A systematic review of how leadership affects the establishment of patient safety in the healthcare industry of low- and middle-income countries

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Abstract

Introduction: Patient safety is still a major challenge in all the countries. Finding a solution to the patient safety issue in healthcare has important global repercussions. Healthcare leadership is a critical factor which decides patient safety in positive, negative, or mixed relationships. A wide range of leadership styles are highlighted in the literature and leaders of all healthcare institutions should promptly attend patient safety events.

Methods: A systematic review was carried out to find key attributes of leadership characteristics and dimensions which are more important in patient safety in LMICs. Eleven Journals were identified from quality sources based on the desired criteria and reviewed. The author critically evaluated the relationship between leadership and patient safety and proposed suitable leadership characteristics for optimal patient safety.

Results: Main leadership attributes revealed that transformational leadership characteristics, the establishment of a patient safety culture and training and education of staff are important factors. Regarding patient safety aspects, improving the knowledge, skills and attitudes of staff, improving the work environment and teamwork are more important.

Conclusion: The author suggests healthcare leaders should strengthen safe patient care by adhering to identified leadership attributes and allocating resources to ensure continuous improvement in identified safety dimensions and sustainability through monitoring and evaluation.

Keywords: Leadership style; Patient Safety; Healthcare; Transformational leadership

1 Introduction

Leadership is defined as choosing, educating, empowering, and motivating followers to achieve the intended company goals. Various leadership styles describe leadership philosophies, attitudes, and behavioural patterns. A few of them are transformational, transactional, and laissez-faire. (Nasim et al., 2022)(Ginsburg et al., 2010) Leadership plays a crucial role in the establishment of patient safety in healthcare systems in low- and middle-income countries (LMICs). Patient safety events continue to occur in healthcare despite interventions and have increased healthcare costs.

Leadership style shows a positive, or negative relationship with patient safety . Transactional leadership is based on reward and punishment, where the leader focuses on ensuring that the team follows the set rules and regulations. Transformational leadership, on the other hand, is more focused on developing the team and creating a shared vision to achieve common goals. Studies revealed that transformational leadership has a positive effect on patient safety (ALFadhalah & Elamir, 2022)(McFadden et al., 2009). However, Merril 2015 suggests a combination of transformational
and Transactional would be a better approach. (Merrill, 2015). (Robert & Vandenberghe, 2021) Laissez-faire leadership, which is a negative form of leadership, maybe more influential than positive forms but can have detrimental effects on patient safety as well.

So, it is ambiguous and inconsistent which leadership characteristics are more positive for patient safety in the healthcare industry. Effective leaders are visionaries, communicators, facilitators, advocates, and critical thinkers. This research focuses more on exploring leadership characteristics practiced in LMICs and suggesting leadership characteristics that are more suitable for LMICs regarding patient safety.

**Objectives**

This research focuses on how leadership affects patient safety in the healthcare industry of low- and middle-income countries.

Specific objectives are to evaluate key attributes of leadership, to investigate key dimensions of patient safety, and to critically evaluate the relationship between leadership and patient safety in the healthcare industry of LMICs. Finally, the authors want to propose suitable leadership characteristics for optimal patient safety in the healthcare industry of LMICs.

### 2 Method of Analysis

The review is performed in a deductive approach and Objectives and variables are developed by LR after considering the empirical data and the evaluation of the current theory. The scope of this review is illustrated in the Venn diagram,

![Figure 1 Venn diagram](image)

Search terms used are leadership, Leadership styles, patient safety, healthcare institutions, and low- and middle-income countries. A literature search was carried out consulting the databases Emerald Insight, Science Direct, Wille online library (2013-2023), and Elsevier. Over a thousand results were generated. The author applied additional filters to search parameters by analyzing the effectiveness and quality of the sources. Inclusion and exclusion criteria were applied to the collection of articles that were evaluated, Peer-reviewed articles and conference papers published from 2013 to 2023 were selected. Books, book reviews and review articles were excluded. Data was analyzed as a descriptive
summary and thematic analysis. The author utilized the thematic synthesizing approach to analyze the data from the selected 12 journal articles, their methodology and a summary of findings.

Figure 2 Framework for thematic analysis
3 Results and Discussion

3.1 Key Attributes of Leadership in the healthcare industry

The authors identified five main attributes of leadership namely leadership style, organizational culture, communication, staffing and resource allocation, education and training. There is a large diversity among leadership styles, and it can be explained using full range leadership theory with nine characteristics. The authors identified three main leadership styles transformational, transactional, and laissez-faire.

