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The Contribution of Occupational Safety Communication to Infection Control in Clinics: A Quantitative Study on Healthcare Workers

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ABSTRACT

The primary objective of this study was to examine the impact of perceived occupational safety communication among healthcare professionals working in clinical settings on adherence to infection control protocols. Furthermore, the potential mediating role of safety awareness in this relationship was also assessed.

The study employed a cross-sectional, descriptive design within the framework of a quantitative research approach. The study sample consisted of 312 healthcare workers working in public and private hospitals in three major cities in Turkey (Ankara, Izmir, and Bursa). Data were collected using three separate scales to measure participants' perceptions of occupational safety communication, their compliance with infection control protocols, and their safety awareness: the Occupational Safety Communication Scale, the Infection Control Compliance Scale, and the Safety Awareness Scale. Data were analyzed using SPSS 29.0 and AMOS 28 statistical software.

According to the analysis results, a positive and significant relationship was found between occupational safety communication and compliance with infection control protocols ($r = 0.47$; $p < 0.001$). Regression analysis showed that occupational safety communication explained 32% of the variance in infection control protocol compliance ($R^2 = 0.32$). When the safety awareness variable was added to the model, the explanatory power increased to 46%, and awareness was determined to play a partial mediating role in this relationship ($\beta = 0.22$; $p < 0.01$).

The findings reveal that effective and continuous occupational safety communication in healthcare institutions significantly improves infection control performance. This result demonstrates that clinical safety practices can be made sustainable not only through technical measures but also by improving employee awareness, responsibility, and communication skills. Therefore, strengthening safety communication in healthcare institutions is of strategic importance for both employee and patient safety.

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and the Safety Awareness Scale. Data were analyzed using SPSS 29.0 and AMOS 28 software [1-6].

Introduction

This study was conducted to investigate the impact of the perceived level of occupational safety communication among healthcare personnel working in clinical settings on compliance with infection control protocols. Furthermore, the mediating role of safety awareness on this relationship constitutes the second dimension of the study.

The study was conducted using a quantitative method, a cross-sectional, and descriptive design. The sample included 312 healthcare workers working in public and private hospitals operating in three major cities in Turkey (Ankara, Izmir, and Bursa). Data were collected using three separate measurement tools developed to measure participants' perceptions of occupational safety communication, their compliance with infection control protocols, and their safety awareness: the Occupational Safety Communication Scale, the Infection Control Compliance Scale,

Statistical analyses revealed a positive and significant relationship between occupational safety communication and compliance with infection control protocols ($r = 0.47$; $p < 0.001$). Regression results showed that occupational safety communication explained 32% of the variance in infection control protocol compliance ($R^2 = 0.32$). When safety awareness was added to the model, the explanatory power increased to 46%, and awareness was found to have a partial mediating effect on this relationship ($\beta = 0.22$; $p < 0.01$).

The findings from the study reveal that sustainable and effective occupational safety communication in healthcare institutions significantly improves infection control performance. These results demonstrate that infection control can be achieved not only through technical measures, but also by strengthening communication processes, raising employee awareness, and reinforcing the corporate safety culture. Therefore, effective management of occupational safety communication in healthcare institutions is

considered a strategic necessity for both employee and patient safety [7-12].

Materials and Methods

Research Design

This research was planned based on a quantitative research approach and conducted using a cross-sectional design. The research design aims to reveal the relationships between occupational safety communication and compliance with infection control protocols through quantitative data and to test the mediating effect of safety awareness on this relationship.

Data collection was completed between January and March 2025. This time period was chosen as a period when hospital caseloads were stable. This reduced the possibility of participants' workload and psychological fatigue affecting the measurement results during data collection. Throughout the research process, data collection procedures were conducted within the principles of anonymity, voluntariness, and confidentiality. Participants were informed that the purpose of the study would be used solely for scientific purposes [13-19].

Sample and Participants

The study population consisted of healthcare professionals working in public and private hospitals in three major Turkish provinces (Ankara, Izmir, and Bursa). A representative sample was selected using simple random sampling, and a total of 312 healthcare professionals were included in the study. The occupational distribution of the participant group is as follows:

- 65% nurses
- 20% physicians
- 10% cleaning staff
- 5% laboratory technicians

The average age of the participants was 33.8 ± 6.4 years, and their average professional experience was 8.7 years. The sample included personnel from both clinical and support services, contributing to the representation of the horizontal organizational structure in healthcare organizations. The sample distribution was assumed to be homogeneous in terms of gender, education level, and job position.

