

Investigating the Determinants of Safety Citizenship Behaviour among Healthcare Workers through Mediating and Moderating Mechanisms

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ABSTRACT:

This study aims to examine the factors influencing safety citizenship behavior among healthcare workers with harmonious safety passion serving as a mediator and psychosocial safety climate acting as a moderating variable. The sample size for this study was 402 and the sampling technique used was convenience sampling. The units of analysis were healthcare workers serving public and private hospitals in the Punjab and Islamabad. Statistical analysis was done including regression analysis to test the hypotheses. Social Exchange Theory (SET) was utilized to examine the relationships in the present study. Findings reveal that a significant positive association exists between safety specific transformational leadership, occupational safety and health practices and safety citizenship behavior. Furthermore, harmonious safety passion plays a mediating role while psychosocial safety climate serves as the moderator in these relationships. By grounding the analysis in SET, examining the role of psychosocial safety climate as the moderator and occupational safety and health practices as the independent variable, the study provides a novel theoretical framework to understand how relational and contextual factors influence safety behaviors among healthcare workers. This research has managerial implications for healthcare managers and provides guidelines for the policy makers regarding creating safe healthcare workplaces which is beneficial for both patients, employees and the community as a whole.

Keywords: safety-specific transformational leadership, occupational safety and health practices, psychosocial safety climate, harmonious safety passion, safety citizenship behavior.

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1. Introduction

Healthcare workers (HCWs) are the pillars of every healthcare system since they offer various services such as prevention, diagnosis, therapy, and rehabilitation, which contribute significantly to patient results and public health. Healthcare systems' efficiency and sustainability are greatly dependent on the well-being and safety of their HCWs. Nevertheless, the field of healthcare is one of the most dangerous occupational fields around the world because the healthcare workers' activities are constantly associated with biological, chemical, physical, ergonomic, and psychosocial hazards that increase HCWs' vulnerability to infectious diseases, musculoskeletal disorders, radiation injuries, violence at work, exhaustion, burnout, and mental stress (World Health Organization [WHO], 2022; International Labour Organization [ILO], 2022; Amoadu et al., 2025). According to the recent studies, healthcare facilities whose working conditions are not healthy suffer from a high rate of staff turnover, low levels of employee involvement, decreased quality of care, and medical errors.

Occupational health and safety have thus evolved to become one of the cornerstones of sustainable healthcare systems. It is estimated by the International Labour Organization that there are millions of occupational injuries and occupational diseases annually around the world, causing huge economic loss and decreasing productivity and even preventing some avoidable deaths. In healthcare settings, the occupational hazards are especially complex as healthcare professionals deal with infectious agents, hazardous materials, ionizing radiation, physically exhausting work, emotional exhaustion, and psychologically challenging clinical environment simultaneously. While in most industries the hazards faced by employees are mainly physical in nature, in healthcare, employees continuously need to take into consideration not only physical safety but also psychological resilience in order to provide continuous patient care.

In particular, the pandemic has highlighted the vulnerability of the healthcare workforce and has

shown that occupational safety transcends mere accident prevention. The pandemic period was marked by overwhelming workloads of healthcare professionals, long working hours, lack of personal protective equipment, fear of infection, emotional exhaustion, violence at work, anxiety, depression, and even professional burnout. Such factors have had a significant impact on employee wellbeing and provision of healthcare services and have clearly pointed to the need for developing systems capable of ensuring the safety of healthcare professionals in usual circumstances as well as in case of emergencies. In response, various international organizations have developed a number of initiatives such as the Working for Health Action Plan (2022-2030) to promote better occupational safety policies, more supportive leadership, and healthy psychological working environment. Such approaches to healthcare professionals' safety understand them as an important human capital for the achievement of Sustainable Development Goals 3 (Good Health and Well-being) and 8 (Decent Work and Economic Growth) (WHO, 2022; Amoadu et al., 2025).

Although the implementation of the regulatory framework and technological innovations have greatly contributed to the achievement of workplace safety, findings show that there is still room for accidents to happen since the organization's safety does not just rely on formal procedures, but rather on employees' attitudes, motivation, and discretionary behavior. The old approach to occupational safety focuses on following the regulations, engineering controls, and elimination of hazards. Modern occupational safety studies now focus more on the idea that sustainable occupational safety performance relies on the voluntary participation of the employees in the organization's safety program aside from their job obligations (Conchie, 2013; Curcuruto et al., 2015; Ghasemi et al., 2025).

Among the many organizational variables affecting workplace safety, leadership has proven to be one of the most important determinants of employee safety outcomes. The organizational leaders set priorities, allocate resources, communicate expectations, and mold the

employee's attitude concerning workplace safety. As a result, leadership affects not just the compliance of the organization's safety processes but also the employees' voluntary involvement in the process of improving organizational safety. While much research is dedicated to transformational leadership as a result of its positive impact on the motivation of employees and organizational effectiveness, it has become increasingly clear among researchers that general leadership theories do not adequately reflect the safety-oriented behavior of the workforce. Such an insight has contributed to the emergence of Safety-Specific Transformational Leadership (SSTL) which involves safety-related inspiration, intellectual stimulation, individualized consideration, idealized influence, and persistent reinforcement of the safety values of the workplace (Barling et al., 2002; Kelloway et al., 2006; Ghasemi et al., 2025).

Safety-Specific Transformational Leadership is distinguished from ordinary transformational leadership because of its explicit focus on employee well-being and workplace safety in day-to-day managerial processes. SSTL leaders communicate an appealing safety vision, inspire their subordinates to detect workplace dangers, create conditions for constant safety learning, recognize safe working habits, and develop such organizational culture that will make employee well-being at the same level of importance as organizational effectiveness. Contrary to transactional leadership, which mostly involves supervision and incentives, Safety-Specific Transformational Leadership inspires its followers' intrinsic commitment to workplace safety through empowering and motivating them through shared organizational values. According to Ghasemi et al.'s (2025) recent scoping review, SSTL is "a distinct type of leadership" and has "stronger effects on safety behavior, safety motivation, safety climate, and occupational accident prevention" compared to regular transformational leadership. Among those theories explaining how SSTL impacts employees' voluntary safety behaviors through reciprocal organizational relationships, Social Exchange Theory should be mentioned.

The relevance of SSTL has also been emphasized in recent studies carried out in risky occupation scenarios. Ali et al. (2025) found that safety-related transformational leadership helps in improving the safety behavior of employees as a result of encouraging knowledge sharing and psychological safety because workers in safety-focused leaders are likely to share their safety knowledge and adopt safe work practices. In the same manner, prior empirical studies have shown that safety-related transformational leaders help in increasing the safety compliance, safety participation, organizational commitment, and safety motivation of employees since they create a positive environment in which employees feel that safety is the responsibility of the organization as a whole (Barling et al., 2002; Wu et al., 2023; Ali et al., 2025).

While leadership is a key aspect of workplace safety, organizational safety can only be sustained through complete Occupational Safety and Health Practices (OSHP). Occupational safety and health practices include management commitment, safety policies, employee participation, hazard recognition, safety communication, constant safety education, emergency planning, incident reporting, supply of personal protective equipment, and monitoring of occupational risks. All these practices form the organizational structure required to ensure protection of employees against occupational risks as well as engagement of employees in workplace safety activities. Several studies have confirmed that organizations adopting occupational safety management systems experience reduced incidences of injuries, higher employee commitment, increased organizational trust, better safety culture, and improved safety performance (Sorensen et al., 2018; Adotey et al., 2025).

Recent research has also confirmed the strategic importance of occupational safety practices within the context of high-risk industries. Adotey et al. (2025), in their study on the mining industry of Ghana, found that occupational health and safety practices positively affect employees' safety behaviors through increased safety knowledge and safety culture, whereas transformational

leadership positively moderates these effects. It was found that companies that make substantial efforts regarding occupational safety practices do not only decrease work accidents but also create a positive culture that motivates employees to get involved in work safety activities. Even though these results have been obtained from the mining industry, the organizational processes are still very important for healthcare organizations, given the similarity of working environments.

