

Impact Of Nursing Leadership Styles On Medication Administration Practices: A Systematic Review

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Abstract

Background: The research was conducted to examine the influence of various nursing leadership styles on the implementation of medication administration practices. Aim: The purpose of the systematic review is to carefully analyze the existing literature on nursing leadership styles and their impact on medication administration practices. Method: A systematic search of databases including PubMed and Google Scholar was conducted to identify relevant studies published between 2004-2023. The inclusion criteria for this study consisted of selecting articles written in English that specially examined nursing leadership and practices associated with medication administration. Additionally, the chosen articles had to use well-established scales for measurement and provide valuable data on nursing leadership and medication administration practices in the hospital setting. After initial screening and quality assessment, twelve studies were included in the synthesis. Results: It revealed a consistent link between nursing leadership styles and medication administration practices in healthcare administration. Nursing leadership styles were identified as advantageous factors in mitigating and fostering a positive impact of medication administration practices. Conclusion: The review underscores the shortcomings and

importance of nursing leadership styles and medication administration practices for healthcare professionals and patients. The research concluded that the importance of leadership styles adopted by nurses holds potential effective ways to enhance medication administration practices, which ultimately affect patient services at the national level in forecasting the future of healthcare in Saudi Arabia.

Keywords: Nursing Leadership Styles, Medication Administration Practices, Healthcare Administration.

Introduction

Healthcare, including nursing practice, is heavily value-laden and relies greatly on leader–subordinate teamwork to ensure high-quality and safe patient care. This becomes much more complicated in a multicultural milieu, as found in most tertiary hospitals in Saudi Arabia, where the medical and nursing human resources are a mix of several nationalities with varied cultures, languages, and personal and professional values (Flores et al., 2023). Medication administration is a complex process involving several phases, steps, and elaborate systems giving rise to the potential for medication errors to occur. Traditionally, nurses have been trained to practice the five rights of medication administration, namely, the right medication, right dose, right route, right time, and right patient. Although the rights are generally regarded as a basic standard for safe medication practice, nurses make many administration errors despite having verified the five rights. This is because the rights offer limited guidance on medication administration (Alharbi & Kundi, 2023).

The multifactorial leadership styles of transformational, transactional, and passive-avoidant is a widely used classification within nursing. The 3 styles are not aligned on a continuum; instead, they display some behaviors that NMs can use to varying degrees at different times. A considerable body of nursing studies has reported a significant relationship between an NMs leadership style and multiple nursing outcomes such as commitment, retention, and medication administration (Farag et al., 2017; Altalhi et al., 2023).

Improper medication administration can result in medication errors, a widespread form of medical mistake in healthcare environments. This issue imposes significant financial burdens on institutions and has adverse effects on the quality of life for patients. Hospital patients, on average, encounter at least one medication error daily, with an estimated 4% of inpatients facing errors related to prescribing, dispensing, or administration. The Institute of Medicine's landmark report in 1999 also highlighted that, on average, hospital patients experience a daily medication error, affecting approximately 4% of inpatients in terms of prescribing, dispensing, or administration. To diminish the occurrence of adverse drug events and enhance the safety and quality of healthcare

services, it is crucial for clinicians to actively engage in both preventive and reactive measures. (Rajhi et al., 2023; AL ALI et al., 2023; Yakout et al., 2023)

Medication administration which in case is improper leads to medication errors are preventable events that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health-care professional, patient or consumer. Medication errors and health-care-related adverse events occur in 8–12% of hospitalizations in European Union Member States. Recognizing the substantial impact of medication administration on patients, their families, healthcare professionals, and the industry at large, it is imperative to address this issue. Nurse Managers and nurses' leadership styles and role in the medication management process delves into the challenges associated with ensuring safe medication practices in contemporary clinical settings. (Al Aaraj et al., 2023; Abousadegh et al., 2023)

Methodology

Literature Search

A comprehensive literature search was conducted to identify relevant studies investigating the nursing leadership styles and their impact on medication administration practices in healthcare organizations. The search was performed using articles published and included in databases like Google Scholar and PubMed. An initial search of databases for research on, 'nursing leadership styles in healthcare organizations' resulted in 300 results while a search on 'medication administration practices' resulted in 550 while results for 'nursing leadership styles and medication practices' resulted in 230 results.