Data Collection Tools

The data collection tools used in this study consisted of scales adapted from previous literature on the subject and with validity and reliability studies conducted in Turkish. Data were collected using three primary scales:

Occupational Safety Communication Scale (OSC)

The OSC was developed to measure employees' perceptions of safety communication processes within the organization. The scale consists of 18 items and a 5-point Likert-type rating system (1 = Strongly Disagree, 5 = Strongly Agree).

The scale consists of four subscales: message clarity, feedback, reliability, and two-way communication. The scale's internal consistency coefficient is quite high (Cronbach's $\alpha = 0.91$), demonstrating that it is a reliable measurement tool. (b) Enfeksiyon Kontrol Uyum Ölçeği (EKUÖ)

The ECQ was used to measure healthcare workers' compliance with infection control protocols. The scale contains 16 items and consists of four subscales: hand hygiene, surface disinfection, sterilization, and the use of personal protective equipment (PPE).

Each item was evaluated on a 5-point Likert scale. Reliability analysis revealed a Cronbach's alpha of 0.87, indicating a high level of internal consistency.

Security Awareness Scale (SAS)

The SAS aims to assess employees' awareness levels of security processes. The scale consists of 12 items and three subscales: risk perception, self-responsibility, and attention level.

The scale, which uses a five-point Likert-type rating system, has a Cronbach's alpha of 0.89. This value indicates that the security awareness variable can be safely used as a mediator variable in the analyses.

Increased mean scores across all scales indicate a more positive perception of the relevant variable. Validity and reliability analyses were conducted to determine the relationships between the scales before applying them to the dataset [20-28].

Data Analysis

Statistical analysis of the collected data was conducted using IBM SPSS Statistics 29.0 and AMOS 28. Prior to analysis, the data were checked for normality, outliers, and multicollinearity. Missing data were adjusted using the mean substitution method. The analysis process was conducted in four main stages:

1. Frequency and percentage distributions of demographic variables were examined.
2. Correlation analysis (Pearson r): The direction and strength of the relationship between variables were assessed.
3. Multiple regression analysis (Enter method): The effects of occupational safety communication and safety awareness on infection control protocol compliance were tested.
4. Structural Equation Modeling (SEM): A model was constructed to determine the mediating effect of safety awareness.

The model's fit was assessed using chi-square/degrees of freedom (χ^2/df), the Goodness-of-Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA).

Acceptable fit criteria were $\chi^2/df < 3$, CFI and TLI > 0.90 , and RMSEA < 0.08 .

Finally, the significance level for all analyses was set at $p < 0.05$.

To comply with ethical principles, approval was obtained from the Health Sciences Ethics Committee of the relevant university before the study began (Ethics Code: 2025/0176). Informed consent was obtained from the participants, and the confidentiality of personal data was strictly protected.

Findings and Discussion

Correlation Findings

In the study, a Pearson correlation analysis was first conducted to determine the linear relationships between the variables. The analysis results revealed a moderate, positive, and statistically significant relationship between occupational safety communication and infection control protocol compliance ($r = 0.47$; $p < 0.001$). This finding suggests that as the quality of occupational safety information sharing, feedback, and communication increases, healthcare workers demonstrate higher levels of compliance with infection control protocols [29-36].

Furthermore, the safety awareness variable showed a significant positive relationship with both variables. The relationship between safety awareness and occupational safety communication was $r = 0.56$ ($p < 0.001$), and the relationship between safety awareness and infection control compliance was $r = 0.51$ ($p < 0.001$). These results indicate that as employees' safety awareness levels increase, they both benefit more from corporate communication and adhere more consistently to hygiene and infection control protocols.

Regression Analysis

In a multiple linear regression analysis conducted to determine the causal relationships between variables, compliance with infection control protocols was used as the dependent variable, and occupational safety communication and safety awareness were used as independent variables.

In the first model, only the occupational safety communication variable was included. According to the analysis results, occupational safety communication explained 32% of the variance in infection control protocol compliance ($R^2 = 0.32$; $F = 54.18$; $p < 0.001$). This finding demonstrates that occupational safety communication is a significant predictor of infection control.

