

Perception of healthcare professionals on patient safety culture and associated factors: a qualitative study using MAXQDA software



Original article

Aileen J. Abraham^{a,*}, Pushpanjali Krishnappa^b, Frank Federico^c

^aDepartment of Allied Health Sciences, Faculty of Life and Allied Health Sciences, Ramaiah University of Applied Sciences, Bangalore, Karnataka 560056, India

^bDepartment of Public Health Dentistry, Ramaiah University of Applied Sciences, Bangalore, Karnataka 560056, India

^cSenior Patient Safety Expert, Quality Improvement Specialist, Institute for Healthcare Improvement, Cambridge, MA 02138, USA

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Abstract: Objective: Patient safety culture is a concern in every healthcare organization, therefore, the healthcare leadership is encountering issues related to patient safety across the globe. In India, there is limited research and information about patient safety culture among healthcare stakeholders and there is relatively little qualitative research available that captures the factors of patient safety culture. Hence, this study aims to explore the perception of healthcare professionals on patient safety culture.

Methods: An exploratory qualitative study design was adopted in a tertiary care hospital. Structured focus group discussion (FGD) (n = 4) among healthcare professionals and two in-depth interview focus groups were audio-recorded and transcribed. Two coders reviewed transcripts using the editing approach and organized codes into themes. The data were analyzed through MAXQDA 2022 (VERBI Software GmbH, Berlin, Germany), qualitative data analysis software, and descriptive analysis technique. The main codes and themes were generated using inductive and deductive method and smart coding was done.

Results: Overall, there were 190 unique mentions of codes related to patient safety culture from 4 FGDs. They were categorized into 6 major themes and subcodes were derived via smart coding using the MAXQDA software. "Resources and constraints" was the most prominent code, followed by management support, manpower shortage, burnout, and lack of personnel commitment.

Conclusions: The study highlights significant gaps in patient safety culture within the healthcare setting, with resource constraints, management support, and manpower shortages emerging as critical challenges. Burnout and lack of personnel commitment further exacerbate these issues, underscoring the need for targeted interventions.

Keywords: focus group discussion • healthcare stakeholders • patient safety culture • qualitative study • healthcare leadership

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1. Introduction

In the year 2000, the patient safety "revolution" as a whole reached a turning point following publication of the report, "To Err is Human" in 1999, in the United States. There has been a strong focus on finding and

eliminating the possible causes of patient safety incidents after the release of the World Health Organization (WHO) Adverse Events report in 2004.¹ The WHO has defined patient safety as "the reduction of risk of

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*Corresponding author.

E-mail: aileensings4ever@gmail.com; aileen2020j@gmail.com (A. J. Abraham).

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unnecessary harm associated with healthcare to an acceptable minimum.”² It is widely acknowledged around the world that hospitals and other healthcare facilities are not as secure as they ought to be.³

Despite its ancient origins, the dictum *Primum Non-Nocere*—“Above all, do no Harm” by Hippocrates is still valid in the present era.⁴ “Crossing the Quality Chasm” report in the year 2001, emphasized the practice of “non-system,” wherein patients encounter diverse caregivers in varied venues, and where no one has complete data of the impact of the safety and quality of healthcare.⁵ Despite the widely known fact that system failures play a significant role in patient safety accidents, companies frequently blame individuals when catastrophic events occur.⁶ The above, in effect, can develop a culture of fear and mistrust in which healthcare personnel are less inclined to disclose occurrences and near-misses and organizations are unable to learn from failures.^{7,8} The concept of “safety culture” gradually expanded among the academic community, institutions, businesses, and consulting organizations. Many definitions of safety culture have been proposed since then.⁹ The notion of safety culture first emerged in hazardous industries, such as aviation and nuclear, when some major incidents could not clearly be understood solely by personal factors, thus necessitating an understanding of the organization’s role.¹⁰ In the past several decades, these industries have greatly improved their level of safety by fostering a “culture of safety” in which safety is prioritized by the senior management.¹¹ Furthermore, safety inspections have been incorporated into all organizational actions.¹² Improving staff values, beliefs, perceptions, and conventions toward providing safe healthcare, as well as promoting behavior and attitudes that reflect dedication to establishing a safety culture, are all part of the patient safety culture concept.^{13–15} Patient safety is progressively perceived as a universal health concern in both the developed and lower to middle revenue generating countries. Unsafe patient care is associated with significant morbidity and mortality throughout the world.¹⁶ It is predicted that 10 million victims across the world are harmed unnecessarily.¹⁷ Creating a safer workplace environment requires the collaboration of individual healthcare professionals, administrators and managers, and state officials.^{18–20} In developing countries, the probability of a patient being harmed in hospitals is high, with the risk of healthcare-associated infection as much as 20 times higher than in developed countries.^{21,22} The present study is relevant in India, as there is limited research and information about patient safety culture among healthcare stakeholders and there is relatively little qualitative research to capture the factors related to patient safety culture. This is a unique approach to elicit the perception of healthcare

