

# INFLUENCE OF NURSE LEADERSHIP ON PATIENT SAFETY: AN INTEGRATIVE REVIEW

## INFLUÊNCIA DA LIDERANÇA DO ENFERMEIRO NA SEGURANÇA DOS PACIENTES: UMA REVISÃO INTEGRATIVA

## INFLUENCIA DEL LIDERAZGO DEL ENFERMERO EN LA SEGURIDAD DE LOS PACIENTES: UNA REVISIÓN INTEGRATIVA

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**Objective:** to identify the knowledge produced in the literature about the influence of nurse leadership on the safety of hospitalized patients. **Method:** integrative review with search in LILACS, PubMed, EMBASE, Scopus and Web of Science databases. Original articles published between 2017 and 2022 in Portuguese, English or Spanish were included. Theses, dissertations, editorials and reviews were excluded. The sample of 1610 articles was analyzed. **Results:** based on the 12 articles included, three categories were listed: influence of leadership on the team to ensure patient safety; consequences of leadership influence on patient safety; leadership styles/models that influence patient safety. **Conclusion:** nursing teams are influenced by their leadership; therefore, a consolidated safety culture is nurtured by effective leadership, committed, prioritizing and supporting safe practices and behaviors supported by positive and contemporary leadership styles in achieving qualified and safe care.

**Descriptors:** Leadership. Nurses. Patient Safety. Hospitals. Health Management.

*Objetivo:* identificar o conhecimento produzido na literatura acerca da influência da liderança do enfermeiro na segurança dos pacientes internados em hospitais. *Método:* revisão integrativa com busca nas bases de dados LILACS, PubMed, EMBASE, Scopus e Web of Science. *Incluíram-se artigos originais publicados entre 2017 e 2022, nos idiomas português, inglês ou espanhol. Excluíram-se teses, dissertações, editoriais e revisões. Analisou-se a amostra de 1610 artigos. Resultados:* com base nos 12 artigos incluídos, elencaram-se três categorias: influência da liderança na equipe para garantir a segurança do paciente; consequências da influência da liderança na segurança do paciente; estilos/modelos de liderança que influenciam a segurança do paciente. *Conclusão:* equipes de enfermagem são influenciadas pelas suas lideranças; portanto, uma cultura de segurança consolidada é nutrida por uma liderança

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*eficaz, comprometida, que prioriza e apoia práticas e comportamentos seguros apoiados em estilos de liderança positivos e contemporâneos no alcance de uma assistência qualificada e segura.*

*Descritores: Liderança. Enfermeiras e Enfermeiros. Segurança do Paciente. Hospitais. Gestão em Saúde.*

*Objetivo: identificar el conocimiento producido en la literatura acerca de la influencia del liderazgo del enfermero en la seguridad de los pacientes internados en hospitales. Método: revisión integrativa con búsqueda en las bases de datos LILACS, PubMed, EMBASE, Scopus y Web of Science. Se incluyeron artículos originales publicados entre 2017 y 2022, en los idiomas portugués, inglés o español. Se excluyeron tesis, disertaciones, editoriales y revisiones. Se analizó la muestra de 1610 artículos. Resultados: con base en los 12 artículos incluidos, se enumeraron tres categorías: influencia del liderazgo en el equipo para garantizar la seguridad del paciente; consecuencias de la influencia del liderazgo en la seguridad del paciente; estilos/modelos de liderazgo que influyen en la seguridad del paciente. Conclusión: los equipos de enfermería están influenciados por sus líderes; por lo tanto, una cultura de seguridad consolidada se nutre de un liderazgo eficaz, comprometida, que prioriza y apoya prácticas y comportamientos seguros apoyados en estilos de liderazgo positivos y contemporáneos en el alcance de una asistencia cualificada y segura.*

*Descriptorios: Liderazgo. Enfermeras y Enfermeros. Seguridad del Paciente. Hospitales. Gestión en Salud.*

## Introduction

Health services are moving with the transformations and needs of the world, in which the active and changing process of work, of which the nurse is part, causes them to assume management positions and the competence to lead. In this context, it is essential to highlight the need for the development of managers and leaders in health organizations. During the work of the nurse in the managerial scope, actions are developed directed to the organization of the service and management of human resources, aiming to provide adequate conditions for the care of the patient and for the performance of the nursing team.

Given the increase in hospitalization demand in recent years due to the COVID-19 pandemic, nursing professionals, especially nurses, have gained considerable prominence, mainly due to their ability to lead<sup>(1)</sup>.

In the care perspective, leadership can be determined as a process that involves and influences an environment or group context that has common goals. Therefore, it has been the subject of studies in several areas, especially nursing, since, in this area, there are leaders of various types and styles, with their own characteristics<sup>(2-5)</sup>.

Among the types and styles/models, the following stand out: authentic leadership,

characterized by its ability to contribute to employee appreciation and generate better performance of the entire team for positive results; transformational, presented by the type of leadership that motivates employees to do more than they are expected to do; coaching, guided by the promotion and encouragement of employee learning in order to promote personal and technical development; described as the demonstration by the leader to their followers of appropriate conduct, presented through their personal actions and interpersonal relationships; and, finally, clinical leadership, identified by its ability to directly improve the service as a result of its connection with the management of the clinical area and patient care<sup>(6-7)</sup>.