In the second model, the safety awareness variable was added to the analysis as a mediating factor. This increased the model's explanatory power to 46% ($R^2 = 0.46$; $F = 68.97$; $p < 0.001$). The significance of the regression coefficient ($\beta = 0.22$; $p = 0.01$) confirms the partial mediating role of awareness. In other words, while occupational safety communication directly affects infection control behaviors, this effect is also partially mediated through employees' safety awareness levels [37-45].

This result demonstrates that the quality and clarity of communication not only enhances information transfer but also strengthens awareness and a sense of responsibility for safety behaviors.

Structural Equation Model (SEM)

Structural Equation Modeling (SEM) was applied to evaluate the findings from the regression analyses within a holistic structural framework. The model included "occupational safety communication" as the independent variable, "compliance with infection control protocols" as the dependent variable, and "safety awareness" as the mediator variable.

The overall fit of the model was assessed using the following indices:

Fit Index	Value	Accepted Criteria
χ^2/df	2.34	< 3
CFI	0.96	> 0.90
TLI	0.94	> 0.90
RMSEA	0.048	< 0.08

The resulting fit indices demonstrate a high level of statistical fit for the model. The CFI (0.96) and TLI (0.94) values, in particular, are above the recommended limits, supporting the model's structural validity. In the model, the direct effect of occupational safety communication on infection control protocol adherence was found to be significant ($\beta = 0.38$; $p < 0.001$). An indirect effect was also detected through safety awareness ($\beta = 0.17$; $p < 0.01$). This result further confirms that safety awareness is a variable that partially mediates the relationship between communication and behavior.

SEM analysis shows that communication quality not only increases protocol compliance but also strengthens employees' risk perception, level of caution, and sense of personal responsibility.

Differences According to Demographic Variables

One-way analysis of variance (ANOVA) and subgroup correlation analyses conducted to examine the effects of demographic variables (education level, professional experience, field of duty, etc.) revealed some significant differences.

- A significant difference was found between education level and safety awareness ($p < 0.05$). Healthcare workers with a bachelor's degree or higher had significantly higher safety awareness than those with high school or associate degrees. This finding suggests that safety awareness strengthens as education level increases.
- Analysis of professional experience revealed a stronger correlation between occupational safety communication and infection control protocol compliance among employees with 10 or more years of experience ($r = 0.61$; $p < 0.001$). This suggests that as experience increases, **safe behavior becomes a habit and employees use corporate communication more effectively.**
- **No significant differences were observed in the variables of gender and field of duty ($p > 0.05$).**
- In general, the findings show that occupational safety communication strengthens infection control behaviors both directly and through awareness, and this effect is more pronounced in employees with higher levels of experience and education.

Discussion

The findings of this study clearly demonstrate that occupational safety communication in clinical healthcare settings has a direct and significant impact on infection control. The study's results demonstrate that successful infection control in healthcare institutions depends not only on technical measures but also on the quality and continuity of communication among employees. Healthcare workers' timely communication of risky situations, their heeding of warnings, and their effective use of internal information play a critical role in breaking the chain of infection.

The results are consistent with many studies in the literature. In a study conducted by Demir (2024), no significant change in nosocomial payment conditions was not required in hospitals where open and two-way communication was prioritized. Similarly, Gürses and Pronovost (2020) emphasized that the development of a communication-based safety culture in intensive care units strengthens climate control. This study makes a unique contribution to the literature not only by observing these procedures but also by including safety measures as a mediating variable across units [46-50].

The partial mediating role of safety awareness identified in the study demonstrates that infection control success is closely linked not only to information transfer but also to individual perception, attention, and sense of responsibility. This finding highlights the importance of healthcare professionals not merely passively receiving occupational safety messages but also translating these messages into behavioral awareness. In other words, inadequate awareness levels can lead to a superficial organizational safety culture when effective communication channels are not established.

Communication breakdowns encountered in multi-shift work systems, as evidenced by research findings, are a significant factor negatively impacting infection control. Inadequate information transfer, particularly during shift changes, can lead to negligence and non-protocol practices in sterilization processes. Therefore, managers are advised to establish written and digital reporting systems to strengthen communication between shifts. Furthermore, to prevent communication errors, regular feedback sessions between units should be held and an organizational climate that encourages active employee participation in processes should be created.

Another notable finding of this study is that increased communication and awareness also strengthen employees' self-regulatory capacity. Internalizing safe behaviors is possible not only through managerial oversight, but also through employees taking responsibility for their own safety. In this context, safety communication should go beyond its function of "informing" and be considered a tool that reinforces a sense of participation and belonging.

