



Research Article

The Impact of Authority Factors on Health Workers' Compliance with Hand Hygiene Practices at the Emergency Installation of Adi Husada Hospital, Undaan Wetan, Surabaya

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ABSTRACT

Compliance with hand hygiene is a key National Quality Indicator established for hospitals and serves as a crucial metric for quality across all service units. The national target for hand hygiene compliance is set at over 85%. However, Adi Husada Hospital (AHUW) has set a higher target of 100% to meet the quality indicators for hand hygiene compliance. An analysis of hand hygiene compliance data from March to August 2024 revealed that the emergency department at AHUW achieved a compliance rate of 86%. This rate is lower than that of several other service units, such as the operating rooms (100%) and the intensive care unit (98%). This study aims to explore the relationship between authority factors and adherence to hand hygiene standard operating procedures (SOP) among health workers in the AHUW Emergency Installation.

The research employed a quantitative, cross-sectional design and collected primary data via a questionnaire distributed via Google Forms.

The study found that compliance among medical personnel at the AHUW Emergency Installation was rated good. The primary factor influencing both compliance and non-compliance was identified as the individual self-factor, followed closely by the organizational authority factor. Notably, only the location status showed a significant impact on handwashing compliance ($p = 0.006$). This finding suggests that the presence of authority figures in the workplace plays a crucial role in healthcare workers' adherence to hand hygiene practices. In contrast, the variables of responsibility, legitimacy, status, and proximity to authority figures did not exhibit significant effects ($p > 0.05$), suggesting they do not strongly influence compliance.

These findings suggest that the visible presence of authority at the point of care is more impactful than any formal or perceived characteristics of that authority.

Keywords: compliance, hand hygiene, authority, health workers

INTRODUCTION

Hand hygiene is the most straightforward and effective method for preventing treatment-related infections in healthcare settings. Despite its simplicity and advancements in infection control practices, compliance among healthcare workers with hand hygiene recommendations in hospitals remains disappointingly low. This compliance is a key National Quality Indicator for Hospitals and



should be integrated as a quality metric within each service unit. The target for hand hygiene compliance is over 85% (WHO, 2009) (Erasmus, et al., 2010). (Menkes, 2022)

Compliance entails a behavioral shift from disregarding regulations to adhering to them (Notoatmodjo, 2010) Various factors can influence compliance, including individual factors aligned with Niven's compliance theory, group dynamics consistent with Asch's conformity theory, and organizational influences reflective of Milgram's theory of authority compliance. In this analysis, the focus will be on examining the authority factors that impact compliance, as outlined by Milgram's theory (Niven, 2022) (Asch, 1951) (Milgram, 1963)

The theory of obedience to authority, proposed by Stanley Milgram, suggests that individuals tend to follow orders from authority figures, even if these orders conflict with their personal moral beliefs. This tendency toward obedience is powerful when the figure issuing the commands holds a recognized position of authority (Myers & Twenge, 2017)

Milgram's theory originated from a landmark obedience experiment conducted in 1963, which demonstrated that people are often willing to comply with directives from authority figures, even when those directives contradict their own ethical standards. In the healthcare context, Milgram's theory implies that compliance with protocols is likely to increase when authority figures—such as unit heads, supervisors, or emergency department managers—are perceived as legitimate, are physically close to staff, possess high status, and take responsibility for their actions. Regarding hand hygiene practices, authority figures who model the desired behavior, provide direct oversight, and actively encourage adherence to hand hygiene protocols can significantly enhance staff compliance.

This study examines how authority affects healthcare workers' compliance with hand hygiene protocols in the Emergency Department (ED) of Adi Husada Hospital. Milgram's theory offers a valuable psychosocial framework for understanding how authority structures within healthcare organizations influence adherence to standard operating procedures, especially in the high-pressure environment of emergency departments.

The significance of this research lies in evaluating whether the current authority structure in the ED effectively promotes compliance. The findings can help hospital management develop targeted strategies to enhance leadership roles and supervision, ultimately improving service quality and ensuring patient safety.

MATERIAL AND METHODS

This research utilized a quantitative approach and a cross-sectional design. Data collection was conducted in the Emergency Department (ED) of Adi Husada Undaan Wetan Hospital, located in Surabaya, East Java. The study population included all personnel in the ED, except the Head of Unit and the Head of Room, for a total of 36 individuals. The final sample consisted of 33 medical staff members, while 3 administrative personnel were excluded from the analysis. The investigation focused on one dependent variable: hand hygiene compliance. It also considered five independent variables representing subcomponents of authority factors based on Milgram's theory. Hand hygiene compliance was assessed through direct observations of hand hygiene practices, following the Five Moments for Hand Hygiene as recommended by the World Health Organization (WHO). The compliance score was quantitatively calculated as the percentage of hand hygiene actions performed relative to the total opportunities, allowing it to be treated as a continuous variable suitable for analysis as interval data.