In this context, the importance of leadership styles/models that adapt to how leaders can influence their followers to achieve common goals is emphasized. The styles/models of leadership explain how the interpersonal relationship of the leader with the followers happens, implying the leader to think, together with the team, strategies to expand the benefits and reduce the risks, both for patients and the team involved in the care, organization and community<sup>(8-9)</sup>. In addition, they are focused on relationships or the fulfillment of tasks. Furthermore, its effects on results have

been the target of research, since it is necessary to practice effective leadership in order to meet the current challenges<sup>(9)</sup>.

With this, it is emphasized that styles/models of leadership centered on relationships and people, and not on tasks, are effective and fundamental in maintaining a work environment favorable to the practice of the nursing team<sup>(9-10)</sup>. In this context, it is essential to understand the relationship between nursing leadership and the quality of care provided to patients, especially in their safety. The safety culture influences patient safety, highlighted as a structure that generates cultures, behaviors, technologies, procedures, processes, aiming at reducing the risk of unnecessary damage to an acceptable minimum possible, making errors less frequent. Moreover, they minimize the impact when they occur and, consequently, their results are strongly influenced by the behavior of the leader<sup>(11)</sup>.

The relationship between leadership and safety is essential in obtaining assertive results in patient care, so that the safe culture must be nourished by effective leadership at all levels, whose satisfactory results have been demonstrated by the literature<sup>(11)</sup>. The adoption of protocols for planning care and patient safety indicators, characterized as instruments that show the quality of relationships between professionals, effective communication, interaction and association of the health team, are fundamental for the leading nurse, since ensuring a safe environment involves the management and safety of care<sup>(11,12)</sup>.

In this sense, to obtain the engagement of people, it is necessary greater affinity among all areas active in health organization, especially leaders, in order to provide favorable working conditions that stimulate cooperation and actions for the establishment of safety culture. This can be understood as the sum of attitudes, perceptions, behavior and individual and group skills, as well as the proficiency of institutional health and safety management<sup>(13)</sup>.

Safety culture is the approach and application of structures and processes created to support patient safety in an organization, based on institutional values and practices, indispensable in the prevention of adverse events<sup>(14-15)</sup>.

Leadership is one of the elements that most influence the construction of a health safety culture, being essential for the encouragement of professionals and for the mobilization of resources. In this way, a nurse who has scientific knowledge, broad vision, as well as a favorable professional reference model, becomes fundamental in the development, structuring and establishment of safety protocols and standards; in the verification and analysis of processes, as well as the designation of strategies and objectives of the organization in the adherence to safe practices<sup>(16)</sup>.

Notwithstanding the relevance of leadership for the clinical practice of nurses and, especially, for patient safety, there is a lack of national and current scientific evidence that synthesize and correlate the influence of different leadership styles/models on patient safety. Such factors promote the advancement of knowledge, given the importance of the role of nurses in the management of health services and in direct patient care, which directly influences the quality of care provided<sup>(7)</sup>. Given the above, this study aimed to identify the knowledge produced in the literature about the influence of nurse leadership on the safety of hospitalized patients.

## Method

This is an integrative review, a method that provides a synthesis of information and knowledge with the aggregation of the applicability of relevant research results in practice<sup>(17)</sup>. Thus, the elaboration of this review was supported by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), theoretical-methodological reference composed of a 27-item checklist and a four-step flowchart, which cover the quality of review studies<sup>(18)</sup>.

The review was carried out in six stages, namely: <sup>(1)</sup> elaboration of the guiding question; <sup>(2)</sup> establishment of criteria for inclusion and exclusion of studies/sampling or search in the literature, with the search in a broad and diversified database; <sup>(3)</sup> identification of information to be removed from selected studies/categorization of studies<sup>(17)</sup>; <sup>(4)</sup> evaluation of studies included in

the integrative review;<sup>(5)</sup> interpretation of results;  
<sup>(6)</sup> synthesis of knowledge.

To elaborate the guiding question, the acronym PCC was adopted, specifying the type of study participants, the concept and the context

(Chart 1), according to the recommendation of the Joanna Briggs Institute (JBI)<sup>(19)</sup>. Thus, the following question was elaborated: “What is the influence of nursing leadership on patient safety in hospital institutions?”.

**Chart 1** – Description and components of the PCC strategy. Ribeirão Preto, São Paulo, Brazil, 2023

Acronym	Description
P (Participants)	Nurse leader
C (Concept)	Patient safety
C (Context)	Hospitals

Source: created by the authors.

The searches were carried out in December 2022, in the electronic databases Latin American and Caribbean Health Sciences Literature (LILACS), National Library of Medicine, through PubMed, EMBASE, Scopus and Web of Science, databases that have a large collection of publications in the health area. Controlled descriptors of Medical

Subject Headings (MESH), MEDLINE/PubMed, and Health Sciences Descriptors (DeCS), LILACS and Emtree, Embase were used, according to the language of each database, using the Boolean operator AND to combine the descriptors, according to search strategies presented in Chart 2.