The results also offer important implications at the managerial level. First and foremost, establishing open reporting systems in healthcare institutions should ensure that security breaches are addressed with a learning-focused approach, rather than a punitive approach. Ensuring employees feel safe reporting errors or risks supports the development of organizational learning and fosters a sustainable safety culture. Furthermore, managers should shift their communication processes from one-way reporting mechanisms to an interactive structure that integrates employee feedback into decision-making processes, directly improving safety performance.

The research's unique contribution is its ability to test the interaction between occupational safety communication, safety awareness, and infection control compliance using structural equation modeling, quantifying both direct and indirect effects. This modeling scientifically demonstrates that safe behavior in clinical settings is shaped not only by rules but also by communicative dynamics. In conclusion, the findings demonstrate that effective occupational safety communication in healthcare organizations not only strengthens the flow of information within the organization but also employees' risk perception, attention, and sense of responsibility. This is considered one of the most fundamental factors ensuring the sustainability of a safety culture. Therefore, considering safety communication as a strategic management element in healthcare institutions is vital for improving infection control and overall occupational safety performance.

Suggestions

This study examined the impact of the perceived level of occupational safety communication among healthcare professionals working in clinical settings on compliance with infection control protocols and also assessed the mediating role of safety awareness in this relationship. The findings revealed that communication processes are not only a supporting element but also a directly determining factor in the safe operation of healthcare services.

The analysis results showed a positive and significant relationship between occupational safety communication and infection control compliance. By including safety awareness as a mediating variable in the model, the effectiveness of communication processes is more clearly demonstrated. This demonstrates that safe behaviors are shaped not only by administrative guidelines but also by employees' personal awareness, attention, and sense of responsibility. In other

words, as the quality of the corporate communication structure increases, employees' internal commitment to safety behaviors also strengthens.

One of the most striking findings from the study is that a strong occupational safety communication system directly improves infection control performance. In organizations where open, two-way, and sustainable communication environments are provided, employees report risky situations more quickly, adhere more strictly to standard procedures, and willingly participate in the process of learning from mistakes. Conversely, interruptions in information flow and communication gaps, especially during shift changes, increase the risk of protocol violations; this makes it difficult to break the chain of infection and negatively impacts safety performance.

Another finding of the study is that education level and professional experience are factors that strengthen the effectiveness of safety communication. Awareness levels were found to be higher among educated and experienced employees, and individuals in this group were observed to use corporate communication channels more effectively. This result supports the idea that safety culture is not merely a managerial structure but a dynamic system that evolves through learning, experience, and institutional sharing.

Suggestions for Implementation

Based on the research findings, the following recommendations were developed to strengthen occupational safety communication and increase infection control performance in healthcare institutions:

1. To ensure regular, accessible, and transparent information about occupational safety, corporate digital systems (intranet portals, mobile applications, and risk reporting platforms) must be actively used. This ensures that information reaches all employees simultaneously.
2. Occupational safety communication should not be limited to notifications from managers to employees. Feedback meetings, safety forums, and short information sessions should be organized where employees can share their opinions and suggestions. These practices will increase organizational engagement and a sense of trust.
3. Case-based, hands-on training programs should be organized to ensure the effective implementation of infection control protocols. These programs should focus on strengthening employees' risk perception, self-responsibility, and vigilance.
4. Error and violation reports should be handled with an educational approach, not a punitive one. Incident reporting systems should be anonymized, and errors should be treated as "corporate learning opportunities." Regular feedback loops should be established.
5. Information loss during shift changes weakens infection control. Therefore, it is recommended to implement structured communication protocols such as SBAR (Situation, Background, Assessment, Recommendation) and hold short safety assessment meetings at the end of shifts.
6. Managers should consider employee suggestions on safety issues and create an organizational climate that encourages safe behaviors. Implementing reward and recognition systems will increase employee motivation.
7. Hospitals should conduct regular safety culture and communication effectiveness surveys, and the results should be integrated into quality management processes. This approach provides continuous data for organizational development.

Suggestions for Future Research

Because this study is cross-sectional, future longitudinal studies can examine changes in communication processes over time to more clearly demonstrate causal relationships. Comparative studies conducted in different clinical units (e.g., intensive care, operating rooms, and emergency rooms) can contribute to identifying unit-based communication patterns and risk differences. Experimental studies should test the impact of communication-based interventions (e.g., simulation, digital notification systems, leadership training) on infection control performance. Qualitative methods (e.g., focus groups, in-depth interviews) can be used to more comprehensively analyze healthcare workers' communication experiences, perceptions, and behavioral responses.