The independent variables encompassed five dimensions of authority: location status, personal responsibility, legitimacy of the authority figure, status of the authority figure, and proximity to the authority figure. Each dimension was assessed using a closed-ended questionnaire featuring a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Responsive Features

Based on the results of a questionnaire completed by 36 medical personnel at the Emergency Room of AHUW, the characteristics of the respondents are summarized as follows:

Table 1. Respondent Characteristics Data

Characteristics Responden	n	Percentage (%)
Gender	36	100
Woman	14	38,9
Man	22	61,1
Age	36	100
< 30 Years	10	27,8
30 - 39 Years	17	47,2
40 - 49 Years	5	13,9
≥ 50 Years	4	11,1
Working Period	36	100
< 10 Years	20	55,6
10 - 19 Years	8	22,2
20 - 29 Years	7	19,4
≥ 30 Years	1	2,8
Work	36	100
Doctor	15	41,7
Nurse	21	58,3
Education	36	100
Diploma degree	26	27,8
Bachelor degreee	10	72,2
Total	36	100

From Table 1, it is evident that the majority of respondents (61.1%) were male, with the largest age group being individuals aged 30 to 39 years (47.2%). Additionally, the most common working period among respondents was less than 10 years (55.6%). This finding suggests that those participating in the survey are relatively new to their roles at AHUW and may not have established a strong connection with the organization.

Compliance Level

The compliance of health workers with the Standard Operating Procedure (SOP) for hand hygiene—specifically, the five moments of handwashing—was evaluated by observing their adherence to the outlined steps in the AHUW-established SOP. The results regarding respondents' handwashing compliance are presented below

Table 2. Respondents' Compliance Level in Handwashing

Compliance Level	Sum	Percentage (%)
Low	2	5,6
Enough	9	25
High	25	69,4

As indicated in Table 2, the majority of respondents demonstrated high compliance with handwashing practices. Three main factors were identified as motivations influencing their handwashing behavior: (1) self-factors, (2) work unit factors, and (3) organizational factors. The reasons respondents provided for their handwashing practices are summarized below

Table 3. Reasons for Respondents to Wash Their Hands

Reasons for Compliance	Sum	Percentage (%)
Self-factor	34	94,4
Work unit factor	0	0
Organizational factors	2	5,6

According to Table 3, the primary reasons respondents cited for washing their hands are largely self-motivated. Health workers follow hand hygiene protocols as outlined in the hospital's Standard Operating Procedures (SOP). Each unit, including the emergency department at AHUW, displays reminder posters that promote hand hygiene practices, specifically the use of alcohol-based antiseptic solutions and handwashing with soap and running water, in accordance with these SOPs. It is essential to perform hand hygiene before and after medical procedures as outlined in these SOPs. While nurses are committed to maintaining these hand hygiene standards, there is a pressing need for the hospital to provide more comprehensive support and detailed information regarding hand hygiene procedures within each unit. Below are the six-step handwashing procedures and the five designated moments for hand hygiene that respondents observed.

Table 4. Compliance with the 6 Steps and 5 Hand Washing Moments by Respondents

Compliance	Average	Interpretation
Adherence to the 6-step procedure for proper handwashing	3,42	Good
Washing hands before contact with the patient	3,19	Pretty Good
Washing hands before performing aseptic procedures	3,61	Good
washing hands after exposure to the patient's body fluids	3,81	Good
Washing hands after contact with patients	3,58	Good
Washing hands after contact with the patient's environment	3,42	Good
Average	3,50	Good

Table 4 indicates that health workers have successfully followed the 6 steps and 5 moments of handwashing. However, the moment of washing hands before patient contact is rated as considered quite good.

Quality of Location Status

The assessment of location status focuses on health workers' perceptions of the prestige of AHUW and its correlation with the pride they feel as nurses, as well as their awareness of the achievements made within their unit. Below is an analysis of respondents' perceptions of AHUW's location status.

Table 5. Assessment of Respondent Location Status

Location Status	Average	Interpretation
Proud to work at AHUW	3,50	Good

Proud of my work and the achievements of my unit at AHUW	3,33	Good
Average	3,42	Good

Table 5 demonstrates that respondents' assessment of their location status at AHUW is classified as good.