2. Literature Review

2.1 Theoretical Foundation: Social Exchange Theory

Theory of Social Exchange (SET), formulated by Blau (1964), offers the framework that is used to explain why supportive organizational activities motivate employees to reciprocate via positive workplace behaviors. According to SET, interactions between employees and organizations occur in the form of reciprocal exchange of valuable resources instead of mere contracts. In case employees feel that the organization cares about their needs and offers support, fairness, leadership and desirable working environment, employees view these actions as investments made by the organization in them and develop trust, obligation and commitment, which, in turn, motivates them to reciprocate via behaviors that help the organization outside of their official duties (Blau, 1964; Gouldner, 1960; Cropanzano & Mitchell, 2005). Hence, SET has become one of the most prominent theories of organizational citizenship behavior, employee engagement, work passion, leadership and safety behaviors.

In occupational health and safety research, SET justifies the positive reaction of employees towards the organizational efforts made in terms of workplace safety. Safety-specific transformational leadership, occupational safety and health practices, and psychosocial safety climate are considered organizational resources that reflect the concern of the management for the welfare of employees in terms of their physical and psychological safety. Those employees, whose needs for safety are met in the form of safety-specific transformational

leadership, occupational safety and health practices, and psychosocial safety climate, are expected to develop harmonious safety passion and demonstrate safety citizenship behaviors to increase workplace safety. Indeed, recent studies have shown evidence of the validity of the reciprocity mechanism. According to Ghasemi et al. (2025), the theory of social exchange can be considered one of the key explanations for the efficacy of safety-specific transformational leadership in terms of safety motivation and safety behavior. Likewise, according to Ali et al. (2025), the effect of safety leadership on safety behavior is due to the knowledge sharing and psychological safety, whereas Adotey et al. (2025) found out that occupational safety and health practices increase safety behavior due to increased organizational trust and safety commitment. Likewise, Amoadu et al. (2025) have found that those organizations characterized by a good psychosocial safety climate have more of their employees being happy, engaged, and committed to the organization. In general, all the above researches provide justification for using SET as the theory behind the relationships between safety-related transformational leadership, occupational safety, harmony safety passion, psychosocial safety climate, and safety citizenship behavior.

2.2 Safety-Specific Transformational Leadership and Safety Citizenship Behavior

Safety-specific transformational leadership (SSTL) is a type of transformational leadership that focuses on workplace safety, motivating employees to be engaged in safety by creating vision, modeling safety actions, stimulating intellectual thoughts, and giving individual consideration (Barling et al., 2002; Kelloway et al., 2006). Differing from general transformational leadership, safety-specific transformational leadership guides the behaviors of leaders in promoting safety and cultivating a workplace environment in which safety becomes the organizational value for everyone in the organization. Such leadership behaviors inspire the employees to go beyond just complying with the policies and take part in those activities that make the work environments safer. Safety

citizenship behavior (SCB), such as helping others in following the safety procedures, communicating any safety hazards, taking part in the safety initiatives, and offering ideas for improvement, reflects an important form of extra-role behavior that facilitates sustainable safety performance in organizations (Hofmann et al., 2003; Conchie, 2013; Curcuruto et al., 2015).

This association between SSTL and safety-related variables has been further confirmed in high-risk organizations by recent findings. In their extensive scoping review, Ghasemi et al. (2025) argued that SSTL is a better predictor of safety behavior, safety motivation, safety climate, and occupational accidents prevention compared to general transformational leadership. Likewise, Ali et al. (2025) revealed that SSTL positively influences safety behavior of employees by facilitating knowledge exchange and psychological safety. Khan et al. (2024) also suggested that supportive leadership plays a positive role in the development of safety citizenship behavior of healthcare professionals working in psychologically supportive settings. Despite all these findings, there is a lack of empirical research in healthcare organizations in developing countries, where occupational hazards and other constraints vary significantly from those present in other organizations. The Social Exchange Theory suggests that healthcare professionals perceiving SSTL will engage in safety citizenship behaviors to repay the organization for its support.

H1: Safety-specific transformational leadership has a significant positive influence on safety citizenship behavior among healthcare workers.

2.3 Safety-Specific Transformational Leadership and Harmonious Safety Passion

Safety-specific transformational leadership (SSTL) is not only about encouraging employees to comply with the organizational safety policies but also includes the leaders' ability to motivate their employees in regard to workplace safety on an intrapersonal level. SSTL leaders motivate employees through creating a safety vision, showing their own dedication to safe work practices, encouraging creativity in problem-

solving, and providing personalized attention in relation to safety (Barling et al., 2002; Kelloway et al., 2006). Such leadership helps create an environment where employees spontaneously embrace the values of organizational safety without viewing it simply as a mandatory practice. Harmonious Safety Passion (HSP) is a term that comes from the Dualistic Model of Passion and describes an autonomous and positive psychological connection with safety practices, meaning that employees are willing to perform the safety activities due to the personal importance of such behaviors and identification with organizational identity (Vallerand et al., 2003; Vallerand, 2015). Research has found that leadership based on trust, empowerment, recognition, and communication helps increase employees' intrinsic motivation and engagement in order to form HSP (Forest et al., 2011; Deci & Ryan, 2000).

There is increasing empirical support for the positive association between SSTL and psychological engagement of employees in occupational safety. According to Ghasemi et al. (2025), SSTL always contributes to the improvement in safety motivation, safety climate perception, and proactive safety behavior in employees working in hazardous industrial settings. In a similar vein, Ali et al. (2025) found out that safety transformational leadership is effective in fostering safety behavior through positive mechanisms like knowledge exchange and psychological safety. Transformational leadership was found to foster intrinsic motivation, psychological empowerment, organizational identification, and work passion of employees (Bass, 1985; Bono & Judge, 2003; Breevaart et al., 2015). Nonetheless, there is limited empirical literature regarding the impact of SSTL on harmonious safety passion especially in developing countries and among health care workers. Social Exchange Theory suggests that when employees feel that the organizations' leaders care about their safety, then they will respond to this by adopting organizational safety values and hence developing harmonious safety passion. Based on the above reasoning, the current study hypothesizes that:

H2: Safety-specific transformational leadership has a significant positive influence on harmonious safety passion.

2.4 Occupational Safety and Health Practices and Safety Citizenship Behavior

OSHP can be understood as organizational policies, processes, training, safety and health hazard control, communication, employee involvement, and management commitment for the purpose of safeguarding employees against risks in their workplaces (International Labour Organization, 2022; World Health Organization, 2022). Besides ensuring that occupational risks are reduced through such practices, an organization also improves its employees' perception about the safety systems in place in the organization. Through consistent investments on safety resources, provision of safety equipment, safety training, and involving employees in safety decision making, employees will have positive perceptions about the organizational safety systems and hence voluntarily involve themselves in safety activities. The Safety Citizenship Behavior (SCB) are these discretionary behaviors where employees help in reporting hazards, helping other employees, being part of safety committee meetings, and suggesting ideas among others (Conchie, 2013; Curcuruto et al., 2015).

Previous literature suggests that occupational safety practices positively impact safety participation and organizational safety performance. According to Neal & Griffin (2006), effective safety management systems positively affect safety behavior of employees through enhanced safety knowledge and safety motivation. Similarly, Sorensen et al. (2018) indicated that organizations adopting integrated occupational safety programs have higher levels of employee participation and better safety cultures. More recently, Adotey et al. (2025) revealed that occupational health and safety practices increase safety behavior of employees; meanwhile, transformational leadership strengthens this relationship. In a similar vein, Amoade et al. (2025) indicated that occupational safety practices adopted in supportive workplaces

result in improved well-being of employees and positive workplace behaviors. However, little information is available on the effect of occupational safety practices on safety citizenship behavior of healthcare workers in developing countries. Drawing upon Social Exchange Theory, it is expected that employees would reciprocate their organization's investment in their safety through voluntary safety-related behaviors at the workplace. Therefore, the following hypothesis is formulated:

H3: Occupational safety and health practices have a significant positive influence on safety citizenship behavior.