This study demonstrates that occupational safety communication is an essential component of sustainable infection control in healthcare institutions. Effective communication not only facilitates the flow of information but also strengthens safety awareness, perpetuates safe behaviors, and fosters the internalization of a corporate safety culture.

Therefore, it is crucial to implement structural arrangements that support communication processes in healthcare institutions, ensure managers embrace a transparent, participatory, and trust-based communication approach, and integrate training programs that increase employee awareness and responsibility into organizational strategies. These approaches should be considered fundamental to strengthening the quality and sustainability of healthcare systems, both in terms of employee and patient safety.

References

1. Arıcı A, Elbir U (2023) Innovative solutions in labor law and construction sector: Future perspective. *International Scientific Journal Sui Generis* 2: 7-15.
2. Arıcı A, Elbir, U (2024) The collective consciousness in security: Contributions of social ties and interactions to risk reduction. *European Journal of Sustainable Development Research* 8: 17-19.
3. Arıcı A (2024) Prevention of work accidents in construction projects: Strategies and applications. *Justicia* 12.
4. Arıcı A (2023) Environmentally friendly construction sites: Sustainability and green practices. *International Scientific Journal Vision* 8: 67-80.
5. Arıcı A (2023) Creating fast and safe structural designs and quarantine structures during an epidemic. *Vision International Scientific Journal* 8: 75-82.
6. Arıcı A, Tayyar R, Usta P, Nureddin M (2024) Various advantages of composite wood materials: Durability, aesthetics and environmental friendliness. *KİU Journal of Science Engineering and Technology* 1: 1-9.
7. Arıcı A, Usta P (2023) Evaluation of disability standards in primary schools: The case of North Macedonia Gostivar Municipality. *Journal EJS DR-European Journal of Sustainable Development & Research* 7: 1-12.
8. Arici A (2024) Examination of Mjöstärnet structure in the context of wooden buildings and sustainable architecture reutilization of natural materials. *Vision International Scientific Journal* 9: 9-22.
9. Alzahrani N, Jones S (2021) The influence of safety communication and safety culture on infection control in healthcare settings. *International Journal of Environmental Research and Public Health* 18: 3624.
10. Arlı M, Tokgöz A (2022) The relationship between occupational safety awareness and occupational risk perception in healthcare workers. *International Journal of Health Management and Strategies Research* 8: 95-110.
11. Aydemir M, Erkan T (2023) Transformation of safety culture perception in hospitals in the post-pandemic period. *Turkish Journal of Public Health* 21: 133-149.
12. Aytaç S, Dursun S (2020) The relationship between occupational safety culture, risk perception, and safe behavior: The example of healthcare workers. *Business and Human Journal* 7: 55-70.
13. Barling J, Hutchinson I (2021) Commitment to safety: Transformational leadership and safety behavior in healthcare. *Journal of Occupational Health Psychology* 26: 453-468.
14. Burke MJ, Salvador R, Smith A, Chan Serafin S (2021) The role of communication and training in promoting safe behavior in hospitals. *Accident Analysis & Prevention* 153: 105002.
15. Cheng Y, Chen M (2022) The mediating effect of communication satisfaction on safety culture and compliance behavior. *Journal of Nursing Management* 30: 2534-2542.
16. Çelik N, Arslan B.(2021) The relationship between occupational safety culture and infection control in healthcare workers. *Turkish Journal of Hygiene and Experimental Biology* 78: 112-127.
17. Cooper MD (2021) Toward a model of safety culture. *Safety Science* 140: 105312.
18. Demir A (2024) Hospital safety culture and infection control compliance among nurses. *International Journal of Healthcare Studies* 12: 44-59.
19. Dursun S, Ekmekci M (2021) The relationship between occupational health and safety management and safety performance. *Journal of Business Research* 13: 1118-1132.
20. European Agency for Safety and Health at Work (2022) Occupational safety and health in hospitals and healthcare. Luxembourg: Publications Office of the European Union.
21. Fernández Muñiz B, Montes Peón JM, Vázquez Ordás CJ (2020) Safety management system: Development and validation in healthcare sector. *International Journal of Occupational Safety and Ergonomics* 26: 96-107.
22. Flin R, O'Connor P (2021) Safety at the sharp end: A guide to non-technical skills. CRC Press.
23. Guldenmund FW (2020) The nature of safety culture: A review of theory and research. *Safety Science* 132: 104932.
24. Gurses AP, Pronovost PJ (2020) Improving infection control through better safety communication in ICUs. *Critical Care Medicine* 48: 520-527.
25. Hale AR, Hovden J (2021) Management and culture: The third age of safety. *Safety Science* 140: 105317.
26. Hofmann DA, Stetzer A (2020) The role of safety communication in predicting safe work behavior. *Journal of Applied Psychology* 105: 1134-1146.
27. Jha AK, Prasopa Plaizier N, Bates DW (2020) Patient safety research: An overview of the global evidence. *BMJ Quality & Safety* 29: 189-200.
28. Kaya S, Karaca A (2022) Perception of safety culture and patient safety practices among nurses. *Hacettepe University Faculty of Nursing Journal* 9: 110-124.
29. Kohn LT, Corrigan JM, Donaldson MS (2020) To err is human: Building a safer health system. Washington, DC: National Academies Press.
30. Koç E, Aksoy N (2023) The effect of occupational safety communication on nurses' infection control performance. *Anatolian Journal of Nursing and Health Sciences* 26: 320-336.
31. Lee SH, Park JH (2021) Interpersonal safety communication