Quality of Responsibility

The evaluation of personal responsibility concerns health workers' accountability for performing each hand hygiene action and step before and after medical procedures, in accordance with the hospital's Standard Operating Procedures (SOP) for Hand Hygiene. The following is an assessment of respondents' sense of responsibility.

Table 6. Quality Assessment of Respondent Responsibility

Personal Responsibility	Average	Interpretation
Commitment and consistency in executing all procedures set by the hospital	3,58	Good
Responsibility in implementing hand hygiene measures and procedures according to the established Standard Operating Procedures (SOPs)	3,58	Good
Average	3,58	Good

Table 6 indicates that respondents' assessment of their responsibilities regarding the hospital's guidelines is categorized as good.

Quality of Legitimacy of Authority Figures

The assessment of the legitimacy of authority figures concerns healthcare workers' perceptions of unit heads and room heads. This assessment considers whether these leaders hold legitimate positions that grant them the authority to regulate and instruct nurses to follow established procedures. Below is the assessment of the quality of legitimacy of the authority figures:

Table 7 Assessment of the Quality of Legitimacy of Respondent Authority Figures

Legitimacy of Authority Figures	Average	Interpretation
Recognition of authority, decisions, or policies established by leaders or authority figures in my unit	3,39	Good
The Head of Unit/Room emphasizes the importance of following the hand hygiene SOP	3,47	Good
The Head of Unit/Room legally has the right to regulate and instruct actions per the SOP	3,47	Good
Average	3,44	Good

Table 7 shows that the assessment of the legitimacy of the authority figures—the unit head and the room head—is rated as good.

Quality of Authority Figure Status

The assessment of the status of authority figures focuses on healthcare workers' perspectives regarding the skills, abilities, knowledge, and professionalism of the unit heads and room heads

within the hospital. The following is the assessment of the quality of the status of the respondent authority figures:

Table 8 Quality Assessment of Status of Respondent Authority Figures

Status of Authority Figures	Average	Interpretation
The Head of Unit/Room in my unit is a professional with high credibility, knowledge, and experience	3,36	Good
The Head of Unit/Room in my unit possesses good skills, abilities, and knowledge in implementing the hand hygiene SOP	3,42	Good
Average	3,39	Good

Based on Table 8, the quality assessment of the authority figures' status—the heads of the unit and room—is categorized as good.

The Closeness of Authority Figures

The assessment of closeness to authority figures pertains to how health workers perceive their relationships with unit heads and room heads regarding the implementation of hand hygiene Standard Operating Procedures (SOPs) before performing medical procedures. Below is the respondents' assessment of the proximity to their authority figures.

Table 9. Assessment of the Proximity of Respondent Authority Figures

The Closeness of Authority Figures	Average	Interpretation
The Head of Unit/Head of Room in my unit is close to my subordinates and is always actively involved in unit issues	3,53	Good
The relationship between the executor and the supervisor in my unit is excellent	3,47	Good
The Head of Unit/Head of Room is willing to consider input from subordinates to improve patient safety	3,53	Good
Average	3,51	Good

Table 9 presents an evaluation of respondents' relationships with their authority figures, specifically the unit head and the room head.

Linear Regression Test of the Influence of Location Status, Personal Responsibility, Legitimacy of Authority Figure, Status of Authority Figure, and Proximity to Authority Figure on Hand Hygiene Compliance

To determine the influence of location status, personal responsibility, legitimacy of the authority figure, status of the authority figure, and proximity to the authority figure on hand hygiene compliance among healthcare personnel, a linear regression analysis was conducted. This analysis aims to assess the extent to which the authority-related factors outlined in Milgram's theory contribute to or predict compliance with hand hygiene protocols among healthcare workers in the Emergency Department of Adi Husada Undaan Wetan Hospital.. In this study, we examined the influence of independent variables on the dependent variable using linear regression analysis. This test evaluates whether each independent variable—namely, location status, personal responsibility, legitimacy of the authority figure, status of the authority figure, and proximity to the authority figure—has a statistically significant effect on hand hygiene compliance. The significance level set for this study was $\alpha = 0.05$. A significance value (p-value) from the

regression analysis that is less than 0.05 indicates that the independent variable significantly influences the dependent variable

The results of the linear regression analysis between the independent and dependent variables are summarized in Table 8 below:

Table 8. Linear Regresion Location Status, Responsibilities, Legitimacy of Authority Figures, Status of Authority Figures and Proximity of Authority Figures to Handwashing Compliance

