e-ISSN : 2597-6052

MPPKI MEDIA PUBLIKASI PROMOSI KESEHATAN INDONESIA

Research Articles Open Access

Organizational and Behavioral Factors Associated with Infection Prevention and Control Policy Implementation among Nurses: A Cross-Sectional Study in a District Hospital

Rahmat Alyakin Dakhi[1]*, Jasmen Manurung[2], Astrid Carmia Dachi[3]
[1]Universitas Sari Mutiara Indonesia, Medan, Sumatera Utara, Indonesia
[2]Universitas Sari Mutiara Indonesia, Medan, Sumatera Utara, Indonesia
[3]Dinas Kesehatan Kabupaten Nias Selatan, Sumatera Utara, Indonesia

***Corresponding Author**: E-mail: rahmatalyakin@sari-mutiara.ac.id

ARTICLE INFO

Manuscript Received: 04 Mar, 2026
Revised: 22 Apr, 2026
Accepted: 01 May, 2026
Date of Publication: 06 May, 2026
Volume: 9
Issue: 5
DOI: 10.56338/mppki.v9i5.10602

KEYWORDS

Healthcare-Associated Infections;
Infection Prevention;
Nurses;
Policy Implementation

ABSTRACT

Introduction: Healthcare-associated infections (HAIs) remain a critical indicator of healthcare quality and patient safety. HAIs contribute to increased morbidity, prolonged hospitalization, higher healthcare costs, and mortality. At Lukas Hilisimaetano Hospital, the incidence of HAIs exceeded the national minimum service standard of <1.5%, reaching 10.73% in 2023 and 7.31% in 2024. These findings suggest that the implementation of infection prevention and control (IPC) policies in the hospital has not been fully optimized. Based on Edward III's policy implementation theory, policy implementation is influenced by communication, resources, disposition, and bureaucratic structure. This study aimed to analyze organizational and behavioral factors associated with IPC policy implementation among nurses.

Methods: A cross-sectional analytical study was conducted from May to November 2025 at Lukas Hilisimaetano Hospital. All 45 nurses working in inpatient units were included using total sampling. Data were collected using structured questionnaires and observation sheets measuring communication, resources, disposition, bureaucratic structure, and IPC policy implementation. Instrument validity was assessed through expert review, and reliability testing showed acceptable internal consistency (Cronbach's alpha >0.70). Data were analyzed using Chi-square and binary logistic regression.

Results: Communication (OR=7.90; p=0.003), resources (OR=9.44; p=0.001), disposition (OR=14.40; p=0.001), and bureaucratic structure (OR=8.20; p=0.001) were significantly associated with IPC policy implementation in bivariate analysis. Multivariate analysis showed that disposition (AOR=8.26; 95% CI: 1.77–38.58; p=0.008) and resources (AOR=4.71; 95% CI: 1.13–19.58; p=0.033) remained significantly associated. The strong association between disposition and IPC implementation highlights the importance of behavioral commitment among nurses in supporting infection prevention practices.

Conclusion: IPC policy implementation is associated with both organizational and behavioral factors, with disposition emerging as the strongest associated factor. Findings should be interpreted cautiously due to the cross-sectional design and small sample size. Strengthening behavioral commitment and ensuring adequate resources may support improved IPC implementation in similar settings.

Publisher: Fakultas Kesehatan Masyarakat Universitas Muhammadiyah Palu

INTRODUCTION

Hospitals as healthcare institutions play an important role in improving public health by providing quality services according to established health standards. However, hospitals can also become a source of infection if medical procedures are not performed in accordance with infection prevention protocols (1,2).

Permenkes No. 27 of 2017 explains that HAIs, currently known as Healthcare-Associated Infections (HAIs), are infections associated with services in healthcare facilities (2). HAIs are infections that occur in patients during treatment in hospitals or other healthcare facilities after hospital admission within 48–72 hours (2,3). These infections may spread from patients to staff, to other patients, to visitors or families, or from staff to patients through direct contact with contaminated equipment or body fluids (2,3).

Healthcare-associated infections remain a major global patient safety problem and contribute significantly to increased morbidity, mortality, prolonged hospitalization, and higher healthcare costs worldwide (3–5). Globally, millions of patients are affected by HAIs each year, particularly in developing countries where infection prevention programs are often limited by inadequate resources and weak implementation of infection control policies (1,3–5).