2.5 Occupational Safety and Health Practices and Harmonious Safety Passion

OSHP can be defined as the organization's dedication to protecting its employees through the use of safety policies, continuous safety training, risk identification, risk management, employee involvement, and safety communication (ILO, 2022; WHO, 2022). In addition to minimizing workplace accidents, OSHP helps to build an environment within an organization that promotes the psychological well-being of employees and reinforces their belief that the organization is concerned about their health and safety. According to Self-Determination Theory and Social Exchange Theory, the employees will be more motivated to internalize the values of their organizations regarding their health and safety and become intrinsically motivated to act safely at work (Deci & Ryan, 2000; Blau, 1964).

Past research has shown that proper occupational safety strategies contribute to high levels of employee engagement, organizational commitment, safety motivation, and positive work attitudes (Neal & Griffin, 2006; Sorensen et al., 2018). In recent times, Adotey et al. (2025) showed that holistic occupational health and safety practices lead to enhanced safety behaviors due to enhanced safety knowledge and organizational safety culture of the employees. Similarly, Amoade et al. (2025) revealed that organizations within the healthcare sector having positive safety environments demonstrate

employee well-being, organizational commitment, and better workplace performance. Past research has explored the impact of OSHP on safety performance and compliance, but little is known about its impact on the development of harmonious safety passion among healthcare professionals. Based on the theory of social exchange, the perception by the employees that the organization is highly committed to the safety of the employees is expected to motivate them to develop positive emotional bonds toward workplace safety, hence harmonious safety passion.

H4: Occupational safety and health practices have a significant positive influence on harmonious safety passion.

2.6 Harmonious Safety Passion and Safety Citizenship Behavior

Harmonious Safety Passion (HSP) is an intrinsic motivational drive of employees towards engaging in occupational safety due to the fact that they consider occupational safety to be personally relevant and important for them (Vallerand et al., 2003; Vallerand, 2015). Harmonious safety passion differs from controlled passion in the sense that it inspires employees to join voluntary activities that concern safety without being forced by anybody or any external factors. Employees with harmonious safety passion incorporate safety into their professional identity, and therefore they have enthusiasm about keeping themselves and other people safe.

However, empirical evidence indicates that harmonious passion is associated with positive impact on employee engagement, organizational citizenship behavior, creativity and proactivity at the workplace (Forest et al., 2011; Breevaart et al., 2015). In relation to the field of occupational safety research, employees with higher intrinsic safety motivation are more engaged in safety behavior in terms of safety participation, hazard identification and reporting, information sharing and participation in voluntary safety activities (Neal & Griffin, 2006; Curcuruto et al., 2015). In addition, Ali et al. (2025) highlight that supportive psychological processes help employees to

participate voluntarily in safety behaviors whereas according to Ghasemi et al. (2025), safety motivation was found as one of the main processes that links safety-specific leadership with enhanced safety outcomes. Nonetheless, the link between harmonious safety passion and safety citizenship behavior has not been extensively empirically studied, especially in relation to health care organizations. Utilizing Social Exchange Theory framework, it can be argued that individuals who internalize the organizational safety values through harmonious safety passion should reciprocate by displaying safety citizenship behaviors.

H5: Harmonious safety passion has a significant positive influence on safety citizenship behavior.

2.7 Mediating Role of Harmonious Safety Passion

Past studies show that leaders and safety practices in organizations affect the behavior of employees not only directly but also indirectly via psychological processes that enhance intrinsic motivation of employees to engage in safety-related behaviors. Safety-focused transformational leaders motivate employees by displaying safety commitment, giving individualized consideration and building trust, while occupational safety and health practices generate supportive environments through safety policies, training, communication and management commitment (Barling et al., 2002; Kelloway et al., 2006; Neal & Griffin, 2006). Organizational resources induce employees to internalize safety values, thus generating harmonious safety passion that motivates consistent engagement in safety-related behaviors. Social Exchange Theory demonstrates that employees reciprocate the supportive leadership and organizational efforts by generating positive psychological states that eventually result in voluntary work behaviors (Blau, 1964; Cropanzano & Mitchell, 2005).

According to recent literature, psychological mediators play an essential part in understanding the relationships between organizational factors and safety results. Ali et al. (2025) proved that safety transformational leadership enhances

safety behavior of workers thanks to knowledge sharing and psychological safety. At the same time, Ghasemi et al. (2025) have found out that safety motivation is one of the important psychological mechanisms linking SSTL and safety results. In a way similar to the previous study, Adotey et al. (2025) stated that occupational safety and health management improves safety behavior of workers owing to better organizational safety culture and worker participation. Even though there are numerous psychological mediators studied in the existing literature, there are not many evidences about the mediating effect of harmonious safety passion, particularly in the healthcare sector. It seems reasonable to say that harmonious safety passion serves an important mediating function regarding the relationship between SSTL and safety citizenship behavior.

H6: Harmonious safety passion mediates the relationship between safety-specific transformational leadership and safety citizenship behavior.

2.8 Mediating Role of Harmonious Safety Passion between Occupational Safety and Health Practices and Safety Citizenship Behavior

Occupational Safety and Health Practices (OSHP) serve as an integral aspect in influencing the behavior of employees since they create a work environment that values health, safety, and well-being of individuals. Organizational commitment to safety, employee involvement, safety training, hazard identification, safety policies, and safety communication contribute to both the reduction of risks in the workplace and to the formation of psychological attachment of employees towards safety values (Neal & Griffin, 2006; Sorensen et al., 2018; ILO, 2022). In accordance with the principle of Social Exchange Theory (Blau, 1964), the psychological states of employees who see high organizational commitment to their safety will be positive, and, therefore, they will get involved in safety practices. The Harmonious Safety Passion (HSP) is one of such psychological processes, when individuals develop intrinsic commitment to the

safety of the workplace. Individuals who internalize organizational safety values are willing to participate in safety practices due to their internal motivation rather than external pressure (Vallerand et al., 2003; Deci & Ryan, 2000).

Empirical evidence increasingly supports the mediating role of positive psychological mechanisms in explaining the relationship between organizational safety initiatives and employee behavior. Adotey et al. (2025) reported that effective occupational health and safety practices enhance employees' safety behavior by strengthening safety culture and organizational commitment, while Amoadu et al. (2025) highlighted that supportive workplace environments improve employee well-being and encourage positive work behaviors. Similarly, Ghasemi et al. (2025) emphasized that organizational safety resources influence safety outcomes through motivational and psychological processes rather than through compliance alone. Despite these findings, limited research has specifically examined harmonious safety passion as the underlying mechanism linking occupational safety and health practices with safety citizenship behavior, particularly in healthcare organizations. Therefore, it is proposed that employees who perceive comprehensive occupational safety and health practices develop stronger harmonious safety passion, which subsequently motivates them to engage in discretionary safety citizenship behaviors that contribute to a safer organizational environment.

Several empirical studies have revealed the important role played by positive psychological mechanisms in understanding the effect of organizational safety programs on the employee's behavior. According to Adotey et al. (2025), good occupational health and safety programs help increase safety behaviors among employees through the creation of safety culture and organizational commitment, while Amoadu et al. (2025) observed that good workplace environments boost the employee's welfare and motivate positive work behaviors. Similarly, Ghasemi et al. (2025) argued that organizational safety resources affect safety outcomes not

through compliance but through motivation and psychology. Nevertheless, there is a paucity of empirical literature regarding the mediating effect of harmonious safety passion in understanding the relationship between occupational safety and health practices and safety citizenship behavior, especially within the healthcare sector. Accordingly, it can be hypothesized that harmonious safety passion mediates the effect of comprehensive occupational safety and health practices on safety citizenship behavior.