**Chart 2** – Search strategy in selected databases. Ribeirão Preto, São Paulo, Brazil, 2023

Database	Search strategy
PubMed	<i>(“leadership” AND “patient safety” AND “nursing” AND “hospital”)</i>
LILACS	<i>(“liderança” AND “segurança do paciente” AND “enfermagem” AND “hospital”)</i> <i>(“leadership” AND “patient safety” AND “nursing” AND “hospital”)</i> <i>(“liderazgo” AND “seguridad del paciente” AND “enfermería” AND “hospital”)</i>
SCOPUS	<i>(“leadership” AND “patient safety” AND “nursing” AND “hospital”)</i>
Web of Science	<i>(“leadership” AND “patient safety” AND “nursing” AND “hospital”)</i>
Embase	<i>(“leadership” AND “patient safety” AND “nursing” AND “hospital”)</i>

Source: created by the authors.

The inclusion criteria were original articles published in the last five years (2017 to 2022), in order to identify the styles/models of leadership most addressed by the studies in contemporary, in Portuguese, English or Spanish. Theses, dissertations, editorials and reviews of any kind were excluded, since the adopted reference indicates the exclusion of these types of studies.

Subsequently, the findings were selected using the Rayyan application<sup>(20)</sup>, and the titles and abstracts were first read by two independent researchers. Afterwards, the selection divergences among the researchers were referred to a third researcher, responsible for the decision to include them in the sample or not.

Next, the full reading of the selected articles was carried out, and the final study sample was defined.

Furthermore, the reference list of the manuscripts that made up the sample was searched, in order to verify the possibility of new inclusions.

For the extraction of the results, the form of the International Network of Nursing in Occupational Health (RedENSO) was used and adapted<sup>(21)</sup>, due to its worldwide coverage. Thus, the following criteria were considered: title, language, author, year, journal, country, objectives, methods, population, sample, results and evaluation of the level of evidence<sup>(19)</sup>.

For the classification of the level of evidence, the criteria proposed by the Joanna Briggs Institute were followed: level I – Evidence obtained after the systematic review containing only randomized controlled trials; level II – Evidence obtained after at least one randomized

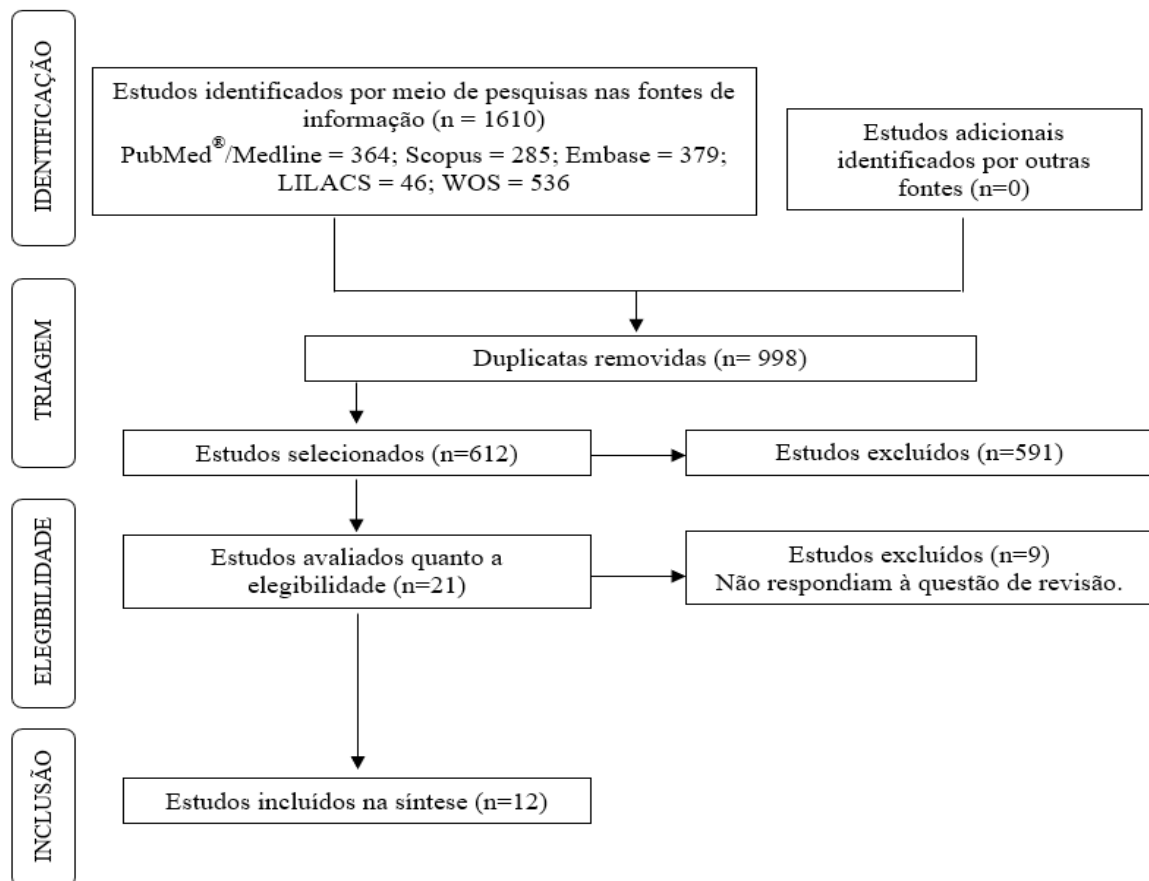
controlled trial; level III 1 – Evidence obtained from well-designed, non-randomized controlled trials; level III 2 – Evidence obtained from well-designed cohort or case-control studies, analytical studies, preferably from more than one research center or group; level III 3 – Evidence obtained from multiple time series, with or without intervention, and dramatic results in uncontrolled experiments; level IV – Opinion of respected authorities, based on clinical criteria and experience, descriptive studies or expert committee reports<sup>(19)</sup>.