Previous studies emphasize that effective infection prevention and control (IPC) programs require strong institutional commitment, adequate resources, clear communication, and healthcare workers' compliance with standard operating procedures (1,5–7). Strengthening hospital management systems and organizational structures has been identified as a key strategy to reduce HAIs and improve the quality of health services (6–9).

Another important factors associated with successful infection control implementation is the behavior and commitment of healthcare workers. Nurses, as frontline healthcare providers who interact directly with patients, play a crucial role in implementing infection prevention policies (10–12). Previous studies have shown that positive attitudes, adequate knowledge, and supportive organizational environments are significantly associated with nurses' compliance with infection prevention and control guidelines (10,11,13).

The impact of HAIs includes increased morbidity and mortality, reduced quality of life, and additional economic burden for both patients and hospitals (3,14,15). The risk of exposure is not only experienced by patients but may also affect healthcare workers, families, and visitors (2,3,16). This burden can be minimized through the implementation of effective infection prevention and control programs in healthcare facilities (1,5,6,17).

Every hospital is required to implement an infection prevention and control program in accordance with national regulations and quality assurance standards (2). In practice, this includes surveillance, reporting, evaluation, and organizational coordination through an Infection Prevention and Control Committee to minimize infections among patients, staff, and visitors (1,2,12).

Nurses are among the healthcare workers who have the most direct and continuous contact with patients in hospitals. Therefore, nurses have a substantial role in preventing HAIs through compliance with standard precautions, particularly hand hygiene, aseptic procedures, and the use of personal protective equipment (2,10,12,14).

According to Edward III's policy implementation framework, the success of policy implementation is associated with four major determinants: communication, resources, disposition, and bureaucratic structure (18). Clear communication, adequate resources, positive implementer attitudes, and effective organizational structure are all essential to ensure that policies are translated into practice successfully (9,18,19).

An initial survey conducted at Lukas Hilisimaetano Hospital showed that the incidence of HAIs remained above the expected minimum service standard, indicating that the implementation of the infection prevention and control program had not yet been optimized (2). In 2023, the incidence rate reached 10.73%, and in 2024 it remained high at 7.31%. This condition highlights the importance of examining organizational factors influencing policy implementation among nurses in the hospital setting. Therefore, this study aimed to analyze factors associated with the implementation of the IPC control program policy by nurses at Lukas Hilisimaetano Hospital, South Nias Regency.

Although previous studies have identified communication, resources, and organizational structure as important factors associated with infection prevention practices, most studies have examined these factors separately or focused primarily on compliance outcomes. There remains limited empirical evidence integrating both organizational and behavioral factors within a unified policy implementation framework, particularly in resource-constrained hospital settings. Furthermore, the application of Edward III's policy implementation model in the context of infection prevention and control (IPC) remains underexplored.

Therefore, this study aims not only to examine factors associated with IPC policy implementation but also to contextually assess and extend Edward III's framework by evaluating the relative contribution of organizational and behavioral components in a district-level hospital setting. HAIs Conceptually, the structural relationship among variables can be illustrated as follows:

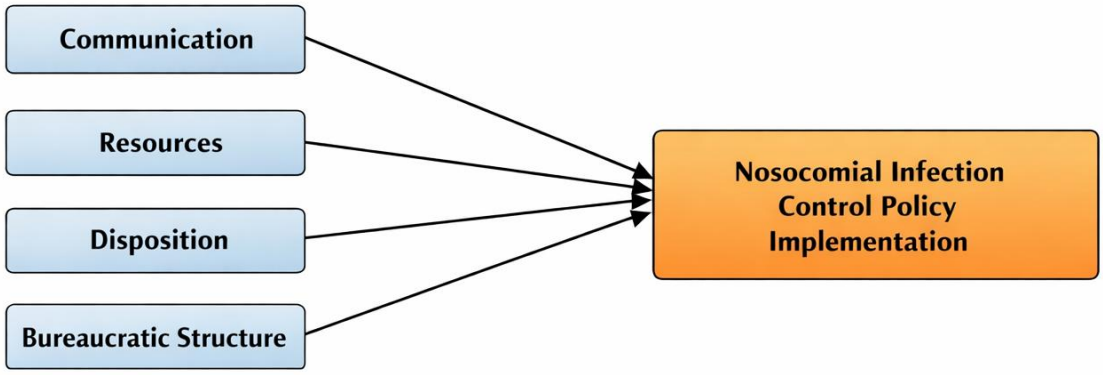

Figure 1. Conceptual Diagram

METHOD

Study Design and Setting

A cross-sectional analytical study was conducted between May and November 2025 at Lukas Hilisimaetano Hospital, South Nias Regency, Indonesia.

Population and Sample

The study population consisted of all executive nurses assigned to inpatient care units at Lukas Hilisimaetano Hospital. A total of 45 nurses were included in the study. Because the target population was relatively small and accessible, all eligible nurses were included using a total sampling technique.

Variables

The dependent variable in this study was the implementation of the HAIs control program policy. The independent variables were communication, resources, disposition, and bureaucratic structure. These variables were developed based on Edward III's policy implementation framework (18).

Data Collection

Data were collected through self-administered questionnaires and structured observation. Observations focused on hand hygiene practices, PPE use, and adherence to standard precautions. Observations were conducted by trained researchers using standardized checklists to ensure consistency.

Instrument Development, Validity, and Reliability

The research instrument was developed based on Edward III's policy implementation framework and adapted from previously published studies on infection prevention and organizational behavior. Content validity was assessed by three experts in public health and hospital management.

Reliability testing was conducted using Cronbach's alpha, with results indicating acceptable internal consistency: communication (0.78), resources (0.81), disposition (0.86), bureaucratic structure (0.74), and policy implementation (0.83).

Operational Definitions

All variables were measured using structured questionnaires with a 5-point Likert scale.
Communication: measured using 8 items assessing clarity, consistency, and feedback (score range 8–40).
Resources: measured using 7 items assessing availability of staff, equipment, and training.
Disposition: measured using 8 items assessing attitudes, commitment, and willingness.
Bureaucratic Structure: measured using 6 items assessing SOP clarity and coordination.
Policy Implementation: measured using 10 items assessing compliance with IPC procedures.
Total scores for each variable were categorized into "good" and "poor" based on median cut-off values

Data Collection

Data were collected through self-administered questionnaires and structured observation. Observations focused on hand hygiene practices, PPE use, and adherence to standard precautions. Observations were conducted by trained researchers using standardized checklists to ensure consistency

Data Analysis

Data analysis was conducted in three stages. Univariate analysis was used to describe respondent characteristics and the distribution of study variables. Bivariate analysis using the Chi-square test was performed to examine the association between independent variables (communication, resources, disposition, and bureaucratic structure) and the dependent variable (implementation of the HAIs control program policy). The strength of association was measured using Odds Ratio (OR) with a 95% confidence level and a significance threshold of $p < 0.05$.

Multivariate analysis was performed using binary logistic regression to identify the most dominant factor influencing policy implementation. Variables with $p < 0.25$ in the bivariate analysis were included in the regression model. Adjusted Odds Ratios (AOR) with 95% Confidence Intervals (CI) were calculated to determine the independent relationship of each variable. Statistical significance was set at $p < 0.05$.

Given the limited sample size, logistic regression was used cautiously as an exploratory analysis. The ratio of events per variable was considered, and results were interpreted conservatively to minimize overfitting bias.

Ethical Consideration

This study was conducted after obtaining ethical clearance from the appropriate institutional ethics committee. Participation was voluntary, and all respondents provided informed consent prior to data collection. Confidentiality and anonymity of respondents were maintained throughout the research process.

RESULTS

Characteristics of Respondents

The characteristics of respondents in this study can be seen in the following table.

Table 1. Characteristics of Respondents

Characteristics	N	%
Gender		
Male	10	22.2
Female	35	77.8
Age		
21 - 30	12	26.7
31 - 40	26	57.8
> 40	7	15.5
Education Level		
D3 Nursing	39	86.7

S1 Nursing /Ners	6	13.3
Work Experience		
< 5 years	11	24.4
5 - 10 years	13	28.9
> 10 years	21	46.7
Prevention Training HAIs		
Ever	31	68.9
Never	14	31.1
Total	45	100.0

A total of 45 nurses participated in this study. Most respondents were within productive working age and had varying educational and work experience backgrounds. Overall, the respondents represented nurses actively involved in inpatient care and in the implementation of hospital infection prevention and control procedures.

