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Research Paper

Examining Patient Safety Culture in Hospitals: A Systematic Review

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Abstract: Patient Safety Culture (PSC) is critical in healthcare organizations, influencing patient outcomes and care quality. This study is a systematic review that provides a comprehensive understanding of PSC in hospitals by synthesizing the current literature using the PRISMA framework and focusing on identifying key components, determinants, and factors influencing healthcare professionals' attitudes and perceptions toward PSC. A systematic search of the SCOPUS database identified 19,129 documents on PSC, of which 21 were included after rigorous screening and application of eligibility criteria. Key findings highlight the importance of effective leadership, communication, teamwork, and organizational learning in fostering a positive PSC. Supportive leadership and non-punitive environments encourage error reporting, whereas continuous professional development and stress-reduction programs enhance safety culture. Factors such as work-related stress, professional commitment, and organizational culture significantly impact PSC. Understanding these factors is essential for designing strategies to deal with healthcare professionals' specific needs and challenges. This systematic review also reveals gaps in research on the causal relationships and mechanisms that shape PSC, suggesting that further studies are needed to develop more effective interventions. Practical implications emphasize the importance of leadership training, regular safety training sessions, stress reduction programs, and evidence-based practices. This review provides actionable insights for healthcare administrators, policymakers, and practitioners aiming to improve patient safety, offering a comprehensive understanding of PSC components and strategies for enhancement. This study contributes to efforts to create safer healthcare environments and improve patient outcomes by bridging the gap between theory and practice, underscoring the necessity of integrated, continuous approaches to PSC.

Keywords: Humans; Organizational Culture; Patient Safety; Evidence Gaps; Leadership

Introduction

Patient Safety Culture (PSC) is a fundamental element in healthcare organizations, profoundly affecting patient outcomes and care quality. PSC encompasses the collective

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beliefs, attitudes, values, and norms shared among healthcare professionals about patient safety (Huang et al., 2023; Mistri, 2023). Establishing and maintaining a robust PSC requires consistently promoting values, beliefs, and behaviors that prioritize patient safety within hospitals (Venny, 2024; Arbianti, 2023). The importance of this culture lies not only in preventing harm but also in encouraging open discussion and continuous improvement, thereby reducing adverse events through preventive actions and proactive risk management. This correlation highlights the critical role that a positive safety culture plays in the overarching goal of enhancing healthcare quality and safety. Additionally, a strong PSC contributes to a supportive environment where staff members feel valued and respected, leading to higher job satisfaction and retention rates among healthcare workers.

The significance of a positive PSC cannot be overstated. It has been demonstrated that hospitals with a strong safety culture experience fewer adverse events and see marked improvements in the quality and safety of care delivered (Kim et al., 2020; Herak, 2023). This relationship underscores healthcare organizations' need to invest in and actively foster a safety-oriented culture. PSC development is an active, sustainable process that requires participation at all levels of the organization to build a culture in which safety is a shared responsibility and encourages individuals to raise potential safety concerns. By prioritizing safety culture, healthcare organizations can build a resilient system capable of effectively adapting to challenges and mitigating risks.

Key components of PSC include teamwork, open communication, non-punitive responses to errors, leadership support, and organizational learning (Abel et al., 2023). These elements are integral to building and sustaining a safety culture that encourages reporting and learning from errors without fear of retribution. Effective teamwork in healthcare settings ensures that all team members, regardless of role, collaborate toward common safety goals. Open communication allows for the free flow of information, enabling staff to share concerns and insights that can prevent errors and enhance patient care. Non-punitive responses to errors are essential for creating an environment in which mistakes are viewed as opportunities for learning rather than occasions for blame. Leadership support is critical in providing the resources and commitment needed to maintain focus on safety initiatives. Organizational learning involves continuously assessing and improving safety practices in response to new information and experiences, thereby fostering a culture of continuous improvement.

Healthcare institutions must implement several strategies to effectively enhance PSC. These strategies include training programs to reduce human-related incidents, improving safety monitoring systems, learning from successful experiences, digitizing healthcare management, and enhancing communication among healthcare providers. Emphasizing hand hygiene procedures is another critical aspect of these strategies (Alsulami et al., 2022). Safety monitoring systems enable the early detection of potential safety issues, allowing for timely interventions. Learning from successful experiences involves analyzing instances in which safety was effectively maintained and applying those

lessons to other contexts. Digitalizing healthcare management can streamline processes and reduce the likelihood of human error. Improving communication among healthcare providers ensures that critical information is accurately and promptly shared, which is vital for maintaining patient safety.

