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Analysis of Patient Safety Culture to Improve Quality at Primaya Hospital Semarang

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ABSTRACT

This study investigates patient safety culture in hospitals, highlighting its role in protecting patients from preventable harm through a culture of safety. Effective patient safety culture involves collaboration, open communication, and strong leadership support but faces challenges like resource limitations and inconsistent staff training. This study uses Primaya Hospital Semarang as a case example to examine how current safety practices align with quality improvement goals. A mixed-methods approach, including surveys and interviews with 169 staff members, used AHRQ's safety culture survey to analyze teamwork, staffing, communication, and management support, identifying areas for targeted improvement. Key findings include that organizational learning and continuous improvement received the highest positive response (86.17%), followed by teamwork (83.43%) and communication about error (76.57%). However, staffing and work pace was notably weak, with only 48.08% positive responses. In interviews, a strong no-blame culture was emphasized for managing errors, although communication improvements were frequently suggested. Additionally, while routine error reporting was common, gaps in follow-up actions were noted, indicating areas for ongoing enhancement in patient safety practices.

Introduction

Patient safety is one of the top and critical priorities in healthcare globally, given its essential role in protecting patients from preventable harm due to complications and enhancing overall healthcare quality (Alsulami et al., 2022). Establishing a comprehensive and effective culture focusing on patient safety in hospitals is fundamental, as it involves creating an environment where healthcare providers work collaboratively, communicate openly, and are supported by leadership in their commitment to patient safety. Achieving a high level of patient safety culture, however, can be complex; it depends on various factors including organizational factors, human resource factors, guidelines, communication, education, and learning from previous mistakes. As healthcare systems grow more intricate, these elements become vital in fostering an environment that reduces risks, prevents errors, and supports swift recovery from adverse events (Bashir et al., 2024).

Despite its recognized importance, establishing and sustaining a patient safety culture in hospitals often encounters significant obstacles (Emanuel et al., 2009). Challenges such as resource limitations, lack of adequate healthcare workers training, heavy workloads, inconsistent communication, and varying staff perceptions about safety policies can undermine a hospital's efforts to achieve high standards of patient safety (Mahmoud et al., 2023). To address these issues, hospitals must have a clear understanding of their current safety culture and identify specific areas that require improvement. This study, therefore, seeks to address the question: How effectively do hospitals' current patient safety cultures support their quality improvement goals, and what areas need targeted strengthening? Using Primaya Hospital Semarang as a case example, this study applies a comprehensive analysis of patient safety culture to provide insights that could inform broader strategies for enhancing patient safety across healthcare institutions.

Method

Reliability and validity of the questionnaire results analysed with SPSS version 26 with Cronbach Alpha and Pearson correlation. This type of research is descriptive research, with a mixed-methods research approach. Mixed method research is a quantitative research method with descriptive research type and qualitative research methods with in-depth interviews.

The variables of this study consist of teamwork; staffing and work pace; organizational learning- continuous improvement; response to error; supervisor, manager, or clinical leader support for patient safety; communication about error; communication openness; reporting patient safety events; hospital management support for patient safety; handoffs and information exchange.

The population of this study was 250 staff at Primaya Hospital Semarang. The sample was collected by proportional random sampling with slovin methods The sample in this study was 169 respondents. The data collection technique is done by filling out the questionnaire online using google forms. The qualitative methods conducting in-depth interviews with informants that collected by purposive sampling. The informant who will be interviewed is 12 people consisting of the Hospital Director, nurse coordinator, nurse staff, admin staff, doctors, management staff and the Patient Safety Team. The instrument of this study was generate by the guidance of AHRQ Hospital Survey on Patient Safety Culture. The results was presented by calculate the frequency of response for each survey items. The data analyse base on the AHQR instruments. The data was analysed based on the AHRQ instruments. The safety culture assessment is said to be strong if the positive response is equal to 75%, and it is moderate if the positive response is equal to 50-70%, and said to be weak if the positive response is less than 50%.