Bivariate

Bivariate analysis showed that all variables were significantly associated with IPC implementation, as presented in Table 2.

Table 2. Bivariate Analysis of Factors Associated with Infection Control Policy Implementation

Variable	Good Implementation n (%)	Poor Implementation n (%)	OR	95% CI	p-value
Good Communication	16 (80.0)	4 (20.0)	7.90	1.94–32.17	0.003
Poor Communication	7 (28.0)	18 (72.0)	Ref	–	–
Adequate Resources	17 (85.0)	3 (15.0)	9.44	2.14–41.63	0.001
Inadequate Resources	6 (24.0)	19 (76.0)	Ref	–	–
Positive Disposition	18 (90.0)	2 (10.0)	14.40	2.79–74.36	0.001
Negative Disposition	5 (20.0)	20 (80.0)	Ref	–	–
Good Bureaucratic Structure	15 (75.0)	5 (25.0)	8.20	2.03–33.08	0.001
Poor Bureaucratic Structure	8 (32.0)	17 (68.0)	Ref	–	–

The results of the bivariate analysis showed that all four independent variables were significantly associated with the implementation of the HAIs control program policy. Communication was significantly associated with policy implementation (OR=7.90; p=0.003). Resources also showed a significant association (OR=9.44; p=0.001). Disposition demonstrated the strongest association in the bivariate analysis (OR=14.40; p=0.001), while bureaucratic structure was also significantly related to policy implementation (OR=8.20; p=0.001).

The high odds ratio observed for disposition (OR=14.40) suggests a strong association between nurses' attitudes and IPC implementation. However, the wide confidence interval indicates potential variability, which may be influenced by the small sample size. These findings indicate that nurses who perceived communication, resources, disposition, and bureaucratic structure positively were more likely to demonstrate good IPC policy implementation of the control program policy.

Multivariate

Multivariate analysis showed that disposition and resources remained significantly associated with IPC policy implementation after adjustment, whereas communication and bureaucratic structure were no longer statistically significant (Table 3).

Table 3. Multivariate Logistic Regression Analysis of Factor associated with of Infection Control Policy Implementation

Variable	Adjusted OR (AOR)	95% CI	p-value
Communication	3.12	0.79–12.34	0.103
Resources	4.71	1.13–19.58	0.033
Disposition	8.26	1.77–38.58	0.008
Bureaucratic Structure	2.64	0.68–10.21	0.162

Model Fit Indicators: Nagelkerke $R^2 = 0.62$; Hosmer–Lemeshow test p = 0.71

Multivariate logistic regression analysis (Table 3) revealed that disposition remained the most dominant independent factor associated with policy implementation (AOR=8.26; 95% CI: 1.77–38.58; p=0.008). Resources also significantly associated with IPC policy implementation after (AOR=4.71; 95% CI: 1.13–19.58; p=0.033).

Although communication and bureaucratic structure demonstrated strong crude associations in bivariate analysis, their effect diminished after multivariate adjustment. Communication was no longer statistically significant (p=0.103), and bureaucratic structure also lost statistical significance (p=0.162). These findings suggest that nurses' attitudes and commitment, as well as the adequacy of available resources, are the most important factorinfluencing the implementation of the HAIs control program policy in this hospital.

DISCUSSION

This study demonstrates that organizational factors play a substantial role in IPC policy implementation among nurses in the implementation of HAIs control policies. While all variables showed statistically significant associations in bivariate analysis, multivariate logistic regression revealed that only disposition and resources remained statistically significant predictors after adjustment. These findings are consistent with the broader literature showing that successful infection prevention policy implementation depends not only on procedural systems, but also on behavioral and organizational readiness (5–9).

