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## Enhancing Safety Climate Through Occupational Safety and Health Training in the Healthcare Setting: The mediating Role of Safety Communication

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### Abstract

**Introduction:** Healthcare workers face a myriad of distinct risks in the healthcare settings. Occupational Safety and Health (OSH) training and OSH communication are essential for attaining and changing the safety climate. This study sought to examine the direct effect of OSH training on safety climate, examine the mediating role of OSH communication and explore the interrelationships among OSH training, OSH communication, and safety climate in the healthcare setting. **Methods:** A cross-sectional survey involving 250 health professionals (doctors, nurses and technical staff) was conducted using structured questionnaire on perception of OSH training, OSH communication and safety climate. Data were analyzed to conduct impact, correlation, and mediation analysis for the relationships among these variables using Structured Equation Modeling (SEM) and SPSS software tools. **Results:** The results showed that OSH training directly and positively influences OSH communication and safety climate, and OSH communication has a significant positive effect on the safety climate. Mediation analysis revealed that OSH communication partially mediates the relationship between OSH training and safety climate, indicating that OSH training becomes more effective when it is combined with well-defined and consistent communication about safety issues within organizational context. **Conclusion:** The results support that vital OSH training initiatives combined with a strategic OSH communication program may help to foster a favorable safety climate in healthcare. The dual impact of training and communication elucidated in this study provides potential practical significance for hospital administrators seeking to improve the culture of safety while preventing occupational risks.

**Keywords:** healthcare setting, mediation analysis, occupational safety and health, safety climate, structural equation modeling (SEM)

### INTRODUCTION

A strong safety climate is essential for the health and well-being of employees and patients in healthcare settings. Safety climate refers to employees' shared perceptions of the importance placed on safety within their workplace. Effective safety protocols are crucial in hospitals, which operate under high-risk conditions; workplace accidents must be avoided, as patient safety and well-being are directly dependent on them. The World Health Organization (WHO) identifies occupational hazards in healthcare settings, including exposure to infections and physical and ergonomic hazards, as significant threats to the safety climate if not adequately addressed (World Health Organization, 2020).



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One widely adopted and effective intervention that organizations employ to foster safety awareness and promote adherence to safety guidelines is Occupational Safety and Health (OSH) training. In the health sector, OSH training provides employees with information on safe work practices, infection management, and equipment operation, all of which are necessary to maintain a secure workplace. In addition to training, effective occupational safety and health communication is essential, as it promotes safety protocols, assures proper comprehension of processes, encourages employees to report hazardous incidents, and cultivates a culture that prioritizes safety (Murray et al., 2024).

Although OSH training programs are offered for both employees and management, their positive influence on the safety climate can only be completely achieved through a strong communication framework. Studies demonstrate that psychological safety and a robust safety climate correlate with enhanced compliance to infection prevention protocols among nurses, underscoring the need for supportive communication contexts (Lee et al., 2025).

Nonetheless, OSH training is often implemented within the hospital setting to improve safety climate; even so, its positive impact is limited by insufficient OSH communication practices. Many hospitals offer extensive safety training; yet, they frequently fail to ensure the clear and consistent accessibility of safety protocols across all organizational units. This information disconnect frequently leads to the improper use of measures, underreporting of hazards and ultimately, a deficient safety climate. (Malik & Azmat, 2022).

The complexity of multiple departments and responsibilities requiring coordination for safety creates an extra layer of complications. The advantages of OSH programs may be fully realized in the workplace only through a cohesive blend of effective training and constant safety reminders. Consequently, it is essential to examine the influence of OSH communication on the correlation between OSH training and safety climate in hospitals, as well as how both can be promoted to facilitate access to resources that foster a favorable safety climate (Murray et al., 2024).

The importance of this study is that it highlights OSH communication as a mediator in the association between OSH training and safety climate among hospitals. With this in mind, hospital executives and policymakers can create more holistic safety initiatives that don't merely train but also ensure the communication of safety messages through various levels of reinforcement throughout the organization.

These findings may be used to tailor the design of training and communication safety interventions to effectively enhance patient and staff safety. Furthermore, this study contributes to OSH communication literature by showing that OSH communication may be an effective intervention through which training is maximally effective, promoting a better safety culture. More generally, enhancing training and communication to improve the safety climate in hospitals may help reduce workplace injuries, improve patient outcomes, and increase employee morale.