stakeholders about the patient safety aspects on ground reality. The culture of safety is diverse in India and it needs to be unveiled before assessing the patient safety culture. Hence, this study aims to explore the perception of healthcare professionals on patient safety culture.

2. Methods

2.1. Study setting and design

An exploratory study design was adopted using qualitative methods for collecting data for the study. This study was conducted in a tertiary care multispecialty hospital in the metropolitan city of Bangalore. We used focus group discussions (FGDs) with healthcare professionals who are stakeholders in patient care. The FGDs were directed toward understanding the perceptions and personal experience of patient safety culture among healthcare professionals. The study population consisted of stakeholders of the hospital—departmental Managers, hospital administrators, registered nurses, infection control team, and operational and quality team. Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines were used to the maximum extent possible by the authors for reporting the study. The qualitative content analysis method was adopted for the study.

2.2. Ethical considerations

The study was approved by the institute’s ethics committee (IRM Approval No.: MSRMC/EC/AP-07/09-2022) and informed consent was taken by all the participants of the focus group. Participants were briefed about the intention of conducting the study and confidentiality of the data collected. All the interview data were coded as anonymized, stored securely by the authors, and accessed only by them to maintain confidentiality.

2.3. Sampling and recruitment

Purposive sampling was used and the authors recruited the healthcare professionals for the FGD in consultation with hospital management. There were 4 FGDs and code saturation was noted at the end of it all.

The time and place of the interview was selected based on the convenience of the participants, and permission was taken from each department head before the interview.

2.4. Data collection, coding, and analysis

A semi-structured interview guide was developed based on the objective of the study, available literature on

patient safety culture, and feedback from the patient safety experts. The focus group interviews were audio-recorded, which lasted for 30–65 min; the first author (AJ) served as the moderator and the interviews were observed by an assistant taking notes. Inductive and deductive qualitative content analysis was used to analyze the interview scripts. The participants' responses were transcribed verbatim for each question. The researchers reviewed the transcripts for accuracy and to generate coding categories and subcategories. The transcripts were anonymized and the MAXQDA software was used for qualitative data analysis. The transcripts were read several times to get familiarized with the data.

Coding was done in two stages, the primary phase and the secondary phase, to establish the codes and subcodes. In the primary phase, inductive codes were generated from the dataset. In the secondary phase, deductive coding was used and each transcript was coded and subcodes were regrouped after generating the code book in the software. Codes were merged into common themes and the authors agreed on the code definition and revisited the codes based on the consensus of the authors referring the code book. The authors agreed to the codes and themes derived from each transcript. The researchers reviewed the transcripts for accuracy and to generate coding categories and subcategories in line with the aim of the objective. In descriptive analysis, the collected data are interpreted by summarizing in view of the predefined themes.²³ Four-step quantitative data analysis strategy²⁴ was used: Identifying codes, that is, the unit codes were sorted and placed

in categories, they were analyzed for themes and patterns, categories were examined for meaning and interpretation, and a diagram was constructed to illustrate the codes and themes found in the data.²⁵

The quotations from the FGD are illustrated to understand the results. The participants and FGD number are given for the respective quotation from the transcript. The quotes/...../represent omission of a sentence or part of the text. Changes have been made in terms of grammar to improve the readability and no content is altered from the script. P represents Participant in the FGD.