H7: Harmonious safety passion mediates the relationship between occupational safety and health practices and safety citizenship behavior.

2.9 Moderating Role of Psychosocial Safety Climate on the Relationship between Safety-Specific Transformational Leadership and Harmonious Safety Passion

Psychosocial Safety Climate (PSC) is an indicator that shows how employees perceive organizational processes and practices in terms of the promotion of mental well-being and safety and the reduction of stressors (Dollard & Bakker, 2010). When there is a good PSC, this means that organizational management pays attention to creating a safe working environment for its employees, where they feel appreciated and safe when reporting any issues related to safety. This way, it becomes possible to create more trust towards organizational management among employees and increase the effectiveness of managerial behaviors through openness and intrinsic motivation (Dollard & Bakker, 2010; Idris et al., 2012). For healthcare organizations, where employees often face workload, emotional stress, and occupational hazards, it is particularly important to develop good psychosocial safety climate.

It is important to note that recent research has shown that not only does PSC contribute directly to employees' well-being, but it enhances the effects of supportive leadership on positive psychological outcomes of individuals. According to Amoade et al. (2025), healthcare organizations possessing high levels of psychosocial safety climate have better employee well-being, higher work engagement, and positive

safety performance. Furthermore, according to Khan et al. (2024), PSC makes the impact of leadership on the development of safety citizenship behavior in healthcare professionals more effective. Yang et al. (2023) proved that PSC increases the positive attitude and organizational citizenship behavior of workers by decreasing psychological strain and providing organizational support. Based on the concepts of Social Exchange Theory, employees that are exposed to safety-related transformational leadership and high level of PSC are more likely to feel organizational support, which leads to the development of harmonious safety passion.

H8: Psychosocial safety climate positively moderates the relationship between safety-specific transformational leadership and harmonious safety passion, such that the relationship is stronger when psychosocial safety climate is high.

2.10 Moderating Role of Psychosocial Safety Climate on the Relationship between Occupational Safety and Health Practices and Harmonious Safety Passion

The Occupational Safety and Health Practices (OSHP) form the building blocks for safeguarding employees via safety policies, training, communication, risk management, and employee engagement. Yet, the success of such practices largely rests on the organizational climate in which such practices are adopted. The concept of the Psychosocial Safety Climate (PSC) ensures that there is a work environment in which employees feel valued in terms of their physical as well as psychological safety by management. When OSHP are adopted in the context of such a strong psychosocial safety climate, employees will trust organizational motives and actively participate in safety endeavors (Dollard & Bakker, 2010; Idris et al., 2012).

The empirical evidence suggests that supportive psychosocial work environments can enhance the efficacy of organizational safety programs by promoting motivational and psychological wellbeing of the employees. As per Amoade et al. (2025), healthcare organizations with stronger psychosocial safety climate have higher employee

engagement, organizational commitment, and well-being. Similarly, Adotey et al. (2025) suggest that effective occupational safety and health programs are more effective in promoting safe behavior among employees through positive organizational context, whereas Yang et al. (2023) argue that psychosocial support can promote internalization of organizational values among employees and discretionary behaviors. However, despite this evidence, there is a lack of empirical research that has attempted to analyze the moderating role of psychosocial safety climate and occupational safety and health programs on harmonious safety passion in the

healthcare organizations. According to Social Exchange Theory, employees experiencing comprehensive safety practices along with supportive psychosocial work environments will develop stronger harmonious safety passion as compared to employees not experiencing such conditions.

H9: Psychosocial safety climate positively moderates the relationship between occupational safety and health practices and harmonious safety passion, such that the relationship is stronger when psychosocial safety climate is high.

Research Model

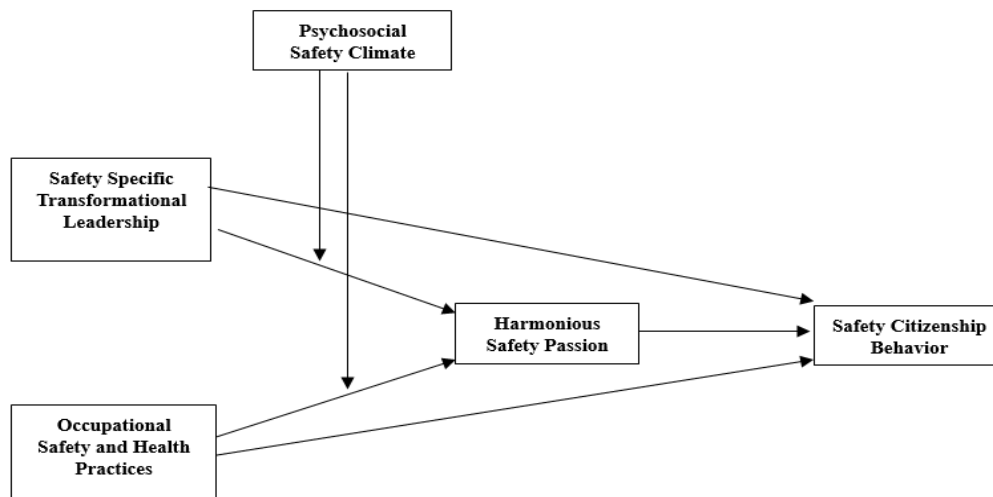


Figure 1: Research Model

3. Methodology

3.1 Research Design

This study adopted a quantitative, cross-sectional research design to examine the relationships among safety-specific transformational leadership (SSTL), occupational safety and health practices (OSHP), psychosocial safety climate (PSC), harmonious safety passion (HSP), and safety citizenship behavior (SCB) among healthcare workers in Pakistan. A quantitative approach was considered appropriate because it facilitates the empirical testing of theoretical relationships through statistical analysis and enables the examination of direct, mediating, and moderating effects among multiple variables.

Furthermore, the cross-sectional survey design allowed data to be collected from a large and diverse sample of healthcare professionals within a single time frame, making it suitable for investigating organizational and behavioral phenomena in healthcare settings.

3.2 Research Participants and Sampling

The target population comprised healthcare professionals employed in public and private hospitals across Punjab and the Federal Capital Territory of Pakistan. Data were collected from Punjab Employees' Social Security Institution (PESSI) hospitals located in different cities of Punjab, private hospitals in Lahore, Faisalabad, and Sialkot, and public healthcare institutions in

Islamabad, including Capital Hospital, Federal General Hospital, and Rawal General Hospital. The respondents included physicians, specialists, nurses, paramedical staff, administrative officers, and support staff, ensuring representation from different professional groups within the healthcare sector. A convenience sampling technique was employed because of the geographical dispersion of healthcare institutions, time limitations, and resource constraints associated with data collection. Prior permission was obtained from the respective hospital administrations before distributing the questionnaires. A total of 402 valid questionnaires were collected and retained for analysis, which provided an adequate sample for examining the proposed mediation and moderation model.

3.3 Sample Size Determination

The sample size was determined by considering the requirements of quantitative research involving mediation and moderation analyses. Previous methodological studies recommend a sufficiently large sample to ensure statistical power and obtain stable parameter estimates when testing complex research models. The final sample consisted of 402 healthcare workers, exceeding the minimum sample size generally recommended for behavioral research and regression-based mediation and moderation analyses. The diversity of respondents across multiple healthcare institutions also enhanced the representativeness of the sample and improved the generalizability of the study findings within the Pakistani healthcare context.

3.4 Data Collection Procedure

Data were collected using a structured self-administered questionnaire after obtaining permission from the management of the participating healthcare institutions. Participation in the study was entirely voluntary, and respondents were informed about the objectives of the research before completing the questionnaire. Informed consent was obtained from all participants, and they were assured that their responses would remain anonymous and confidential and would be used exclusively for

academic purposes. Since English is the official medium of professional communication within Pakistani healthcare organizations, the questionnaire was administered in English without requiring translation. Completed questionnaires were screened for completeness before being entered into the statistical software for analysis.