Independent variable	P Value	Interpretation
Location Status*	0,006	significant effect on
Responsibility	0,851	Unsignificant effect on
Legitimacy of Authority Figures*	0,548	Unsignificant effect on
Authority Figure Status*	0,521	Unsignificant effect on
The Closeness of Authority Figures	0,281	Unsignificant effect on

Based on the results presented in Table 8, only location status was statistically significant for handwashing compliance ($p = 0.006$; $p < 0.05$). This finding indicates that healthcare workers' perceptions of authority figures' presence in specific locations significantly influence their adherence to hand hygiene practices. In contrast, the other four variables—responsibility ($p = 0.851$), legitimacy of authority figures ($p = 0.548$), status of authority figures ($p = 0.521$), and proximity of authority figures ($p = 0.281$)—did not demonstrate a significant effect on compliance. P-values greater than 0.05 indicate that these factors are not statistically significantly associated with staff hand hygiene compliance in the Emergency Department of Adi Husada Undaan Wetan Hospital.

These findings emphasize that the physical presence or visibility of authority figures may have a more substantial impact on compliance behavior than their perceived legitimacy or formal status. Hospital management can leverage this insight to enhance on-site supervisory presence, thereby improving service quality and patient safety by enhancing hand hygiene compliance. (Ulum & Wulandari, 2013) (Andini, et al., 2023)(Putri, 2018)(Gupita, 2016).

The findings indicate that personal responsibility did not impact compliance, aligning with previous studies that reported no significant relationship between nurses' sense of responsibility and their handwashing compliance. However, several other studies presented contrasting results, suggesting that personal responsibility is indeed related to and influences compliance. (Sumeninger, 2015) (Andini, et al., 2023)(Ernawaty, et al., 2022)(Putri, 2018)(Ulum & Wulandari, 2013)(Jeli & Ulfa, 2014)

Additionally, the legitimacy of authority figures was found to significantly influence compliance, consistent with previous research demonstrating a significant relationship between perceived legitimacy and nurses' adherence to nursing care protocols. Conversely, several studies have indicated that this legitimacy may not be associated with compliance. (Ulum & Wulandari, 2013) (Andini, et al., 2023)(Putri, 2018)(Mahfudhoh & Rohmah, 2015)

The findings regarding the status of authority figures indicate a significant impact on compliance, consistent with previous studies demonstrating a meaningful relationship between authority figure status and compliance. However, earlier research reported contrasting results, suggesting that the status of authority figures does not significantly influence compliance. (Ulum & Wulandari, 2013)(Putri, 2018)(Andini, et al., 2023)

Additionally, the proximity of authority figures was found not to affect compliance, contradicting other studies that claim a connection between proximity and compliance. (Andini, et al., 2023)(Putri, 2018)(Gupita, 2016).

CONCLUSION AND SUGGESTION

Conclusion

The study revealed that the level of compliance among medical personnel at the AHUW Emergency Installation was categorized as good. The primary factors influencing both compliance and non-compliance were identified as individual self-factors, followed by organizational authority factors. Notably, location status had a significant effect on handwashing compliance ($p = 0.006$), indicating that the presence of authority figures in the workplace plays a vital role in healthcare workers' adherence to hand hygiene practices. In contrast, other variables, such as responsibility, legitimacy, status, and proximity to authority figures, did not demonstrate significant effects ($p > 0.05$), suggesting they do not strongly influence compliance. These findings imply that the visible presence of authority at the point of care may be more impactful than characteristics of formal or perceived authority.

Suggestion

Based on the findings and results of the study, which indicate that authoritative factors—including location status, the legitimacy of authority figures, and their status—significantly influence the compliance of medical personnel with hand hygiene standard operating procedures (SOP), several recommendations can be made to enhance compliance:

1. Implement a system to reward the accomplishments of both individuals and work units, aimed at fostering pride in their workplace status. This finding could involve public recognition, such as highlighting the best-performing units and employees on a weekly or monthly basis (e.g., unit and employee of the week or month)
2. Strengthen the role of authority figures in the oversight and monitoring of hand hygiene SOP implementation. This action should be done in a more focused, routine, and professional manner.
3. If deemed necessary, introduce a system of rewards and penalties related to adherence to the hand hygiene SOP, with authority figures playing a legitimate and authorized role in its execution.
4. Provide ongoing training for key authority figures, such as Unit Heads and Room Heads, who serve as role models. This act will ensure that their expertise, knowledge, and skills align with expectations, thereby reinforcing their status as authoritative leaders.

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CONFLICT OF INTEREST

The researcher stated that there was no *Conflict Of Interest* with the respondents and the place where this study was conducted.

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