The findings of this study reinforce the importance of integrating organizational support and behavioral approaches in hospital infection prevention strategies. While structural factors such as communication systems and bureaucratic procedures remain important, behavioral commitment among nurses appears to be the most influential factor in sustaining policy implementation in resource-limited settings. Therefore, hospital management should prioritize continuous education, supportive supervision, and motivational strategies to strengthen compliance with IPC standards

Communication

The results of this study indicate that communication played a significant role in the implementation of infection prevention policies. This finding is consistent with previous studies showing that effective communication, policy dissemination, and feedback mechanisms are essential to improving healthcare workers' compliance with infection prevention protocols (13,19).

Good communication is essential in building coordination, shared understanding, and teamwork in hospital settings. Clear and structured communication enables nurses to understand the objectives, procedures, and responsibilities related to infection control policies, thereby reducing ambiguity and implementation errors (13,18).

The role of the infection prevention and control committee as a communication channel is also important to ensure that policies are consistently delivered and understood by implementers.

Communication strategies and dissemination methods should be adapted to the characteristics of healthcare workers and organizational needs to improve policy acceptance and implementation and organizational needs to improve policy acceptance and implementation (1,2,7).

Although communication showed a significant association in bivariate analysis, its relationship was no longer statistically significant after multivariate adjustment. This may indicate that communication operates in close interaction with other organizational factor associated with, particularly resources and implementer disposition. Similar findings have been reported in previous studies showing that communication alone may be insufficient unless supported by organizational readiness and workforce engagement (8,9,13).

Resources

Resources were found to be significantly associated with policy implementation in this study. Adequate resources remain a fundamental requirement for the effective implementation of infection control programs, particularly in ensuring the availability of trained personnel, infrastructure, personal protective equipment, and operational support (20–22).

This finding is consistent with previous studies indicating that limited resources, including insufficient protective equipment and inadequate infrastructure, are major barriers to reducing HAIs and maintaining compliance with infection prevention protocols (20–22).

Hospital leadership has a central role in ensuring that the infection prevention and control program is adequately supported. Adequate staffing alone does not guarantee successful policy implementation if healthcare workers lack the necessary skills, training, and institutional support to perform infection prevention procedures effectively if healthcare workers lack the skills, training, and institutional support needed to carry out infection control procedures effectively (21,23,24).

Education and training should therefore be prioritized as part of resource strengthening. Previous evidence has shown that healthcare workers who receive structured infection prevention training are more likely to adhere consistently to standard precautions and safe clinical practices (12,20,24).

Hand hygiene practices and the use of personal protective equipment are crucial components of infection prevention and control. Their effectiveness depends not only on knowledge and attitudes but also on the consistent availability of facilities and protective materials in the clinical environment (2,12,14,25).

Resources also remained independently associated with policy implementation in multivariate analysis. This reinforces the importance of managerial commitment in ensuring sufficient logistical support, workforce capacity, and operational readiness to sustain infection prevention policy implementation in hospitals (9,21,22).

Disposition

Disposition refers to the attitudes, commitment, integrity, and willingness of implementers in carrying out a policy. The results of this study show that disposition had a significant relationship with policy implementation and emerged as the most dominant factor associated with after multivariate adjustment (18).

This finding suggests that nurses' attitudes and commitment are crucial in ensuring successful infection control policy implementation. Positive attitudes toward infection prevention policies encourage nurses to follow standard procedures more consistently and maintain patient safety practices in everyday clinical work (10,11).

This result is in line with previous studies showing that behavioral and attitudinal factors are among the strongest predictors of compliance with infection prevention practices, especially hand hygiene, standard precautions, and routine protective behaviors (10,11).

Disposition reflects intrinsic motivation, professional responsibility, and behavioral readiness. Even when policies are well communicated and resources are available, implementation may still fail if implementers lack commitment or do not perceive the policy as important (9,18).

The dominant role of disposition in this study suggest that behavioral and attitudinal factors may a greater influence than structural or procedural component in determining successful IP policy implementation in determining effective policy execution. Therefore, strengthening nurses' awareness, motivation, and professional commitment should become a strategic priority in hospital infection prevention programs (9–11).