3. Results

Qualitative analysis identified 6 major themes. *In vivo* codes derived from the FGD were Increased workload, Non-value added activities, Rewards and recognition, and Manpower shortage.

Resource constraint and manpower shortage emerged as the main code when the word cloud was generated based on the frequency of codes in all the FGDs (Figure 1). Manpower shortage across the department was evident as per the nurse–patient ratio and this came out in the FGD, and nurses strongly recommended to increase the nurse–patient ratio to deliver quality care. Stress and burnout was another major theme during the thematic analysis, and this resulted in decreased work–life balance and impacted their commitment toward patient safety. Although the participants accepted that there was support from management for patient safety, they emphasized that nurses feared the blame after reporting and perceived that there was



Figure 1. Major themes derived from coding for FGD.

Note: FGD, focus group discussion.

punitive action on incident reporting. This was due to high attrition and because the staff did not participate in the training modules offered by the hospital in their full sense. The lack of interest is due to the lack of personal commitment.

Organizational learning and continuous improvement is also observed as another important theme because of lack of incident reporting by all cadres of hospital staff. This is because of lack of awareness among the staff members about the importance of incident reporting, while there is also no encouragement for the staff for reporting an error in the department.

Table 1 provides an overview of the demographic and professional characteristics of the participants involved in the study. The sample consisted of 24 healthcare professionals, with 19 females and 5 males. Participants represented various roles, including administrators (n = 2), departmental managers (n = 2), staff nurses (n = 12), infection control nurses (n = 4), and quality executives (n = 4). Their professional experience ranged from 1 year to over 20 years, with the majority having 6–10 years of experience (n = 8). The FGDs lasted an average of 30–65 min, ensuring a comprehensive exploration of perceptions on patient safety culture.

3.1 Reporting of incidents and culture of blame

During the FGD, participants expressed that incident reporting is part of their work routine and it is not as

Characteristics and category	N
<i>Gender</i>	
Female	23
Male	57
<i>Profession</i>	
Administrator	48
Departmental manager	32
Staff nurse	
Infection control nurse	62
Quality executive	18
<i>Experience (years)</i>	
1–5	39
6–10	3
11–15	1
16–20	3
<i>Duration of FGD (min)</i>	8
Mean	14

Note: FGD, focus group discussion.

Table 1. Participant characteristics.

expected by the management. Several factors were brought forth during the discussion:

We are not worried about blame culture attached to incident reporting/.../we report errors initially otherwise later it will be a problem/..../if we are caught, then they will take action. At junior level they will hide, due to fear of punishment or cut the salary. (FGD 1, P-2)

Nurses did not exhibit fear of blame, rather it was the perception of fear. They also felt that newly joined staff feared punitive action, even though punishment was not a part of the organizational culture. This exhibits the knowledge gap and awareness of current organizational culture:

If we report the near miss events, it is good but many departments they are hiding because of fear.(FGD 3, P5)

In this discussion, participants felt that most of the time near-miss events go underreported as they fear punishment and blame:

Each department is different in culture of reporting and housing keeping staff don't usually report because they are illiterates or can't use the application. (FGD 4, P3)

The department managers said the cleaning staff were not reporting the incidents. This is mainly because of the literacy level of the housekeeping staff and most of them were not comfortable using the new software application which is used to capture the incident reporting. This suggests that the role of managers is crucial for monitoring and supporting the staff for reporting.