Transformational leadership style which is practiced by energetic, enthusiastic, and passionate leaders is the main type of leadership style according to thematic analysis. According to findings, transactional and laissez-faire leaders are very minimal, and ethical leadership concepts also exist among healthcare workers in LMICs. (ALFadhalah & Elamir, 2022; Nasim et al., 2022; Rahmawati et al., 2018; Yam et al., 2017) The study performed in Kuwait revealed that except for two leaders, taken into the study all the others have characteristics of transformational leaders. In this study, transformational leadership was determined by the highest score. However, a considerable proportion of respondents rated their leaders as transactional. It further revealed that transformational leaders made better patient safety implementations than transactional leaders and the difference between the two groups is statistically significant. (ALFadhalah & Elamir, 2022) However, another study revealed that transformational leadership moderates the relationship between safety culture and safety performance. (Asad et al., 2022) A journal article based on the perception of patient safety culture among nurses has focused on ethical leadership. (Lotfi et al., 2018) Ethical leadership theory is a form of leadership directed by respect for ethical beliefs and values and the dignity of others. On the other hand, Chen Chia Yang applied contingency leadership theory to his study on leadership behaviour, safety culture, and safety performances in the healthcare industry. Contingency theory claims that there is no best way to lead an organization or make decisions. A metanalytic study on leadership style and patient safety suggests empowering leadership is the most influential leadership style related to patient safety in an organization. The study further emphasized that in the healthcare sector, transformational leadership was the most influential leadership style. The thematic analysis suggests leadership style is more towards the transformational study.
Analysis of the results of review articles suggests that organizational culture related to patient safety can be grouped into various dimensions such as non-punitiveness, teamwork, organizational learning, staffing, supervisor and manager expectations and actions promoting safety, and continuous improvement. Communication, openness, feedback, handoffs and transitions, management support for patient safety, safety perception, and incident reporting frequency. (Rahmawati et al., 2018) Even though most of the studies are concerned with these dimensions, the establishment of a safety culture is still in its early stages. A study found that physicians have a lower perception of safety culture than any other medical staff. However, they could benefit from learning about safety in clinical practices. (PSC and Leade, n.d.) Survey results of another study suggested that the concept of 'safety culture' had yet to attain an acceptable level of awareness. (Montminy, 2022) However another study claims that organisational culture has a mediator effect on leadership and patient safety. (Alotaibi et al., 2015; Rahmawati et al., 2018) On the other hand Yam et al strongly imply that a prominent safety culture does not exist in the organization in his study. (Yam et al., 2017) Another study suggested that safety climate has a significant impact on safety performance. (Asad et al., 2022) Perception of management leadership shows the largest effect on safety climate in a different study and teamwork climate shows the highest direct effect on safety climate. (Weng et al., 2017) Taking all into consideration, the thematic analysis revealed that ten out of the eleven articles reviewed by the author were concerned with organization culture or patient safety culture, where the majority does not show the adequate establishment of safety culture.

A leader’s ability to lead effectively is enhanced by effective communication. Six Out of eleven articles reviewed have discussed or considered the communication of leaders. Studies suggest that leadership behaviour suggests senior executives should be involved in safety communication and initiate safety systems to promote a safety culture. It further stated that direct communication increases cohesiveness and perception of the hospital’s organization and provides more commitment and support to medical staff to handle medical disputes properly. In another study, results revealed that leaders’ communication-related questions were answered with a very low score as substantial or need to improve the score category. (Yam et al., 2017) In another study, all participants agreed that the written policies with the communication of expectations, best practices, and guide expectations would eliminate the grey areas and hold staff accountable. This will help medical error investigations direct efforts toward improvement initiatives. (Montminy, 2022)

Staffing and resource allocation is one of the critical factors that affect patient safety, and it is a major constraint that limits the establishment of patient safety initiatives in LMICs. The systematic review revealed that only a minimal number (three) of studies focused on this aspect of leadership. Leaders need to pay much attention to the education and training of the staff as well and they also should be knowledgeable of patient safety initiatives. Five out of the six patient safety department members who participated in the study stated that leaders must be knowledgeable of the content within the organization’s patient safety-related policies, procedures, and protocols to ensure equality in practice. (Montminy, 2022) Education and training programmes on nurses showed a mean score of 4.17 or 83 % which is a high value in one study whereas Training and education scores were within the substantial level in another study. (Rahmawati et al., 2018; Yam et al., 2017)