Cultivating a positive PSC in hospitals is essential for improving patient outcomes and the quality of care. Therefore, this paper conducts a systematic review using the PRISMA framework to synthesize the current evidence and identify consistent themes, determinants, and best practices related to PSC in hospital settings.

Despite the growing body of literature on PSC globally and nationally, there has been limited systematic synthesis of findings that consolidates both international and local perspectives. Most existing studies focus on quantitative measurement rather than integrative evidence synthesis. Several gaps remain in understanding how leadership, professional commitment, and organizational culture interact to influence PSC outcomes. Therefore, this study seeks to address these gaps by systematically synthesizing recent literature using the PRISMA framework, identifying key determinants, and offering practical recommendations to strengthen PSC in hospital settings.

Method

The methodology employed in this study follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, which is a widely recognized approach for conducting systematic reviews. The primary objective of this systematic review is to examine PSC in hospitals by synthesizing the current literature on the subject. The data source for this review was the SCOPUS database, selected for its broad coverage of peer-reviewed journal articles in the health sciences, with a publication period of 2023 - 2024 (July 25, 2024). The search keyword used was "Patient Safety Culture." The review process adhered to the four key stages of PRISMA: identification, screening, eligibility, and inclusion.

The analysis stage of this research follows the PRISMA approach and is carried out sequentially and systematically, comprising the following steps. 1) Identification stage: Systematic searches were conducted in the SCOPUS database using the keywords “Patient Safety Culture”. All potential studies were identified during this stage without applying any initial restrictions on publication year, document type, or language. 2) Screening Stage: Once the articles were collected, a screening process was conducted with initial inclusion criteria that included journal articles, English language documents, healthcare focus, and open access. This screening process involved reviewing the titles and abstracts of the identified articles to exclude those that did not meet the inclusion criteria. 3) Eligibility Stage: After screening the articles, an in-depth analysis was conducted through full reading to assess the feasibility of the content. Only articles that provided a substantial and in-depth analysis of PSC were deemed eligible, while studies that only briefly mentioned PSC were excluded from further analysis. 4) Inclusion stage: eligible articles that met all criteria were selected for final review. Each included article was analyzed to extract key data,

including authors, study title, and study highlights. 5) Data Analysis: The data extracted from the included studies were then analyzed in detail to answer the objectives of this systematic review. This analysis identified and discussed key components of PSC highlighted in the literature, including leadership, teamwork, communication, a non-punitive response to errors, and organizational learning. 6) PRISMA Conclusion: The findings from these articles were synthesized to provide a comprehensive understanding of PSC, addressing the research objectives and contributing valuable insights into the cultural factors that influence patient safety in healthcare settings. The PRISMA flow diagram, showing the systematic steps, is presented in Figure 1.