3.5 Research Instrument and Measures

The study employed previously validated measurement instruments to ensure the reliability and validity of the constructs. All variables were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Safety-Specific Transformational Leadership was measured using the 13-item scale developed by Kelloway et al. (2006). Occupational Safety and Health Practices were assessed using the 13-item instrument developed by Nordlöf et al. (2017). Psychosocial Safety Climate was measured using the 10-item scale proposed by Hall et al. (2010), while Harmonious Safety Passion was assessed using the 10-item instrument developed by Robertson and Barling (2013). Safety Citizenship Behavior was measured using the 27-item scale developed by Hofmann et al. (2003). These instruments have been widely applied in previous occupational safety and organizational behavior research and have consistently demonstrated satisfactory psychometric properties. Their adoption in the present study ensured content validity and facilitated comparison with existing empirical findings.

3.6 Ethical Considerations

Ethical principles governing research involving human participants were strictly observed throughout the study. Permission to conduct the research was obtained from the relevant hospital authorities before data collection commenced. Participants were informed about the purpose of the study, their right to decline participation or withdraw at any stage without any consequences, and the confidential handling of all information provided. No personally identifiable information was collected, and all responses were analyzed in aggregate form to ensure participant anonymity and privacy. These procedures were implemented

to comply with accepted ethical standards for social and healthcare research.

3.7 Common Method Bias

Because all variables were measured using a single questionnaire completed by the same respondents, procedural and statistical measures were adopted to minimize the possibility of common method bias. Procedurally, respondents were assured of anonymity and confidentiality, participation was voluntary, and previously validated measurement scales were employed to reduce evaluation apprehension and response bias. Statistically, Harman's single-factor test was performed to assess the presence of common method variance. The results indicated that no single factor accounted for the majority of the total variance, suggesting that common method bias was not a significant concern in the present study. These findings support the validity of the data used for subsequent analyses.

3.8 Data Analysis Technique

The collected data were analyzed using IBM SPSS Statistics together with Hayes' PROCESS Macro. Initially, descriptive statistics and Pearson correlation analysis were conducted to summarize the characteristics of the data and examine the relationships among the study variables. Multiple regression analysis was subsequently performed to test the direct effects proposed in Hypotheses H1–H5. The mediating role of Harmonious Safety Passion was examined

using PROCESS Model 4, whereas the moderating role of Psychosocial Safety Climate was assessed using PROCESS Model 1. Bootstrapping with 5,000 resamples and 95% bias-corrected confidence intervals was employed to evaluate the significance of indirect and interaction effects. Mediation and moderation effects were considered statistically significant when the confidence intervals excluded zero, providing robust evidence for the proposed research model.

4. Results

4.1 Demographics

Out of 402 participants, 54% were female healthcare workers, whereas 46% were male participants. Most of the respondents were young, falling in the age category between 25 and 35. However, the sample as a whole included the entire serving age range of healthcare workers. A majority of the respondents (38.6%) were either MBBS or bachelor degree holders. Specialists or master degree holders comprised 31.8%. Diploma holders constituted 20.9% of the sample and the other unspecified category made 8.7% of the population. For the current study, the organizational affiliation was categorized into mainly two broad types i.e. public hospitals and private hospitals. Nearly half of the participants belonged to government hospitals and the rest of them to private and others including autonomous bodies and charity foundations etc.

4.2 Descriptive Statistics and Correlation Analysis

Table 1: Descriptive Statistics and Correlation

	Mean	SD	1	2	3	4	5
1. SSTL	3.600	.608	1				
2. OSHP	3.476	.754	.584**	1			
3. PSC	3.322	.814	.573**	.651**	1		
4. HSP	3.874	.559	.519**	.521**	.457**	1	
5. SCB	3.866	.574	.515**	.545**	.459**	.760**	1

Notes. N=402, SSTL= Safety-specific transformational leadership, OSHP= Occupational safety and health practices, PSC= Psychosocial safety climate, HSP= Harmonious safety passion, SCB= Safety citizenship behaviors, ** = $p < 0.01$. The table provides descriptive statistics and correlation among the variables studied. For safety-specific transformational leadership with 402 observations, scores range from 1.00 to 5.00, a mean of 3.600, and a standard deviation of 0.608, reflecting moderate agreement and consistency. For occupational safety and health practices, scores range from 1.00 to 5.00, with a mean of 3.476 and a standard deviation of 0.754, indicating slightly more variability. For psychosocial safety climate, scores also span from 1.00 to 5.00, with a mean of 3.322 and a higher standard deviation of 0.814, showing greater response variability. For harmonious safety passion, scores range from 1.80 to 5.00, with the highest mean of 3.874 and a standard deviation of 0.559, indicating consistent positive responses. For safety citizenship behaviors, scores range from 1.85 to 5.00, with a mean of 3.866 and a standard deviation of 0.574, suggesting high engagement and reliability in responses. These statistics indicate moderate to high levels of agreement across the variables, with varying degrees of response dispersion.

The results of the correlation analysis (see Table 1) indicate that a strong positive association exists between SSTL and SCB, whereby $r = .515$

and $p < 0.01$. The relationship between OSHP and SCB is also found to be positive and significant whereby $r = .545$ and $p < 0.01$. Harmonious safety passion has a very strong positive relationship with safety citizenship behavior, where $r = .760$, indicating that the employees who are passionate about safety exhibit proactive safety behaviors. The relationships of SSTL and OSHP with HSP are also positive and statistically significant, where the values for r are .519 and .521 respectively and $p < 0.01$ in both of them. This analysis underscores the association among safety practices, organizational climate, and individual safety behaviors. Strong leadership (SSTL) and organizational support (PSC) foster better safety practices (OSHP), which contribute to employees' harmonious passion for safety (HSP) and their willingness to go beyond the call of duty in ensuring workplace safety (SCB). All correlations are significant, implying that the relationships observed in the sample are unlikely to have occurred due to chance.

4.3 Regression Analysis

Regression analysis has been employed in the present study to determine the strength and direction of the relationships between variables and to test the hypotheses (H1 to H9). Table 4.2 represents the results of regression analysis where hypotheses (H1 to H9) have been tested for their statistical significance, along with their standard errors (SE), t-statistics (T), and p-values (P).

Table 2: Regression Analysis

Direct Effect Hypotheses					
Hypothesis	Relationship	Estimates			
		B	SE	T	p
H1	SSTL → SCB	0.083	0.040	2.093	0.037
H2	OSHP → SCB	0.118	0.034	3.448	0.001
H3	SSTL → HSP	0.300	0.046	6.519	0.000
H4	OSHP → HSP	0.245	0.037	6.594	0.000
H5	HSP → SCB	0.640	0.040	16.135	0.000
Indirect Effect Hypotheses					
Hypothesis	Relationship	B	SE	LLCI	ULCI
H6	SSTL → HSP → SCB	0.330	0.038	0.264	0.414
H7	OSHP → HSP → SCB	0.258	0.034	0.195	0.330

Notes: N=402; SSTL=Safety-specific transformational leadership; OSHP=Occupational safety and health practices; HSP=Harmonious safety passion; SCB=Safety citizenship behavior.

The results show that all hypotheses (H1 to H5) are statistically significant ($p < 0.05$). Safety-specific transformational leadership (SSTL) and occupational safety and health practices (OSHP) both significantly influence harmonious safety passion (H3, H4) and safety citizenship behavior (H1, H2). The strongest relationship exists between harmonious safety passion and safety citizenship behavior (H5). These results suggest a robust framework for understanding the interplay between safety-specific transformational leadership, occupational safety and health practices, harmonious safety passion and safety citizenship behavior in a healthcare setting.