### 3.2 Key dimensions in patient safety in the healthcare industry in LMICs

This review is based on Vincent’s framework of contributory factors. namely, patient factors, task and technological factors, staff factors, team factors, work environment factors, organization and management factors, and institutional context factors. No article has discussed patient-related factors such as the complexity and seriousness of the illness, language and communication, personality, and social factors. In all articles, staff factors such as knowledge and skills, attitudes, competence, and physical and mental health were assessed, discussed, and related to leadership. Work environment factors such as staffing levels and skill mix, workload and shift patterns, design, availability, and maintenance of equipment, administrative and managerial support, and the physical environment are also discussed in ten articles. Team factors such as verbal communication, written communication, supervision, and help-seeking behaviour are also discussed in most articles. Organizational management factors are also considered in those articles. Various studies have been performed using various dimensions, and data has been collected to assess patient safety using different standard instruments. But most of them broadly looked at safety culture, adverse event reporting systems, training, and education of staff members.

Some articles show a very high level of patient safety (Asad et al., 2022; Montminy, 2022; Rahmawati et al., 2018; Weng et al., 2017) However some authors have pointed out gaps in patient safety concerns. However, According to Merrill 2015, all studied hospitals he studied have very poor error-prevention mechanisms. Another study discovered that reporting and accident investigation systems rely on organizational systems, such as a patient safety committee investigating medical incidents and independently reporting events. The study’s findings revealed that an
organization's commitment had no significant effect on global safety performance, possibly due to employees not feeling the organization's commitment and support. (Chingchia Yang 2009)

Results of the survey related to the implementation of education for nurses showed a high mean score, indicating the necessity of education programs. Montimny et al. revealed the role of attitudes, beliefs, and collective efficacy in the production of a patient safety culture. Taiwan study revealed teamwork climate, working conditions and job satisfaction have ‘fully mediated’ the effect of perception of management leadership on safety climate. According to Montimany et al., patient safety culture is built on trust and a shared vision for patient safety. Errors are considered as learning opportunities. Staff is supported to investigate adverse events and errors.

3.3 Relationship between leadership attributes and key dimensions of patient safety

Different leadership styles were reviewed in this article and out of them, the majority focused on features of the transformational leadership style, which shows a positive relationship with patient safety. Transactional leadership was also discussed to some extent, and that also suggests a positive relationship. Ethical leadership and contingency leadership were also discussed, and those styles also have a positive influence on patient safety.

According to a study in Kuwait, all leaders, or most leaders, were transformational leaders, and they strengthened the commitment of followers towards the organization’s goals. Patient safety performance is commonly attributed to teamwork and safety climate, and effective transformational leadership exhibits safety performance beyond the expected level. Implementation of patient safety initiatives and reporting practices shows a positive and significant association with a transformational leadership style. However, there is a negative association between transformational leadership and the number of reported incidents, near misses, and root-cause analyses of errors. (ALFadhalah & Elamir, 2022) However, a study in Taiwan revealed safety performance was affected and improved with contingency leadership and a positive patient safety organization culture. According to an Iran study optimization of the organizational commitment and adherence to ethical leadership by administrators and managers in hospitals will improve the patient safety performances of nursing officers. (Lotfi et al., 2018) Leadership is critical in promoting patient safety within healthcare organizations. Identification of relationships is crucial in prioritizing patient safety initiatives and promoting accountability for safety at all levels of the organization. Establishing clear policies and procedures that promote safety, providing resources for staff training and development, facilitating communication and collaboration among healthcare teams, and identifying and addressing potential patient safety risks also play an important role.

3.4 Strategic Framework for the Establishment of patient safety through appropriate leadership in the healthcare industry of Low- and middle-income countries

The strategic framework was developed based on thematic analysis. Considering the elements listed in the strategy framework, the government and healthcare leaders should design methods of strengthening and establishing patient safety in low- and middle-income countries. Patient safety initiatives should be taken to ensure safe patient care in LMICs using major concerns discussed in review articles. Main leadership attributes revealed that transformational
leadership characteristics, the establishment of a patient safety culture and training and education of staff are important factors. Regarding patient safety aspects, improving the knowledge, skills and attitudes of staff, improving the work environment and teamwork are more important.

4 Conclusion and Recommendations

This report has focused on critically evaluating the key quality attributes of leadership and key dimensions of patient safety and critically evaluating the relationship between leadership and patient safety in LMICs. Moreover, to develop a framework to establish a patient safety framework which is more suitable for LMICs to ensure safety in the healthcare industry.