The search strategy employed the use of keywords to optimize the retrieval of relevant articles. The following search terms and their variations were used: "nursing leadership," "medication practices" "nursing leadership styles and medication" and "medication practices by nurses." The search was not limited by publication date however only the publications in the English language were accessed. The PRISMA diagram provides complete details for research identified, screened, and included in the systematic review.

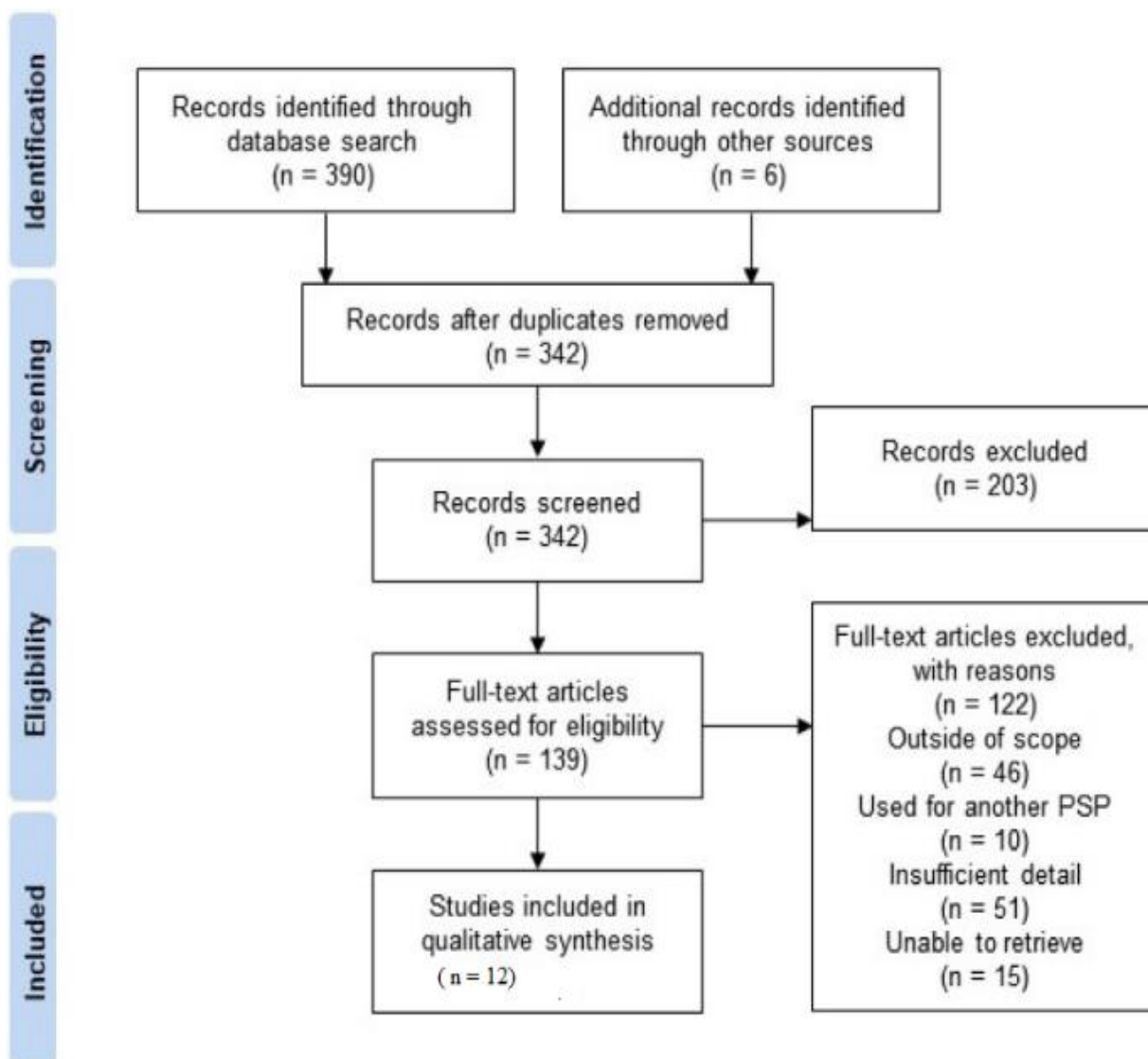


Figure 2: PRISMA Flow Diagram for Systematic Review

Inclusion/ exclusion Criteria

Studies were included in the review if they investigated the use of nursing leadership styles and medication administration practices in the healthcare sector.

