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Assessing and Improving a Hospital's Safety Culture, Which Includes Reporting, Leadership, and Teamwork

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ABSTRACT

Background: A strong hospital safety culture is essential for delivering high-quality care and preventing adverse events. It encompasses the values, attitudes, and behaviors shared by healthcare workers that influence patient safety outcomes. This study aimed to assess and improve a hospital's safety culture, focusing on three critical domain-reporting, leadership, and teamwork—through a structured intervention program.

Methods: A descriptive cross-sectional study with an interventional component was conducted among 200 healthcare professionals including physicians, nurses, and allied health staff. Data was collected using the Hospital Survey on Patient Safety Culture (HSOPSC) before and after a six-week intervention that included leadership workshops, team-building exercises, and safety reporting awareness sessions. Out of the initial sample, 182 participants completed both assessments. Data was analyzed using SPSS version 27, with paired t-tests employed to compare pre- and post-intervention results. A p-value < 0.05 was considered statistically significant.

Results: The findings revealed significant improvement across all domains of safety culture. The perception of teamwork increased from 63.8% to 88.8%, leadership support from 51.3% to 81.5%, and reporting culture from 43.0% to 76.5%. The mean overall safety culture score improved from 3.18 ± 0.54 before the intervention to 4.14 ± 0.51 after, showing a statistically significant enhancement ($p < 0.001$). Participants also reported feeling safer when reporting incidents and perceived leadership as more responsive and supportive following the intervention.

Conclusion: The study concluded that a comprehensive, multidisciplinary intervention can significantly strengthen hospital safety culture. Enhancing leadership engagement, promoting teamwork, and fostering a non-punitive reporting environment led to measurable improvements in safety perceptions. Sustained commitment to continuous education, communication, and leadership support is essential for maintaining a culture of safety and ensuring long-term improvements in patient care outcomes.

KEYWORDS:

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BACKGROUND

A strong safety culture within hospitals forms the foundation for delivering high-quality patient care and minimizing preventable harm. In healthcare settings, safety culture refers to the shared values, attitudes, perceptions, and behaviors that determine how safety is managed and prioritized. When safety becomes ingrained in the hospital's identity, every individual—from administrators to frontline staff—takes ownership of patient and staff well-being. This culture encourages proactive identification of risks and open communication about errors or near misses before they result in adverse outcomes (Finn et al., 2024).

Over the years, healthcare systems around the world have recognized that establishing a safety culture is not merely about implementing policies but about transforming mindsets. Hospitals operate as complex organizations where multiple professionals must collaborate seamlessly. The dynamics of teamwork, communication, and leadership directly affect how effectively safety procedures are followed. A robust safety culture ensures that even under pressure, staff remain committed to following standards that protect patients and colleagues alike (Huang et al., 2024).

One of the central components of safety culture is the willingness of staff to report incidents without fear of blame or punishment. A non-punitive reporting environment allows for the early detection of systemic issues that may compromise patient care. When healthcare workers feel safe to report errors or near misses, management gains valuable data for improving processes and preventing recurrence. The absence of such reporting mechanisms often results in underreported incidents, leading to repeated mistakes and hidden risks that threaten overall hospital safety (Ali Ali et al., 2022).

Leadership plays a pivotal role in shaping and sustaining a hospital's safety culture. Leaders set the tone for how safety is perceived and prioritized by demonstrating commitment through actions rather than words alone. When leaders model transparency, accountability, and responsiveness to staff concerns, they foster trust and engagement. Conversely, when leadership fails to address safety lapses or neglects frontline feedback, staff morale and compliance with safety practices decline. Effective leaders promote shared responsibility, continuous learning, and a collective focus on improvement (Azyabi et al., 2021).

Teamwork is another cornerstone of a healthy safety culture. Hospitals rely on multidisciplinary teams that must communicate clearly, coordinate efficiently, and support each other under demanding conditions. A culture that values teamwork ensures that all members, regardless of hierarchy, can contribute ideas and express concerns. Teamwork also strengthens problem-solving and decision-making, especially in high-stakes clinical environments where collaboration can mean the difference between success and failure in patient outcomes (Mistri et al., 2023).