4.4 Mediation Analysis

In the present study, mediation analysis was performed using Hayes' PROCESS macro, a statistical tool designed for SPSS to test mediation and moderation. The analysis examined the indirect effects of Safety-Specific Transformational Leadership (SSTL) and Occupational Safety and Health Practices (OSHP) on Safety Citizenship Behavior (SCB) through the mediator Harmonious Safety Passion (HSP) by using model 4 of Process macro. Bootstrapping was used to estimate the indirect effects and their significance. The results revealed significant positive mediation effects, with beta coefficients, standard errors, and 95% confidence intervals reported for each pathway. The confidence intervals did not include zero, confirming that HSP serves as a significant mediator in the relationship between SSTL, OSHP, and SCB, thereby emphasizing the critical role of leadership and safety practices in enhancing harmonious passion.

Table 2 provides evidence for the indirect effect of SSTL on SCB through the mediator HSP. The effect size (0.330) suggests that SSTL has a

moderate positive indirect influence on SCB. The bootstrapped standard error (0.0382) indicates a relatively small degree of variability in the estimate. Importantly, the 95% bootstrap confidence interval (0.2641 to 0.4144) does not include zero, suggesting that the indirect effect is statistically significant. This result supports the hypothesis that the mediator HSP plays an impactful role in the relationship between SSTL and SCB, thus H6 is supported.

The results for H7 (Table 4.2) indicate that Occupational Safety and Health Practices (OSHP) have a significant positive effect on Safety Citizenship Behavior (SCB) through Harmonious Safety Passion (HSP). The beta coefficient ($B = 0.258$) suggests a moderate positive indirect effect. The standard error ($SE = 0.034$) indicates that the estimate is precise, with relatively low variability. Additionally, the 95% confidence interval ($LLCI = 0.195$, $ULCI = 0.330$) does not include zero, confirming that the indirect effect is statistically significant. This result supports the hypothesis (H7) and highlights the mediating role of HSP in the relationship between OSHP and SCB. It underscores the importance of effective occupational safety and health practices in improving healthcare service performance by fostering positive safety-related behaviors.

4.5 Moderated Regression Analysis

Moderated regression analysis using Hayes' PROCESS macro model 1 examines how a moderator variable influences the relationship between an independent and a dependent variable. By testing interaction effects and providing bootstrapped confidence intervals, it identifies significant conditional effects. In this study, the analysis assessed whether Psychosocial Safety Climate (PSC) moderated the effects of Safety-Specific Transformational Leadership (SSTL) and Occupational Safety and Health Practices (OSHP) on Harmonious Safety Passion (HSP), revealing significant moderated relationships in a sample of 402 participants.

Table 3: Moderated Regression Analysis

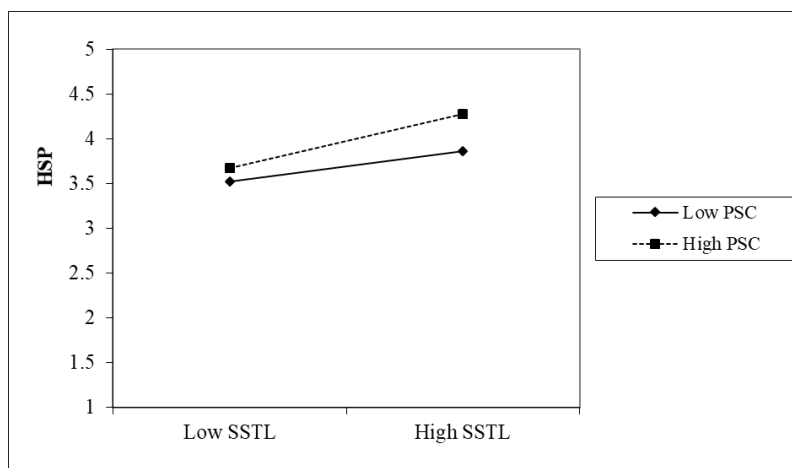
Predictors	B	SE	T	p	LLCI	ULCI
SSTL → PSC → HSP	0.131	0.040	3.228	0.001	0.051	0.210
OSHP → PSC → HSP	0.133	0.034	3.848	0.000	0.065	0.200

Notes: N=402; SSTL= Safety-specific transformational leadership; OSHP=Occupational safety and health practices; PSC=Psychosocial safety climate; HSP=Harmonious safety passion

Table 3 shows that Safety-Specific Transformational Leadership (SSTL) has a meaningful positive influence on Harmonious Safety Passion (HSP), moderated by Psychosocial Safety Climate (PSC). The beta coefficient ($\beta = 0.131$) indicates that Safety-Specific Transformational Leadership indirectly enhances healthcare workers' harmonious safety passion under the moderation of psychosocial safety climate. The effect is statistically significant ($p = 0.001$) with a 95% confidence interval (LLCI = 0.051, ULCI = 0.210) that does not include zero. This suggests that the combined effect of safety-specific transformational leadership and psychosocial safety climate significantly enhances harmonious safety passion in healthcare workers, hence H8 is supported.

The results also indicate that occupational safety and health practices (OSHP) and psychosocial safety climate (PSC) significantly and positively

impact harmonious safety passion (HSP). The beta coefficient ($\beta = 0.133$) reflects the strength of this effect, and it is statistically significant ($p < 0.001$). The confidence interval (LLCI = 0.065, ULCI = 0.200) further confirms the robustness of the relationship. This demonstrates that implementing effective occupational safety and health practices enhances the psychosocial safety climate, which subsequently nurtures employees' intrinsic passion for maintaining safety. In both cases, the results underscore the importance of leadership and safety practices in shaping the psychosocial safety climate, which serves as a crucial pathway to fostering employees' harmonious safety passion and thus H9 is supported. A close look at the moderation graphs, figures 2 and 3, makes it even clearer that when psychosocial safety climate is high, the relationship between SSTL and HSP and the one between OSHP and HSP are stronger and vice versa.

**Figure 2: Moderation graph showing the moderating effects of PSC between SSTL and HSP**

This interaction plot illustrates the relationship between safety-specific transformational leadership (SSTL) on the x-axis and harmonious safety passion (HSP) on the y-axis, moderated by

levels of psychological safety climate (PSC). The solid line represents a low psychological safety climate (Low PSC). The dashed line represents a high psychological safety climate (High PSC).

Both lines show an upward trend, indicating that as SSTL increases (moving from Low SSTL to High SSTL), HSP also improves regardless of PSC levels. At Low PSC, the difference in HSP between Low SSTL and High SSTL is smaller. At High PSC, the gap widens significantly, with High SSTL resulting in much higher HSP compared to Low PSC. The impact of SSTL on HSP is more

pronounced when the PSC is high. This suggests that a strong psychological safety climate amplifies the positive effects of safety-specific transformational leadership on hospital safety performance. Conversely, when PSC is low, the effectiveness of SSTL on improving HSP is limited, as shown by the flatter slope of the solid line.

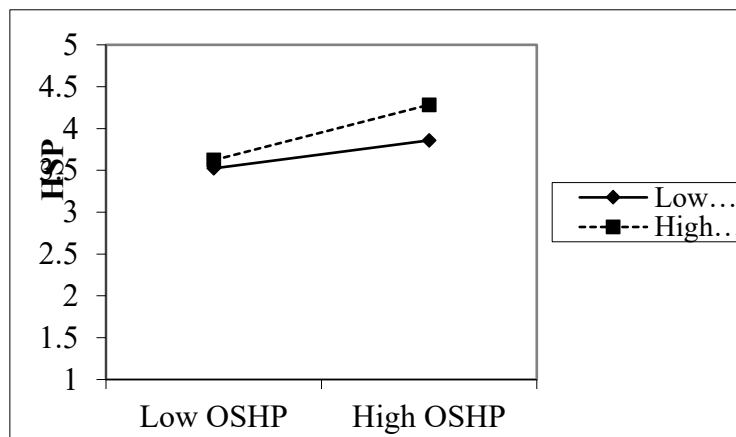


Figure 3: Moderation graph showing the moderating effects of PSC between OSHP and HSP

This moderation graph illustrates the relationship between occupational safety and health practices (OSHP) on the x-axis and harmonious safety passion (HSP) on the y-axis, moderated by levels of psychological safety climate (PSC). The solid line represents a low psychological safety climate (Low PSC). The dashed line represents a high psychological safety climate (High PSC). Both lines show a positive slope, indicating that as OSHP improves (from Low OSHP to High OSHP), HSP increases, regardless of PSC levels. When PSC is low, the difference in HSP between Low OSHP and High OSHP is smaller. When PSC is high, the gap becomes more pronounced, with High PSC resulting in significantly higher HSP than Low PSC. The relationship between OSHP and HSP is strengthened in the presence of a High PSC. In other words, a positive psychological safety climate amplifies the impact of occupational safety and health practices on hospital safety performance. Conversely, when PSC is low, the positive impact of OSHP on HSP is weaker, as seen by the flatter slope of the solid line. To maximize hospital safety performance, organizations should enhance both occupational safety and health practices and foster a strong

psychological safety climate. A high PSC ensures that the benefits of OSHP are fully realized.