Results and Discussion

The result of research on the culture of patient safety in Primaya Hospital Semarang was conducted with 169 subjects filled out the AHRQ questionnaire via Google Forms,

with the data shown on Table 1 (Akpa et al., 2021). Based on the table, we found that the dimension of the questionnaire with the highest positive response was “organizational learning and continuous improvement” with the amount of positive response being 86.17% of cases (strong/very good).

Table 1
Data on the results of filling out the AHRQ questionnaire across all dimensions

No	Dimensions	Positive Response (%)	Negative Response (%)	Amount of responses	Culture category
1	Communication about error	1822 (76.57)	276 (23.43)	2098	Strong/very good
2	Communication openness	1638 (69.23)	603 (30.77)	2241	Moderate/good
3	Handoffs and information exchange	581 (75.17)	733 (24.83)	1314	Strong/very good
4	Hospital management support for patient safety	1191 (67.07)	545 (22.93)	1736	Moderate/good
5	Organizational learning and continuous improvement	1828 (86.17)	188 (13.83)	2016	Strong/very good
6	Reporting patient safety events	878 (59.2)	277 (40.8)	1155	Moderate/good
7	Response to error	842 (65.68)	972 (34.32)	1814	Moderate/good
8	Staffing and work pace	577 (48.08)	1182 (51.92)	1759	Weak/bad
9	Supervisor, manager, or clinical leader support for patient safety	732 (72.77)	723 (27.23)	1455	Strong/very good
10	Teamwork	696 (83.43)	671 (16.57)	1367	Strong/very good
	Total	10785 (70.33)	6170 (29.67)	16995	Strong/very good

The dimension of organizational learning and continuous improvement has the highest positive response (86.17%), this dimension reflects a strong commitment to ongoing improvement, suggesting that the hospital emphasizes continuous learning and skill enhancement among staff. (Alanazi & Falqi, 2023) reported similar findings of patient safety culture dimensions with organizational learning and continuous improvement with high positive ratings of 57.9% (Kalwani & Mahesh, 2020). Organizational learning is reflected through the enactment of organizational routines. In

patient safety culture settings, Organizational learning is central to patient safety, especially in fostering a reporting culture that encourages incident documentation for learning and systemic improvement.[17] Teamwork scored highly at 83.43%, underscoring well-coordinated collaboration among healthcare professionals. This aligns with Skoogh et al. (2022), who identified teamwork as a predictor of positive perceptions of patient safety, highlighting respect, support, and collaboration as essential factors for achieving this dimension. (Alsabri et al., 2022) further support this by noting that teamwork and communication interventions contribute to improvements in the safety culture, particularly in environments with complex tasks.

Communication about errors received a positive response of 76.57%, reflecting an open environment for discussing mistakes and learning from them. This resonates with (Rivard et al., 2006), who describe the necessity of a safety learning culture that avoids individual blame, favoring a systemic approach to prevent similar incidents in the future.[16] This finding is consistent with Skoogh et al. (2022), who emphasized that feedback on errors is an integral part of patient safety culture that promotes continuous learning and improvement.[17] The positive response for handoffs and information exchange (75.17%) reinforces how structured communication methods enhance patient safety, as demonstrated in (Friesen et al., 2008), who describe handoffs as crucial exchanges of authority, responsibility, and critical patient information. Effective handoff protocols bridge communication gaps caused by complex healthcare environments, which are prone to breakdowns due to frequent transitions among specialized providers.[19] Structured handoff protocols contribute to significant reductions in medical errors, affirming the necessity of standardization to improve outcomes.[20]

Moderate ratings for communication openness (69.23%) and management support (67.07%) echo findings from (Noviyanti et al., 2021), who emphasize that satisfaction with communication directly influences a positive safety culture. The authors suggest that an open communication climate, encouraged by leadership, not only improves job satisfaction but also strengthens the safety culture within healthcare units. (Friesen et al., 2008) further elaborate on the risks associated with variable communication practices, noting that inconsistent handoff quality can lead to patient harm. This highlights the need for strong management support, as also pointed out by (Skoogh et al., 2022), where leadership plays a pivotal role in fostering open, blame-free dialogue crucial for effective team collaboration and patient safety.