The analysis of the results was performed descriptively, grouping the synthesis among the studies included by similarity in three categories.

## Results

The search resulted in the identification of 1,610 records, of which 12 were included. The selection process and the number of publications in each step are detailed in the flowchart shown in Figure 1.

**Figure 1** – Flowchart of the article selection process for the integrative review following the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Uberaba, Minas Gerais, Brazil, 2023



Source: created by the authors.

Figure translation: IDENTIFICATION. Studies identified by searching the information sources (n = 1610). Additional studies identified through other sources (n = 0). SCREENING. Duplicates removed (n = 998). Studies selected (n=612). Studies excluded (n=591). ELIGIBILITY. Studies assessed for eligibility (n=21). Studies excluded (n=9); Did not answer the review question. INCLUSION. Studies included in the synthesis (n=12)

To facilitate the analysis, the results are presented in a summary chart (Chart 3):

**Chart 3** – Summary chart of articles included in the integrative literature review. Ribeirão Preto, São Paulo, Brazil, 2023 (continued)

Author/Title	Journal/ Country/ Language/ Year	Objectives	Methods/ Population/ Sample	Results	Level of evidence
Labrague LJ, Al Sabei SD, Abualrub RF, Burney IA, Al Rawajfah O <sup>(22)</sup>  Authentic leadership, nurse-assessed adverse patient events and quality of care: The mediating role of nurses' safety actions	Journal Nursing Management. Oman English 2021	To examine whether nurses' safety actions mediate the relationship between authentic leadership, adverse events assessed by nurses and quality of nursing care.	Multicenter cross-sectional study involving nurses in intensive care units in Oman. Multistage regression analysis was performed on tests for the mediation model. Total of 1,608 nurses.	The results suggest the importance of developing authentic leadership among nurse managers to foster nurses' safety actions and reduce adverse patient outcomes.	Level III 2
Labrague Lj <sup>(23)</sup>  Influence of nurse managers' toxic leadership behaviors on nurse-reported adverse events and quality of care	Journal Nursing Management. Philippines English 2021	To assess the impact of toxic leadership behaviors among nursing managers on adverse events reported by nurses and quality of care.	A multicenter, cross-sectional study in 20 hospitals in the Philippines. Three standardized scales were implemented. Total of 1,053 nurses.	Nurses who experience the work of a nursing manager presenting toxic behaviors reported a higher frequency of adverse events and worse quality of care.	Level III 2
Boamah S <sup>(24)</sup>  Linking Nurses' Clinical Leadership to Patient Care Quality: The Role of Transformational Leadership and Workplace Empowerment	Canadian Journal of Nursing Research. Canada English 2018	To test a model that examines the relationships between transformational leadership, structural empowerment, nursing team clinical leadership, and adverse patient outcomes assessed by nurses.	Cross-sectional research, carried out with a randomly selected sample from intensive care hospitals in Ontario, Canada. Structural equation modeling was used. Total of 378 nurses.	Transformational leadership was significantly associated with decreased adverse patient outcomes through structural empowerment and clinical leadership of nursing team.	Level III 2

**Chart 3** – Summary chart of articles included in the integrative literature review. Ribeirão Preto, São Paulo, Brazil, 2023 (continued)

Author/Title	Journal/ Country/ Language/ Year	Objectives	Methods/ Population/ Sample	Results	Level of evidence
Barkhordari-Sharifabad M, Mirjalili N-S <sup>(25)</sup>  Ethical leadership, nursing error and error reporting from the nurses' perspective	Nursing Ethics. Iran English 2020	To determine the level of ethical leadership from the perspective of nurses and its effect on nursing error and error reporting in teaching hospitals affiliated with Shahid Sadoughi University of Medical Sciences, Yazd, Iran.	Cross-sectional descriptive study. Data collection was carried out through questionnaires "ethical leadership in nursing, nursing errors and error notification". Total of 171 nurses.	There was a significant relationship between the level of ethical leadership of nursing managers and error rates and error reporting. Developing an ethical leadership approach in nurse managers reduces the error rate.	Level III 2
Lotfi Z, Atashzadeh-Shoorideh F, Mohtashami J, Nasiri M <sup>(26)</sup>  Relationship between ethical leadership and organisational commitment of nurses with perception of patient safety culture	Journal Nursing Management Iran English 2018	To determine the relationship between ethical leadership, nurses' organizational commitment and their perception of patient safety culture.	Descriptive-correlational study, in hospitals in Tehran in 2016. Data were analyzed using descriptive and inferential statistics in SPSS v. 20. Total of 340 nurses.	The regression analysis showed that the ethical leadership of nursing managers and the organizational commitment of nurses is a predictor of patient safety culture and confirms the relationship between the variables.	Level III 2
Boamah SA, Laschinger HKS, Wong C, Clarke S <sup>(27)</sup>  Effect of transformational leadership on job satisfaction and patient safety outcomes	Science Direct Canada English 2018	To analyze the effects of nurse managers' transformational leadership behaviors on job satisfaction and patient safety outcomes.	Cross-sectional research. The hypothesized model was tested using structural equation modeling. Total of 378 nurses.	Transformational leadership had a strong positive influence on workplace empowerment, which in turn increased nurses' job satisfaction and decreased the frequency of adverse outcomes.	Level III 2