Included publications with a focus on nursing leadership in the healthcare sector and medication practices in healthcare administration.

Studies were excluded if they were not relevant to the topic of nursing leadership and medication practices and similar, another reason for exclusion was duplicate publications and non-scientific research.

Data Extraction

To gain a better understanding of the similarities and general direction of the research, data related to the author, research design, objective, results, and conclusion used in the study were noted and extracted from original articles.

Nurse's Leadership Styles, Benefits, and Limitations

The American Nurses Association (ANA) recognizes the following seven nursing leadership styles:

Leadership Style	Benefits	Limitations
Laissez-faire Leadership	Because laissez-faire nurse leaders do not micromanage or dictate how their teams should function, highly experienced teams that are already effective may work well with this type of leadership.	Laissez-faire nursing is not necessarily a good fit for the healthcare industry due to the constant change and the need for quick decision-making.
	Laissez-faire philosophy supports the theory that if something is not broken, it does not need to be fixed (or changed).	With large numbers of experienced nurses retiring and new nurses constantly onboarding, laissez-faire nursing leadership is unlikely to adequately help new teams that need critical guidance to provide high-quality care and be proactive with patient safety.
	Laissez-faire nurse leaders rely more on independent activity than individual initiative. If individuals prefer to work on their own, the lack of an involved leader may not matter.	

Autocratic Leadership	Autocratic nurse leaders are effective in making decisions quickly and delegating when necessary.	Autocratic nurse leadership does not tend to promote trust or communication among a team. It may also create a culture that does not capitalize on all team members' valuable insights and knowledge.
	This top-down leadership style may serve teams well in emergencies or when implementing and enforcing "zero occurrences" policies (e.g., driving for zero pressure ulcers, etc.).	Autocratic leaders can stifle collaborative decision-making and transparency or hinder an organization's journey to high reliability by suppressing staff input.
Servant Leadership	Servant leadership in nursing can be extremely beneficial when leading a multidisciplinary, diverse team because leaders concentrate on meeting each team member's individual needs.	A poorly performing team may continue to struggle under the servant leadership style when collective direction and guidance for the whole team would otherwise create a more unified process and approach.
	Servant leaders can adapt their approaches to different roles, specialties, and resource requirements.	Servant leadership in nursing is not recommended when top-down decisions must be made to quickly align an entire team or organization.

Democratic Leadership	Democratic leadership in nursing can help ensure that the whole team feels valued and able to speak up.	A democratic leadership style can be detrimental when a rapid response is required, especially in a care setting where adverse events and emergencies occur frequently.
	Highly reliable organizations value transparency and input from team members with the most expertise — not necessarily seniority or highest rank — making this type of leader instrumental for creating a culture that promotes good ideas from all levels.	Democratic leaders who always depend on the group may struggle when needing to make decisions independently.
Situational Leadership	Situational leadership allows for flexibility. Leaders can modify their approaches to best fit the staff and resources of a given scenario.	Situational leadership lets leaders “go with the flow” when needed but could derail organizational goals if teams get off track.
	Discoveries can happen when leaders look for different ways to approach a task. This leadership style leaves room for both leaders and staff members to take initiative or suggest ideas	Performance quality could vary widely among individuals and teams due to inconsistencies in approach and potentially unpredictable decision-making.