While considerable research emphasizes the critical role of Occupational Safety and Health (OSH) training in enhancing workplace safety and creating a positive safety climate, this evidence is primarily limited to developed nations with advanced safety frameworks. In addition, most of the developing world, including Nepal and other South Asian countries, is confronted with unique challenges, such as a lack of resources and facilities, lower literacy on safety standards, and inadequate protective measures (Ghimire et al., 2023; ILO, 2022). Additionally, safety perceptions are influenced by socio-dynamic factors as well as individual traits that complicate the establishment of a strong safety climate in these regions (Ghimire et al., 2023). In developing countries, while organizations have been increasingly implementing sustainable practices such as Green Human Resource Management to improve organizational efficiency (Ghimire et al., 2022), limited attention has been given to aligning these strategies with OSH initiatives and safety communication.

Although previous studies have associated OSH training and safety communication with favorable safety climates in isolation, there is a lack of empirical evidence on their interaction, primarily because most healthcare establishments operate in resource-limited environments. However, the mediating role of safety communication between OSH training and safety climate has yet to be fully explored in a developing country context. Bridging these gaps is critical to identifying effective interventions, ensuring workplace safety, and complementing the sustainability agenda of developing economies. These insights could be used to develop tailored approaches that improve the safety of healthcare environments for workers and patients.

This research is based on Social Exchange Theory (SET), initially developed by Blau (1964), which serves as a fundamental framework for analyzing the relationships between firms and their employees. The fundamental principle of SET posits that interactions between parties include reciprocity, wherein the provision of valued

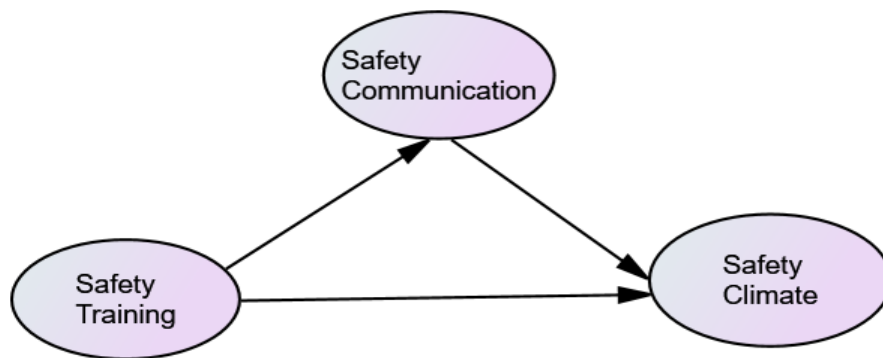
resources or aid by one party elicits a corresponding favorable response from the other party. In the organizational setting, Social Exchange Theory posits that when firms allocate resources like training, effective communication, and support, employees are likely to respond with favorable attitudes, behaviors, and job performance.

Effective leadership is crucial in cultivating a positive safety climate across healthcare organizations. Leaders who continuously exhibit dedication to safety, allocate essential resources, and include staff in safety dialogues greatly influence the development of a culture that prioritizes safety (Zhou et al., 2021). Recent studies have correlated safety leadership with enhanced adherence to safety protocols and a decrease in adverse incidents inside hospitals (Feng et al., 2023).

The COVID-19 pandemic highlighted the critical need for strong occupational safety and health practices. Hospitals with established communication systems and safety practices exhibited enhanced adaptation and resilience throughout the crisis (Lopez et al., 2021). The pandemic further demonstrated the significance of occupational safety and health communication in alleviating anxiety and safeguarding the mental well-being of healthcare professionals (Singh et al., 2022).

**Conceptual Model**

The generated conceptual model from SET positions OSH training as the independent variable and safety climate as the dependent variable, with OSH communication as the mediating variable. In this model, the exchanges occurring between the organization and employees are shown to be interdependent, indicating that training and communication, as provided by organizations, are complementary factors leading to safety climate. Overall, SET lays a strong theoretical foundation for understanding the pathways by which organizational investments in training and communications affect employees’ perceptions and behaviors that contribute to a positive climate for safety. According to Social Exchange Theory, OSH communication functions as the mechanism through which employees perceive and reciprocate training efforts, thereby strengthening the indirect pathway from OSH training to safety climate. This paper extends the current understanding of safety climate dynamics in healthcare contexts by using SET to illuminate the role of reciprocating relationships in achieving organizational safety objectives.