**Chart 3** – Summary chart of articles included in the integrative literature review. Ribeirão Preto, São Paulo, Brazil, 2023 (continued)

Author/Title	Journal/ Country/ Language/ Year	Objectives	Methods/ Population/ Sample	Results	Level of evidence
Zaheer S, Ginsburg L, Wong HJ, Thomson K, Bain L, Wulffhart Z <sup>(28)</sup>  Acute care nurses' perceptions of leadership, teamwork, turnover intention and patient safety – a mixed methods study	BMC Nursing Canada English 2021	To analyze how nurses' perceptions of senior leaders, immediate supervisors, teamwork, and turnover intention affect their perceptions of patient safety.	Mixed methods study, with cross-sectional research data, using semi-structured interviews. It involved 185 nurses and non-medical health professionals. Semi-structured interview data: total of 15 nurses.	Hierarchical regression analyses showed that senior leadership team perceptions, teamwork, and turnover intention were associated with the overall degree of patient safety.	Level III 2
Anderson AD, Floegel TA, Hofler L, Swanson M <sup>(29)</sup>  Exploring the Relationship Between Contact Frequency, Leader-Member Relationships, and Patient Safety Culture	Journal of Nursing Administration United States. English 2019	To explore associations between contact frequency of nurse leaders and their team members, leader-member relationships, and patient safety culture.	Cross-sectional survey of bedside nurses. Participating nurses' perception of the leader-member relationship was measured using the LMX-7. 746 nurses.	Significant association was found between relationship strength and patient safety culture. Frequency of contact can support relationships between leaders and members and improve safety culture.	Level III 2
Asif M, Jameel A, Hussain A, Hwang J, Sahito N <sup>(30)</sup> .  Linking Transformational Leadership with Nurse-Assessed Adverse Patient Outcomes and the Quality of Care: Assessing the Role of Job Satisfaction and Structural Empowerment	International Journal of Environmental Research and Public Health. Pakistan English 2019	To examine the relationships between transformational leadership (TL), structural empowerment (SE), job satisfaction (JS), adverse patient outcomes assessed by nurses (APO), and quality of care (QOC).	The hypothesized model was tested using confirmatory factor analysis and structural equation modeling. It involved a total of 600 nurses working in 17 hospitals in Pakistan.	A positive relationship was found between TL, SE, JS and QOC, and negative relationships between TL and APO, SE and APO and JS and APO. The study suggests that SE and JS strongly mediate the TL-APO and TL-QOC relationships.	Level III 2



**Chart 3** – Summary chart of articles included in the integrative literature review. Ribeirão Preto, São Paulo, Brazil, 2023 (continued)

Author/Title	Journal/ Country/ Language/ Year	Objectives	Methods/ Population/ Sample	Results	Level of evidence
Moraes MCS, Dutra GO, Ferreira TDM, Dias FCP, Balsanelli AP, Gasparino RC <sup>(6)</sup>  Nursing coaching leadership and its influence on job satisfaction and patient safety	Journal of School of Nursing – University of São Paulo. Brazil Portuguese 2021	To compare the nursing technicians' perception with the nurses' self-perception of the exercise of nurses' coaching leadership and to check the influence of this leadership model on the safety climate and on the team's satisfaction.	Correlational method study, using the Questionnaire on the Nurse's Self-Perception of Leadership Exercise, the Questionnaire on the Perception of Technicians and Assistants on the Exercise of Leadership and the subscales: Safety, Climate and Job Satisfaction. Carried out with 85 nurses and 85 nursing technicians.	The Coaching Leadership dimensions obtained have positive and significant correlations with the Safety Climate and Satisfaction subscales. The safety climate and team satisfaction are better when nurses exercise the dimensions of Coaching Leadership.	Level III 2.
Santos JLG, De Pin SB, Guanilo MEE, Balsanelli AP, Erdmann AL, Ross Ratchneewan <sup>(31)</sup>  Nursing leadership and quality of care in a hospital setting: mixed methods research	Rene Journal. Brazil Portuguese 2018	To examine and describe the relationship between nursing leadership and quality of care in the hospital environment.	Concurrent and convergent mixed methods study. Quantitative data were collected using the Leadership subscale of the Brazilian Nursing Work Index-Revised. Qualitative data was collected through interviews with 64 participants. Total of 105 nurses.	Effective nursing leadership generated quality of care through collaboration with nursing team, encouraging patient advocacy, and improving care.	Level III 2

**Chart 3** – Summary chart of articles included in the integrative literature review. Ribeirão Preto, São Paulo, Brazil, 2023 (conclusion)

Author/Title	Journal/ Country/ Language/ Year	Objectives	Methods/ Population/ Sample	Results	Level of evidence
Liukka M, Hupli M, Turunen H <sup>(32)</sup>  How transformational leadership appears in action with adverse events? A study for Finnish nurse manager	Journal Nursing Management. Finland English 2018	To verify whether elements of transformational leadership are present in the actions of nursing managers after adverse events.	Nursing managers were interviewed individually in a semi-structured format. Data were analyzed using inductive content analysis. It was attended by 11 nursing managers.	Nursing managers must understand their responsibilities and the importance of making it clear to the team that patient-centeredness must be evident in all healthcare actions.	Level III 2.