3.2. Staffing, documentation, and non-value added activities

In all the discussion among the various stakeholders in this study, manpower shortage was emphasized. This is important to note as patient safety errors and burn-out among nurses is related to shortage of staff in the departments:

Manpower shortage is major issue, if staffing is adequate then work life balance can be improved and also errors will be reduced. (FGD 1, P 5)

Nurses perceived that lack of adequate manpower is the cause for errors and if this is addressed by the management, the work–life balance will be improved along with patient safety aspects:

I personally feel some of the non-value added work the nurses do is needs to be done by somebody else like receptionist to attend the calls/..../Coordinating with the house keeping department to get wheelchair or any other assistance is not nurses' job but we do it always. (FGD 2, P 3)

Registered nurses expressed that all the activities done by nurses were not part of their job description and that most of the activities could be handled by non-nursing staff in the hospital:

Multiple job responsibility that has to be avoided/.../ Nurses are doing everything which is not only their work, like follow up of discharge summary, collecting lab reports. If these activities are taken care by other staff, we can work towards patient safety in a better way. (FGD 4, P4)

Departmental managers and nurses discussed the summary of activities that can be handled by other staff, and if they are relieved from those activities, nurses can contribute toward better patient care aspects:

We all do extra and duplication of documentation, which is not required. Example vitals, we document it three times, in graph and handwritten and in nursing documentation/...../as per policies, if we don't document, the work is not done. Hence we focus on documenting rather than other safety aspects/...../. (FGD 1, P 3)

The nurses expressed that documentation work both in manual form and in electronic health records was taking the majority of their time. As the hospital was accredited and policies for documentation were daunting tasks for all the nurses, the care for patients was compromised:

/...../the pressure of documenting is always there, we keep on writing, if the patient attender comes, we sometimes we don't listen/...../In between documentation we are answerable for attenders. Hence the quality of our work comes down. (FGD 2, P-6)

The group perceived that documentation was their first priority and at times they were unable to attend to the request of patients' attenders; also, they were frequently disturbed by the attenders, which resulted in poor quality of work and documentation:

In all department there should be sufficient manpower and we can do better care and service and finish our job of documentation. (FGD 3, P1)

They suggested that if there was adequate manpower they could fulfill the requirements of documentation as per the accreditation standards and contribute to implementation of the electronic health record project without disturbing the quality of care. This shows that they are interested to contribute effectively to the care of patients, but in the present situation they were not giving their best:

The patient rounds happen at different time for different department, hence our work is disturbed most of the time. (FGD 3, P6)

The process of the hospital was not in favor of the nurses and they felt the doctor rounds hampered patient care activity. The rounds were not scheduled as various specialty patients are admitted in the same ward. Each specialty doctor visits the ward at different time schedules and therefore continuity of patient care is compromised:

In this department, patient are calling for nursing staff for all the queries' example (Dietary, maintenance, housekeeping, radiology, lab services, and all these things as escalating through nursing staff only)/...../ Nurses are point of contact for all activities, we start the process and end the process. This takes our time. (FGD 4, P4)

Registered nurses expressed that multiple jobs were assigned to nurses and this needed to be distributed to other staff in the department. They felt they were the single point of contact for all the activities that happened around the patients.

3.3. Emotional stress and work–life balance

Nurses' emotional stability is very crucial for the working environment, as they comprise the backbone of the hospital. Their work–life balance becomes a priority for the management and this in turn affects the patient safety aspects:

Most of the time I regret that I couldn't give time to my patients at the end of the day/...../Patients give feedback next day about our behaviour, we feel sad. (FGD 2, P4)

Nurses expressed that their emotional health was affected by their workload and they could not prioritize the patient needs, and this disturbed their state of mind. Their intent to care for the patients could not meet the expectations, and moreover when the patients gave feedback about their behavior, it bothered them:

We don't have time to spend time with our family, we go late from our shift and can't apply leave when we need/...../It all depends on the patient load other staff availability/...../I feel this is increasing my stress. (FGD 4, P2,P1)

The participants emphasized on the work–life balance, which is mainly due to the leave management system in the hospital, as it is evident that staff are short and leave cannot be applied as per their need:

Yoga classes are organised from the hospitals to manage stress but after duty staying for one hour is not possible, we always want to go home. (FGD 1, P5)

Quality executives expressed that the staff were not availing the yoga sessions post their work. The management was taking an active role in mitigation of stress by arranging for yoga classes for the interested staff, but the staff did not take part as they wanted to go home after their shift. Physical exhaustion is evident in this aspect.