*Figure 1. Conceptual model of the study*

**Hypothesis:**

The following hypothesis are proposed based on the conceptual model:

H1: OSH training programs have a significant positive effect on the safety climate in hospital settings.

H2: OSH communication mediates the relationship between OSH training programs and safety climate in hospital settings.

**Objectives:**

Objective 1: To assess the direct effect of OSH training programs on the safety climate in hospital settings.

Objective 2: To examine the mediating role of OSH communication in the relationship between OSH training and safety climate.

Objective 3: To explore the associations between OSH Training, OSH Communication, and Safety Climate in hospital settings.

**METHODS**

This study is grounded in Social Exchange Theory (SET), which suggests that positive reciprocal relationships form when organization invest in their employees through training and communication. The conceptual model developed for this study positions Occupational Safety and Health (OSH) training as the independent variable, Safety Climate as the dependent variable, and OSH Communication as the mediating variable.

A cross-sectional survey design was used to collect data at a single point in time, allowing for an examination of the relationships between Occupational Safety and Health Training, OSH Communication, and Safety Climate in hospital settings. The target population comprised healthcare professionals, including doctors, nurses, and technicians. Stratified random sampling ensured a balanced representation of each professional group, resulting in a sample size of 250 participants, sufficient for regression and mediation analyses.

Data were gathered through structured, standardized questionnaires measuring perceptions of OSH training, communication, and safety climate. OSH training was assessed for perceived quality and relevance, OSH communication evaluated safety-related clarity and feedback, and the safety climate was measured through perceptions of overall workplace safety culture. The survey was administered through face-to-face interviews. Socio-demographic data (e.g., gender, profession, experience) were collected as control variables.

Data analysis included descriptive statistics to summarize demographics, correlation analysis to examine variable relationships, regression analysis to identify direct effects, and mediation analysis using Structural Equation Modeling (SEM) to test whether OSH communication mediated the relationship between OSH training and safety climate. Reliability was confirmed with Cronbach's Alpha, and validity was assessed through Exploratory factor analysis (EFA).

To enhance methodological transparency, reliability and validity tests were conducted. All constructs demonstrated satisfactory internal consistency with Cronbach's  $\alpha$  values exceeding the 0.70 threshold, and Composite Reliability (CR) values above 0.70. Convergent validity was supported through Average Variance Extracted (AVE) values above 0.50. Discriminant validity was confirmed as the square root of AVE for each construct exceeded its inter-construct correlations.

Ethical approval (ref no. 2772) was obtained from Nepal Health Research Council, and informed consent was secured from participants. Confidentiality and anonymity of participant data were maintained throughout the research process. This study has some limitations as a cross-sectional study captures data at one point, limiting causal inferences. Additionally, self-reported data may introduce biases such as social desirability bias. Future research should explore longitudinal designs and objective measures to provide a more comprehensive understanding of the effects of OSH training and communication on safety climate.

