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Between Leadership Expectations and Error Reporting: Contradictions in Patient Safety Culture in an Iranian Hospital

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Abstract

Background: *A safety culture is a foundational determinant of patient safety in healthcare settings, and its deficiency has been consistently linked to increased risks of adverse events and suboptimal care delivery. This study examines the current state of patient safety culture (PSC) through the perspectives of frontline hospital staff, identifying both key strengths and critical areas for improvement within the organizational environment.*

Methods: *In this descriptive cross-sectional study, 316 staff working in Ali Ibn-e Abitaleb hospital, Rafsanjan were selected. The study employed the Hospital Survey on Patient Safety Culture (HSOPSC) a validated instrument measuring 12 composite domains to collect data, which were subsequently analyzed using one-way ANOVA and Kruskal-Wallis tests in SPSS software.*

Results: *Results showed a relatively strong perception of leadership support for safety (76.85%), but critically low scores in non-punitive response to errors (16.82%), staffing (18.35%), and error reporting (39.23%). Communication and feedback about errors (44.63%), communication openness (39.47%), frequency of events reported (39.23%), management support for patient safety (34.47%), teamwork across units (33.47%) were among the weaknesses of PSC. Notably, a punitive culture and staffing were strongly associated with suppressed incident reporting, revealing a critical failure in organizational level occupational health and safety (OHS) controls. The aggregate score for PSC was observed to be suboptimal (44.76%), necessitating subsequent enhancement.*

Conclusions: *Overall PSC is poor and requires hospital manager's attention. The punitive culture at workplace, the staffing, management support for staff and teamwork across units are the most important issues that should be considered in this hospital. Therefore, the safety culture can be promoted, the risks threating patients can be reduced, and ultimately the health care quality can be improved. These findings underscore the need for OHS interventions targeting punitive workplace norms, staffing adequacy, and inter-unit collaboration to foster a just culture and improve patient outcomes.*

Keywords: Safety culture, Patient safety, Hospitals, Staff perspective.
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Introduction

Patient safety is a fundamental component of healthcare quality and a core indicator of system performance [1]. Health care measures are considered among the riskiest activities [2]. This fact has made patient safety one of the health-related concerns in the world [3]. Patient safety is a fundamental pillar of healthcare quality, serving not only as a critical outcome measure but also as a core determinant of system performance [4]. In contemporary healthcare systems, ensuring patient safety has emerged as a top strategic priority, underpinning efforts to regulate, monitor, and continuously improve the quality, reliability, and equity of care delivery [5]. A positive safety culture is a key condition for maintaining and promoting safety, and a guide for health care providers to make patient safety one of the highest organizational priorities [6, 7]. Approximately, 50% of adverse events are preventable. It is believed that a patient safety culture must be created among hospital staff to improve the quality of health care [8]. Past research has consistently demonstrated that hospitals with a more positive safety culture exhibit superior clinical performance, lower rates of adverse events, and higher levels of patient satisfaction [9].

As articulated by the World Health Organization (WHO), patient safety is not merely a clinical concern but a systemic imperative requiring coordinated efforts across policy, practice, and culture to ensure that healthcare systems consistently deliver care free from preventable harm [10]. Medical errors can reflect many problems, including lack of PSC in the organization [11]. Patient safety is formally delineated as an organizational endeavor aimed at enhancing the security of patient care provision [12]. This comprehensive process encompasses several critical components, including the meticulous assessment of potential risks, the precise identification and subsequent management of patient-centric hazards, systematic event reporting, and the implementation of efficacious interventions designed to mitigate these identified risks [13].