Transactional Leadership	Transactional leadership is easy to understand. Staff members know what they must do, how leaders want it done, and what will happen when they do it (or if they do not). Leaders use a task-and-reward process with limited communication or opportunities for creative thinking.	The transactional leadership model does not generally encourage creativity or problem solving. Getting things done quickly or easily may take precedence over doing them better. This style can be difficult to maintain in times of constant or rapid change due to shifting values, priorities, and goals.
	Staff members tend to meet their work objectives because they are under close supervision. Transactional leadership helps inexperienced supervisors and teams because they have procedures to follow.	Leaders make most of the decisions, explicitly dictate the work, and determine criteria for success, providing little opportunity for innovation from non-supervisory staff members.
Transformational leadership	Transformational nurse leaders inspire and motivate their staff to find better ways of achieving a goal.	Transformational leadership can be ineffective in the beginning stages of initiatives, brand-new organizations, or ad-hoc situations where goals and processes are unclear.
	Transformational leaders mobilize groups to get work done, improving morale, motivation, and well-being by establishing an excellent rapport.	This type of leadership style requires an existing structure so that improvement, further development, growth, or transformation can occur.

One of the components of the American Nurse Credentialing Center's (ANCC) Magnet Model® designation, the transformational style creates leaders who develop a vision of the future for their teams and organizations, regardless of their level. The primary goal of being a transformational leader is not to be a better boss but to empower, inspire, engage, and lead teams to deliver highly reliable, safe, and effective patient care, every time (Felicia Sadler;2023).

Systematic Analysis of Research

Sr	Author	Research Topic/Title	Objective	Research Design/Methodology	Leadership Styles	Conclusion
1	(Alharbi & Kundi, 2023)	Servant Leadership and Leadership Effectiveness in Healthcare Institutions	The purpose of the present study is to analyze the moderating effect of cognitive style indicators on the relationship between servant leadership style and leadership effectiveness.	Mix method explanatory sequential research design was used to collect data. AMOS SEM was run for data analysis and development of measurement and structural models. The study population was drawn from healthcare institutions in the Qassim region, Saudi Arabia.	Servant Leadership Style	The results showed a positive association between servant leadership style, cognitive style indicator, and leadership efficiency. In addition, all values were significant and indicative of the cognitive style's moderating impact on servant leadership and leadership effectiveness.

2	(Mughal , 2023)	Impact of transformational leadership upon physicians & nurses performance in Saudi healthcare organizations	The aim of current study was to investigate the impact of transformational leadership on performance.	The simple random sampling technique as used to select sample size. 450 questionnaires were distributed and 407 were received and used in analysis. Pls-sem was used for analysis of data.	Transformational leadership style	Idealized influence has a significant role in enhancing performance but stimulation, consideration & motivation play significant role in increasing the physicians and nurses' performance in healthcare organizations.
3	(Farag et al., 2017)	Do Leadership Style, Unit Climate, and Safety Climate Contribute to Safe Medication Practices?	To examine if leadership style and unit climate predict safety climate; and testing the direct, indirect, and total effect of leadership style, unit climate, and safety climate on nurses_ safe medication practices.	Nurse manager leadership style was measured using the Bass and Avolio Multifactorial leadership survey (MLQ-5X). This cross-sectional study used survey data from 246 rns working in a Magneta hospital.	Transformational Transactional Passive avoidant	Leadership style and unit climate predicted 20% to 50% of variance on all safety climate dimensions. Model testing revealed the indirect impact of leadership style and unit climate on nurses_ safe medication practices.
4	(Flores et al., 2023)	Congruence of Effective Leadership Values between Nurse Leaders and Staff Nurses in a Multicultural Medical City in Saudi Arabia: A Sequential Mixed-Methods Study	This study explores the perceived congruence of effective values of nursing leadership between the nurse leaders and the staff nurses in a multicultural tertiary hospital.	This is a descriptive sequential mixed-methods study conducted in a multicultural medical city in Saudi Arabia. Purposive sampling was used in the qualitative phase, while stratified sampling was used	-	Both nurse leaders and staff nurses in the multicultural institution have congruent leadership values that are perceived as essential to achieve institutional goals and, ultimately, safe and high-quality patient care.