**RESULTS**

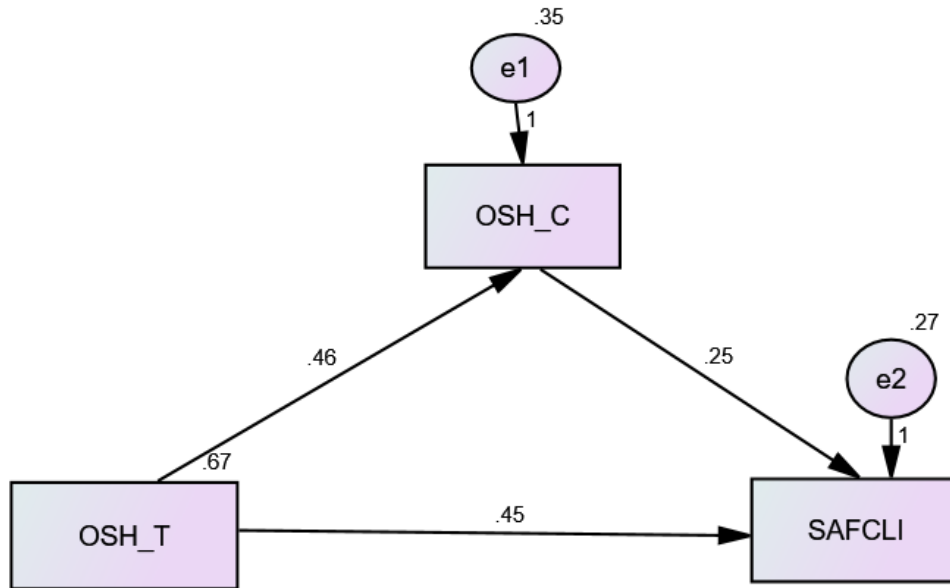
Frequency distributions of socio-demographic variables include gender, profession, qualification, experience, and employment status of the participant in the following table 1. The socio-demographic characteristics of the sample (N = 250) were analyzed and summarized in terms of gender, profession, qualification, experience, and employment status. The gender distribution shows that 69.2% of the respondents were female (n = 173), and 30.8% were male (n = 77). Regarding profession, 47.6% of the participants were nurses (n = 119), followed by doctors at 37.2% (n = 93) and technicians at 15.2% (n = 38). In terms of qualifications, the majority held a bachelor's degree

(64.4%, n = 161), while 18.8% had a master’s degree (n = 47), and 16.8% had a diploma (n = 42). For work experience, 53.6% had more than 10 years of experience (n = 134), 30.4% had less than 5 years (n = 76), and 16.0% had between 5-10 years of experience (n = 40). Lastly, 62.8% of respondents were employed on a contract basis (n = 157), whereas 37.2% had permanent employment status (n = 93). These results provide a detailed understanding of the demographic composition of the study participants.

**Table 1.** Demographic Characteristics of Healthcare Professionals (N= 250)

Socio-demographic Variable	Categories	Frequency	Percent (%)
Gender	1 (Male)	77	30.8
	2 (Female)	173	69.2
Profession	1 (Nurse)	119	47.6
	2 (Doctor)	93	37.2
	3 (Technician)	38	15.2
Qualification	1 (Diploma)	42	16.8
	2 (Bachelor's)	161	64.4
	3 (Master's)	47	18.8
Experience (years)	1 (Above 1)	76	30.4
	2 (3 to 5)	40	16
	3 (Above 5)	134	53.6
Employment	1 (Permanent)	93	37.2
	2 (Contract)	157	62.8

(source: Field survey,2023)



**Figure 2.** The Mediation Analysis

(source: Field survey,2023)

The mediation effect was tested using bootstrapping with 5,000 resamples, and indirect paths were significant based on  $\beta$  estimates, standard errors, p-values, and 95% confidence intervals. The mediation analysis demonstrated that Occupational Safety and Health Training (OSH\_T) significantly influences both OSH communication (OSH\_C) and Safety Climate (SAFCLI). Specifically, the direct effect of OSH\_T on OSH\_C yielded a path coefficient of **0.46**, indicating that enhanced training directly improves communication regarding safety within the organization.

Similarly, OSH\_C has a positive effect on SAFCLI ( $\beta = 0.25$ ), suggesting that effective communication practices lead to improvements in the safety climate. The direct effect of OSH\_T on SAFCLI was strong ( $\beta = 0.45$ ), underscoring the critical role of training in fostering a positive safety climate, independent of its effect through communication. This indicates that OSH Training not only directly enhances a safety climate but also exerts an indirect influence through improved communication, reflecting a **partial mediation** effect. Model fit indices were satisfactory ( $\chi^2/df < 3$ , CFI > 0.90, TLI > 0.90, RMSEA < 0.08, SRMR < 0.08), indicating a good fit between the hypothesized model and observed data.

The model fit assessment revealed that the total effect of OSH\_T on SAFCLI comprises both direct and indirect components, with an indirect effect of **0.115**. While the model explains a substantial portion of the variance in both OSH communication and safety climate ( $R^2(\text{OSH\_C}) = 0.35$ ;  $R^2(\text{SAFCLI}) = 0.27$ ), residuals indicate that **65%** of the variance in OSH communication and **73%** of the variance in safety climate remain unexplained. This result suggests that other factors beyond OSH training and communication likely contribute to shaping the safety climate, highlighting potential areas for future exploration.

