Integrated Health Research Journal (IHRJ)

The Official Journal of the College of Health and Allied Sciences University of Cape Coast, Ghana

REVIEW ARTICLE

Safety Culture and Patient Safety Outcomes in Developing Countries: A Narrative Review

Jacob Owusu Sarfo[1], Janet Exornam Yawo Ocloo[1], Edward Wilson Ansah[1], and Mustapha Amoadu[1]*

[1]Department of Health, Physical Education & Recreation, University of Cape Coast, Cape Coast, Ghana.

*Correspondence should be addressed to Mustapha Amoadu (email: amoadu88@gmail.com)

Abstract

Background: The effects of medical errors on patients are increasingly becoming a public concern. It is estimated that 10% and 20% of persons receiving healthcare in developed and developing economies, respectively, are harmed, but a majority of these errors are preventable.

Objective: The purpose of this paper is to summarise the current literature on the level of patient safety culture awareness and practice, predictors of patient safety culture, and the link between patient safety culture and patient outcomes in developing countries.

Materials and methods: A systematic search for literature from the following data bases, ScienceDirect, PubMed, JSTOR, ProQuest, Taylor & Francis Online, and Emerald Insight was carried out. Consistent with the inclusion criteria and study objectives, 23 published articles were included in this review.

Results: We found that patient safety culture awareness and practice in developing countries is low and still evolving. High predictors of patient safety culture include teamwork, communication, work environment and provider job satisfaction. Low predictors include a non-punitive response to errors, handoffs, transitions and transfers, staffing, and blameless reporting systems. We found that improved patient safety culture results in better patient outcomes. However, there is limited evidence on patient safety culture and patient outcomes in African countries, which hinder evidence-based practice aimed at promoting better health outcomes of patients.

Conclusion: Stakeholders must ensure enhanced medical data collection and preservation of comprehensive incidence reporting systems and strategies to improve patient safety and health outcomes.

Keywords: Safety Culture, Patient Safety Outcomes, Developing Countries, Narrative Review

Citation: Sarfo, J. O., Ocloo, J. E. Y., Ansah, E. W., Amoadu, M. (2023). Safety Culture and Patient Safety Outcomes in Developing Countries: A Narrative Review. Integrated Health Research Journal 1(2), 43-53. https://doi.org/10.47963/ihrj.v1i2.1373
Received 23rd September, 2023; **Accepted** 18th November, 2023; **Published** 31st December, 2023

Introduction

The motivation to improve the healthcare systems is because of the unnecessary patient injury and deaths resulting from preventable medical errors (Sameera et al., 2021; Slawomirski et al., 2017). Evidence suggests that medical errors are increasingly becoming an issue of global public health concern as they account for significant deaths. The World Health Organization (WHO, 2019) reported medical errors as the 14th cause of morbidity and mortality globally. Statistics show that at least one out of every 10 persons receiving healthcare is harmed in the developed world, but the figure is double in the developing countries (WHO, 2019). For instance, medical errors account for about 440,000 deaths annually in the United States of America (USA) alone (James, 2013; Mohajan & Mohajan, 2018). Again, estimate indicates that medical errors account for 2.6 million deaths annually in low-and middle-income countries (LMICs) alone (WHO, 2019). Similarly, a study by Wilson et al. (2012) in eight developing countries revealed that 8.2% of patients receiving healthcare experienced at least one adverse effect. With a range of 2.5% to 18.4% per country, 83% of these adverse effects are preventable, with 30% resulting in patient death (Wilson et al., 2012). Notably, all these errors occur at various stages of healthcare delivery.

Ensuring the highest level of patient safety remains a priority for every healthcare system. However, despite considerable investments in enhancing client safety, patients still suffer preventable harms while receiving healthcare (Slawomirski et al., 2017). Studies show that to achieve a safe healthcare climate, healthcare organisations must establish and

practice a patient safety culture that views medical errors as challenging (Kohn et al., 2000; Rodziewicz et al., 2021). Moreover, every health professional should understand this culture well, that should be characterised by mutual trust and shared values among the professionals (Groves, 2014; O'Donovan et al., 2019). Patient safety culture refers to how patient safety is perceived, planned, and executed in a healthcare facility (Wilson et al., 2012). Thus, positive patient safety culture permits clinical or medical staff to reduce medical errors, learn from past mistakes and devote themselves to safer care delivery (Wu et al., 2022). It is evident that healthcare staff with positive attitudes toward patient safety culture contribute greatly to creating a safe atmosphere that is devoid of errors and promote patient-oriented services (O'Donovan et al., 2019).

Although uncovering medical errors can be challenging (Rodziewicz et al., 2021), it is believed that the opinions of individuals and societies are changing from accepting and normalising medical errors to demanding healthcare safety and accuracy of care. This change requires improving the understanding of patient safety culture and its effects on patient outcomes at all stages of healthcare delivery and among all cadres of care providers (Dicuccio, 2015). For instance, evidence suggests that it is critical for health professionals and patient safety researchers to collaborate with their counterparts in developing countries to share expertise and experiences to enhance their understanding of patient safety and healthcare quality (Harrison et al., 2015). A systematic review conducted in the United Kingdom concluded that "there is work to be done concerning the study of patient safety culture and its connection to patient outcomes" (Dicuccio, 2015, pp 142). Therefore, the current narrative review summarises literature between 2005 to 2022 to evaluate the state of research in developing countries on patient safety culture and patient outcomes. Narrative reviews are helpful in understanding and describing complex issues of interest (Greenhalgh & Papoutsi, 2018).