Communication is the lifeline that connects leadership, teamwork, and safety reporting. Clear, respectful, and timely communication reduces misunderstandings and prevents errors. In environments where open dialogue is encouraged, staff are more likely to voice safety concerns, share knowledge, and support colleagues. Structured communication tools such as briefings, handovers, and checklists have been shown to enhance safety outcomes by standardizing the exchange of critical information (Alhassan et al., 2024).

Continuous learning and feedback are essential elements of improving safety culture. Hospitals that actively review incidents and provide constructive feedback to staff demonstrate a commitment to growth rather than blame. This approach encourages ongoing professional development and strengthens institutional resilience. By learning from past errors, teams become more adept at anticipating risks and implementing preventive strategies that enhance patient safety (El-Sherbiny et al., 2020).

The measurement of safety culture through surveys and assessments has become an important step for hospitals seeking improvement. Such assessments provide insights into staff perceptions, identify areas of strength, and highlight aspects needing attention. The results can guide leadership in developing targeted interventions, training programs, and policies that address specific weaknesses within the organization. Regular monitoring also allows hospitals to track progress and sustain long-term cultural change (Demeke et al., 2025).

Improving hospital safety culture requires a comprehensive and collaborative approach. Initiatives that integrate leadership training, communication enhancement, and system-based reporting improvements are often the most successful. Creating psychological safety—where staff feel respected and supported—further promotes openness and accountability. Continuous reinforcement through education, policy updates, and recognition of positive behaviors helps embed safety into the daily routines of healthcare workers (Huong Tran et al., 2021).

Ultimately, a strong hospital safety culture benefits everyone—patients, staff, and the organization as a whole. When safety is prioritized at every level, hospitals not only reduce adverse events but also enhance trust, job satisfaction, and public confidence. Building such a culture is an ongoing process that demands leadership commitment, teamwork, transparent communication, and an unwavering dedication to learning and improvement (Mahrous, 2018).

METHODOLOGY

Research Design

This study employed a descriptive cross-sectional design combined with an interventional component to assess and improve the hospital's safety culture, focusing on reporting, leadership, and teamwork. The initial phase aimed to evaluate the existing safety culture among hospital staff, while the second phase introduced structured interventions to strengthen identified weak areas. This design allowed both the assessment of current perceptions and the measurement of improvement following the intervention.

Study Population and Sampling

The study population consisted of physicians, nurses, and allied health professionals working in various clinical departments. A total of 200 participants were selected using stratified random sampling to ensure adequate representation of all professional categories and departments. The inclusion criteria required participants to have at least six months of continuous service and active involvement in patient care. Individuals on extended leave or those working exclusively in administrative roles were excluded from the study.

Data Collection Instrument

Data were collected using the Hospital Survey on Patient Safety Culture (HSOPSC) developed by the Agency for Healthcare Research and Quality (AHRQ). The instrument assessed multiple dimensions of safety culture, including teamwork, communication openness, leadership support for safety, and event reporting frequency. The survey comprised 42 items rated on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." It was distributed in printed form, and participants were given one week to complete it anonymously to ensure honest and unbiased responses.

Validity and Reliability

Prior to the main study, the questionnaire underwent pilot testing among 20 healthcare workers who were not part of the final sample. Their feedback helped refine the language and clarity of certain items. The pilot test results demonstrated a Cronbach's alpha coefficient of 0.89, confirming excellent internal consistency and reliability of the instrument. Content validity was established through expert review by three specialists in healthcare quality and patient safety.

Intervention Program

After the baseline survey, an intervention program was designed and implemented over a period of six weeks to strengthen the hospital's safety culture. The program included three main components: leadership workshops, team-building activities, and safety reporting awareness sessions. Leadership workshops focused on fostering transparency, accountability, and supportive management practices. Team-building activities emphasized effective communication and collaboration across departments.