We also did an in-depth interview to 12 healthcare workers with 10 questions regarding the patient safety culture (Table 2). Through the interviews, key insights emerged regarding the patient safety culture. Teamwork was generally rated positively, though communication improvement was a recurring suggestion. Staffing adequacy varied by unit, with higher-stress areas citing staff shortages. A no-blame approach was widely practiced for patient safety incidents, and peer support was strong, helping prevent future mistakes. Supervisors and management supported patient safety through regular

training, feedback, and open reporting systems, though some staff noted gaps in follow-up actions. Freedom to discuss patient care was valued, with routine reporting aiding continuous improvement. While the handover process was effective, some recommended stricter adherence to timing and documentation quality to enhance communication continuity across shifts.

Table 2
Result of in-depth interviews related to patient safety culture at Primaya Hospital Semarang

No	Question	Answer
1	How would you evaluate teamwork in your unit? Is it going well, and is there anything that needs improvement?	Most respondents agree that teamwork is functioning well, but communication remains a critical area for improvement. Some mention issues with individual responsibility and the need to address group mentality in specific teams. The director emphasizes that consistent team-building efforts and strong collaboration across different healthcare roles are essential for optimal service.
2	Do you think the current staffing levels are sufficient for the patient volume? How is the stress level in your unit?	Opinions vary, with some feeling staffing is adequate, while others report a shortage, leading to high stress levels. Many note that when patient numbers spike, inter-unit cooperation can help, though stress management is necessary due to the unpredictable nature of healthcare work.
3	How does your unit handle patient safety issues?	Respondents indicate a "no-blame" culture, focusing on root cause analysis and case discussions to improve patient safety. Staff work together on problem-solving, reporting issues to quality divisions, and following established protocols for improvement. Incident reports and key performance indicators (KPIs) are also commonly used for follow-up actions.
4	How do you feel when you make a mistake at work? Is there support from colleagues to prevent recurrence?	The majority report feeling guilty but supported by peers. Teams emphasize constructive feedback and shared responsibility to prevent repeat incidents, with some noting an institutional no-blame policy that encourages open discussion and learning from errors.
5	How does your supervisor support patient safety culture?	Support includes regular training, constructive feedback, reminders for error reporting, and a hands-on approach from supervisors who frequently check in with staff. Management promotes a no-blame culture, reward systems for safety reporting, and open channels for discussing improvement needs.
6	How are discussions conducted when there is an error in your unit?	Typically, discussions involve a detailed review of the incident, often led by supervisors or in meetings. Participants identify root causes, devise corrective actions, and implement improvements. In complex cases, comprehensive methodologies like FMEA (Failure Mode and Effects Analysis) and RCA (Root Cause Analysis) are employed.

7	How does your unit provide freedom for you to give input regarding patient care?	Feedback channels include routine monthly meetings, handovers, and open discussions with supervisors. Some units have electronic reporting systems directly connected to quality divisions, enabling anonymous suggestions on critical issues if needed.
8	Are error reports in your unit routinely filed?	Most respondents confirm routine error reporting, often as part of monthly KPIs. Some note variations in frequency, with a few units reporting lapses in follow-up actions.
9	How has hospital management contributed to a culture of patient safety?	Hospital management is generally perceived as supportive, promoting training, enforcing SOPs, and encouraging open communication. However, some staff suggest a need for increased follow-up to ensure reported issues are resolved.
10	Do you find the current handover system effective? Are there areas for improvement?	The handover system is largely seen as effective, though punctuality and consistency in documentation remain areas for potential improvement. Management is working on streamlining handover documentation to avoid errors associated with repeated information input.