The strong association of disposition indicates that behavioral commitment may play a more decisive role than structural factors in resource-limited settings. Even when policies and resources are available, implementation ultimately depends on the willingness and motivation of healthcare workers. This aligns with organizational behavior theories emphasizing intrinsic motivation and professional responsibility as key drivers of compliance

Bureaucratic Structure

The results of this study also show that bureaucratic structure was significantly associated with policy implementation in bivariate analysis. A well-functioning organizational structure can facilitate coordination, clarify responsibilities, and support adherence to infection prevention procedures (8,9,18).

Bureaucratic structure in policy implementation includes two major aspects: standard operating procedures (SOPs) and the distribution of responsibilities across organizational units. Clear SOPs help standardize actions among implementers and reduce variability in clinical practice (8,12,18).

An efficient bureaucratic structure also supports effective cooperation between hospital management, infection control teams, and nursing staff. In contrast, fragmented responsibilities, weak coordination, and unclear lines of authority may hinder policy implementation (8,9,19).

Although bureaucratic structure lost statistical significance after multivariate adjustment, it remains an important organizational foundation for implementation. Thin finding suggests that bureaucratic structure, and leadership support, and resource allocation mechanisms, resource allocation, and leadership support (8,9).

This study demonstrates that both organizational and behavioral factors are associated with IPC policy implementation. Disposition emerged as the strongest factor, suggesting that behavioral commitment plays a central role. This finding aligns with organizational behavior theory emphasizing intrinsic motivation and professional responsibility. The loss of significance of communication and bureaucratic structure may indicate overlapping constructs or indirect relationships. It is possible that these factors associated with implementation through disposition.

These findings suggest that in resource-limited settings, behavioral readiness may outweigh structural readiness. Even when policies and resources exist, implementation depends on individual commitment. However, findings should be interpreted cautiously due to methodological limitations.

Overall, the findings of this study support global evidence that infection prevention and control programs require a comprehensive approach involving policy, behavior, and organizational support systems. Effective communication, sufficient resources, positive implementer disposition, and supportive leadership structures all contribute to successful implementation, although behavioral commitment appears to be the most decisive factor in this setting (5–11).

Limitations

This study has several limitations. First, the cross-sectional design limits the ability to establish causal relationships between variables. Second, the relatively small sample size may reduce statistical power and increase the possibility of model overfitting in multivariate analysis. Third, the use of self-reported questionnaires may introduce social desirability and response bias. Fourth, because the study was conducted in a single district hospital, the generalizability of the findings to other healthcare settings may be limited. Future studies involving larger multicenter samples and longitudinal designs are recommended to strengthen the evidence regarding IPC policy.

CONCLUSION

This study found that both organizational and behavioral factors were associated with IPC policy implementation among nurses at Lukas Hilisimaetano Hospital. Among the variables examined, disposition emerged as the strongest associated factor, highlighting the critical role of behavioral commitment in supporting infection prevention practices. Adequate resources also contributed significantly to successful implementation. These findings suggest that efforts to strengthen IPC implementation should focus not only on organizational support and resource availability, but also on enhancing nurses' motivation, attitudes, and professional commitment. Nevertheless, the findings should be interpreted cautiously due to the study's methodological limitations.

AUTHOR CONTRIBUTION STATEMENT

The three author are contributor to this research. All authors contributed to the study, including conceptualization, methodology, data collection, analysis, interpretation, and manuscript writing.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article. This research was funded by Universitas Sari Mutiara Indonesia. The funder had no role in the study design, data collection, data analysis, interpretation of data, writing of the manuscript, or decision to publish the results.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

No generative AI or AI assisted technologies were used in the preparation or writing of this manuscript. The content presented is entirely original and the result of the author's independent intellectual effort.

SOURCE OF FUNDING STATEMENTS

Universitas Sari Mutiara Indonesia, Medan, Sumatera Utara, Indonesia

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to Universitas Sari Mutiara Indonesia for the financial support provided for this research. The authors also thank all respondents and research assistants who contributed to the data collection process and supported the successful completion of this study.