Safety reporting sessions educated staff on non-punitive reporting systems and encouraged open discussion of errors to promote a learning culture.

Post-Intervention Assessment

Following the intervention phase, the same HSOPSC questionnaire was redistributed to the same participants for post-intervention evaluation. Out of the original 200 participants, 182 completed both the pre- and post-intervention surveys, resulting in a response rate of 91%. This allowed for a reliable comparison of pre- and post-intervention results to determine the impact of the safety culture improvement program.

Data Analysis

All collected data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize demographic characteristics and responses to survey items. Comparative analysis between pre- and post-intervention data was conducted using the paired t-test to assess the significance of improvements in safety culture domains.

A p-value less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the hospital's institutional ethics committee prior to data collection. Participation was voluntary, and all participants were informed about the study's purpose, procedures, and their right to withdraw at any time without consequence. Written informed consent was obtained, and all responses were kept strictly confidential and anonymous. Data were used solely for research purposes.

Qualitative Feedback

In addition to the quantitative data, participants were invited to provide qualitative feedback through open-ended questions included in the post-intervention survey. These responses offered deeper insight into staff perceptions regarding teamwork, leadership responsiveness, and the openness of the reporting system after the intervention. The qualitative data were thematically analyzed to complement the quantitative findings and provide a comprehensive understanding of the hospital's safety culture.

RESULTS

This study aimed to assess and improve the hospital's safety culture by evaluating three major domains: reporting, leadership, and teamwork. Data was collected from 200 participants at baseline, with 182 completing the post-intervention survey. Participants included physicians, nurses, and allied health professionals.

Table 1. Demographic Characteristics of Participants (n = 200)

Variable	Category	Frequency	Percentage (%)
Gender	Male	78	39.0
	Female	122	61.0
Age (years)	20–29	46	23.0
	30–39	82	41.0
	40–49	52	26.0
	≥50	20	10.0
Profession	Physician	60	30.0
	Nurse	110	55.0
	Allied health staff	30	15.0
Years of Experience	<5 years	48	24.0
	5–10 years	76	38.0
	11–15 years	54	27.0
	>15 years	22	11.0

The sample consisted mostly of females (61%) and nurses (55%), representing the largest professional group in the hospital. The majority of respondents (41%) were aged between 30 and 39 years, and 38% had between 5–10 years of experience. This distribution ensured an adequate representation of both experienced and early-career healthcare workers.

Table 2. Perception of Teamwork Before and After Intervention (n = 182)

Teamwork Items	Pre-Intervention (Agree/Strongly Agree)	Post-Intervention (Agree/Strongly Agree)
Team members support each other	65%	88%
Communication between team members is effective	58%	86%
Staff work together to solve problems	62%	90%
Mutual respect exists among colleagues	70%	91%
Overall positive perception of teamwork	63.8%	88.8%

There was a notable improvement in teamwork perceptions following the intervention. Agreement regarding "effective communication" increased from 58% to 86%, and "mutual respect" rose from 70% to 91%. Overall teamwork perception improved significantly from 63.8% pre-intervention to 88.8% post-intervention ($p < 0.001$), reflecting the positive effect of leadership workshops and team-building sessions.

Table 3. Leadership Support for Patient Safety (n = 182)

Leadership Items	Pre-Intervention (Agree/Strongly Agree)	Post-Intervention (Agree/Strongly Agree)
Management encourages safety reporting	55%	83%
Supervisors discuss safety openly	50%	84%
Leaders act upon safety concerns promptly	48%	79%
Leadership prioritizes safety over workload	52%	80%
Overall leadership support perception	51.3%	81.5%

Perceptions of leadership support improved significantly across all items. The proportion of participants who agreed that "management encourages safety reporting" increased from 55% to 83%, and "leaders act upon safety concerns promptly" rose from 48% to 79%. These results suggest the leadership workshops effectively enhanced managerial engagement and responsiveness to safety concerns.