5. Discussion:

In the current study, the links between safety-specific transformational leadership (SSTL), occupational safety and health practices (OSHP), harmonious safety passion (HSP), psychosocial safety climate (PSC), and safety citizenship behavior (SCB) were investigated among the healthcare professionals in Pakistan. Based on Social Exchange Theory (SET), the study explores the impact of various organizational and leadership variables on safety behaviors of the healthcare professionals through the mediation of harmonious safety passion and moderation of psychosocial safety climate. All nine hypotheses of this study were found to be highly significant. These results indicate that there is a complementary relationship between leadership and organizational safety practices in creating psychologically supportive environment in which employees take part in voluntary safety behaviors.

These findings add value to the increasing literature on occupational safety since they show that besides formal safety management systems,

employees' psychological and motivational dynamics affect safety citizenship behavior. In particular, harmonious safety passion was found to be one of the psychological dynamics through which safety-specific transformational leadership and occupational safety and health practices were positively associated with safety citizenship behavior, while psychosocial safety climate enhanced the positive relationship between both organizational antecedents and harmonious safety passion. The findings support the idea that sustainable occupational safety cannot be realized based on safety legislation and compliance alone but also necessitates leadership, safety practices, and the workplace culture that focus on employees' psychological needs (Barling et al., 2002; Neal & Griffin, 2006; Dollard & Bakker, 2010). Similar views have been put forward recently by other researchers that the organizations with supportive leadership and positive psychosocial safety climate are more engaged, motivated in terms of safety, and demonstrate discretionary safety behavior (Wu et al., 2023; Amodu et al., 2025; Ali et al., 2025; Ghasemi et al., 2025).

Moreover, the current study adds to the application of Social Exchange Theory in occupational safety research by showing that healthcare workers repay the organization for its support by forming psychological attachment towards occupational safety as well as indulging in safety citizenship behaviors. By investing in safety-focused leadership and employing proper safety and health management system along with creating a psychosocially safe environment, the healthcare organizations show to the workers that they care about their wellbeing. The workers then reciprocate this care in the form of harmonious safety passion by engaging themselves in safety practices and helping others in making the workplace more safe voluntarily. This study shows empirically that the success of interventions at workplace safety is contingent not only on the policies adopted by an organization but also on the quality of social exchange relationship developed between organizations and their employees. The current study offers a lot of insights on how sustainable

safety cultures can be created in healthcare organizations, especially those in developing countries such as Pakistan where little empirical research has been conducted on such relationships.

5.1 Safety-Specific Transformational Leadership and Safety Citizenship Behavior

As can be observed from the results of the current study, safety-specific transformational leadership increases safety citizenship behavior of healthcare professionals and validates the hypothesis one, emphasizing the role of leadership in improving workplace safety. Instead of enforcing compliance with the safety regulations of the organization, safety-specific transformational leaders motivate employees to engage in proactive safety behaviors, which include helping fellow employees, identifying potential risks, engaging in safety activities, and suggesting ways to improve existing safety policies. The results obtained coincide with other research conducted by Barling et al. (2002), Kelloway et al. (2006), Smith et al. (2020), and Wu et al. (2023), which prove the fact that consistent communication about safety issues, modeling safety behavior, and encouragement of involvement positively affect motivation and discretionary safety behavior of employees. Recent research conducted by Ali et al. (2025) and Ghasemi et al. (2025) confirms this result and demonstrates that safety-specific transformational leadership improves safety behavior of employees through the promotion of knowledge sharing, psychological safety, and safety climate.

The study results could be discussed within the context of Social Exchange Theory, according to which employees respond to organizational support with positive attitudes and discretionary behaviors (Blau, 1964; Cropanzano & Mitchell, 2005). Healthcare employees who perceive their supervisors as being highly committed to their safety will most likely develop trust in organizational leadership and engage in discretionary behaviors in terms of ensuring workplace safety in addition to the required activities. It is noteworthy that the reciprocal

relationship between organizational leaders and employees is especially relevant in the healthcare sector because high-quality treatment in hospitals depends on team work and effective communication. Unlike other studies dedicated to the influence of leadership on workplace safety in industrial companies like construction and manufacturing firms, the current study reveals that the influence of transformational leadership on safety is observed in healthcare facilities in Pakistan, thus adding to the generalizability of the occupational safety literature.

5.2 Occupational Safety and Health Practices and Safety Citizenship Behavior

The second unique contribution of the current paper lies in using the practice of occupational safety and health as an independent predictor in its own right, rather than a control variable. Indeed, our data has demonstrated a significant positive effect of OSHP on safety citizenship behavior ($\beta = 0.11$, $p < 0.01$). When hospitals spend money on building protective infrastructure, employees react to such investment. From the standpoint of Social Exchange Theory, this conclusion appears quite logical. Healthcare employees, seeing that the organization cares about them by protecting them from possible threats, do not perceive such a measure as purely contractual; they consider it as a sign of true concern from the part of the institution, and thus try to reciprocate. This occurs in various small-scale actions: warning about an almost accident that has occurred, briefing colleagues on certain safety procedures, or just simply speaking up at a meeting to suggest improvements to the existing process. However, none of such actions is ever included in the job description, making them true citizenship behavior.

5.3 Safety-Specific Transformational Leadership and Harmonious Safety Passion

Whereas OSHP influences employee behavior, leadership influences employee attitude regarding these behaviors, and this is where harmonious safety passion comes into play. In line with the results found by Wu et al. (2023), the results of this study revealed that safety-specific

transformational leadership had a significant impact on HSP ($\beta = 0.30$, $p < 0.001$), indicating that leadership does not influence safety policies only; it influences employees' attitude towards safety as well (Ali et al., 2020). It is all about the exchange, when a leader that motivates, mentors and supports employees gets employees who have embraced the principle of safety. Such an exchange is based on trust, and safety-specific transformational leaders encourage open communication, and their employees feel psychologically safe when talking about any hazards and issues without being afraid of any negative consequences of their speech. This feeling of safety leads to employees embracing the safety culture. Employees no longer see safety as an imposition but a positive attitude towards it.

5.4 Occupational Safety and Health Practices and Harmonious Safety Passion

Emotional change also takes place through another route: the interventions themselves. OSHP was identified as predicting HSP ($\beta = 0.24$, $p < 0.001$), meaning that protective measures do more than just lower the incidence of injury; they influence how employees feel about their job. Healthcare employees' perception of organizational investment in protecting them means that safety will no longer be viewed as an imposed requirement, but an integral and even rewarding component of their profession. There is an obvious managerial implication here: managers should not consider the safety measures as simply a way to tick boxes on some checklist. Measures of infection prevention and control, tuberculosis and HIV precautions, safe patient lifting, and manual handling need to be put into practice not because of regulatory reasons, but in order to nurture the love for safety that leads to protective behavior on employees' part.