Teamwork was rated positively, but there is a need to address communication gaps and clarify individual responsibilities within teams to avoid group mentality in decision-making. Standardized communication methods help avoid errors by ensuring clear, accurate exchanges within healthcare teams. They highlight that structured communication methods, such as regular team briefings, create an environment where individuals feel confident speaking up, thus preventing groupthink and enhancing individual accountability. Collaborative practices also reinforce the shared goals that are essential to patient safety.

We found that staffing adequacy varies across units, with some areas experiencing higher stress due to shortages. Improved inter-unit collaboration and stress management practices could help in managing patient volumes effectively. Addressing staffing levels and managing stress effectively is also critical, as understaffing can lead to burnout and increase stress levels, both of which negatively affect patient outcomes.[23] Ensuring adequate staffing and promoting inter-unit collaboration to distribute patient loads more evenly can help alleviate stress and prevent errors. High stress and workload among healthcare staff are closely linked to a decrease in patient safety culture, underscoring the importance of balanced staffing to support safe care.[24] Our findings also reported no-blame culture being widely practiced. A no-blame culture, which focuses on understanding the root causes of incidents, is essential for maintaining a supportive environment. They assert that a non-punitive approach allows staff to report errors without fear of retribution, fostering openness and continuous improvement in patient safety. This culture change encourages more proactive incident reporting, contributing to a safer environment and reducing the likelihood of repeated errors. Finally, fostering effective teamwork, standardized communication, and no-blame reporting can create an integrated approach where communication gaps are minimized, responsibilities are

clarified, and teams are better equipped to handle patient care complexities. Regular training and team-building initiatives also help reinforce these principles, supporting a sustainable culture of safety across healthcare settings.

In-depth interview showed that supervisors actively support patient safety through training, feedback, and regular check-ins. However, enhancing follow-up actions could improve the effectiveness of these efforts and address any reported safety issues fully. The study by (Seo & Lee, 2022) found that in presence of hospital management and supervisor supporting patient safety, healthcare workers' performance in engaging the patient safety culture improve in a promotive manner. The study highlighted that hospital management and supervisor has a role in promoting the healthcare workers' perceivement of patient safety culture more positively.[26] Staff participating in this interview also revealed to have multiple channels to provide input, such as monthly meetings and handovers. Expanding these channels, including anonymous reporting options, may further empower staff to voice concerns on patient care. Although routine reporting is common, some lapses in follow-up actions are noted, indicating a need for a more structured response system to ensure all reported issues are resolved satisfactorily. This comes along with the process of handoff, in which while handover processes are generally effective, improving punctuality and documentation consistency could significantly reduce communication gaps during shift transitions. (Friesen et al., 2008) emphasize that effective handoffs are crucial for ensuring continuity of care and minimizing patient safety risks. Implementing structured communication protocols, like SBAR, can enhance information exchange and reinforce accountability among caregivers, ultimately improving patient outcomes.[19]

This research has several limitations. Firstly, reliance on self-reported data from both the questionnaire and interviews may introduce bias, as respondents could overstate positive aspects or underreport negative experiences due to fear of repercussions. The cross-sectional design captures perceptions at a single point in time, not reflecting changes over time; longitudinal studies would be needed for that. Although the in-depth interviews provided valuable qualitative insights, the limited number (12) may not capture the full range of perspectives from different units and roles.

Conclusion

In conclusion, the assessment of patient safety culture at Primaya Hospital Semarang, through both the AHRQ questionnaire and in-depth interviews, highlights several strengths and areas for improvement. The high positive response in dimensions such as organizational learning, teamwork, and communication about errors indicates a solid foundation for a safety-oriented environment. However, challenges remain, particularly concerning staffing levels, communication gaps, and the consistency of error reporting follow-ups. The insights gathered emphasize the importance of continuous improvement in these areas to enhance patient safety outcomes. By fostering a supportive culture that encourages open communication, accountability, and adequate staffing, the

hospital can further strengthen its commitment to delivering safe and high-quality patient care.

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