Therefore, the purpose of this paper is to summarise the current literature regarding the level of patient safety culture awareness and practice, the predictors of patient safety culture, and the relationships between patient safety culture and patient outcomes. The evidence gathered in this review contributes to a better understanding of patient safety culture in healthcare, with practical implications for enhancing the quality of care to improving patient outcomes.

Methods

Search strategy

This An initial literature search was carried out in Science Direct, PubMed, Emerald Insight, and JSTOR using phrases such as 'patient safety culture' OR 'patient safety' OR 'safety culture', patient outcomes' OR 'patient safety outcomes' OR 'medical errors.' We searched reference lists for systematic reviews conducted in developing countries to find relevant studies. Studies related to patient safety culture or patient outcomes, conducted within the healthcare settings in any developing country from January 2005 to May 2022 and published in English, were included. However, studies conducted in developed countries and in languages other than English before 2005 or outside the healthcare setting were excluded. Again, studies that did not focus on patient safety, safety culture, and patient outcomes were excluded from this study. Based on the above criteria, 23 studies were included in this study. See Table 1 for a detailed search strategy.

Narrative Review Approach

In this study, a systematic approach was undertaken for data extraction and analysis, employing the narrative synthesis method as outlined by Popay and colleagues (2006). To begin, papers of interest were meticulously identified, focusing on those directly aligned with the study's objectives related to patient safety culture awareness, practice, predictors, and outcomes. Subsequently, a thoughtful categorisation of these selected papers was conducted, systematically organising them into coherent and meaningful themes or groups. This categorisation not only streamlined the data but also served as a foundation

Table 1: Search strategy

Search strategy item	Search strategy
Databases	PubMed; JSTOR; ScienceDirect; ProQuest; NBCI; Emerald Insight; Taylor & Francis Online; Google scholar; and Google
Language filter	English
Time filter	2005-2022
Spatial filter	Developing Countries
Keywords	"patient culture" OR "patient safety culture" OR "safety culture" "patient outcomes" OR "patient safety outcomes" OR "patient satisfaction" OR "patient safety" "adverse effects" OR "medical errors" OR "patient harm" "impact" OR "fatalities" OR "deaths" OR "effects" "low-middle income countries" OR "developing countries"
Inclusion criteria	1. Published literature on developing countries; 2. grey literature on developing countries; publications between 2005 – 2022 in developing countries; and 3. literature must provide methodology, population, study setting (health setting), be on patient safety culture and or patient outcomes.
Exclusion criteria	1. News reports; 2. studies before 2005; 3. Conduct on developed countries; 4. either methodology, population, study setting not provided or conducted outside the health setting.

for in-depth analysis. The analysis phase involved a comprehensive exploration of the findings within each category, delving into the interconnections within the data, and identifying potential sources of variation among the studies. This iterative process culminated in the organisation of the data into overarching themes, contributing to a holistic understanding of patient safety culture in healthcare contexts.

Findings

Twenty-three published articles are included in this review (see Figure 1). The majority of the studies used a cross-sectional descriptive design. Predominantly, primary data was collected using the Hospital Survey on Patient Safety Culture (HSOPSC) or other similar forms of questionnaires. The studies were conducted in healthcare settings, and participants were mostly healthcare workers, clinical or administrative or both. See Table 2 for the details (At the end .

The findings indicate that the majority of the studies focused on the determinants of patient safety culture, with only three studies investigating relationships between patient culture and patient outcomes. We presented the findings under level of patience safety culture awareness and practice, predictors of patient safety culture and patient health outcomes.

Level of Patience safety culture awareness/practice

Some studies reported a high level of patient safety culture awareness with corresponding levels of practice (Hellings et al., 2010; Öhrn et al., 2011; Webair et al., 2015). However, most studies recorded low levels of awareness and low practice of patient safety culture (Ammouri et al., 2015; Elsheikh et al., 2017; Garuma et al., 2020; Hellings et al., 2007; Nourmoradi et al., 2015; Prates et al., 2021). Other studies, however, did not assess or report the level of patient safety culture awareness or practice (Abdallah et al., 2019; Dirik, 2017; El-Jardali et al., 2012; Lee et al., 2015).

Predictors of Patient Safety Culture

Hospital Survey on Patient Safety Culture (used for most of the studies in this review) is used to design, implement, and evaluate patient safety programmes (Palmieri et al., 2020; Sorra, 2004). The tool highlights patient safety, error and error reporting rate. It has 42 items grouped into 12 composite measures. This survey requires respondents to provide an overall grade on patient safety for their work area and to indicate the number of incidents they reported over the previous 12 months (Sorra et al., 2018). See Table 3 below for the 12 patient safety culture composites and their definitions.