5.5 Harmonious Safety Passion and Safety Citizenship Behavior

Among all the associations examined, this particular one came out the strongest ($\beta = 0.64$, $p < 0.001$), and the magnitude of its effect speaks volumes. As opposed to compliance, passion is

sustainable and does not fade away once the working day is over. Ali et al. (2020) explained harmonious safety passion as the proactive engagement in the behavior associated with safety due to its compatibility with individual values, and the results obtained seem to fit this definition rather well since the employees passionate about safety are not only compliant but proactive as well; they join safety committees, participate in audits, shape policies and contribute to the creation of a safety culture.

5.6 The Mediating Role of Harmonious Safety Passion between Leadership and Safety Citizenship Behavior

By synthesizing all these strands, HSP turned out to be a strong intermediary in the relation between SSTL and SCB, which replicated the model already identified by Wu et al. (2023). Practically speaking, this implies that the influence of leadership on safety behavior is more complicated than direct, because some part of it occurs via the emotional bond fostered by the leaders. From the point of view of hospital managers, this implication seems obvious yet too often ignored. Indeed, by improving their leadership skills, managers will contribute both to enhanced safety conditions and to effective employee retention, because developing transformational leadership will allow fostering harmony of safety passion and discretionary safety behavior at the same time.

5.7 The Mediating Role of Harmonious Safety Passion between Practices and Safety Citizenship Behavior

Mediating pattern was observed in the case of OSHP as well ($\beta = 0.258$, LLCI = 0.195, ULCI = 0.330). This finding reiterates the idea that the adoption of structured safety practices does not solve the problem on its own. HSP serves as an intermediary between safety procedures and safety behaviors: people who have incorporated safety into their values do not remain passive about it but take a more active role and watch out for their coworkers and potential hazards before the situation escalates. This study suggests that OSHP implementation and development of HSP

cannot replace each other; rather, they must be combined as the two aspects of the process.

5.8 The Moderating Role of Psychosocial Safety Climate between Leadership and Harmonious Safety Passion

One aspect that contributes to the innovation of the model used in this study is the presence of psychosocial safety climate and the effect that it has on the connection between SSTL and HSP ($\beta = 0.131$, $p < 0.01$), meaning that safety-specific transformational leadership was more successful in fostering harmonious safety passion in organizations where the psychosocial safety climate was favorable. This finding is significant in the sense that psychosocial safety climate refers to the extent to which members of the organization perceive management's concern for the psychological wellbeing of the employees. Leadership is contextual in the sense that it can either be amplified or inhibited depending on the existing organizational climate.

5.9 The Moderating Role of Psychosocial Safety Climate between Practices and Harmonious Safety Passion

In the case of OSHP, ($\beta = 0.133$, $p < 0.001$), the same pattern was observed in which the effect of OSH practices on harmonious safety passion was achieved more successfully in the presence of a positive psychosocial safety climate. Psychological safety encourages employees to engage in OSH practices, to be proactive about reporting risks and offering ideas for improvement and to implement policies seriously and not just in theory. For the administrator of a hospital, it is clear that the cycle in the model is completed and it is not an abstract nicety for him to have a good psychosocial safety climate; it is what makes his other investments in safety worthwhile.

6. Research Implications

6.1 Theoretical Implications

The current research contributes to the literature on occupational safety and organizational behavior from various theoretical perspectives. Firstly, Social Exchange Theory (SET) is

extended in the study in terms of showing that the healthcare professionals repay the resources provided to them by organizations through forming harmonious safety passion and performing safety citizenship behavior. The results confirm that transformational leadership for occupational safety and health and safety practices are important organizational resources for stimulating the voluntary performance of safety-related behaviors on the part of employees, which are not related to their official job tasks.

Second, this study makes a contribution to the burgeoning field of workplace safety literature by combining a leadership, organizational, and psychology approach in one conceptual framework. Whereas past research on the topic has focused mainly on the direct impact of safety transformational leadership on safety-related outcomes (Barling et al., 2002; Wu et al., 2023), this current study shows that harmonious safety passion is a vital psychological process that acts as a mediator in the relationships between safety transformational leadership and occupational safety and health practices on the one hand, and safety citizenship behavior on the other.

Thirdly, the current study explores occupational safety and health practices (OSHP) as an organizational antecedent of harmonious safety passion and safety citizenship behavior in the healthcare industry. Even though some studies have explored the relationship between OSHP and safety performance and organizational safety culture, few empirical studies have investigated the effects of OSHP on psychological attachment of workers to workplace safety. With this in mind, this study advances the literature in occupational safety field by investigating the effects of the two organizational antecedents on the discretionary safety behaviors of healthcare professionals (Adotey et al., 2025). In addition, the current study will be one of the pioneering studies exploring psychosocial safety climate (PSC) as a moderator of the relationship between safety-specific transformational leadership, OSHP and harmonious safety passion in Pakistan. In other words, the current study will advance the literature by investigating the moderating role of PSC in the relationship between organizational

safety initiatives and the discretionary safety behaviors of workers (Dollard & Bakker, 2010; Amoade et al., 2025).

6.2 Practical Implications

The implications arising from the current research are quite numerous in terms of applicability to health care administrators, policy makers, and management in hospitals. Health care organizations function in an environment with considerable levels of physical, biological, and psychological hazards. Therefore, the safety of workers becomes the key issue in the health care organization to ensure not only the health and safety of employees but also good quality patient care. The implication from this research is that the implementation of transformational leadership that will focus on the safety of workers can considerably improve the workers' safety-related behavior.

This research equally emphasizes the need for adopting occupational safety and health practices that are more comprehensive than just being regulated. It is essential for the hospital managers to have occupational safety policy that will be in tandem with the national and international regulations; strong infection prevention and control programs, risk assessments at the workplace, safety training and adequate supply of personal protective equipment (PPE). Just as equally important is adopting a psychosocial safety climate in ensuring the psychological well-being of the workers via management approaches, effective communication, involvement of workers in safety decision making, and non-punitive approach in incident reporting. These efforts are expected to bring about harmonious safety passion and behavior (WHO, 2022; ILO, 2022; Amoade et al., 2025).

6.3 Limitations and Future Research

Nevertheless, there are various weaknesses in this current research that need to be taken into account when evaluating the results of the research. Firstly, the cross-sectional nature of the research makes it impossible to investigate causality between the research variables. In order to do so, future researchers have to make use of

either longitudinal or experimental research designs to explore the relationship among leadership, organization safety practice, psychological mechanisms, and safety behavior. Secondly, the researcher made use of convenience sampling approach and gathered data from healthcare employees from Punjab and Islamabad areas only. Though this sample is representative enough of the healthcare sector, the results may not generalize to other provinces/countries.

Third, all variables were assessed through self-reporting questionnaires, thereby increasing the chance of common method bias and social desirability bias even with the use of procedural and statistical techniques to counteract these problems. In future studies, multiple sources of data collection could be used such as employee, supervisor, and organizational records for validating the results of the study. Last but not least, the current study has solely considered harmonious safety passion as the mediator variable and psychosocial safety climate as the moderator variable. Future scholars can conduct the same study by taking into account different mediator variables such as safety engagement, psychological empowerment, organizational trust, or safety motivation along with different moderators like proactive personality, organizational justice, safety culture, or organizational support. The model can be

replicated in other high-risk industries including aviation, mining, manufacturing, and information technology.

7. Conclusion

Besides formal safety regulations, healthcare organizations need other measures to develop sustainable safety cultures. The results of the current study show that a combination of positive supportive leadership, sound occupational safety and health policies, and high psychosocial safety climate ensures the development of harmonious safety passion, leading in its turn to safety citizenship behavior in addition to prescribed duties among healthcare workers. The results of the current study show the significance of taking into account all three dimensions of safety in order to achieve better workplace safety.

Through expanding Social Exchange Theory in the case of the Pakistani healthcare industry, the current research demonstrates that healthcare workers' reciprocate organizations' efforts to create safe working environment physically and psychologically with higher intrinsic commitment to safety and active participation in safety initiatives. Moreover, the current study makes a contribution to the existing literature on occupational safety as it identifies harmonious safety passion as a mediating variable and psychosocial safety climate as a contextual one.

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