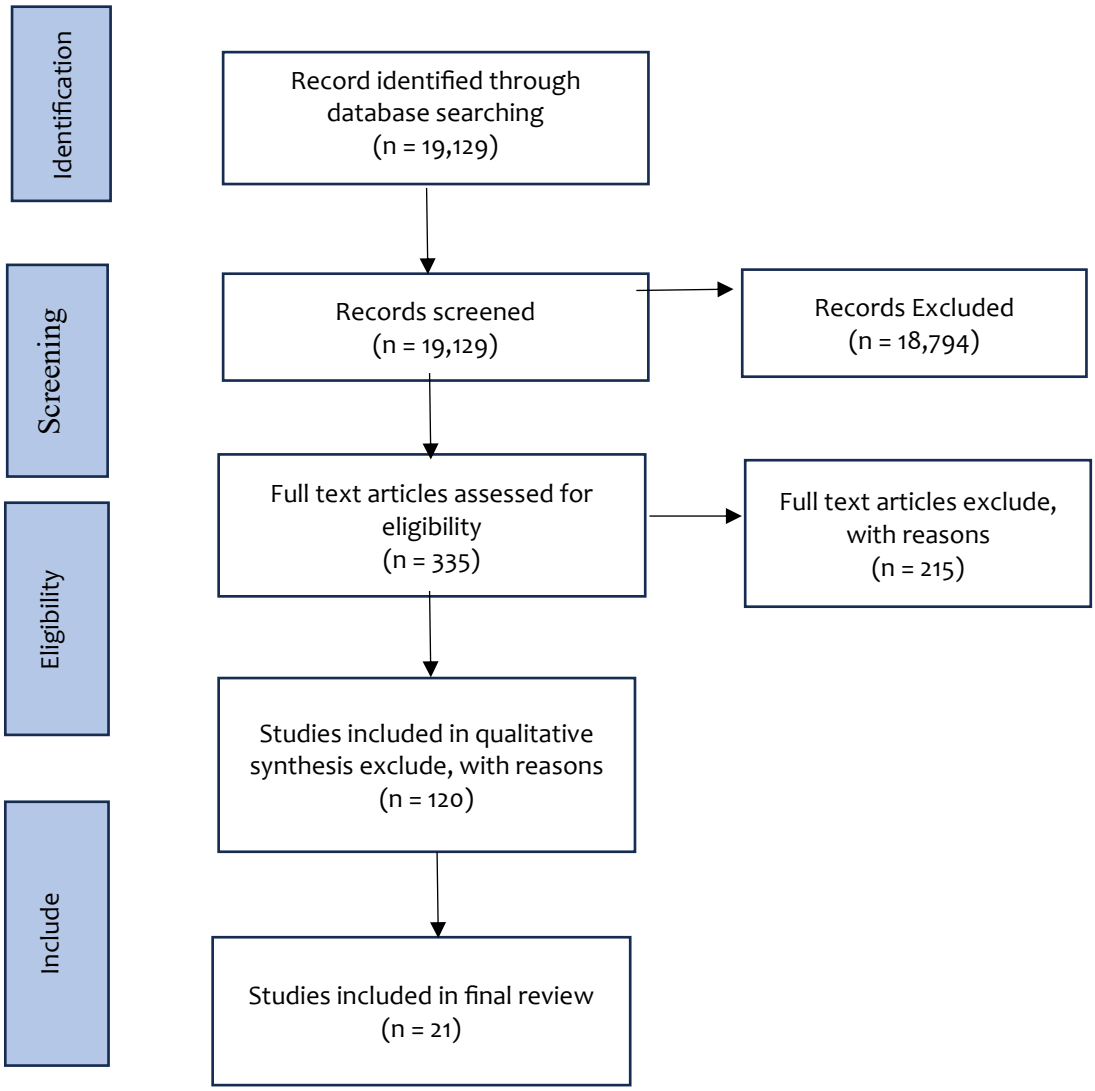

Figure 1. Selection Process Workflow

Figure 1 shows that the process of searching, selecting, filtering, and obtaining the final review used 21 journals as research.

Results

The process of searching and selecting proper studies is pictorially represented in Figure 1. In the initial search, 19,129 studies were identified; after removing duplicates, 18,794 remained. At this stage, 215 studies were selected based on title and/or abstract review and the removal of irrelevant studies. The full texts of these 120 studies were reviewed in depth, and 21 studies were ultimately deemed eligible for inclusion in the present systematic review and meta-analysis.

The identification phase of the study identified 19,129 documents from the SCOPUS database that addressed PSC using the search keyword [TITLE-ABS-KEY (patient AND safety AND culture)]. These documents span from 1943 to 2024, indicating a growing interest in PSC within the academic and healthcare communities. The distribution of documents by year, as shown in Figure 2, reflects an increasing trend in research output on this topic, particularly in the last decade.

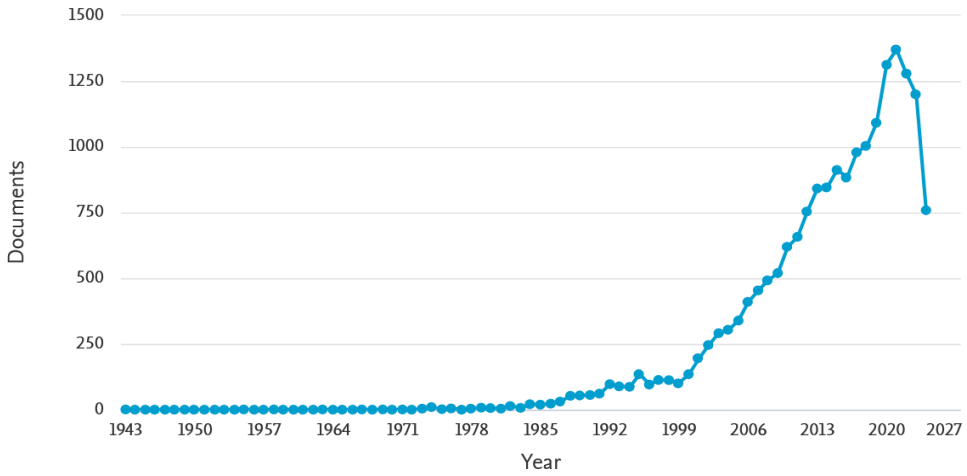

Figure 2. Distribution of Documents by Year

The distribution of documents by year, as shown in Figure 2, reflects an increasing trend in research output on this topic, particularly in the last decade. This surge in publications suggests a heightened awareness and prioritization of PSC within the healthcare sector. The increase in research output also correlates with global initiatives and policy developments to improve patient safety, indicating a robust response from the academic community to these calls for action. The distribution of documents per year by source, displayed in Figure 3, highlights the journals and conferences that have been prominent in publishing PSC-related research.