The overall rating of patient safety culture is classified as positive and negative, based on the participants' average percentage of positive responses in each study. High predictors in the current review are the composite factors that significantly enhance patient safety culture in the organisation. In contrast, the low predictors are those factors that got a lower percentage of positive ratings from participants. Thus, these factors need to be improved to ensure a positive culture in the healthcare facilities. Some high predictors identified across studies were teamwork

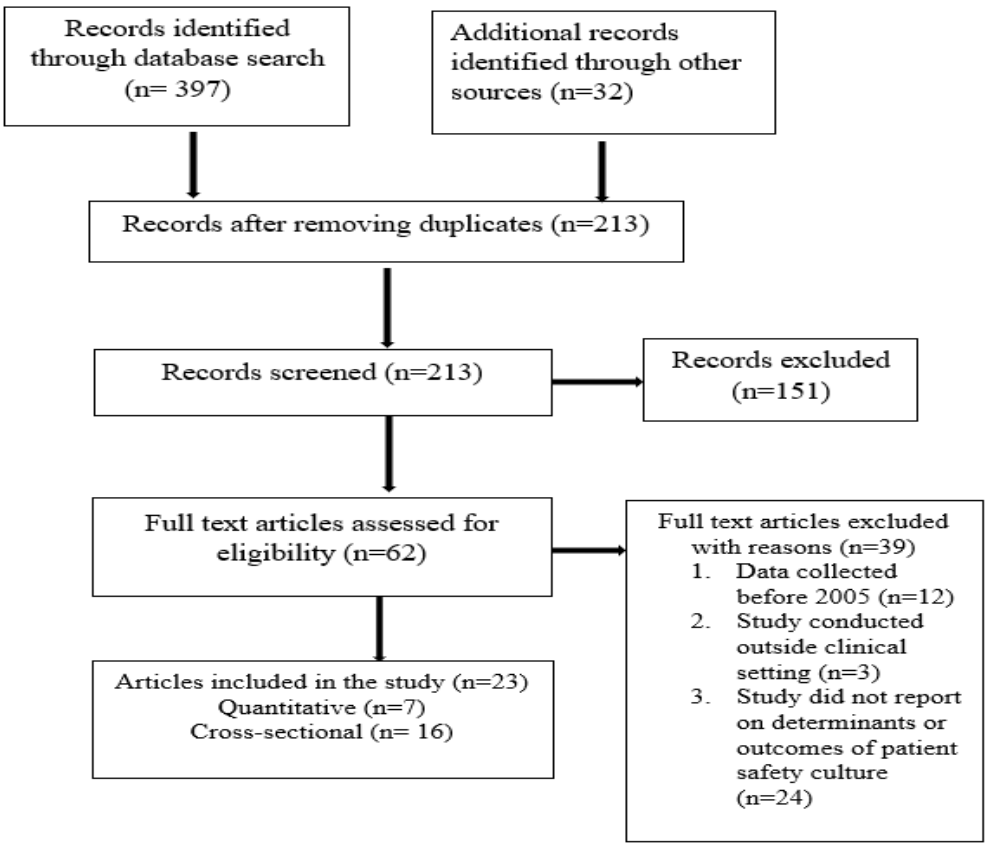

Figure 1: Flow chart of the record screening process

Table 2: Summary of Studies Included (n = 23)

Author/year/ Country	Purpose	Methodology/ Design	Population/sample	Level of PSC awareness/ practice	Predictors (Highest contributors)	Predictors (Lowest contributors)	Patient Safety outcomes
(Webair et al., 2015)/ Yemen	To provide a baseline assessment of patient safety culture in primary care settings in Al-Mukala, Yemen as a first published study from a least developed country.	Quantitative/ Survey	Staff of primary healthcare centres and units in Al-Mukala District. 71 physicians, nurses, medical assistants, midwives, and non-clinical staff (non-care providers)	Positive (High)	'Communication openness', 'Work pressure and pace' and 'Patient care tracking/follow-up',	Under reporting errors, non-punitive response to error	positive rating on quality and patient safety were low
(Nourmoradi et al., 2015)/Iran	To assess Patient safety culture in four educational hospitals in Ilam city, Iran.	Cross-sectional study.	Four educational hospitals (Imam Khomeini, Mustafa Khomeini, Taleghani and Kowsar hospitals) in Ilam city. A total of 104 persons in different wards of the hospitals including physicians, nurses, midwives, and paramedics (radiology and laboratory staff) participated	Negative (low)	Teamwork within units	non-punitive response to error	
(Ammouri, Tailakh, Muliira, Geethakrishnan, & Al Kindi, 2015)/ Oman	To investigate nurses' perceptions about patient safety culture and to identify the factors that need to be emphasised to develop and maintain the culture of safety among nurses in Oman	Cross-sectional design	All nurses were working full time in four major governmental hospitals in Muscat. (Responses were received from 414 participants)	Negative (low)	teamwork within units, organisational learning and continuous improvement, feedback and communications about error	non-punitive response to error, hospital management support and staffing	
(El-Jardali et al., 2012)/Lebanon	To assess hospitals' readiness to integrate patient safety standards into routine practice	Cross-sectional study	6807 respondents from 68 hospitals in Lebanon		Staff education and training		
(Garuma et al., 2020)/Ethiopia	To assess the patient-safety culture and associated factors among healthcare workers in public hospitals of East Wollega Zone, western Ethiopia	Cross-sectional study	421 healthcare workers selected from public hospitals of East Wollega Zone, western Ethiopia using simple random sampling	Negative (low)	Teamwork within hospital units	Non-punitive responses to error. blameless event-reporting systems, appropriate staffing, and management support to patient-safety initiatives. risk free hospital handoffs and transitions	

