compliance in using gloves according to established regulations (Xia, Fu, Liao, Yang, Guo, & Bian, 2020).

CONCLUSION

Effective supervision can improve nurses' compliance with glove-wearing protocols as stipulated by the regulations in effect at each hospital. Policy makers need to improve supervision practices to make them more structured and tiered in order to maximize results and reduce the risk of non-compliance.

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