3.4. Training

Training is conducted throughout the year regarding safety issues but many staff don't attend with full intention/...../They are attending because of mandatory rules and attendance. After the duty hours we are tired and can't concentrate. (FGD 2, P-2)

Hospital administrators said that safety and quality-related trainings were conducted at regular intervals but attendance was poor. The departmental managers said that the staff attended the trainings only for attendance and documentation. Another reason for poor attendance to training was, it was scheduled post their duty and hence it was taxing for them.

3.5. Rewards and recognition

Rewards or appreciation for incident reporting is required because they are pointing out something which is critical for all of us and patient also, for me that kind of culture would help me promoting incident and promoting safety culture.(FGD 3, P1)

The infection control team expressed their view on the rewards for reporting the incident and how it was impactful in improving the overall safety culture in the organization.

Patient safety culture theme was expressed by the above-mentioned subthemes (Figure 2), and later this was used to connect the other major themes in the thematic analysis script using MAXQDA software.

The major themes were clubbed to bring an association with the patient safety culture; this gave a visual understanding of the interconnection between the subcategories of codes with the major themes (Figure 3).

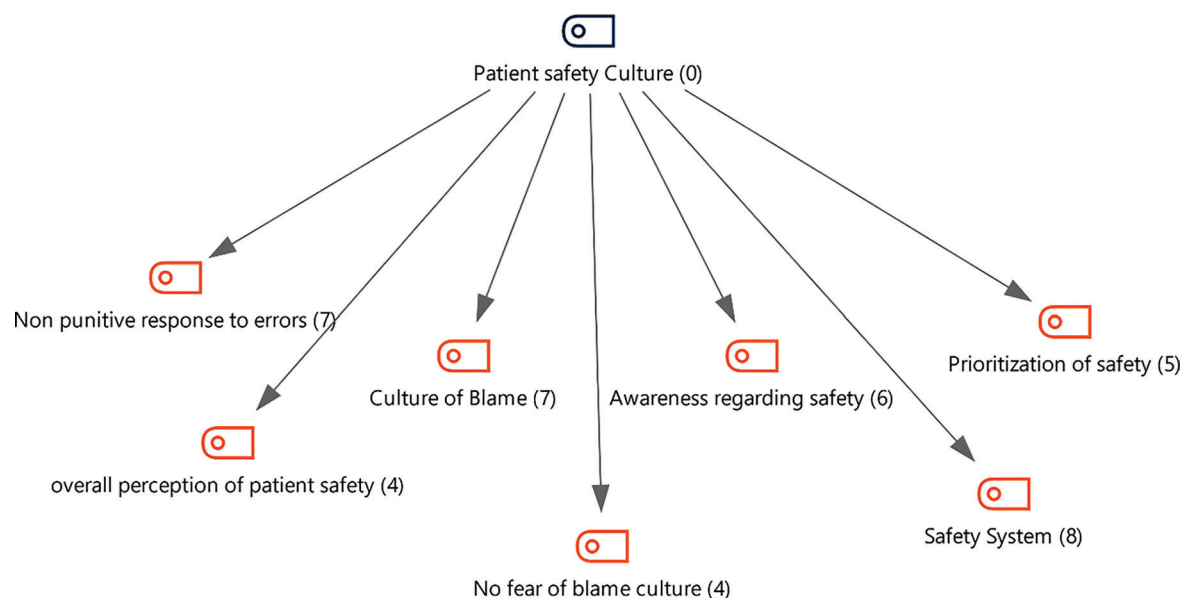


Figure 2. Themes identified for the FGD under “patient safety culture” using MAXQDA software (numbers indicated the frequency of codes derived from the scripts). FGD, focus group discussion.