(Hellings et al., 2007)/Belgium	To measure patient safety culture in five Belgian general hospitals.	Quantitative	3,940 individuals responded: 2,813 nurses and assistants, 462 physicians, 397 physiotherapists, laboratory and radiology assistants, social workers and 64 pharmacists and pharmacy assistants.	Negative (low)	teamwork within hospital units,	hospital management support for patient safety, non-punitive response to error, hospital transfers and transitions, staffing,	
(Prates et al., 2021)/ Brazil	To assess the patient safety culture perceived by healthcare and administrative staff in a Brazilian hospital and examine whether education and experience are related to positive perceptions	A descriptive-analytical case study	618 participants, of whom 315 worked in healthcare assistance and 303 in administrative services	Negative (low)	Hospital management support for patient safety	Non-punitive response to error	
(Abedi et al., 2019)/ Iran	To investigate the relationship between patients' safety, medical errors and patients' safety rights with patients' security feeling in selected hospitals of Mazandaran Province, Iran	descriptive cross-sectional study	1,083 patients were randomly selected for the study				patients' safety, medical errors and patients' rights have significant effects on patients' security feeling simultaneously. patients' safety leads to the avoidance of error and a feeling of peace and security for them
(Abdallah et al., 2019)/Kuwait	To explore the relationship between organisational learning and patient safety culture in hospital pharmacy settings and to explore how dimensions of organisational learning relate to dimensions of pharmacy patient safety culture.	Cross-sectional study	from three public hospital pharmacies and three private hospital pharmacies in Kuwait. 272 different categories of pharmacy staff completed surveys		Training (TRN), management that reinforces learning (MRL) and supportive learning environment (SLE)		

(Hellings et al., 2010)/Belgium	To describe a patient safety culture improvement approach in five Belgian hospitals.	Quantitative	3,940 and 3,626 individuals responded respectively to the first and second surveys	Positive (high)	teamwork within hospital units, supervisor expectations and actions promoting safety	hospital transfers and transitions, non-punitive response to error, and staffing	
(Elsheikh et al., 2017)/Saudi Arabia	To measure patient safety culture to improve its perception, reaction, and implementation, leading to improvement in care delivery.	Quantitative survey	The total population surveyed was 623: 336 nurses, 174 physicians, 9 pharmacists, and 104 technicians	Negative (low)		Staffing and Non-Punitive response to error"	
(Öhrn et al., 2011)/ Sweden	To evaluate the results and changes after 5 years of the Patient Safety Dialogue in 50 departments (37 medical and 13 psychiatric) in 3 hospitals	Quantitative		Positive (high)			improved their patient safety culture maturity in the areas of hospital-acquired infections, outcome measurements, and general patient safety.
(Lee et al.,2015)/ Taiwan	To improve and develop better strategies regarding patient safety in healthcare organisations.	Quantitative			teamwork climate, safety climate, job satisfaction, stress recognition and working conditions	perceptions of management and hospital handoffs and transitions	
(Dirik, 2017)/Turkey	To investigate further the relationships between these three variables.	cross-sectional descriptive	274 nurse participants working in a university hospital located in Izmir (Turkey).		work environment, Support for optimal patient care, 'nurse/physician relationships' and 'staff involvement in organisational affairs		

Table 3: Organization of Themes: Predictors of Patient Safety Culture

Major Themes	Sub-Themes	Authors
High Predictors	Teamwork	Ammouri et al., 2015; Garuma et al., 2020; Hellings et al., 2007, 2010; Lee et al., 2015; Nourmoradi et al., 2015
	Communication	Ammouri et al., 2015; El-jardali et al., 2011; Webair et al., 2015
	Work environment/job satisfaction	Abdallah et al., 2019; Dirik, 2017; Lee et al., 2015; Webair et al., 2015
	Training/Learning	Abdallah et al., 2019; Ammouri et al., 2015; El-Jardali et al., 2012
	Management Support	Abdallah et al., 2019; El-jardali et al., 2011; Prates et al., 2021
Low Predictors	Handoffs/Transitions/Transfers	Garuma et al., 2020; Hellings et al., 2007, 2010; Lee et al., 2015
	Non-punitive response to error	Ammouri et al., 2015; Elsheikh et al., 2017; Hellings et al., 2010; Nourmoradi et al., 2015; Prates et al., 2021; Webair et al., 2015
	Poor leadership	
	Poor Management support	Ammouri et al., 2015; Garuma et al., 2020; Hellings et al., 2007; Lee et al., 2015
	Staffing	Ammouri et al., 2015; Elsheikh et al., 2017; Garuma et al., 2020; Hellings et al., 2007, 2010
	Event reporting systems	El-Jardali et al., 2012; Garuma et al., 2020; Webair et al., 2015

(Ammouri et al., 2015; Garuma et al., 2020; Hellings et al., 2007, 2010; Lee et al., 2015; Nourmoradi et al., 2015), communication (Ammouri et al., 2015; El-jardali et al., 2011; Webair et al., 2015) work environment and provider job satisfaction (Abdallah et al., 2019; Dirik, 2017; Lee et al., 2015; Webair et al., 2015), staff training, information sharing and learning (Abdallah et al., 2019; Ammouri et al., 2015; El-Jardali et al., 2012) and management support for safety culture (Abdallah et al., 2019; El-jardali et al., 2011; Prates et al., 2021).