Source: created by the authors.

Five studies were published in 2018, two in 2019, one in 2020 and four in 2021. Two studies were written in Portuguese, with English version, and ten in English. All studies were classified with level of evidence III 2.

Regarding the countries of publication, there were three publications from Canada, two from Brazil, two from Iran, one from the United States of America (USA), one from the Philippines, one from Finland, one from Oman and one from Pakistan, demonstrating diversification in the countries of publication. In general, the size and particularities of the number of participants that composed the samples varied, noting the heterogeneity of the contexts investigated.

The manuscripts were published in the following journals: Canadian Journal of Nursing Research, Nursing Ethics, BMC Nursing, Journal of School of Nursing – University of São Paulo, Rene Journal, The Journal of Nursing Administration, Journal Nursing Management Science Direct, International Journal of Environmental Research and Public Health.

Regarding the objectives of the studies, the findings mostly seek to investigate the relationship and/or influence of different styles/models of leadership in patient safety,

that is, to verify if leadership causes positive implications in reducing adverse events and, consequently, in improving the safety of patients admitted to hospitals.

Given the synthesis and analysis of the findings, three categories were listed: Influence of leadership on the team to ensure patient safety; Consequences of leadership influence on patient safety; Leadership styles/models that influence patient safety.

## Discussion

### *Category 1 – Influence of leadership on the team to ensure patient safety*

The leadership style/model played by nurses, their way of communicating, their knowledge, interpersonal relationships, among other skills, can generate considerable effects on patient safety. The more the team feels stimulated and engaged by its leader, the greater the adherence to good nursing care practices, directly implicating in the reduction of adverse events and, consequently, in patient safety. It is noticed, then, that the nurse leader, depending on the

style/model adopted, generates impact both in the micro perspective of the institution and in the macro analysis<sup>(6,23,26-29,31-32)</sup>.

Eight studies<sup>(6,23,26-29,31-32)</sup> discussed more deeply how leadership influences the team for patient safety in the hospital context. Most authors<sup>(6,26,28,31-32)</sup> praise competencies, characteristics and desirable actions to leaders in order to positively influence their teams, envisioning improvements in patient safety and, thus, in the qualification of the care provided, since both are directly related. Moreover, an international study highlights the fact that leadership competencies define an expected level of performance, resulting from the integration between knowledge and skills<sup>(33)</sup>.

In this context, one study highlights the combined effect between formal and informal leadership to provide insight, support, personnel resources with clinical competencies, characterized by knowledge, skills and attitudes. This is a crucial aspect to provide and ensure better results in patient care, especially effective clinical leadership, enabling nursing professionals to improve the work environment<sup>(27)</sup>.

Another relevant aspect identified was the leader's ability to positively influence the team when promoting attitudes, such as offering feedback, maintaining effective communication and offering support, once these attitudes promote the achievement of quality and safe care<sup>(6,26)</sup>.

This idea is corroborated in a study that highlighted communication as an effective and essential competence for the exercise of effective leadership. It is through assertive communication that the leader approaches their team, exchanging information and opinions in a frank and authentic way, sharing ideas and influencing their team, aiming at good performance and safety in patient care. Thus, it is essential to adopt strategies for effective communication, envisioning quality in decision-making, planning and safety of care<sup>(34)</sup>.

Feedback was also pointed out as an important tool in building positive results for patients, professionals and health organizations, associated with increased safety culture, development of technical skills, reduction of

team stress and less evasion of professionals. Therefore, it needs to be valued and adopted<sup>(35-36)</sup>.

The great challenge of managers in identifying and developing leaders was also pointed out, given the need for increasingly qualified professionals, requiring the approach of the theme to be carried out from the graduate course since nursing lacks and needs inspiring leaders<sup>(6)</sup>.

However, newly graduated nurses deal with various challenges regarding attitudes and leadership activities throughout their training. Because they are poorly prepared and have little experience, they have low technical ability to perform high complexity nursing care, and it is often necessary to attend courses of specialization and improvement of critical thinking<sup>(37)</sup>. Therefore, the urgent need to improve graduate curricula is highlighted, including contents related to leadership, in addition to investing in the quality of clinical training of nurses, so that these professionals are better prepared for the challenge of leading a health service.

Other measures to promote positive leadership practices and prevent toxic leadership behaviors are related to the provision of empirical education and leadership development as a promising organizational strategy to reduce adverse events and improve the quality of service<sup>(23)</sup>. Currently, there is an impulse for nurses to receive leadership education from universities, but, in addition, health institutions need to plan the development of leadership through continuing education programs in their work environments with a view to successions<sup>(11)</sup>.

Dialogical leadership, emphasizing horizontal work with staff, in addition to learning skills and capabilities for communication, effective management, decision making and teamwork, showed to be strategies to qualify care and reduce adverse events<sup>(31)</sup>.