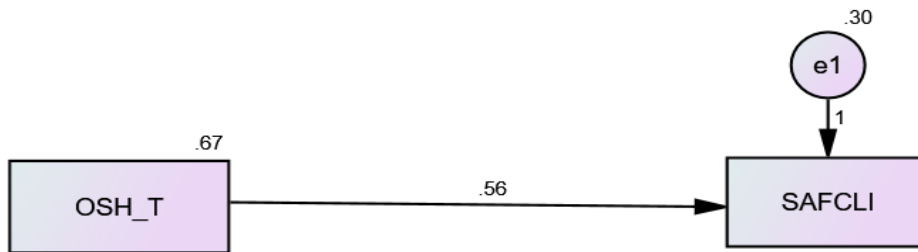


Figure 3. The Path Analysis

(source: Field survey, 2023)

The structural model indicates that Occupational Safety and Health (OSH) Training has a significant positive effect on the safety climate in hospital settings. The standardized path coefficient between OSH training and safety climate is **0.56**, suggesting that an increase in OSH training is associated with a substantial improvement in perceptions of safety climate. The **R<sup>2</sup> value of 0.30** shows that OSH training explains **30%** of the variance in the safety climate, indicating that OSH training is a critical determinant of safety climate perceptions. However, the remaining variance (**70%**) is attributed to other factors not included in this model, as indicated by the error term ( $e_1 = .30$ ). This result suggests that while OSH training significantly enhances the safety climate.

Both mediation and direct-effect models were tested to compare relationships with and without the mediator, following standard SEM mediation analysis practice (Hair et al., 2020) additional variables likely contribute to a more comprehensive understanding of safety perceptions.

**Hypothesis Result**

Table 2. Hypothesis test result

Hypothesis	Hypothesis statement	Decision
H1	OSH training programs have a significant positive influence on the safety climate in the hospital settings.	Supported
H2	OSH Communication mediates the association between OSH training programs and safety climate in the hospital settings.	Supported

(source: Field survey, 2023)

## Correlation Analysis

**Table 3.** Correlation Matrix

	SAFCLI	OSH_T	OSH_C
SAFCLI			
OSH_T	.648**		
OSH_C	.523**	.536**	

Note:  $p < .05$ ,  $p < .01$ \*\*,  $p < .001$ \*\*\*

(source: Field survey, 2023)

The correlation matrix indicated an overall significant positive relationship between Safety Climate (SAFCLI), OSH Training (OSH\_T) and OSH Communication (OSH\_C). More specifically, SAFCLI was highly correlated with OSH\_T ( $r = 0.648$ ,  $p < 0.001$ ). Higher OSH training quality perceptions were associated with a more positive safety climate in the hospital setting. There was also a modest positive correlation between SAFCLI and OSH\_C ( $r = 0.523$ ,  $p < 0.001$ ), indicating that communication about occupational safety has a positive relationship to safety climate. There was also a significant correlation between OSH\_T and OSH\_C ( $r = 0.536$ ,  $p < 0.001$ ), indicating that a hospital which offers more extensive OSH training is likely to practice better OSH communication. These findings highlight the interrelatedness of training, communication and safety climate in healthcare settings and call for safety initiatives that are integrated.

## DISCUSSIONS

The research shows the significance of occupational safety and health (OSH) training in enhancing the safety climate in the healthcare environment. The OSH training has a direct impact on the safety climate ( $\beta = 0.45 / 0.56$ ) and communication ( $\beta = 0.46$ ), as increased employee training results in a more comprehensive comprehension of essential information and improved safety behaviors. These findings are consistent with recent research, which suggests that OSH training programs that are effective in equipping employees with the requisite competencies and knowledge lead to enhanced safety performance.

The findings resonate with Social Exchange Theory, indicating that organizations that deliver training and maintain consistent safety messaging between training sessions can expect employees to reciprocate with safety-minded attitudes and behaviors. We found that communications, in turn, moderate the effect of training ensuring its effectiveness in practice. This will prove pivotal for health organizations because these findings highlight the importance of coupling communication with healthcare training programs to make a long-term impact on safety culture, improving health outcomes for employees and patients alike.