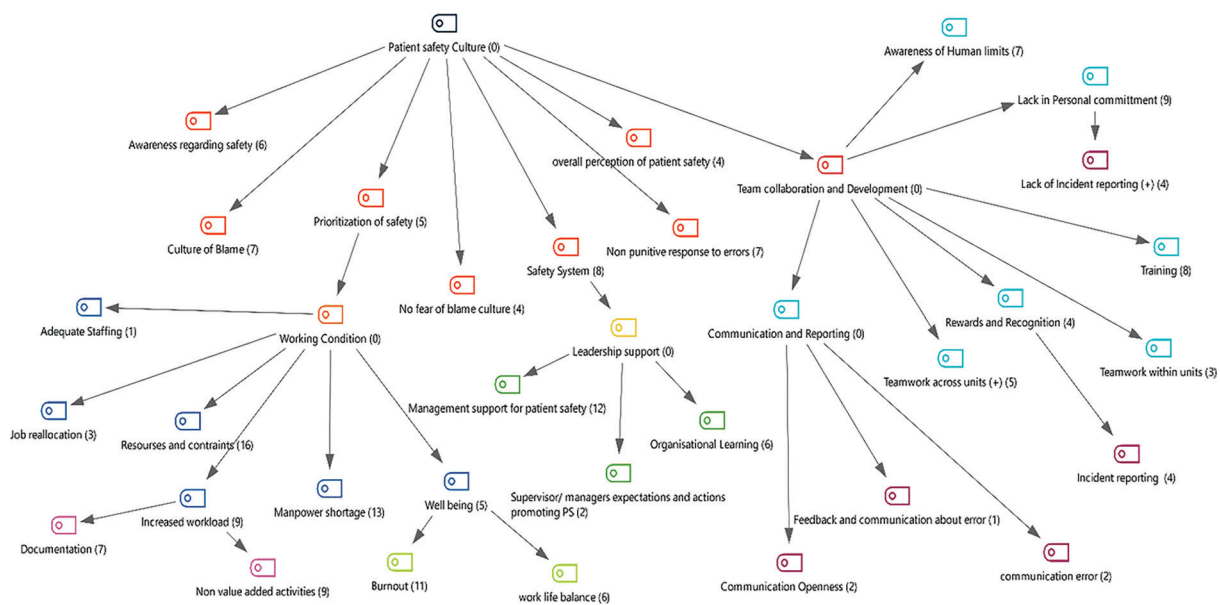


Figure 3. Matrix showing the relationship between the major themes and subthemes; the themes were merged using MAXQDA software.

The major themes were clubbed to bring an association with the patient safety culture, which gave a visual understanding of the interconnection between the sub-categories of codes and the major themes.

As we can see, documentation and non-value added activities contributed to the increased workload of nurses, which resulted in negative working conditions. This was the reason why nurses did not perceive safety as a priority, resulting in poor patient safety culture. Similarly, rewards and recognition emerged as a factor for non-reporting of incidents. Nurses viewed recognition as a key factor of motivation as they had not much time in the department to carry out patient care activities. They prioritized events, they expected rewards and recognition.