We also identified low predictors of safety culture, which include a non-punitive response to errors (Ammouri et al., 2015; Elsheikh et al., 2017; Hellings et al., 2010; Nourmoradi et al., 2015; Prates et al., 2021; Webair et al., 2015), handoffs, transitions and transfers (Garuma et al., 2020; Hellings et al., 2007, 2010; Lee et al., 2015), and staffing (Ammouri et al., 2015; Elsheikh et al., 2017; Garuma et al., 2020; Hellings et al., 2007, 2010).

Patient Safety Outcomes

Evidence suggests that improved patient safety culture reduces hospital-acquired infections, the occurrence of medical errors and improves general patient safety (Öhrn et al., 2011). It was further evident that positive patient safety culture increases patients' feeling of peace and security while preserving patients' rights (Abedi et al., 2019), culminating into overall patient health outcomes.

Table 3 presents results on the association between overall knowledge performance and sociodemographic characteristics of the participants. Chi-square analysis revealed there were significant associations between overall knowledge performance and educational level (X^2=40.849, p< 0.001), as well as gestational stage (X^2 = 9.764, p=0.008). However, there was no significant association found between marital status, occupation, and gravida with overall knowledge performance.

Discussion

An The strength of the patient safety culture of any healthcare organisation does not only affect patient outcomes, its equally affects the professionals working within the organisation and the overall image of the organisation (Sorra & Nieva, 2004). The findings from the current review indicate that patient safety culture is grey and evolving (even in research) in developing nations. This confirms that healthcare systems in developing countries are far from achieving effective patient safety culture (Farokhzadian et al., 2018). Although there has been an increased interest in patient safety culture research over the past few years (Dicuccio, 2015), most of the articles included in this study were baseline studies from developing countries. Some of the studies were baseline assessments of safety culture (Nourmoradi et al., 2015; Webair et al., 2015), and others explored the perceptions of various cadre of healthcare professionals about patient safety culture (Ammouri et al., 2015; Elsheikh et al., 2017; Garuma et al., 2020; Prates et al., 2021). Contrary to this, research from developed countries have moved from baseline to evaluation of improvement strategies and interventions that aimed at improving patients' safety and associated health outcomes (Garuma et al., 2020; Webair et al., 2015).

Level of patients' safety culture awareness and practice in developing countries

The review reveals a consistent pattern across the studies, indicating that the reported level of awareness of patient safety culture and corresponding practice among healthcare professionals tends to be relatively low. This finding underscores the complexity of implementing strategies to enhance patient safety culture within the healthcare system. Several critical challenges surface, including inadequate administrative infrastructure, ineffective leadership, and a lack of concerted efforts to align healthcare practices with national and international standards. Furthermore, the prevalence of deeply ingrained values that may not prioritize team participation poses significant obstacles to developing an effective culture of patient safety (Farokhzadian et al., 2018). Moreover, it is evident that many developing countries face additional challenge of not having comprehensive national standards and policies specifically tailored to patient safety culture (Prates et al., 2021). The absence of such foundational guidelines can hinder proactive actions to enhance patient safety.

On the other hand, the review highlights a contrasting situation in high-income countries, where healthcare professionals generally exhibit a higher level of awareness, understanding, and practice when it comes to patient safety culture (Farokhzadian et al., 2018). However, it is essential to note that these countries also report higher levels of medical errors or adverse events. This paradox can be attributed to the presence of more robust incidence reporting systems and a greater motivation among healthcare professionals to accurately report incidents when they occur. In essence, these reporting systems serve not only to provide accurate data but also to serve as valuable tools for training and developing interventions that address the challenges posed by medical errors within the healthcare system (Garuma et al., 2020). Consequently, the review underscores the pressing need for developing countries to establish similar incident reporting systems and prioritise patient safety culture within their healthcare systems. By doing so, they do not only generate accurate data but also enhance training and intervention strategies to mitigate medical errors, ultimately improving patient safety and promoting better health outcomes.

Predictors of patient safety culture in developing countries

Numerous studies have identified a range of predictors that influence patient safety culture within healthcare settings. These include critical factors such as teamwork, management support for patient safety culture, leadership, communication, staffing levels, job satisfaction, training and learning opportunities, effectiveness of handoffs, transitions, and transfers, the presence of robust reporting systems, and a non-punitive response to errors (El-jardali et al., 2011; Garuma et al., 2020; Hellings et al., 2007, 2010; Nourmoradi et al., 2015; Prates et al., 2021; Webair et al., 2015). However, it is essential to recognise that the influence of these predictors can vary significantly across different healthcare settings. Consequently, measurement and assessment of patient safety culture must be conducted at the unit level, consistently using a common standardized measurement. For instance, findings reveal that units dealing with a higher volume of active cases and elderly patients may exhibit lower patient safety culture scores (Huang et al., 2010). Similarly, larger units with lower staff turnovers may experience more medical errors (Dodek et al., 2012). Furthermore, the dynamics of teamwork can differ between individual units within the same healthcare facility, indicating that patient safety culture comprises distinct subcultures (El-jardali et al., 2011). Therefore, improving patient safety culture requires a multifaceted approach that considers the unique dynamics within each unit.