BIBLIOGRAPHY

1. Organization WH. Guidelines on core components of infection prevention and control programmes. Geneva; 2016.
2. Kementerian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia Nomor 27 Tahun 2017. Jakarta, Indonesia: Kemenkes RI; 2017.
3. Haque M, Sartelli M, McKimm J, Bakar MA. Health care-associated infections – an overview. Infect Drug Resist. 2018;11:2321–33. https://doi.org/10.2147/IDR.S177247
4. Rosenthal VD. International Nosocomial Infection Control Consortium report. Am J Infect Control. 2016;44(12):1495–504. https://doi.org/10.1016/j.ajic.2016.08.007
5. Haque M, McKimm J. Strategies to prevent healthcare-associated infections. Risk Manag Healthc Policy. 2020;13:1765–72. https://doi.org/10.2147/RMHP.S269315
6. Barker AK. Impact of infection control interventions. Infect Control Hosp Epidemiol. 2021;42(4):450–8. https://doi.org/10.1017/ice.2020.1293
7. Allegranzi B. Global infection prevention and control priorities. Lancet Glob Health. 2018;5(12):e1178–80. https://doi.org/10.1016/S2214-109X(17)30427-8
8. Okafor CJ. Hospital management support and implementation. BMC Nurs. 2022;21:89. https://doi.org/10.1186/s12912-022-00851-2
9. Martinez J. Organizational factors influencing infection control. J Infect Public Health. 2021;14(11):1585–91. https://doi.org/10.1016/j.jiph.2021.08.010
10. Johnson J. Nurses attitudes and adherence. J Nurs Manag. 2022;30(4):890–8. https://doi.org/10.1111/jonm.13567
11. Wang Y. Determinants of hand hygiene compliance among nurses. Am J Infect Control. 2021;49(3):290–6. https://doi.org/10.1016/j.ajic.2020.08.021
12. Sands M. Determinants of hand hygiene compliance among nurses. Int J Nurs Stud. 2022;129:104191. https://doi.org/10.1016/j.ijnurstu.2022.104191
13. Lee MH. Factors influencing nurses compliance. Journal of Korean Academy of Nursing Administration. 2021;27(2):123–32. https://doi.org/10.11111/jkana.2021.27.2.123
14. Pittet D. Evidence-based model for hand transmission. Lancet Infect Dis. 2006;6(10):641–52. https://doi.org/10.1016/S1473-3099(06)70600-4
15. Stone PW. Economic burden of healthcare-associated infections. Expert Rev Pharmacoecon Outcomes Res. 2009;9(5):417–22. https://doi.org/10.1586/erp.09.53

16. Wang D. Clinical characteristics of hospitalized patients with COVID-19. JAMA. 2020;323(11):1061–9. https://doi.org/10.1001/jama.2020.1585
17. Allegranzi B, Nejad SB. Burden of endemic health-care-associated infection in developing countries. The Lancet. 2011;377(9761):228–41. https://doi.org/10.1016/S0140-6736(10)61458-4
18. Dachi RA. Faktor-faktor yang memengaruhi implementasi kebijakan kesehatan. Jurnal Kesehatan Masyarakat Indonesia. 2023;18(2):101–9. https://doi.org/10.26714/jkmi.18.2.2023.101-109
19. Roeslie E. Implementasi kebijakan kesehatan dalam pelayanan rumah sakit. Jurnal Kebijakan Kesehatan Indonesia. 2022;11(3):145–53. https://doi.org/10.22146/jkki.74532
20. Ahri RA. Availability of infection prevention resources. Belitung Nurs J. 2020;6(5):171–8. https://doi.org/10.33546/bnj.1173
21. Ahmed N. Knowledge awareness and practice of healthcare professionals. Pak J Med Sci. 2020;36:S49–56. https://doi.org/10.12669/pjms.36.COVID19-S4.270 4
22. Garcia R. Organizational readiness and infection prevention implementation. BMC Health Serv Res. 2021;21:984. https://doi.org/10.1186/s12913-021-07034-2
23. Liu Y. Emergency management of nursing resources. Int J Nurs Sci. 2020;7(2):135–8. https://doi.org/10.1016/j.ijnss.2020.03.011
24. Arslanca T. Knowledge and preventive behaviors of COVID-19. PLoS One. 2021;16(4):e0250017. https://doi.org/10.1371/journal.pone.0250017
25. Bakhit M. PPE use among healthcare workers. BMJ Open. 2021;11(6):e043774. doi:10.1136/bmjopen-2020-043774