4. Discussion

4.1 Statement of principal findings

During the FGD, nurses explained that the perception of punitive actions had a negative influence on patient safety culture. The instances of underreporting by the participants was because of the fear of blame. Lack of resources emerged as the main code in all the FGDs. Staff shortage and increased workload was another concern among the nurses which affected the nurse's efficiency of work and had a negative impact on patient safety. The results were similar to the study conducted by Alves et al.,²⁶ which showed that staffing shortage

had an impact on the working conditions of the organization and it negatively affected the patient safety and quality of care. Resource constraint and staffing shortages, which are common themes in all the FGDs, are major concerns among all the healthcare stakeholders, more importantly among nurses. This result is consistent with other studies conducted in other developed countries, where resource constraint is viewed as an important factor for nurses' perception of patient safety and quality care.^{27,28} Documentation emerged in our study as the key theme during the FGD. This was due to the nature of the process adopted by the hospital in compliance with the national accreditation standards. As the electronic health record is not fully implemented in hospitals, nurses are expected to document in the paper record as well as the electronic health record. Nurses document multiple times the same patient record in different fragmented health records to meet the requirement of the hospital policy. This requires the management to review the duplication of records and allow nurses to use their time for quality of patient care. Thematic analysis identifies some of the major reasons for nurse errors related to patient safety and poor quality of patient care. First and foremost, it was non-value added activities of nurses where their majority of time was utilized for work, which can be carried out by other healthcare workers. The next important was lack of recognition and empowerment of nurses in a few departments, which lead to stress and burnout. Another key contributor for nurses' exhaustion was lack

of manpower, as there was no backup plan for nurses who wanted to take leave; the majority of the nurses could not apply for leave during their personal emergency, leading to nurses' fatigue.

4.2 Strengths and limitations

The present study is qualitative in nature and is based on the perception of the healthcare stakeholders; it is conducted in a tertiary care multispecialty hospital in a large metropolitan city. The study results cannot be generalized to other healthcare settings. The focus group participants were nominated by the hospital administrator and might have been on a selection bias. The strength of this study was that all healthcare professionals and nurses from all major departments participated in the study. The main limitation of the study is that it is conducted in only one hospital. The clinicians were not part of the focus of group discussion due to their work schedules. Hence the perception of the doctors is not captured.

4.3 Interpretation within the context of the wider literature

Nurses felt burnout and fatigue, which had a negative impact of the quality of their care toward patients, and this result was similar to another study conducted, where fatigue, stress, and mental pressure were the factors for decreased patient safety.²⁹ Lack of training and ineffective training were observed as concern among newly recruited nurses and this was result of high turnover of nurses in each department. This was in parallel to the results from other study, where lack of training led to decreased patient safety.³⁰

4.4 Implications for policy, practice, and research

The results of the present study will be helpful in exploring aspects of the patient safety culture among healthcare professionals. This gives a strong message to hospital managers to relook at the policies and processes that create a safe work environment for healthcare workers. Further research is required to address the specific issues faced by the Indian healthcare system and specific tools to assess the same. This is the first step in exploring the challenges of healthcare workers to maintain a safe culture, and future research is required to investigate new themes and validate the themes derived from this study. The future research can include all the stakeholders,

including clinicians who play an important role in patient safety culture.

5. Conclusions

This qualitative study has given an understanding of the patient safety aspects and factors that determine the reasons for errors. Lack of resources, including shortage of manpower, was evident from the discussion with the stakeholders. This study implied that to create a safe environment for patients the management has to look at the issues and tailor the system for creating a safe work environment for the staff. Creating a safer workplace environment requires the collaboration of individual healthcare professionals, administrators or managers, and state officials. As a result, it is critical to understand why individuals shortcut the safety process or procedures and why they feel comfortable doing just that, or why supervisors or managers tolerate a conduct that endangers the facility's safety.

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Author contribution

AJ conceptualized the research idea, collected and analyzed data, drafted the manuscript, and participated in critical revisions. PK conceptualized the research idea, collected data, and participated in critical revisions. FF conceptualized the research idea and participated in critical revisions. All authors have read and approved the final version of the manuscript.

Data availability statement

The data underlying this article will be shared on reasonable request to the corresponding author.

Ethical approval

The study was approved by Ramaiah Medical College Ethics Committee (IRM Approval No. MSRMC/EC/AP-07/09-2022).

Conflicts of interest

All contributing authors declare no conflicts of interest.

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