PSC has profound implications not only for patient outcomes but also for the occupational health and safety (OHS) of healthcare workers. Emerging evidence indicates that dimensions of PSC directly influence psychosocial workplace hazards, error-reporting behaviors, and staff well-being, thereby shaping the design and effectiveness of OHS interventions [14, 15]. From an OHS perspective, several

recognized psychosocial risk factors such as excessive workload, lack of managerial support, and punitive responses to errors can contribute to burnout, anxiety, and diminished job performance [16]. Consequently, occupational health interventions must extend beyond traditional hazard controls such as ergonomic adjustments or infection prevention to incorporate organizational-level strategies. These may include cultural competency training, psychological safety workshops, and leadership coaching to mitigate such risks [17]. Furthermore, OHS professionals can leverage PSC data to inform evidence-based staffing models, workload assessments, and team-based communication protocols, aligning patient safety objectives with worker protection [18]. Thus, PSC assessments should be regarded not merely as quality improvement tools, but as vital diagnostic instruments for identifying modifiable organizational risks that fall squarely within the OHS mandate.

A review of the literature indicates that while numerous studies have assessed safety culture [3, 4, 7, 14, 19, 20], few have examined the topic through the lens of occupational health engineering or integrated their findings into structured health, safety, and environment (HSE) management systems [21, 22]. Limited studies have addressed the interaction between organizational culture and technical and managerial risk-control measures [23]. Given the significance of patient safety as a pivotal component of clinical governance and as an accepted benchmark in the accreditation process for healthcare centers this study was designed to investigate PSC from the perspective of hospital staff, aiming to provide a deeper understanding of the current state of safety culture within Iran's healthcare system.

Materials and Methods

This descriptive cross-sectional study was conducted at Ali ibn Abi Talib Hospital in Rafsanjan, southeastern Iran. The statistical population included all nurses, midwives, health workers, nursing assistants, anesthetic and operating room technicians. The whole population was surveyed as census. Inclusion criterion was at least six months of work experience, and exclusion criteria were incomplete questionnaires (response rate less than 50%), unwillingness to participate in the study, being employed in positions other than those listed, those who had to work in a specific hospital for a certain duration, and those working for overtime pay in the hospital.

Four hundred two questionnaires were distributed among eligible staff from October to December 2019, out of which 330 were completed and delivered. The response rate was 82.09%. After removing incomplete questionnaires, data from 316 participants were used in the final analyzes.

Two questionnaires were used for data collection. a) Demographic information (age, work experience, working hours, organizational position, types of shift and ward). b) The Hospital Survey on Patient Safety Culture (HSOPSC), developed in 2004 by the U.S. Agency for Healthcare Research and Quality [24]. This instrument is valid and reliable designed using various texts, cognitive factor analysis tests to assess PSC in a hospital [25-27]. In Iran, Moghri et al. evaluated the reliability of this instrument using Cronbach's alpha coefficient (0.57 to 0.80) [25]. The Persian version of the HSOPSC questionnaire has been validated as a reliable and valid tool for assessing PSC in Iranian hospitals. The questionnaire consists of 42 items grouped into 12 composite dimensions, in addition to 9 non-dimensional items: two items measuring overall perceptions of patient safety and seven demographic items. Each dimension includes 3 to 5 items, and responses are recorded on a 5-point Likert scale. Depending on the item's nature, the scale assesses either the degree of agreement ("strongly disagree" to "strongly agree") or the frequency of occurrence ("never" to "always"). For data analysis, the mean percentage of positive responses was calculated.

The overall score of PSC was also calculated by calculating the mean percentages of positive responses of the 12 composites of PSC [25]. According to the questionnaire's guidelines, dimensions with a mean percentage of positive responses of at least 75% are classified as "strengths" of the safety culture; those with a mean percentage between 50% and 75% are considered "acceptable strengths"; and dimensions with a mean percentage of positive responses below 50% are categorized as "weaknesses" of the safety culture. Additionally, two supplementary items were included at the questionnaire: The overall patient safety grade assigned by respondents to their unit, along with the number of patient safety related incidents reported in that unit over the past 12 months (excluded from the overall score of the PSC).

SPSS 22 was used for data collection and analysis. In descriptive analysis, participants' general characteristics, mean percentage of positive responses, and total mean of the composites were determined and finally, the correlation between the mean scores of each composite and some variables was calculated using ANOVA, and Kruskal Wallis tests.