Study emphasizes that nursing managers consider their responsibility to ensure that nursing team keep in mind patient safety issues and encourage reporting of adverse events. To this end, it is necessary to discuss their occurrence in an open and blameless manner, as well as their notification and the risks

underlying patient safety, and should, therefore, give an example, assuming patient safety issues, providing intellectual stimulation<sup>(31)</sup>. It is important for leaders to create an open communication environment in which leaders are encouraged to report adverse events and errors so that changes can be made to processes and the system; thus, leadership engagement has a significant positive effect<sup>(11)</sup>.

Similarly, a study revisits the issue of senior leadership, teamwork, and turnover intent as factors that impact front-line clinical team perceptions of patient safety<sup>(28)</sup>. A study conducted in Brazil showed that, in general, the perception of professionals in relation to patient safety is not positive, impacting financially, socially and psychologically, affecting both patients and health institutions, being of total relevance that the leaderships coordinate an effective and safe work for all<sup>(38)</sup>.

Finally, it is noteworthy the importance of leaders often contacting their members to build the relationship between nursing teams, in order to improve both the leader-member relationship and the patient safety culture. For this, the nurse leader must act based on this knowledge and increase their contact with the team<sup>(29)</sup>. A study demonstrated the importance of the empathic relationship between leader and followers, enhancing motivation, since difficulties in this relationship tend to be associated with the precariousness of the relationships between the team, demotivation with working conditions, impairment of communication, collisions and unsafe conduct in the assistance provided<sup>(39)</sup>.

### *Category 2 – Consequences of leadership influence on patient safety*

Six studies<sup>(23,26,29,6,31-32)</sup> addressed the possible consequences of leadership influence on patient safety in the hospital environment, both positive and negative.

A study revealed that the better developed nursing leadership, the better the care provided. Moreover, the establishment of a dialogical leadership collaborates with the team in the development of effective practices

for improvements in care, however, there are several challenges to be faced in the management of personnel, especially in the hospital environment<sup>(31)</sup>.

Thus, it is imperative to affirm that there is a strong relationship between nursing leadership and patient safety, as well as between effectiveness and quality of care<sup>(40)</sup>. Therefore, patient safety can only have positive results when nurtured by participatory, present, empathetic, effective and established nursing leadership under interpersonal relationships.

The critical role of nursing managers in creating a positive safety culture was highlighted, as actors capable of influencing their teams to prioritize issues related to patient safety, including the recording of incidents and adverse events, without fear of punishment<sup>(26)</sup>. Likewise, leaders should have skills to motivate and empower the team to find ways of working that prevent adverse events and promote patient safety<sup>(32)</sup>.

In nursing, the nurse leader has a leading role and an important role in the construction and consolidation of a culture in which the notification of adverse events, as well as errors and failures, is used to promote improvements, knowledge and restructuring of institutional processes. Thus, nursing leadership is essential for safe nursing care<sup>(41)</sup>.

This is evidenced in a study that addressed the perception that toxic leadership behaviors significantly increased the reporting of poor quality of care and adverse events. Such reports were made by nurses, including verbal abuse, complaints from patients and their families, falls, infections acquired in health care and errors in drug administration. Therefore, improving leadership behaviors can be a potential strategy to reduce adverse events and improve nursing care in hospitals<sup>(23)</sup>.

Another consequence reported in this review is the strong relationships between a nursing team as an important contributor to the patient safety culture. Researchers agree that the environment in which these relationships are formed should be examined to facilitate the growth of the relationship<sup>(29)</sup>. This premise is strengthened by a study that reinforces the fact that the nurse's

leadership is an aptitude whose improvement is fundamental for the development of the leader in promoting interpersonal relationships that generate involvement and influence to achieve the objectives in common with the institution<sup>(40)</sup>.

Finally, it was pointed out that the development of safety culture in hospitals has a positive relationship with feedback, with consequent improvement of care, improvement in technical skills of the work team, reduction of emotional stress and less intention of professionals to leave their jobs<sup>(6)</sup>. Corroborating this assertion, a research has shown that, when feedback occurs by leaders, the work environment becomes a better place to provide and receive care, including important components such as teamwork and patient safety<sup>(35)</sup>.

### *Category 3 – Leadership styles/models influencing patient safety*

Nine studies<sup>(6,22,24-28,30,32)</sup> addressed leadership styles/models influencing patient safety in hospitals. It is extremely important to highlight how certain leadership styles/models affect and influence the safety culture in hospitals with positive outcomes in order to promote them among nursing leaders worldwide.

The theoretical model of authentic leadership was addressed in this research. Authentic leadership is determined as a method that results in positive performances of the leader and their subordinates<sup>(42)</sup>. It is complemented by two aspects of authentic leadership: the coherence of the leader's actions and the influence of followers in an ethical, responsible and proactive manner<sup>(43)</sup>.

Authentic leadership had a significant correlation with the quality of nursing care and safety actions, correlating it, however, negatively with adverse events, significantly predicting nurses' safety actions ( $\beta=0.168$ ,  $p<0.001$ ), in addition to decreased adverse events ( $\beta=0.121$ ,  $p<0.001$ ). Thus, nurses working with authentic leaders are more likely to report fewer adverse events ( $\beta=-0.063$ ,  $p=0.057$ ) and higher quality of care ( $\beta=0.038$ ,  $p=0.002$ )<sup>(22)</sup>.

The authors of this study justify this phenomenon mainly due to the increasing

emphasis on the ethical and moral conduct of authentic leaders. They emphasize the importance of seeking authentic leadership development among nurse managers as a potential strategy to promote safety actions and, in turn, improve the overall quality of care, preventing adverse outcomes for patients<sup>(22)</sup>.