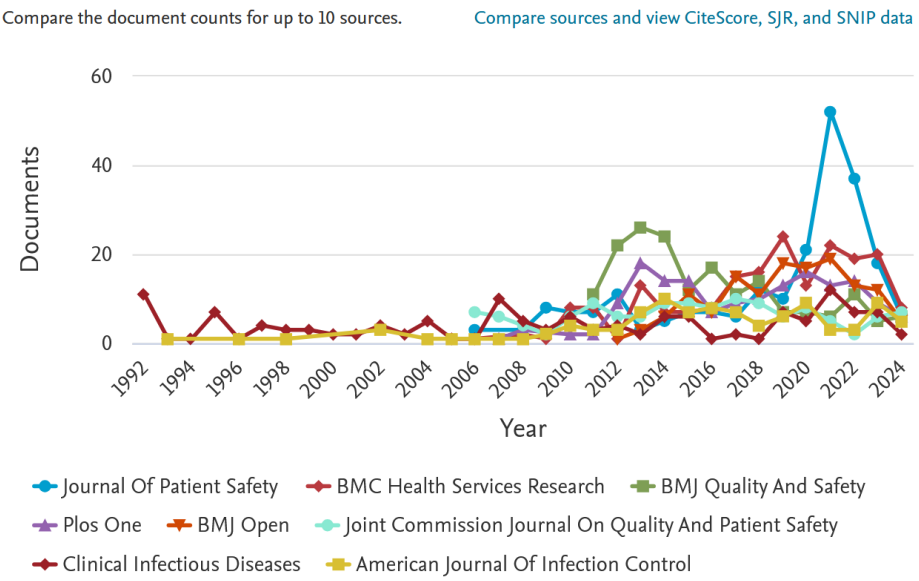

Figure 3. Distribution of Documents per Year by Source

The distribution of documents per year by source, displayed in Figure 3, highlights the journals and conferences that have been prominent in publishing PSC-related research. Notably, the Journal of Patient Safety, the International Journal for Quality in Health Care, and BMJ Quality & Safety are among the leading sources, reflecting their significant role in disseminating research findings. This concentration of publications in a few key journals underscores the central role these journals play in shaping the discourse around PSC. Additionally, the presence of conference proceedings indicates that PSC is a topic of active discussion and debate within professional gatherings, further contributing to developing and disseminating new insights and best practices. This shows that the distribution of documents discussing PSC is mostly found in journal sources, as shown in Figure 4.

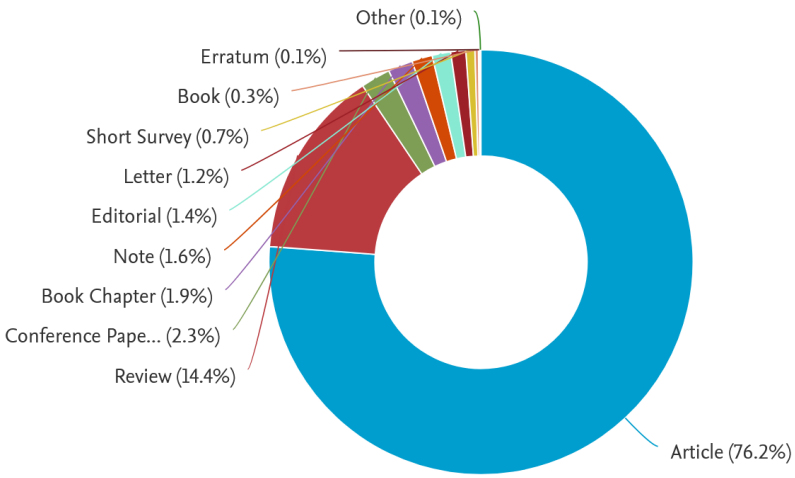

Figure 4. Distribution of Documents by Type

Figure 4 illustrates the distribution of document types, revealing that most documents were journal articles. This predominance of journal articles suggests that PSC research is primarily conducted in formal, peer-reviewed contexts, thereby ensuring the rigor and credibility of the findings. The distribution also includes many review articles,

indicating a substantial focus on synthesizing existing knowledge and identifying gaps for future research. Conference papers and book chapters highlight the multidisciplinary interest in PSC, drawing attention from various fields, including nursing, health professionals, and medicine. These diverse document types demonstrate the wide-reaching impact of PSC research across different academic and professional domains. The academic and professional fields that discuss PSC primarily in nursing, health professions, and medicine are shown in Figure 5.