The researcher began sampling after receiving approval from the Ethics Committee of Rafsanjan University of Medical Sciences with the code of ethics No IR.RUMS.REC.1398.191 and receiving a letter of introduction from the hospital management. After coordinating with the expert for accreditation and quality improvement, explaining the goals and ensuring the information confidentiality, and obtaining written consent from the staff, the questionnaires were distributed among eligible staff.

Results

According Table 1, most respondents were 20-30 years old (43.7%, n=138), and only few respondents were more than 50 years (1.97%, n=6). 32.0% of the respondents had a work experience between 6 and 10 years (n=101), and 7.9% of them had less than one-year work experience (n=25). The highest working hours (28.8%, n=91) were 36-40 hours, and the lowest working hours (7.0%, n=22) were 30-35 hours. Also, most participants were nurses (66.8%, n=211) with rotating shifts (76.7%, n=274).

Table 1. Demographic variables of participants (N=316)

Participant characteristics	N (%)
Age (year)	
20-30	100 (31.6)
31-40	138(43.7)
41-50	67 (21.2)
<50	6 (1.9)
Organizational position	
Nurse	264 (90.7)
Nursing assistant	188 (59.5)
Midwife	14 (4.4)
Anesthetic technician	9 (2.8)
Operating room technician	11 (3.5)
Job experience (year)	
>1	25 (7.9)
1-5	68 (21.5)
6-10	101 (32.0)
11-15	53 (16.8)
16-20	30 (9.5)
<21	38 (12.0)
Shift	
Morning	32 (10.1)
Evening	4 (1.3)
Night shifts	5 (1.6)
Rotational	274 (86.7)
Hospital wards	
CCU	18 (5.7)
ICU	62 (19.6)
Emergency	44 (13.9)
Pediatric	18 (5.7)
Neonatal and NICU	15 (4.7)
Maternity	17 (54.0)
Medical	22 (6.9)
Neurology	16 (5.1)
Surgery	30 (9.5)
Oncology	5 (1.6)
Endocrine	11 (3.5)
Dialysis	11 (3.5)
Angiography	6 (1.9)
Para clinic	6 (1.9)
Surgery room	32 (10.1)

Data were presented as numbers (%).

The sample consisted of 316 nurses.

CCU, Coronary care unit; ICU, Intensive care unit; NICU, Neonatal intensive care unit.

The total score of PSC in this study was 44.76%. The lowest total score of PSC was related to the composite "non-punitive response to errors" (16.87%) and the highest score of PSC was related to "supervisor/manager expectations and actions promoting patient safety" (76.85%) (Table 2) (Figure 1).

Table 2. Different aspects of patient safety culture (N=316)

Different composites of patient safety culture	Total percentage of positive responses	Average percentage of positive responses
Frequency of errors reported	117.7	39.23
Overall perception of patient safety	206.7	51.67
Supervisor/manager expectations and actions promoting patient safety	37.4	76.85*
Organizational learning-continuous improvement	196.5	65.50
Teamwork within unit	245.2	61.30
Communication openness	118.4	39.47
Communication and feedback about errors	133.9	44.63
Non-punitive response to errors	50.6	16.87**
Staffing	73.4	18.35**
Management support for patient safety	103.4	34.47
Teamwork across units	133.9	33.47
Handoffs and transitions	221.3	55.32
Patient Safety Culture Overall Score (%)	-	44.76

Data were presented as numbers (%).

The sample consisted of 316 nurses.

Total and mean percentages of positive responses in the participants:

*** Highest mean percentage of positive responses, ** Lowest mean percentage of positive responses.**

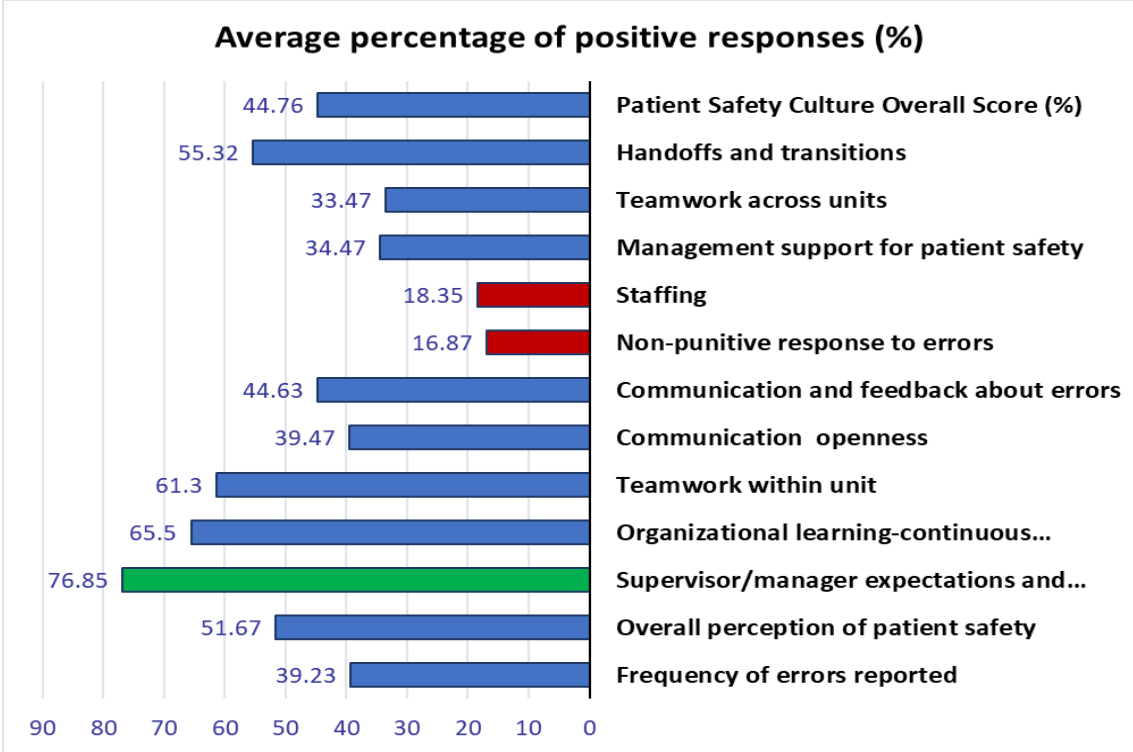

Figure 1. Patient safety culture (PSC) dimension scores in staff (average percentage of positive responses).

The total score of PSC in this study was 44.76%.

The lowest total score of PSC was related to the composite "non-punitive response to errors" (16.87%) and the "staffing" (18.35%).

The highest score of PSC was related to "supervisor/manager expectations and actions promoting patient safety" (76.85%).

Based on Table 3, the overall PSC among the 316 hospital staff was predominantly poor: 58.33% of the 12 PSC dimensions were rated as "poor," 33.33% as "acceptable," and only 8.33% as "favorable." This indicates a systemic weakness in the safety climate across the organization. Critically, 57.6% of staff reported zero safety-related events in the past 12 months, while only a small minority reported multiple incidents (e.g., just 12.0% reported three or more). Concurrently, staff perceptions of their unit's patient safety status were largely neutral or negative: only 30.7% rated safety as "very good" or "excellent" (23.4%+7.3%), whereas 17.1% described it as "poor" or "very weak".

From an OHS perspective, these findings reveal significant psychosocial and organizational hazards. The extremely low error-reporting rate despite a poor safety culture strongly suggests a culture of silence, likely driven by fear of blame, lack of psychological safety, or distrust in management response. Such environments are well-documented risk factors for occupational stress, moral injury, and burnout among healthcare workers. Moreover, the misalignment between leadership expectations (often perceived positively) and frontline realities (evidenced by underreporting and negative safety ratings) reflects a gap in safety leadership, which undermines both patient safety and worker well-being. In OHS terms, this represents a failure in administrative controls specifically, the absence of a just culture and effective incident learning systems. Consequently, staff operate in a high-risk, low-support environment where unreported hazards accumulate, increasing the likelihood of both patient harm and occupational injury. These results underscore that improving PSC is not only a clinical quality issue but a fundamental OHS priority requiring systemic interventions in reporting systems, psychological safety, and managerial accountability.