Transformational leadership was analyzed by four studies that highlighted this leadership model as the positive influence among nursing teams regarding patient safety culture and, therefore, it is important and should be considered among leaders<sup>(24,27,30,33)</sup>.

The transformational leader is one who detects the needs and characteristics of the followers, motivating them and encouraging them to reach high standards of quality and performance, developing their own capacities<sup>(44-47)</sup>.

Transformational leadership is related to lower occurrence of adverse events in patients and optimization of the nursing work environment. Since these leaders are interested in the self-development of their team and enabling them to reach their potential, they provide support and opportunities to improve knowledge and skills and thus improve the quality of care<sup>(24)</sup>. It can be said that the implementation of transformational leadership in organizations provides greater and better relationship with the team, transforms the work environment and favors the involvement of professionals aiming at achieving common goals<sup>(46)</sup>.

Furthermore, some traces of transformational leadership visible in the management of adverse events by nursing managers were identified<sup>(33)</sup>. According to the authors, leaders consider these elements important in their work, and must be educated about transformational leadership so that they can use it more widely and effectively in their managerial work. The goal would be to transform oneself and their employees simultaneously, facilitating the creation of permanent positive changes in patient safety culture, ensuring better care. It can be said that the transformational leader has as elements the skills of vision and strategy, captivating and exciting the group, organizing the work<sup>(47)</sup>.

Transformational leaders play an important role in improving the work environment, leading to better results of nursing care for patients, thus being crucial that they practice transformational leadership behaviors. This will ensure that work environments are empowering to support nurses' professional practice behaviors, which in turn lead to better outcomes for patients<sup>(27)</sup>.

Still in this context, authentic and transformational leaders encourage nurses to think innovatively and share ideas, to improve nursing practice and the quality of nursing care and patient safety<sup>(27)</sup>. Thus, it is possible to affirm that the performance of a transformational leader with such skills favors the management of care, inspiring and motivating the group, contributing to a quality nursing care, being this model indicated while coping with the dynamic challenges of health institutions<sup>(46)</sup>.

Leadership coaching was approached by a research as a relevant leadership model that collaborates both in clinical practice and in the management of professionals<sup>(6)</sup>. Leadership coaching is defined as a process that influences the team, developing skills, attitudes and knowledge to achieve goals, through elements such as communication, feedback, support and influence<sup>(48)</sup>. The safety climate that transcends patient care improves as the characteristics of the coaching dimensions are applied and verified by nursing technicians<sup>(6)</sup>, corroborating a research that states that the leader coaching provides healthier work environments, generating significant results for the team and patients<sup>(49)</sup>.

Another leadership style addressed by authors was ethical leadership<sup>(25)</sup>. Managers who practice ethical leadership have employees with greater organizational commitment and perception of patient safety culture, being a feasible strategy to improve both aspects<sup>(26)</sup>. Therefore, efforts of nursing managers to develop ethical leadership, and the engagement and performance of nurse managers in this process, are vital to the success of the outcome, as well as the culture of patient safety, to increase safe care and improve the quality of services.

Ethical leadership developed by nursing managers reduces the rate of errors and increases

their reporting. Thus, nurse coordinators should be aware that an ethical leader can have a great impact on various aspects of professional performance, including the management of nursing errors<sup>(25)</sup>.

Finally, it should be noted that hospital institutions are complex scenarios in which the pursuit of quality is extremely challenging and often present management models and leadership styles that can hinder the achievement of positive results<sup>(40)</sup>. Thus, the relationship-oriented leadership style/model has been preferred by the front-line team, with better results in patient safety and excellence in service to patients<sup>(28)</sup>. Despite this, nurse managers still exercise different leadership styles/models with a predominance oriented to the task<sup>(50)</sup>.

A limitation of this research concerns the fact that only studies in Portuguese, English and Spanish available in full were included.

This study contributes to the area of nursing by structuring a theoretical framework about the influence of leadership and its consequences for patient safety, as well as leadership styles/models that influence patient safety. The intention is to promote the increase of knowledge, capable of promoting behavior changes and adoption of new styles/ leadership models by nurses, reducing undesirable effects on health care and, consequently, increasing patient safety.

## Conclusion

This review revealed that effective leadership influences team engagement to provide safe and quality care through a strongly established safety culture, minimizing adverse events, providing positive results for patients and team. The included studies show the relevance of the leader in relation to the attitudes of their followers and, consequently, to the achievement of the results, being, therefore, co-responsible for the safe and quality care. Moreover, positive leadership styles, which engage their teams in change, are necessary for the care provided to reach levels of excellence.

## Collaborations:

1 – conception and planning of the project: Lorena Maria Barcellos Morcelli and Andrea Bernardes;

2 – analysis and interpretation of data: Lorena Maria Barcellos Morcelli and Andrea Bernardes;

3 – writing and/or critical review: Lorena Maria Barcellos Morcelli, Bruna Moreno Dias, Carmen Silvia Gabriel and Andrea Bernardes;

4 – approval of the final version: Lorena Maria Barcellos Morcelli, Bruna Moreno Dias, Carmen Silvia Gabriel and Andrea Bernardes.

## Competing interests

There are no competing interests.

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