OSH communication was found to be a partial mediator in the relationship between OSH training and safety climate. This indicates that OSH training influences safety climate directly and indirectly through communication improvement. This mediation effect is consistent with recent studies that highlight communication as a critical pathway through which training improves safety and encourages disclosure of safety-related issues (Niu et al., 2023). In those regards, research demonstrates that connection channels such as feedback loops or incident reporting are essential touchpoints that contribute to the safety climate in environments at risk of harm, like healthcare. (Ghimire, Mishra and Bhaumik, 2025; Kawakami, 2024).

Consistent with these literature insights, the present study investigated the relationships between OSH training, OSH communication, and safety climate within a hospital environment. The results revealed that OSH training significantly and directly affects the safety climate. Likewise, OSH communication has a mediation role. It strengthens the safety climate in healthcare settings, which aligns with previous studies emphasizing the importance of organizational elements like training and communication in promoting workplace safety.

In healthcare settings, the literature consistently supports the importance of OSH training and OSH communication as key factors influencing the safety climate. The present study further confirms that the interaction

between OSH training and safety climate is direct and mediated by OSH communication. Hospitals looking to improve their safety climate must have better training programs and higher quality communication within those training programs to ensure safety protocols are communicated and reinforced. (Kwak, Lim and Lee, 2023).

Ultimately, this research highlights the need for providing appropriate OSH training and communication within healthcare organizations. To help optimize the safety climate benefits that these interventions are intended to achieve, institutions should strive for not only frequency and comprehensiveness of training in practice but also complement this with good communication of safety policies and expectations.

Moreover, contextual factors such as organizational culture and resource availability likely play a significant role in shaping how OSH initiatives are received and implemented. In resource-constrained environments such as those in many developing countries, communication infrastructure may be limited, requiring more innovative, low-cost strategies to maintain safety messaging continuity. (Lopez et al., 2021).

A critical limitation of this study is the potential for self-reporting bias in questionnaire responses, as well as its geographic restriction to a limited number of hospital settings. Future research could explore the same model across broader regions and healthcare systems, using a longitudinal design to evaluate the sustainability of improvements in safety climate over time (Zhou et al., 2023).

In addition, qualitative insights gathered through interviews or focus groups with frontline workers could help uncover nuanced barriers to communication and training effectiveness, especially in under-resourced settings. This would enrich the understanding of how formal and informal communication practices shape safety outcomes (Singh et al., 2022).

The findings also suggest an opportunity for future studies to investigate the moderating roles of leadership commitment, job satisfaction, and psychological safety. Incorporating these variables may offer a more detailed picture of how training and communication interact with deeper organizational dynamics to influence safety climate (Gao et al., 2021; Zhou et al., 2023).

Supporting this view, Koirala et al. (2025) highlighted that structured capability-building initiatives and data-driven talent development strategies significantly enhance organizational performance, which aligns with the present study's findings that systematic OSH training similarly strengthens workplace safety climate in healthcare settings.

By embedding OSH communication and training into the organizational identity and reinforcing it through leadership and peer modeling, healthcare organizations can ensure a resilient safety culture. Such integration, supported by robust evaluation mechanisms, can help sustain long-term improvements in workforce safety and patient care.

## CONCLUSION

In conclusion, this study highlights the crucial role of OSH training and communication in shaping the safety climate within health settings. The results show that OSH training directly enhances safety climate and indirectly enhances it through effective OSH communication, which emphasizes the importance of both in creating a safer workplace. This partial mediation effect of communication implies that training is indispensable, though its impact is enhanced by consistency in OSH communication. Thus, healthcare organizations should integrate strong training programs with comprehensive communication strategies and efforts to foster a positive safety climate. The results also suggest that further variables, including leadership and organizational support, should be examined in future research in order to provide a deeper understanding of safety climate change processes and the long-term impacts.