Table 3. results of patient safety culture among staff (number and percentage) (N=316)

Participant characteristics	N (%)
Overall level of dimensions of patient safety culture	
Poor	7 (58.33)
Acceptable	4 (33.33)
Favorable	1 (8.33)
Events reported ǂ	
0	182 (57.6)
1-2	81 (25.6)
3-5	24 (7.6)
6-10	10 (3.2)
11-20	7 (2.2)
21<	0 (0.0)
Total	304 (96.2)
Hospital status in terms of patient safety ǂ	
Excellent	23 (7.3)
Very well	74 (23.4)
Acceptable	158 (50.0)
Poor	44 (13.9)
Very weak	10 (3.2)
Total	304 (96.2)

Data were presented as numbers (%).

The overall level of composites of patient safety culture, events reported and hospital status in terms of patient safety in 316 nurses.

ǂ: Two additional items (global patient safety rating and error reporting frequency) were not included in the composite score and were analyzed separately.

The analysis of associations between demographic/work-related variables and PSC dimensions revealed several statistically significant relationships with direct implications for OHS outcomes (Table 4). Current work experience was significantly linked to error-reporting frequency (F=2.953, P-value=0.013), suggesting tenure influences engagement with reporting possibly due to shifting perceptions of psychological safety or fear of reprisal. Shift type strongly affected communication openness (F=4.449, P-value=0.002), with non-standard shifts facing greater barriers to speaking up, raising risks of miscommunication and stress. Incident reporting was closely tied to non-punitive responses (F=6.181, P-value<0.001) and staffing (F=2.573, P-value=0.038), underscoring that just culture and sufficient staff enable transparency. From an OHS perspective, punitive climates and understaffing act as psychosocial hazards that suppress reporting and erode psychological safety, while supportive management especially for frontline staff (P-value=0.037) may mitigate these risks. Collectively, these results underscore that PSC is not merely a patient safety issue but a core component of the occupational risk landscape in healthcare, necessitating OHS interventions targeting work organization, shift design, staffing adequacy, and just culture implementation.

Table 4. Results of analysis of variance of patient safety culture dimensions by staff variables

Different aspects of patient safety culture	Variable											
	Experience in the hospital		Current work experience		Working hours per week		Organizational position		Shift type		Number of reported incidents	
	F	P-value	F	P-value	F	P-value	F	P-value	F	P-value	F	P-value
Frequency of errors reported	0.811	0.543	2.953	0.013	0.757	0.604	1.110	0.357	0.689	0.600	1.174	0.322
Overall perception of patient safety	1.544	0.176	1.451	0.206	1.276	0.268	1.283	0.265	0.504	0.733	1.639	0.164
Supervisor/manager expectations and actions promoting patient safety	2.122	0.063	0.690	0.631	1.870	0.086	0.481	0.822	1.146	0.335	1.030	0.392
Organizational learning-continuous improvement	1.288	0.269	1.154	0.332	0.879	0.511	1.212	0.300	0.391	0.815	2.196	0.069
Teamwork within unit	1.396	0.225	1.647	0.147	0.751	0.609	1.009	0.419	1.209	0.306	2.229	0.066
Communication openness	1.029	0.401	0.068	0.997	0.691	0.657	1.542	0.165	4.449	0.002	0.562	0.691
Communication and feedback about errors	0.938	0.457	1.406	0.222	0.536	0.781	1.317	0.250	1.254	0.288	2.471	0.045
Non-punitive response to errors	0.931	0.461	0.886	0.491	1.935	0.075	1.293	0.261	0.646	0.630	6.181	<0.001
Staffing	0.367	0.871	0.624	0.682	1.598	0.148	1.895	0.082	0.717	0.581	2.573	0.038
Management support for patient safety	1.138	0.340	0.866	0.504	1.742	0.111	2.277	0.037	0.446	0.775	0.960	0.430
Teamwork across units	0.980	0.430	0.037	0.999	1.030	0.406	0.492	0.814	0.028	0.998	1.116	0.349
Handoffs and transitions	1.352	0.242	1.063	0.381	0.209	0.974	0.697	0.652	1.355	0.250	2.020	0.092

Data were presented as numbers (%).