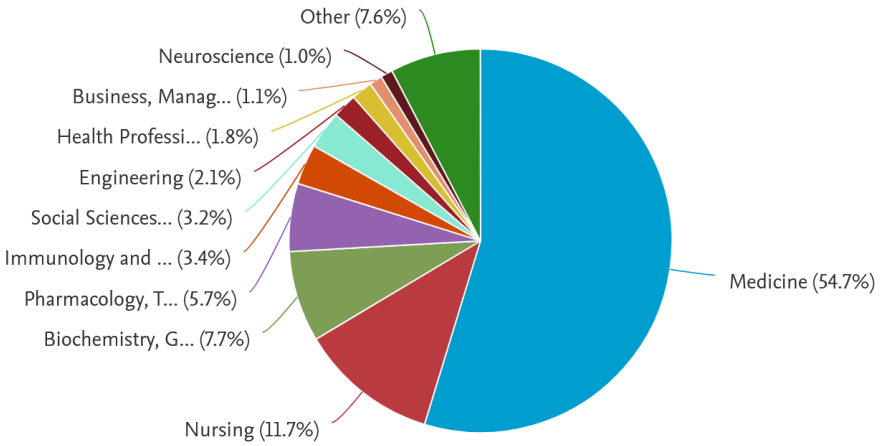

Figure 5. Distribution of Documents by Subject Area

The distribution of documents by subject area, as shown in Figure 5, indicates that most studies on PSC fall within the disciplines of nursing, health professions, and medicine. This distribution is expected, given that these fields are directly involved in patient care and thus have a vested interest in improving safety culture. However, PSC research in psychology, social sciences, and business management suggests an interdisciplinary approach to understanding and enhancing patient safety. These fields contribute valuable perspectives on human behavior, organizational dynamics, and management practices, enriching the overall understanding of PSC and offering comprehensive strategies for its improvement.

In the screening phase, a more stringent set of criteria was applied to narrow the documents to those most relevant to the study's objectives. This phase filtered the initial 19,129 documents to 335 journal articles. The criteria included the requirement for documents to be written in English, to fall within the focus areas of nursing and health professions, and to have been published within the last year (2023 to 2024). Moreover, only open-access articles were considered to ensure accessibility for further analysis and verification. This rigorous screening process ensured that the selected documents were current, relevant, and readily available for detailed examination. The screening phase was crucial for eliminating studies that did not meet the specified criteria, thereby refining the dataset into a more manageable, focused collection of research articles.

During the eligibility stage, the 335 screened articles underwent a more detailed manual assessment to confirm their relevance to the PSC focus. This phase reduced the

number of eligible documents to 120. Each article was meticulously reviewed to ensure it provided substantial insights into the cultural aspects of patient safety in hospital settings. Articles were evaluated for the depth of their analysis, methodological rigor, and relevance to the core themes of PSC. This manual vetting process ensured that the included studies were directly pertinent to this systematic review's research questions and objectives. The detailed assessment identified the most informative and robust studies that could provide valuable insights into hospital PSC.

The inclusion stage culminated in the selection of 21 articles that met all the inclusion criteria and were deemed highly relevant for detailed analysis. These articles, listed in Table 1, were selected for their focus on PSC and their contribution to understanding the cultural dynamics of hospital patient safety. The results section presents findings derived from the data and related to the hypothesis.

Table 1. Studies related to the theme of Patient Safety Culture (PSC)

Author(s) and Year	Study highlights	Results
Li Z.-Y. et al., 2024	Examine the connection between abusive supervision, impression management motivation, and nurses' reluctance to voice patient safety concerns.	Abusive supervision and impression management motivation significantly influence nurses' withholding voice about patient safety. Speak up-related climate moderates this relationship.
Gómez-Moreno C. et al., 2024	Explores nurses' experiences in surgical units regarding incident reporting and the strategies that can enhance patient safety practices.	Effective communication, knowledge sharing, and non-punitive culture facilitate adverse event reporting. Training and supportive culture enhance patient safety.
Mehralian G. et al., 2024	Analyzes how professional commitment among nurses relates to patient safety culture and errors in patient identification.	Higher professional commitment correlates with fewer patient identification errors and a better patient safety culture. Enhancing job satisfaction and professional engagement is recommended.
O'Brien N. et al., 2024	Identifies patient safety policies and initiatives across the Middle East and Asia, highlighting strengths, weaknesses, opportunities, and threats.	Key strengths include training and leadership commitment. Weaknesses include implementation gaps and low clinical awareness. Opportunities and threats identified for improving patient safety.
Ali M. et al.., 2024	Assesses patient safety culture and contributing factors among healthcare providers in public hospitals in Northeast Ethiopia.	The overall positive patient safety culture was 50.1%. Factors significantly associated with it include age, work experience, education level, and training.
Al Muharraq E.H. et al., 2024	Investigates nurses' perceptions of patient safety culture within Saudi Arabia.	Nurses reported moderate safety culture perception with strong teamwork but weak responses to errors and staffing. Recommendations for improving staffing and error response.
Sani M.M. et al., 2024	Evaluates the impact of work-related stress on patient safety culture in a tertiary hospital setting.	Significant negative correlation between stress and safety practice. Work-family conflict and difficulty taking leave predict patient safety culture.
Batalha E.M.S.D.S. et al., 2024	Examine the relationship between patient safety culture	Better safety culture assessments are negatively associated with burnout and