Table 4. Reporting and Communication Openness (n = 182)

Reporting Items	Pre-Intervention (Agree/Strongly Agree)	Post-Intervention (Agree/Strongly Agree)
Staff feel safe reporting errors	45%	78%
Reports are handled fairly	49%	82%
Staff are informed about reported incidents	40%	74%
Feedback is provided after event reporting	38%	72%
Overall reporting culture perception	43.0%	76.5%

Substantial improvement was noted in the reporting culture after the intervention. The percentage of staff who felt safe reporting errors increased from 45% to 78%, and those who believed reports were handled fairly rose from 49% to 82%. The greatest relative increase was seen in feedback practices, which improved from 38% to 72%. These findings indicate that the safety reporting awareness sessions were effective in promoting non-punitive reporting and transparency.

Table 5. Overall Safety Culture Scores Before and After Intervention

Safety Culture Domain	Mean Score (Pre) ± SD	Mean Score (Post) ± SD	Mean Difference	p-value
Teamwork	3.42 ± 0.56	4.28 ± 0.49	+0.86	<0.001
Leadership Support	3.15 ± 0.61	4.12 ± 0.53	+0.97	<0.001
Reporting and Communication	2.98 ± 0.64	4.01 ± 0.59	+1.03	<0.001
Overall Safety Culture	**3.18 ± 0.54**	**4.14 ± 0.51**	**+0.96**	**<0.001**

The mean overall safety culture score improved from 3.18 ± 0.54 before the intervention to 4.14 ± 0.51 afterward, with a statistically significant difference ($p < 0.001$). The most notable improvement was seen in reporting and communication, which increased by over 1 point on the Likert scale. These findings confirm that the combination of leadership engagement, team-based activities, and awareness sessions significantly enhanced the hospital's overall safety culture.

DISCUSSION

The present study was conducted to assess and improve the safety culture of a hospital, focusing on three major domains: reporting, leadership, and teamwork. The results demonstrated significant improvements across all measured dimensions following the intervention, highlighting the effectiveness of targeted strategies such as leadership training, team-building, and non-punitive reporting awareness. These findings align with global evidence emphasizing that multifaceted interventions can substantially enhance hospital safety culture (Finn et al., 2024).

The improvement in teamwork perception, from 63.8% to 88.8%, indicates a stronger sense of collaboration and mutual respect among healthcare workers. This enhancement can be attributed to structured team-building activities that encouraged communication and cooperation across departments. Similar findings were reported by Mistri et al. (2023), who observed that team-based interventions fostered shared accountability and significantly reduced communication-related errors in hospital environments.

Effective teamwork is essential in healthcare due to the interdependence of roles. When healthcare professionals collaborate efficiently, it reduces duplication of tasks and minimizes the likelihood of errors. The increase in mutual respect among colleagues from 70% to 91% after the intervention suggests the development of a psychologically safe environment, where staff felt more comfortable sharing opinions and raising concerns—an aspect also emphasized by Huong Tran et al. (2021).

Leadership support showed a remarkable improvement from 51.3% to 81.5%. This confirms that leadership behavior plays a vital role in shaping the perception and practice of safety within hospital settings. The leadership workshops introduced in this study helped enhance transparency, responsiveness, and managerial commitment to safety. Huang et al. (2024) similarly concluded that leadership commitment is a key determinant of positive safety culture outcomes, as it fosters trust and motivates employees to engage actively in safety-related initiatives.

The finding that the proportion of participants agreeing that "leaders act upon safety concerns promptly" increased from 48% to 79% reflects stronger leadership accountability. According to Demeke et al. (2025), leaders who demonstrate servant leadership principles—such as empathy and active listening—create a culture of openness that encourages reporting and continuous improvement. Thus, the leadership-focused components of this intervention likely contributed significantly to the overall cultural transformation observed.

~~The improvement in the reporting culture was another critical outcome of the intervention. Before implementation, only 45% of~~

participants felt safe reporting errors; this increased to 78% post-intervention. This shift demonstrates that the awareness sessions successfully reduced fear of blame and promoted transparency. Alhassan et al. (2024) highlighted similar findings, noting that when hospitals establish non-punitive reporting systems, staff are more likely to report incidents, leading to more proactive safety management.