While acknowledging the significance of unit-level assessment, it is essential for healthcare systems to recognise broader factors that influence the quality of healthcare delivery in their unique contexts. For instance, a study conducted in Nigeria by Okafor and colleagues (2018) found that patient satisfaction, while excellent, exhibited no significant relationship with patient safety culture. Other factors, such as the patient-provider relationship and the cost-effectiveness of services, appeared to be more influential in this regard. Additionally, within some healthcare systems, a culture of blame persists, making healthcare professionals reluctant to report medical errors or adverse events (Mohajan & Mohajan, 2018; Singer & Vogus, 2013). In contrast, research in developed countries has increasingly focused on enhancing individual predictors to align with desired health outcomes. Therefore, healthcare systems in developing countries must intensify their efforts to elevate patient safety culture into action-driven practices that ultimately lead to improved patient outcomes.

Patient safety outcomes

In the context of developing countries, there is a notable scarcity of literature examining the correlation between patient safety culture and patient outcomes. Specifically, research in these regions has been limited in exploring correlations such as patient experience, medication errors, and patient mortality (Chang & Mark, 2011; Gearhart, 2010; Hofmann & Mark, 2006; Mark et al., 2008; Sorra et al., 2012). This paucity of studies may be attributed to the challenges associated with reporting medical errors within developing healthcare systems, where healthcare professionals and institutions may be inclined to conceal adverse incidents (Elmontsri et al., 2017). The reluctance to report errors often stems from fears of blame and potential legal repercussions, as highlighted in a systematic review on the status of safety culture in Arab countries (Elmontsri et al., 2017). This culture of underreporting poses significant barriers to understanding the relationship between patient safety culture incidents and their impact on patient health outcomes. Nonetheless, it remains crucial to establish these links to inform the development of effective organisational interventions tailored to the unique challenges faced in developing healthcare systems.

Limitations

While a narrative review approach allows for subjectivity in selecting articles, it does introduce the potential for selection bias. To mitigate this bias, we established clear inclusion and exclusion criteria at the outset of the review process. However, it is worth noting that by focusing solely on published literature, we may have inadvertently overlooked relevant unpublished and non-empirical perspectives. Additionally, the use of varying terminology across different databases may have limited the comprehensiveness of our search results. Therefore, standardising terminologies in the field is essential to ensure uniformity in future research. Furthermore, the assessment of data related to patient safety culture and patient outcomes presents challenges, often stemming from inadequate or incomplete medical data. For instance, healthcare professionals' reluctance to report adverse incidents due to fear of blame can result in inaccurate prevalence data in the literature (El-Jardali et al., 2012; Garuma et al., 2020; Webair et al., 2015).

Policy and Research Implications

The findings underscore the need for healthcare organisations to take a comprehensive approach to patient safety culture. This involves recognising that patient safety culture is not a one-size-fits-all concept but comprises diverse subcultures at the unit level. Healthcare leaders

must prioritise initiatives that promote teamwork, effective leadership, open communication, and robust reporting systems tailored to the specific needs of individual units. Additionally, fostering a culture of blame-free reporting and accountability is essential to encourage healthcare professionals to report errors and adverse events transparently. Moreover, healthcare systems in developing countries should consider the broader factors influencing patient safety, such as the patient-provider relationship and cost-effectiveness, and develop strategies that align with their unique contexts. Ultimately, the goal is to transform patient safety culture into tangible improvements in healthcare quality for patient outcomes.

Furthermore, our findings hold significant implications for developing countries where patient safety culture is in its infancy. While these nations have much to learn from developed countries, there is an opportunity for collaborative knowledge-sharing to bridge the existing gap. Extensive research has been instrumental in enhancing healthcare quality and safety globally, motivating governments in developed nations to invest in interventions that reduce medical errors and improve patient satisfaction. Therefore, it is imperative for policymakers and governments in developing countries to recognise the potential risks within their healthcare systems and invest in systematic research to identify unique patient safety challenges. To facilitate this, they should prioritise the establishment of efficient patient data collection systems, empower healthcare professionals to utilize incident reporting systems, and foster a positive patient safety culture. Moreover, collaborative efforts between healthcare researchers in developing and developed countries can help explore the intricate relationship between safety culture and patient outcomes, leading to the development of context-specific evidence-based interventions and the assessment of their long-term effectiveness.

Conclusion

Research on patient safety culture and patient outcomes in developing countries is still a grey area with a huge gap. This review observed that understanding of patient safety culture is low among healthcare professionals, and issues of adverse effects from medical errors are still a challenge in developing countries. Therefore, stakeholders must ensure that enhanced medical data collection and preservation, comprehensive incidence reporting systems are created, and strategies to improve patient safety culture are implemented and measured regularly to ensure efficiency. Finally, sharing knowledge and best practices through collaborative research between healthcare professionals and healthcare researchers across and within countries will help bridge the knowledge/practice gap and improve patient outcomes and satisfaction.

References

1. Abdallah, W., Johnson, C., Nitzl, C., & Mohammed, M. A. (2019). Organisational learning and patient safety: Hospital pharmacy settings. Journal of Health Organization and Management, 33(6), 695–713. https://doi.org/10.1108/JHOM-11-2018-0319

Abedi, G., Mahmoodi, G., Malekzadeh, R., Khodaei, Z., Siraneh Belete, Y., & Hasanpoor, E. (2019). Impact of patients' safety rights and medical errors on the patients' security feeling: A cross-sectional study. International Journal of Human Rights in Healthcare, 12(3), 215–224. https://doi.org/10.1108/IJHRH-01-2019-0001

Ammouri, A. A., Tailakh, A., Muliira, J., Geethakrishnan, R., & Al Kindi, S. (2015). Patient safety culture among nurses. International Nursing Review, 62, 102–110.