Author(s) and Year	Study highlights	Results
	and the professional quality of life among nurses.	traumatic stress, highlighting the importance of investing in safety culture.
Çatal A.T. et al., 2024	Explores intern nursing students' views on patient safety culture and the factors influencing their experiences.	There is a high perception of patient safety culture. Safety factors include health professionals, the care environment, and patients/caregivers.
Farokhzadian J. et al., 2024	Assesses nursing students' competencies in patient safety across classroom and clinical environments.	High scores in 'clinical safety' subdimension. There is a significant difference in patient safety learning confidence between classroom and clinical settings.
Fassi C.F. et al., 2024	Evaluates health professionals' perceptions of patient safety culture in Moroccan primary healthcare facilities.	Teamwork within units is highly developed. Staffing and non-punitive response to errors are the least developed. Recommendations for improving reporting and staffing.
Hurtado-Arenas P. et al., 2024	Examines patient safety culture from the perspective of nurses working in a Chilean hospital.	Communication and reception rated highest. Support from administrators and resource shortages are key issues. Recommendations for improving resource allocation.
Brás C.P.D.C. et al., 2024	Explores nurse-midwives' perceptions of safety culture in maternity hospitals.	Ineffective communication, team instability, and insufficient staffing are barriers. Recommendations for better working conditions and training.
Kiljunen O. et al., 2024	Identifies factors influencing safety-related work in nursing homes and residential care facilities.	Competent staff, management culture, and effective communication are key recommendations for multiprofessional cooperation and support for safe work.
Hassan N.A.H. et al., 2024	Explores the contribution of incident reporting to enhancing safety culture in midwifery practice.	Barriers include fear of reprisal and lack of understanding—recommendations for overcoming barriers to improve safety culture.
Wazqar D.Y. et al., 2024	Analyzes predictors and outcomes of patient safety culture in sustainable oncology nursing practices.	Communication openness and experience are strong predictors—recommendations for investing in oncology nursing practices to enhance patient safety.
Bartoníčková D. et al., 2024	Compares nursing students' perceptions of patient safety culture across three Central European countries.	Significant associations found between PSC dimensions and student characteristics. Recommendations for improving safety protocols and fostering inclusive culture.
Finn M. et al., 2024	Reviews the effects of interventions aimed at strengthening patient safety culture among hospital healthcare workers.	Interventions improve job satisfaction, reduce burnout, and enhance working conditions. Recommendations for comprehensive, theory-informed intervention designs.
Hassan A.E. et al., 2024	Assesses how TeamSTEPPS training influences new nurses' perceptions of teamwork and patient safety culture.	Significant improvement in teamwork and safety culture perceptions. Recommendations for integrating TeamSTEPPS in training programs.
Diriba D.C. et al., 2024	Examines nurses' perspectives on hospital culture and their readiness to integrate evidence-based practice in Ethiopia.	Equivocal perceptions of hospital culture and readiness. Recommendations for leadership engagement and resource allocation.

Author(s) and Year	Study highlights	Results
Reyes Ramos M.J. et al., 2024	Identifies determinants of patient safety culture from nurses' viewpoints in hospital settings.	Identify 26 factors affecting PSC, including notification systems and patient involvement. Recommendations for improving theoretical frameworks.

Table 1 summarizes previous studies that explored various dimensions of PSC, including research objectives, methodologies, key findings, and implications for healthcare practice.