Furthermore, the increase in staff who believed that "reports are handled fairly" from 49% to 82% indicates enhanced trust in the hospital's response mechanisms. Finn et al. (2024) emphasized that fairness and feedback are essential for sustaining long-term reporting culture, as punitive approaches discourage disclosure and conceal systemic problems. The integration of feedback loops in this study helped staff perceive reporting as a constructive process aimed at learning rather than punishment.

The improvement in feedback provision—from 38% to 72%—is particularly significant. Feedback is often the weakest component in reporting systems, yet it is crucial for closing the communication loop and ensuring that lessons learned are applied to prevent recurrence. Azyabi et al. (2021) found that when feedback mechanisms are strengthened, staff engagement and participation in safety reporting increase dramatically. Therefore, the feedback-focused aspect of this intervention contributed to the substantial rise in overall reporting culture scores.

Overall, the mean safety culture score increased significantly from 3.18 ± 0.54 to 4.14 ± 0.51 ($p < 0.001$). This overall improvement reflects the cumulative impact of changes in leadership, teamwork, and reporting. El-Sherbiny et al. (2020) reported comparable findings in Egyptian hospitals, where leadership training and continuous communication initiatives led to significant gains in staff perceptions of safety culture. These results confirm that even within complex healthcare systems, structured improvement strategies can yield measurable cultural change.

The multidimensional approach used in this study—integrating leadership development, teamwork enhancement, and communication improvement—proved to be effective. Mahrous (2018) previously demonstrated that hospitals adopting comprehensive safety programs rather than isolated initiatives tend to sustain higher safety culture scores and achieve better patient outcomes. This supports the notion that safety culture improvement requires long-term, system-wide engagement rather than short-term policy adjustments.

The results also highlight the importance of psychological safety as a driver of reporting and teamwork. When staff feel secure that their input will not result in blame or negative consequences, they are more likely to engage in open communication and collaborative problem-solving. Ali Ali et al. (2022) found that a non-punitive environment significantly enhances staff willingness to report near misses, ultimately leading to more effective risk mitigation.

In this study, leadership workshops helped instill psychological safety by emphasizing transparency, listening, and recognition. According to Huang et al. (2024), such leadership behaviors create a "safety climate" where employees perceive management as genuinely invested in their well-being. Consequently, the trust built through leadership actions amplifies the success of other safety initiatives, including reporting and teamwork development.

The results also demonstrate the interconnectedness of the studied domains. Improvements in teamwork likely reinforced the success of reporting initiatives, as collaborative teams communicate more openly about errors. Similarly, leadership commitment acted as a catalyst for sustaining change, ensuring that new behaviors were not temporary. This aligns with the model proposed by Finn et al. (2024), which emphasizes that leadership, teamwork, and communication must operate synergistically to sustain cultural improvement.

From a practical perspective, this study underscores the importance of continuous monitoring and reassessment of safety culture. As demonstrated by Demeke et al. (2025), hospitals that regularly evaluate safety culture metrics are more capable of maintaining high safety standards and quickly addressing emerging weaknesses. The post-intervention evaluation in this research serves as an example of how feedback-driven assessment can guide long-term improvement.

Lastly, the findings highlight the role of education and continuous professional development in reinforcing safety culture. The structured awareness sessions not only improved knowledge but also altered attitudes toward safety. This is consistent with Mistri et al. (2023), who found that education-based interventions improved safety performance by increasing staff ownership of patient safety responsibilities.

CONCLUSION

In conclusion, the study demonstrated that targeted interventions focusing on leadership, teamwork, and reporting can significantly enhance a hospital's safety culture. The post-intervention improvements across all domains confirm that cultivating open communication, supportive leadership, and non-punitive reporting systems is essential for sustainable cultural transformation. These results reinforce previous research showing that safety culture improvement is a continuous, collaborative process that requires active engagement from all levels of the organization to achieve lasting patient safety excellence.

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