## Implication of the Study

This study has significant implications for healthcare management and policy development. This study offers a foundation for evidence-based decisions for hospital administrators and policymakers. It contributes to an improved design of safety programs, as evidenced by demonstrating the crucial interrelationship of both OSH training and communication in creating and enhancing the safety climate. Hospitals must invest in comprehensive and ongoing OSH training to empower staff at all levels with the tools required to identify risk and do something

about it. In addition, to increase the effectiveness of OSH training programs, creating an organizational culture where open and transparent engagement concerning OSH is encouraged can be beneficial. Thus, there will be a reduction in workplace accidents and better well-being of employees, subsequently leading to good outcomes for patients that align with the wider needs of public health that demand safer healthcare environments.

### Novelty of the study

This study is unique as it investigates the role of OSH communication in mediating the relationship between OSH training and safety climate in a hospital setting. Previous research has mainly examined the direct effects of OSH training on safety outcomes, which this study complements by emphasizing that communication practices in hospitals are an essential mediator between the training programs and the safety climate. The study also employed a mediation model, which has previously not been reported, and provides new knowledge regarding indirect mechanisms for safety culture affecting pathways from training to organizational outcomes, yielding a more integrated and complete perspective on factors shaping safety perceptions in healthcare. These findings expand the current literature concerning safety climate in industries potentially at risk, such as hospitals, by emphasizing the dual role of communication and training in facilitating a safety climate.

Instructional Review Committee (IRC) of hospitals approved this study in order to collect data. The study was also approved by Nepal Health Research Council (NHRC). All the participants in this study were voluntarily participated. Participants in this study were provided with informed consent in the written form and confidentiality was maintained throughout the study. The data retrieved is anonymous, to protect the identities of the respondents.

### AUTHOR CONTRIBUTION

SG: Concept, Introduction, Data Collection, Data Analysis, Result, Ethical Approval

AKM: Ethical Approval, Data analysis, discussion, editing

AB: Research methodology, data curation, grammar and writing

### REFERENCES

- American Hospital Association. (2025, March 11). *Improvement in safety culture linked to better patient and staff outcomes*. <https://www.aha.org/guidesreports/2025-03-11-improvement-safety-culture-linked-better-patient-and-staff-outcomes>
- Burke, M. J., Sarpy, S. A., Smith-Crowe, K., Chan-Serafin, S., Salvador, R. O., & Islam, G. (2021). Relative effectiveness of worker safety and health training methods. *American Journal of Public Health, 98*(2), 315–324. <https://doi.org/10.2105/AJPH.2020.302157>
- Feng, Y., Lu, M., & Zhang, T. (2023). The impact of safety leadership on safety compliance in healthcare: A meta-analysis. *Journal of Patient Safety, 19*(1), 45–52. <https://doi.org/10.1097/PTS.0000000000000909>
- Gao, R., Zhang, Y., & Chen, L. (2021). Leadership, safety climate and safety performance in hospitals: A moderated mediation model. *Journal of Advanced Nursing, 77*(3), 1375–1386. <https://doi.org/10.1111/jan.14642>
- Gao, Y., Rong, W., & Li, H. (2021). The effect of safety leadership and safety climate on safety behavior in the Chinese manufacturing industry. *Safety Science, 143*, Article 105417. <https://doi.org/10.1016/j.ssci.2021.105417>
- Ghimire, S., Mishra, A., & Bhaumik, A. (2022). Green human resource management in conjunction with the sustainability of corporate environments. *Journal of Advanced Research in HR and Organizational*

Management, 9(3-4), 6–11. <https://adrjournalshouse.com/index.php/Journal-HumanResourcesOrg/article/view/1542>