Discussion

Key Components and Determinants of PSC

Effective leadership is consistently highlighted as a critical component of PSC. For instance, Li et al. (2024) found that abusive supervision significantly influences nurses' withholding of voice about patient safety. This study underscores the importance of a supportive leadership style in fostering an environment where nurses feel safe to speak up about safety concerns. Conversely, supportive leadership encourages open communication, where staff members feel valued and empowered to report safety issues. Similarly, Mehralian et al. (2024) demonstrated that higher professional commitment among nurses, influenced by job satisfaction and professional engagement, correlates with a better PSC and fewer patient identification errors. This finding underscores the role of leadership in promoting job satisfaction and professional commitment, both of which are essential to a robust PSC.

Communication and teamwork are also pivotal in shaping PSC. Gómez-Moreno et al. (2024) highlighted that effective communication, knowledge sharing, and a non-punitive culture are key facilitators of adverse event reporting in surgical settings. This finding suggests that fostering an environment where communication is open and non-punitive can significantly enhance patient safety. This is further supported by O'Brien et al. (2024), who identified strengths in patient safety initiatives, including healthcare worker training and leadership commitment. However, they also identified weaknesses, including implementation gaps and low clinical awareness, suggesting that communication and teamwork require continuous reinforcement to sustain a positive PSC.

Organizational learning and continuous improvement emerged as essential for maintaining and enhancing PSC. Sani et al. (2024) found that work-related stress negatively affects PSC among nurses, underscoring the need for interventions to reduce stress and promote organizational learning. Implementing stress-reduction strategies and promoting a culture of continuous learning can help mitigate these negative effects. Batalha et al. (2024) found a negative association between burnout and PSC, emphasizing the importance of addressing professional quality of life to improve safety culture. This is further supported by Hassan et al. (2024), who explored the role of incident reporting in midwifery practices and highlighted barriers such as fear of reprisal and lack of understanding, suggesting that fostering a culture of continuous improvement is crucial.

Another crucial component of PSC is the role of non-punitive responses to errors. A culture that emphasizes learning from mistakes rather than blaming individuals fosters an environment in which healthcare professionals are more likely to report errors and near misses. This approach can lead to significant improvements in patient safety by identifying and addressing systemic issues that contribute to errors. This perspective is echoed in studies by Batalha et al. (2024) and Hassan et al. (2024), who highlight the importance of creating an environment in which healthcare professionals feel safe reporting incidents without fear of retribution.

Factors Influencing Healthcare Professionals' Attitudes and Perceptions

The studies reviewed shed light on the various factors influencing healthcare professionals' attitudes and perceptions towards PSC. Al Muharraq et al. (2024) investigated nurses' perceptions of PSC in Saudi Arabia and found mixed evaluations of various aspects of safety culture. Teamwork and organizational learning were rated highly, suggesting that collaborative efforts and continuous learning are well integrated into the safety culture. However, responses to errors and staffing were rated poorly, indicating significant areas for improvement. These findings suggest that while certain elements of PSC, such as teamwork and learning, are effectively embedded in the organizational culture, other crucial aspects, such as error handling and adequate staffing levels, are lacking.

Similarly, Diriba and Tilahun (2024) assessed nurses' perceptions of hospital culture and readiness for evidence-based practice integration in Ethiopia, revealing equivocal perceptions.

Wazqar and Attallah (2024) examined predictors and outcomes of PSC among oncology nurses in Saudi hospitals, identifying communication openness and experience as strong predictors of a positive safety culture. Their findings underscore the importance of transparent communication and professional experience in fostering a robust PSC. These findings point to the need for ongoing professional development and mentoring programs to help less-experienced nurses develop the skills and confidence needed to contribute to a positive safety culture.

The impact of organizational factors on healthcare professionals' attitudes and perceptions towards PSC cannot be overstated. Organizational culture, management practices, and resource availability play significant roles in shaping how healthcare professionals perceive and engage with safety culture. Studies like those by Al Muharraq et al. (2024) and Diriba and Tilahun (2024) highlight the critical role of organizational support in fostering a positive safety culture. Similarly, the presence of supportive management practices, such as non-punitive responses to errors and encouragement of open communication, can significantly enhance healthcare professionals' engagement with safety practices. These organizational factors must be addressed to create an environment in which PSC can thrive and healthcare professionals feel supported and empowered to prioritize patient safety.

Bridging the Gap Between Theory and Practice

One notable contribution in this area is the review by Finn et al. (2024), which examined the impact of interventions aimed at improving safety culture among healthcare workers. Their findings underscore the importance of interventions that are not only theoretically sound but also practically applicable. Interventions with longer time scales, strong institutional support, and comprehensive, theory-informed designs were found to be the most effective. Such interventions led to increased job satisfaction, reduced burnout, and improved working conditions. These findings highlight the necessity of designing interventions grounded in robust theoretical frameworks and supported by adequate resources and institutional commitment. By aligning theory with practice, healthcare organizations can implement interventions that lead to tangible improvements in PSC.