Chang, Y., & Mark, B. (2011). Effects of learning climate and registered nurse staffing on medication errors. Nursing Research, 60(1), 32–39. https://doi.org/10.1097/NNR.0b013e3181ff73cc

Dicuccio, M. H. (2015). The relationship between patient safety culture and patient outcomes. Journal of Patient Safety, 11(3), 135–142. https://doi.org/10.2307/26633090

Dirik, H. F. (2017). The work environment and empowerment as predictors of patient safety culture in Turkey. 256–265. https://doi.org/10.1111/jonm.12458

Dodek, P. M., Wong, H., Jaswal, D., Heyland, D. K., Cook, D. J., Dm, G. M. R., Kutsogiannis, D. J., Dale, C., Fowler, R., & Ayas, N. T. (2012). Organisational and safety culture in Canadian intensive care units: Relationship to size of intensive care unit and physician management model. Journal of Critical Care, 27(1), 11–17. https://doi.org/10.1016/j.jcrc.2011.07.078

El-jardali, F., Dimassi, H., Jamal, D., Jaafar, M., & Hemadeh, N. (2011). Predictors and outcomes of patient safety culture in hospitals.

El-Jardali, F., Jaafar, M., Jamal, D., & Rabbaa, S. (2012). Integrating patient safety standards into the accreditation program. Journal of Patient Safety, 8(3), 97–103. https://doi.org/10.2307/26632864

Elmontsri, M., Almashrafi, A., Banarsee, R., & Majeed, A. (2017). Status of patient safety culture in Arab countries: A systematic review. https://doi.org/10.1136/bmjopen-2016-013487

Elsheikh, A. M., AlShareef, M. A., Saleh, B. S., & El-Tawansi, M. A. Y. (2017). Assessment of patient safety culture: A comparative case study between physicians and nurses. Business Process Management Journal, 23(4), 792–810. https://doi.org/10.1108/BPMJ-02-2017-0029

Farokhzadian, J., Dehghan Nayeri, N., & Borhani, F. (2018). The long way ahead to achieve an effective patient safety culture: Challenges perceived by nurses. BMC Health Services Research, 18(1), 1–13. https://doi.org/10.1186/s12913-018-3467-1

Garuma, M., Woldie, M., & Kebene, F. G. (2020). Areas of potential improvement for hospitals' patient-safety culture in Western Ethiopia. Drug, Healthcare and Patient Safety, 12, 113–123.

Gearhart, S. F. (2010). The relationship between care provider perceptions of safety culture and patient perceptions of care on three hospital units. Critical Care Medicine Journal, 38(4), 1078–1085. https://escholarship.org/uc/item/0gj863n2

Graber, M. (2013). The incidence of diagnotic error in medicine. BMJ Qual Saf., 22(2), 21–27.

Greenhalgh, T., & Papoutsi, C. (2018). The Shaping of Medical Decisions. BMC Medicine, 16(1), 1–6.

Groves, P. S. (2014). The relationship between safety culture and patient outcomes: Results from pilot meta-analyses. Western Journal of Nursing Research, 36(1), 66–83. https://doi.org/10.1177/0193945913490080

Harrison, R., Cohen, A. W. S., & Walton, M. (2015). Patient safety and quality of care in developing countries in Southeast Asia: A systematic literature review. International Journal for Quality in Health Care, 27(4), 240–254. https://doi.org/10.1093/intqhc/mzv041

Hellings, J., Schrooten, W., Klazinga, N. S., & Vleugels, A. (2010). Improving patient safety culture. International Journal of Health Care Quality Assurance, 23(5), 489–506. https://doi.org/10.1108/09526861011050529

Hellings, J., Schrooten, W., Klazinga, N., & Vleugels, A. (2007). Challenging patient safety culture: Survey results. International Journal of Health Care Quality Assurance, 20(7), 620–632. https://doi.org/10.1108/09526860710822752

Hofmann, D. A., & Mark, B. (2006). An investigation of the relationship between safety climate and medication errors as well as other nurse and patient outcomes. Personnel Psychology, 59, 847–869.

Huang, D. T., Clermont, G., Kong, L., Weissfeld, L. A., Sexton, J. B., Rowan, K. M., & Angus, D. C. (2010). Intensive care unit safety culture and outcomes: A US multicenter study. International Journal for Quality in Health Care, 22(3), 151–161. https://doi.org/10.1093/intqhc/mzq017

James, J. T. (2013). A new, evidence-based estimate of patient harms associated with hospital care. Journal of Patient Safety, 9(3), 122–128. https://doi.org/10.1097/PTS.0b013e3182948a69

Lee, Y. C., Wu, H. H., Hsieh, W. L., Weng, S. J., Hsieh, L. P., & Huang, C. H. (2015). Applying importance-performance analysis to patient safety culture. International Journal of Health Care Quality Assurance, 28(8), 826–840. https://doi.org/10.1108/IJHCQA-03-2015-0039

Linda T. Kohn, Janet M. Corrigan, A., & Donaldson, M. S. (2000). To Err Is Human. National Academies Press. https://doi.org/10.17226/9728

Mark, B. A., Hughes, L. C., Belyea, M., Bacon, C. T., Chang, Y., & Jones, C. A. (2008). Exploring organisational context and structure as predictors of medication errors and patient falls. Journal of Patient Safety, 4(2), 66–77. https://doi.org/10.1097/PTS.0b013e3181695671

Mohajan, H., & Mohajan, H. K. (2018). Munich Personal RePEc archive medical errors must be reduced for the welfare of the global health sector medical errors must be reduced for the welfare of the global health sector. International Journal of Public Health and Health Systems, 3, 5.