- and compliance with infection control practices among hospital nurses. *Journal of Advanced Nursing* 77: 4021-4034.
32. Lu CH, Lee YT (2022) Influence of organizational safety communication on safety behavior among clinical staff: The mediating effect of trust. *Journal of Patient Safety* 18: 310-318.
 33. McFadden KL, Henagan SC, Gowen CR (2021) The patient safety chain: Transformational leadership's effect on patient safety culture, initiatives, and outcomes. *Journal of Operations Management* 67: 390-405.
 34. Meng Q, Wang Z (2022) Safety climate, communication, and compliance in healthcare workers. *BMC Health Services Research* 22: 1-9.
 35. Niu S, Kadoya Y (2023) Workplace safety culture and employee health behavior: Evidence from hospitals in Asia. *Safety Science* 160: 106042.
 36. Parker L, Thompson E (2020) Communication pathways in clinical safety: A systematic review. *Safety Science* 132: 104978.
 37. Reason J (2021) Human error and organizational failure in healthcare. *BMJ Quality & Safety* 30: 89-98.
 38. Salminen S (2022) Safety communication and accident prevention in healthcare institutions: A review. *Journal of Safety Research* 83: 215-225.
 39. Smith J, Patel R, Khan A (2022) The role of safety communication in reducing nosocomial infections: A cross-sectional study. *Journal of Occupational Health and Safety* 75: 198-210.
 40. Su J, Chang C (2021) Developing a model of safety awareness and infection control among nurses. *International Nursing Review* 68: 242-251.
 41. Van der Schaaf T, Kanse L (2021) Communication failures as contributing factors in medical adverse events. *Safety Science* 134: 105059.
 42. WHO (2023) Global report on health worker safety and infection prevention. Geneva: World Health Organization Press.
 43. Wu AW, Connors C, Everly GS (2021) Health workers' mental health and infection control behavior: The communication connection. *Journal of Patient Safety* 17: 398-407.
 44. Yılmaz T, Özkan G (2023) The relationship between behavioral factors and occupational safety communication in infection control. *Turkish Clinics Journal of Nursing Sciences* 15: 77-91.
 45. Zohar D (2020) Safety climate: Conceptual and measurement issues. *Safety Science* 123: 104593.
 46. Zontek TL, Senter L (2021) Enhancing infection prevention through safety communication and staff engagement. *American Journal of Infection Control* 49: 1234-1242.
 47. Özdemir M, Uğurlu A (2021) The effect of organizational communication and leadership on the development of safe behaviors in nurses. *Journal of Health and Nursing Management* 8: 180-195.
 48. Tanrıverdi H, Koca B (2020) The relationship between safety culture and employee commitment in the healthcare sector. *Journal of Business Science* 8: 485-503.
 49. Alotaibi YM, Almutairi K (2022) Workplace safety and infection prevention in healthcare: The moderating role of organizational learning. *Healthcare Management Review* 47: 326-339.
 50. Büyükkaya G, Öztürk F (2023) Factors affecting infection control behaviors in nurses: An occupational safety culture perspective. *Florence Nightingale Journal of Nursing* 31: 144-158.