The effectiveness of theory-informed interventions is further exemplified by the study conducted by Hassan et al. (2024). They evaluated the impact of Team STEPPS, a teamwork training program, on perceptions of teamwork and (PSC) among newly graduated nurses. The study found significant improvements in both areas, suggesting that integrating Team STEPPS into nursing training programs can facilitate the seamless transition of new nurses into the healthcare field. This integration helps new nurses develop a strong foundation in teamwork and safety practices, which are critical components of PSC. The practical application of such theoretical frameworks can significantly impact real-world healthcare settings by equipping healthcare professionals with the skills and knowledge needed to foster a positive safety culture. The success of Team STEPPS highlights the potential of well-designed training programs to bridge the gap between theory and practice, offering actionable insights for healthcare administrators and policymakers.

Finally, the practical implications of bridging the gap between theory and practice are evident in the need for continuous evaluation and adaptation of safety culture interventions. The dynamic nature of healthcare environments necessitates that interventions be regularly assessed for effectiveness and adjusted as needed to meet evolving needs and challenges. Studies like those by Finn et al. (2024) and Hassan et al. (2024) emphasize the importance of ongoing monitoring and evaluation to ensure that culture interventions remain relevant and effective. By integrating continuous feedback mechanisms into the implementation process, healthcare organizations can make data-driven decisions that enhance PSC. This iterative approach ensures that interventions are not static but evolve in response to new insights and developments, thereby sustaining their impact on patient safety. Bridging the gap between theory and practice is thus a continuous process that requires commitment to learning, adaptation, and improvement.

In practical terms, hospital management needs to strengthen the implementation of patient safety culture at the operational level. This includes: (1) reinforcing hospital incident reporting systems to ensure errors and near-misses are documented and analyzed systematically, (2) improving cross-unit communication channels to reduce fragmentation

and encourage information sharing, and (3) providing regular, mandatory safety training and simulation exercises for staff to reinforce awareness and skills. These measures not only align with theoretical frameworks of creating a learning organization but also directly contribute to reducing adverse events and improving patient outcomes.

Hospital management should strengthen the reporting system, promote non-punitive responses to errors, and enhance continuous patient safety training. Additionally, establishing structured communication protocols (e.g., standardized handoff procedures), integrating digital tools for incident reporting, and supporting leadership accountability in patient safety can further consolidate efforts to embed a strong safety culture. These actions will ensure that theoretical insights are translated into tangible practices that safeguard patients while supporting healthcare professionals in their roles.

Monitoring and evaluation to ensure that safety culture interventions remain relevant and effective. By integrating continuous feedback mechanisms into the implementation process, healthcare organizations can make data-driven decisions that enhance PSC.

Gaps in the Literature and Areas for Further Research

Many studies, including Ali et al. (2024) and Farokhzadian et al. (2024), have identified significant associations between various factors and PSC. However, the causal relationships and underlying mechanisms are often not fully explored. For instance, while Ali et al. (2024) found that factors such as age, work experience, and training significantly influence PSC, the specific pathways by which these factors affect safety culture remain unclear. Similarly, Farokhzadian et al. (2024) noted differences in patient safety competencies between classroom and clinical settings among nursing students, suggesting a need for further research into educational strategies to bridge this gap.

Conclusion

In conclusion, this systematic review provides a comprehensive understanding of the key components and determinants of PSC in hospitals. The findings highlight the critical importance of leadership, communication, teamwork, and continuous improvement in fostering a positive safety culture. Effective leadership significantly influenced healthcare professionals' willingness to report safety concerns, whereas communication and teamwork were identified as essential to effective safety practices. Organizational learning and continuous improvement were also underscored as vital for maintaining and enhancing PSC. These elements contribute to a supportive environment in which safety concerns are openly discussed and addressed, thereby improving patient outcomes and overall healthcare quality.

The review also identifies several factors that influence healthcare professionals' attitudes and perceptions towards PSC. These include work-related stress, professional commitment, and organizational culture. Understanding these factors is essential for designing targeted interventions that address the specific needs and challenges faced by

healthcare professionals. The review emphasizes the need for continuous professional development, stress reduction programs, and supportive leadership to sustain a positive safety culture.

Despite the extensive research on PSC, several gaps remain, particularly in understanding the causal relationships and underlying mechanisms that shape safety culture. Further research is needed to explore these areas and develop more effective strategies for enhancing PSC. The practical implications of these findings offer actionable insights for healthcare administrators, policymakers, and practitioners, underscoring the need for supportive leadership, continuous professional development, stress-reduction programs, and evidence-based practices.

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