- Ghimire, S., Mishra, A. K., & Bhaumik, A. (2023). Association between socio-dynamic and other individual characteristics on perceptions of occupational safety among workers in Kathmandu, Nepal. *The Malaysian Journal of Nursing*, 14(4), 21–34. <https://doi.org/10.31674/mjn.2023.v14i04.003>
- Ghimire, S., Mishra, A. K., & Bhaumik, A. (2025). Enhancing safety climate through occupational safety and health practices mediating by management commitment in the hospital setting. *International Journal of Occupational Safety and Health*, 15(1), 15–26. <https://doi.org/10.3126/ijosh.v15i1.70114>
- Ghimire, S., Sharma, R., & Adhikari, D. (2023). Occupational safety and health challenges in South Asian healthcare settings. *Journal of Occupational Health*, 65(2), 123–130.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- International Labour Organization. (2022). *Occupational safety and health challenges in South Asia*. <https://www.ilo.org>
- International Labour Organization. (2025). *Revolutionizing health and safety: Safeday 2025 report*. [https://www.ilo.org/sites/default/files/2025-04/ILO\\_Safeday25\\_Report.pdf](https://www.ilo.org/sites/default/files/2025-04/ILO_Safeday25_Report.pdf)
- Kawakami, T. (2024). Participatory training activities in South Asia for promoting safety and health in informal economy workplaces: Roles of trade unions and employer organizations. *Safety and Health at Work*, 15, 500–506. <https://doi.org/10.1016/j.shaw.2023.12.005>
- Koirala, A., Bhaumik, A., Ojha, S. K., & Mishra, A. K. (2025). From human intuition to data intelligence: Rethinking talent management through HR analytics. *Journal of Multidisciplinary Research for SMET*, 1(2), 39–52. <https://doi.org/10.64297/jmrsmet.v1i2.31>
- Kwak, Y., Lim, J., & Lee, H. (2023). Effects of safety climate on safety behavior: Evidence from South Korean hospitals. *BMC Health Services Research*, 23(1), Article 789. <https://doi.org/10.1186/s12913-023-09601-4>
- Lee, H., Park, S., & Kim, J. (2025). Influence of psychological safety and safety climate perceptions on infection prevention practices among nurses. *Journal of Nursing Management*, 33(2), 123–130. <https://doi.org/10.1111/jonm.13805>
- Lopez, M., Diaz, J., & Herrera, R. (2021). Resilient healthcare systems in the COVID-19 era: A case study. *Healthcare Management Review*, 46(4), 302–310. <https://doi.org/10.1097/HMR.0000000000000336>
- Malik, M. I., & Azmat, H. (2022). Mediating role of safety climate in the relationship between leadership and safety behavior in hospitals. *Journal of Nursing Management*, 30(5), 1214–1222. <https://doi.org/10.1111/jonm.13578>
- Murray, J., Sorra, J., Gale, B., & Mossburg, S. (2024). *Ensuring patient and workforce safety culture in healthcare*. Patient Safety Network. <https://psnet.ahrq.gov/perspective/ensuring-patient-and-workforce-safety-culture-healthcare>
- Niu, C., Shen, Y., Wang, X., & Yang, L. (2023). Impact of communication on patient safety climate in hospitals: A cross-sectional study. *BMC Health Services Research*, 23(1), Article 456. <https://doi.org/10.1186/s12913-023-05781-4>

- Niu, S.-F., Lee, M.-F., & Tseng, C.-N. (2023). Communication mechanisms in improving hospital safety climate: A systematic review. *International Journal of Environmental Research and Public Health*, 20(4), Article 2441. <https://doi.org/10.3390/ijerph20042441>
- Singh, S., Kumar, R., & Mehta, P. (2022). Occupational safety communication and mental health outcomes during COVID-19: A review. *Asian Journal of Psychiatry*, 70, Article 103037. <https://doi.org/10.1016/j.ajp.2022.103037>
- World Health Organization. (2020). *Occupational hazards in the health sector*. <https://www.who.int/tools/occupational-hazards-in-health-sector>
- World Health Organization. (2020). *Occupational safety and health in healthcare settings*. <https://www.who.int>
- Yang, X., Gao, P., Zhang, L., & Liang, X. (2022). Impact of occupational safety and health training on construction workers' safety behavior: A moderated mediation model. *Journal of Safety Research*, 80, 140–149. <https://doi.org/10.1016/j.jsr.2021.12.010>
- Zhou, H., Zou, Y., & Zhang, Y. (2023). Enhancing hospital safety culture through leadership and communication: A multilevel study. *Safety Science*, 150, Article 105806. <https://doi.org/10.1016/j.ssci.2022.105806>
- Zhou, Q., Wang, D., & Chen, W. (2021). Safety leadership and safety climate in hospitals: A multilevel analysis. *Journal of Safety Research*, 78, 85–93. <https://doi.org/10.1016/j.jsr.2021.04.004>