Nourmoradi, H., Kazemi, M., Pirmoradi, F., Mirzaei, A., Mirzaei, M., & Moghadam, F. M. (2015). Hospital patient safety culture in developing countries: A comparative study in Ilam City , Iran. 10(5), 1–8. https://doi.org/10.9734/BJMMR/2015/19499

O'Donovan, R., Ward, M., De Brún, A., & McAuliffe, E. (2019). Safety culture in health care teams: A narrative review of the literature. Journal of Nursing Management, 27(5), 871–883. https://doi.org/10.1111/jonm.12740

Öhrn, A., Rutberg, H., & Nilsen, P. (2011). Patient safety dialogue: Evaluation of an intervention aimed at achieving an improved patient safety culture. Journal of Patient Safety, 7(4), 185–192. https://doi.org/10.1097/PTS.0b013e318230e702

Olds, D. M. (2010). Safety Culture and Nurse-sensitive Outcomes [University of Pennsylvania]. In UMI Dissertation Publishing. http://dx.doi.org/10.1016/j.jaci.2012.05.050

Palmieri, P. A., Leyva-Moral, J. M., Camacho-Rodriguez, D. E., Granel-Gimenez, N., Ford, E. W., Mathieson, K. M., & Leafman, J. S. (2020). Hospital survey on patient safety culture (HSOPSC): A multi-method approach for target-language instrument translation, adaptation, and validation to improve the equivalence of meaning for cross-cultural research. BMC Nursing, 19(1), 1–13. https://doi.org/10.1186/s12912-020-00419-9

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., & Britten, N. (2006). Narrative synthesis in systematic reviews: A product from the ESRC Methods Programme. ESRC Methods Programme, 2006, 93. https://doi.org/10.13140/2.1.1018.4643

Prates, C. G., Caregnato, R. C. A., Magalhães, A. M. M. de, Dal Pai, D., Urbanetto, J. de S., & Moura, G. M. S. S. de. (2021). Evaluation of patient safety culture in a private general hospital: a case study in Brazil. International Journal of Health Care Quality Assurance, 34(2), 110–121. https://doi.org/10.1108/IJHCQA-11-2020-0235

Radziewicz, L. Thomas Houseman, Benjamin Hipskind, E. J. (2021). Error Prevention and Reduction.

Sameera, V., Bindra, A., & Rath, G. (2021). Human errors and their prevention in healthcare. In Journal of Anaesthesiology Clinical Pharmacology, 37(3). 328–335. doi.org/10.4103/joacp.JOACP_364_19

Singer, S. J., & Vogus, T. J. (2013). Reducing hospital errors: Interventions that build safety culture. In Annual Review of Public Health, 34, 373–396). https://doi.org/10.1146/annurev-publhealth-031912-114439

Slawomirski, L., Auraaen, A., & Klazinga, N. (2017). The economics of patient safety strengthening a value-based approach to reducing patient harm at national level.

Sorra, J., Gray, L., Streagle, S., Famolaro, T., Yount, N., Behm, J., & Westat, R. (2018). Hospital survey on patient safety culture: User's Guide. AHRQ Publication No. 18-0036-EF (Replaces 04-0041, 15(16)-0049-EF).

Sorra, J., Khanna, K., Dyer, N., Mardon, R., & Famolaro, T. (2012). and Patients ' Assessments of Hospital Care, 8(3), 131–139.

Sorra, J. N. V. (2004). Hospital survey on patient safety culture (No. 04–0041).

Sorra, J., & Nieva, V. (2004). Hospital survey on patient safety culture. https://doi.org/10.1186/1472-6963-13-228

Thomas, E. P. L. A. (2003). Measuring errors and adverse effects in health care. J Gen Intern Med, 18, 61–67.

Webair, H. H., Al-assani, S. S., Al-haddad, R. H., Al-shaeeb, W. H., Selm, M. A. Bin, & Alyamani, A. S. (2015). Assessment of patient safety culture in primary care setting , Al-Mukala , Yemen. BMC Family Practice, 1–9. https://doi.org/10.1186/s12875-015-0355-1

WHO. (2019, August 26). Patient Safety. 10 Facts on Patient Safety.

Wilson, R. M., Michel, P., Olsen, S., Gibberd, R. W., Vincent, C., El-Assady, R… & Larizgoitia, I. (2012). Patient safety in developing countries: Retrospective estimation of scale and nature of harm to patients in hospital. BMJ (Online), 344(7850), 20. https://doi.org/10.1136/bmj.e832

Wu, H. H., Lee, Y. C., Huang, C. H., & Li, L. (2022). Healthcare professional's perception of patient safety assessed by the hospital survey on patient safety culture in Taiwan: A systematic review. TQM Journal. https://doi.org/10.1108/TQM-11-2021-0317.