The correlation of the composites of patient safety culture with current work experience, working hours a week, organizational position, shift type and number of events reported in 316 nurses.

Discussion

Health care is a complex activity, and inherently associates with the potential risk of illness. Ensuring safe diagnosis and treatment is a core priority of healthcare systems in every country [28]. The foundational step in building a safety culture within healthcare organizations is to assess and evaluate the existing culture using appropriate methods [29]. Current results showed that 66.8% of the participants were nurses. 48.3% of subjects in the Fekadu et al.'s study [30], 32.7% of the subjects in the Liu et al.'s study [31] and 29.9% of the subjects in the Ahmed et al.'s study [32] were nurses. The reason might be the higher number of nurses than other staff in hospitals. Since, most studies have shown the effectiveness of nurses' safety perceptions and behaviors in promoting PSC [33], PSC can be promoted by enhancing patient safety level in staff.

According to the current results, 8.33% of the composites were favorable, 33.33% were acceptable and 58.33% were undesirable, which were considered as weaknesses of PSC in this hospital. Therefore, the composites "frequency of errors reported", "communication openness", "communication and feedback about errors", "non-punitive response to errors", "staffing", "manager support for patient safety", and "teamwork across units" are undesirable and require serious attention. "Non-punitive response to errors", and "staffing" particularly received very low scores (16.87% and 18.35%, respectively). The alarmingly low scores in "non-punitive response to errors" and "staffing" alongside the majority of safety culture dimensions being classified as undesirable carry profound implications for OHS outcomes among healthcare workers.

According to Fekadu et al., low positive response rates in domains such as Handoffs and Information Exchange (39%) and Reporting Patient Safety Events (35.5%) reflect significant gaps in organizational transparency and psychological safety [30]. In contrast, data from the Agency for Healthcare Research and Quality (AHRQ) user database in the United States indicate a more advanced status in areas like Communication about Errors and Reporting Patient Safety Events [34].

From an OHS perspective, a punitive error-response environment functions as a chronic psychosocial hazard, fostering fear, silence, and moral distress, which are well-established precursors to burnout, anxiety, and reduced job satisfaction [35]. Similarly, severe understaffing is not merely an operational challenge but a recognized occupational risk factor linked to physical fatigue, musculoskeletal injuries, cognitive overload, and increased likelihood of both patient errors and workplace incidents [36]. The poor performance in communication, feedback, and teamwork further compounds these risks by eroding psychological safety and team resilience core protective factors in high-stress healthcare environments [37]. Critically, these cultural and organizational deficits represent failures in administrative and organizational-level controls within the OHS hierarchy of controls. Without targeted, engineered interventions such as implementing just

culture policies, workload assessment tools, staffing algorithms based on patient acuity, and standardized interprofessional communication protocols these systemic weaknesses will continue to jeopardize not only patient safety but also the physical and mental well-being of healthcare staff [38]. Thus, addressing these PSC deficiencies is not optional from an OHS standpoint; it is a fundamental requirement for creating a safe, sustainable, and health-promoting workplace in healthcare settings [39].

Some other composites, such as overall perception of existing safety and organizational learning- continuous improvement gained acceptable scores. One of the most critical approaches to enhancing patient safety is through individual and organizational learning specifically, by drawing insights and experience from errors that occur within the hospital setting. This requires proper leadership of healthcare providers and creation of a culture facilitating this process [19]. This composite was acceptable in the current study. Although organizational learning is rightly identified as essential for improving safety, its mere "acceptability" in a context where error reporting is extremely low (57.6% reported zero incidents) and non-punitive response is critically weak (16.87%) suggests that learning is likely reactive, superficial, or siloed, rather than systemic and psychologically safe. From an OHS standpoint, genuine organizational learning cannot occur in a punitive environment; without robust just culture mechanisms, staff will withhold error reports due to fear of blame, thereby depriving the system of the very data needed for improvement [40]. This disconnect represents a latent occupational hazard: workers may participate in formal learning activities (e.g., meetings or training), but if they cannot safely disclose errors or near-misses, these efforts become performative rather than protective[41, 42]. Consequently, the gap between moderate scores in "organizational learning" and the collapse of foundational enablers like psychological safety and staffing adequacy (18.35%) indicates a fragile safety infrastructure that fails to support sustainable OHS outcomes. To transform acceptable learning scores into meaningful protection for workers, engineered OHS interventions are required such as integrating anonymized incident data into routine safety briefings, embedding human factors analysis into root cause reviews, and linking leadership performance metrics to staff-reported psychological safety. Without such system-level controls, even "acceptable" learning cultures risk masking underlying occupational risks that endanger both patients and healthcare workers.