Out of the various leadership styles reviewed in this study, the transformational leadership style shows a more positive approach towards safe patient care. Most articles claim that transformational leaders play a crucial role in establishing patient safety within healthcare organizations. Their role in inspiring and motivating teams to achieve higher levels of performance has been highlighted in most articles. They encourage their employees to identify potential risks, suggest appropriate solutions, and establish best practices in place to improve patient safety. They encourage an open communication culture and non-punitive reporting systems in which employees feel safe reporting errors and near misses. Almost all articles pay attention to employee training and education to ensure that all employees have the skills and knowledge needed to provide safe and effective care. Delegation of authority to make decisions and take ownership of their work, instilling a sense of responsibility and accountability also discussed to some extent in some articles.

The establishment of a patient safety culture in the organization was identified as the second most important step in leadership attributes in LMICs regarding ensuring patient safety. Establishing clear safety goals and expectations, promoting safety accountability, and encouraging employees to report incidents and near-misses are all part of this. Healthcare teamwork and collaboration should also be prioritized by leaders. Effective communication and collaboration are required for identifying and mitigating potential patient safety hazards. Leaders can promote communication and collaboration among healthcare providers while also implementing interprofessional team training programs. Prioritizing patient safety in healthcare organizations not only improves patient outcomes but also fosters a safety culture that promotes better quality of care and ensures patients receive the highest level of safety and care possible.

Staff factors, work environmental factors of the organization and organizational management and team factors were identified as the most important dimensions of patient safety in LMICs. Individual(staff) knowledge, skills, competencies, attitudes, and physical and mental well-being play a significant role in patient safety in LMICs. According to the review, staff factors are the most important determinant of patient safety dimension in LMICs. Implementation of effective reporting and feedback mechanisms is also identified as an important dimension of patient safety. This includes encouraging staff members to report incidents and near-misses and implementing systems to collect and analyze this information to identify trends and areas for improvement.Leaders should also cultivate a culture of continuous improvement in which mistakes are viewed as opportunities to learn and improve patient safety practices. Implementing quality improvement initiatives and using data to track progress and identify areas for improvement are examples of this. Staffing levels, workload, shift patterns, and availability of equipment also have an important role in this regard. Organizational management factors such as financial resource allocation and constraints, national policies, and goals also play key roles in securing patient safety in LMICs.

The importance of the role of patients, their families and carers, and other lay people in improving patient safety is increasingly recognized by developed countries. However, the study revealed that patient factors do not consider or do not play any role in the safety context in LMICs. Patients' language and communication, personality of the patient, and social factors of the patient were not considered as important in any review.

In conclusion, effective leadership is critical for improving patient safety within healthcare organisations. Leaders play a crucial role in setting the tone for a culture of safety, promoting accountability for safety, and ensuring that patient safety is a top priority for all staff members. By prioritizing patient safety, healthcare organizations can improve patient outcomes and create a culture of safety. Transformational leadership style, establishing a patient safety culture, establishing a non-punitive reporting culture, training and education of staff, improvement of skills and attitudes of staff, improving work environment and teamwork, and resource allocation were identified as measures of improving patient safety in LMICs through effective leadership initiatives.
Recommendations

Recommendations of the review are, strengthen the leadership characteristics of leaders. Special attention towards transformational leadership characteristics. It is mandatory to establish a patient safety culture. Leaders should highlight that patient safety is a top priority and responsibility. Accountability is mandatory and Leaders should promote a culture where errors are viewed as opportunities to learn and improve patient safety practices. Implement effective reporting and feedback mechanisms. This includes encouraging staff members to report incidents and near-misses. This should be a non-punitive system and root cause analysis should be performed to find the cause. Prevention of future events should be focused. Information should be analyzed to identify trends and areas that need improvement. Leaders should Set clear safety goals and expectations. Encourage teamwork and collaboration: Leaders should encourage teamwork and collaboration among healthcare teams, which is critical for identifying and addressing potential patient safety risks. Training programs can be arranged to improve communication and collaboration among healthcare providers. Special attention to attitude improvements is also mandatory. Implementation of monitoring and evaluation mechanisms to ensure the sustainability of patient safety. Resource allocation on the establishment of patient safety and development of a management system to ensure two-way trust between management and staff over the long term.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflicts of interest or financial affiliations that could influence the impartiality, objectivity, or integrity of this systematic review.

Compliance with Reporting Guidelines

This systematic review follows established reporting guidelines, including the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement, to ensure the comprehensive and transparent reporting of the review process and findings. This Acknowledgment and Ethical Clearance chapter serves as a testament to our commitment to ethical research practices and the collaborative efforts of all those involved in the completion of this systematic review.

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Leadership behaviours, attitudes and characteristics to support a culture of safety.

The Effect of Leadership, Education and Communication

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