In this study, the overall positive PSC score was 44.76%, suggesting an underdeveloped safety culture in public hospitals. This result aligns with findings from a study conducted in Eastern Ethiopian public hospitals, which reported a comparable score of 47% [30]. In contrast, higher scores have been documented in high-income and some middle-income countries: the US [34] and Brazil [43] reported the highest overall patient safety ratings at 71%, followed by China at 68% [44]. Despite these relatively higher figures, even in those settings, PSC was generally described as only modestly developed, with scores ranging between 50% and 71%. The current study's score of 44.76% falls below this range, classifying it as underdeveloped and underscoring a pressing need for improvement not only nationally but also globally. These disparities reflect broader inequities between high-income and middle-income countries in terms of resources, infrastructure, and institutional commitment to patient safety [45]. For example, in Iran, the persistent underdevelopment of PSC appears to stem from systemic priorities that have long favored expanding access to care over ensuring its safety and quality [46]. Persistent challenges including limited budgets, political sanctions, inefficient insurance schemes, and entrenched socioeconomic disadvantages continue to impede the quality and safety of healthcare delivery [47, 48]. Strengthening patient safety culture in Iranian hospitals therefore requires targeted, cost-effective strategies grounded in systematic reforms and active stakeholder engagement. Strong, committed leadership that explicitly positions patient safety as an organizational priority is essential. Furthermore, regular monitoring and evaluation against national and international standards are critical to driving sustained progress in patient safety [29].

This study has several limitations. Its cross-sectional design precludes the establishment of causal relationships between patient safety culture and the factors that may influence it. Findings reflect the safety culture of a single public hospital in southeastern Iran and may not be representative of private hospitals, tertiary care centers, or healthcare systems in other regions or countries. Caution should be exercised when extrapolating these results to different organizational or cultural contexts. Since data were collected using self-administered questionnaires, the responses may have been subject to social desirability bias and recall bias particularly in sensitive areas such as error reporting and perceptions of management. While anonymity was ensured to encourage honest reporting, future studies could triangulate survey data with objective indicators (e.g., incident reporting system logs) to mitigate this limitation. Future studies should evaluate the impact of engineered interventions on both staff safety outcomes and patient safety culture metrics. Mixed-methods designs combining HSOPSC with objective OHS indicators (e.g., incident rates, burnout biomarkers) are needed to validate causal pathways.

Conclusion: According to the current results, the PSC is poor or unfavorable from the staff perspectives and needs the hospital manager's attention. Additionally, as nurses are the largest healthcare providers in hospitals, they believe that the weaknesses of most composite safety cultures require management attention, planning and serious interventions. The punitive culture at workplace, staffing, management support, and teamwork across units are the most important issues that need to be addressed at this hospital. Therefore, PSC can be promoted, the risks threatening patients can be reduced, and quality of health care services can be improved. Also, the results of the present study and similar research can help explain the role of safety culture in preventing medical errors in hospitals, provide appropriate information for national safety promotion, and be practical for planners and executives.

Ethical Considerations

The researcher began sampling after receiving approval from the Ethics Committee of Rafsanjan University of Medical Sciences with the code of ethics No IR.RUMS.REC.1398.191 and receiving a letter of introduction from the hospital management. After coordinating with the expert for accreditation and quality improvement, explaining the goals and ensuring the information confidentiality, and obtaining

written consent from the staff, the questionnaires were distributed among eligible staff.

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Conflict of Interest

No conflict Interest was provided for this paper.

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