				for the quantitative part.		
5	(Merill, 2015)	Leadership Style and Patient Safety Implications for Nurse Managers	The purpose of this study was to explore the relationship between nurse manager (NM) leadership style and safety climate	A descriptive correlational study was conducted in 41 nursing departments across 9 hospitals. The hospital unit safety climate survey and multifactorial leadership questionnaire were completed by 466 staff nurses. Bivariate and regression analyses were conducted to determine how well leadership style predicted safety climate	Transformational leadership style was demonstrated as a positive contributor to safety climate, whereas laissez-faire leadership style was shown to negatively contribute to unit socialization and a culture of blame	Nursing leaders must concentrate on developing transformational leadership skills while also diminishing negative leadership styles.
6	(Odberg et al., 2019)	Medication administration in nursing homes: A qualitative study of the nurse role	The objective of this study was to expand the knowledge of the nurse's role during medication administration in the context of nursing homes	A mixed study design was applied	-	Medication administration is a pervasive process ingrained in the day-to-day activities of providing care to patients. The nurse's role is compensating, flexible and adaptable.
7	(Lappala inen et al., 2020)	The relationship between nurse manager's transformational leadership style and medication safety.	Medication administration is one of the aspects of patient safety and an important part of nurses' daily practices. Nurse managers can ensure medication safety by adopting a	Data were collected from Registered Nurses (n = 161) in three Finnish hospitals in May 2016 using an electronic questionnaire incorporating the Transformational	Transformational leadership	Nurse managers' transformational leadership style can promote medication safety in units. The medication competence of nurses must be addressed because assurance and confidence in their own

			transformational leadership style. However, little evidence exists regarding how transformational leadership relates to medication safety.	Leadership Scale (TLS) and Medication Safety Scale (MSS). Data were analyzed using statistical analyses including descriptive analyses, principal component analysis and multivariate analyses. STROBE reporting guidelines were followed		expertise in pharmacotherapeutic tasks positively affects their perceptions of medication safety.
8	(Akbiyik et al., 2020)	The Effect of Nurses 'Leadership Behavior on the Quality of Nursing Care and Patient Outcomes	The effect of nursing management styles on patient outcomes and the quality of nursing care (QNC) has recently become a topic of discussion. This review was conducted to examine the effects of leadership styles or behaviors on QNC and on patient outcomes.	13 research studies published between 1 January 2010 and 31 May 2016, which conformed to the inclusion criteria, were reviewed.	Relationship-Focused Leadership Style	Relationship-focused leadership behaviors directly or indirectly improved patient outcomes and raised the QNC compared with task-focused leadership behaviors.
9	(Walsh, 2004)	The Relationship between Leadership Practices and a Medication Safety Regime	This research examined the relationship between organizational culture and leadership and the degree of safety in healthcare institutions.	The hypothesis is that strong leadership practices have a positive relationship with the degree of sophistication of a medication safety program.	-	Institutions that had strong leadership practices toward safety had both high and low levels of safety performance.

10	(Zaghini et al., 2020)	The Relationship between Nurse Managers' Leadership Style and Patients' Perception of the Quality of the Care Provided By Nurses: Cross-Sectional Survey	The main purpose of this study is to test a model that investigates the relationships between nurse managers' leadership style and patients' perception of the quality of the care provided by the nurses.	A multi-center cross-sectional study was conducted.	-	The results of this study showed that the characteristics of the organizational context, the leadership, and the behaviors of nurses, influenced patients' perceptions of nurses' care and medication administration.
11	(Khan & Tidman, 2022)	Causes of Medication Error in Nursing	Ensuring patient safety is the primary goal of the healthcare facility. It is the duty of every healthcare professional involved in patient care to collaborate to administer medication safely without errors.	Optimal and standard integration of medication safety principles and practices comes from leadership, nursing commitment, and the nursing knowledge of causes and how to avoid medication errors and what leads to medication errors.	Transformational Leadership Style	A culture of medication safety shines in an environment of learning and interprofessional collaboration under the umbrella of a transformational leadership style of commitment to patient safety, high-quality, and effective care
12	(Gashaye et al., 2023)	Perceived Utilization of Leadership Styles Among Nurses	Nurses' perceptions of leaders' leadership styles have a significant impact on their well-being. Effective leadership in health care is crucial for improving and enhancing the effectiveness of health care systems.	Cross-Sectional Research Design	Transformational Leadership Style	This study highlights that transformational leadership is a commonly utilized leadership style by leader nurses. Therefore, a transformational leadership style is key to achieving organizational goals and increasing staff nurses' productivity.

DISCUSSION

The present systematic review aimed to thoroughly investigate the impact of different leadership styles adopted by nurses on their performance especially medication administration of patients. The review synthesized findings from a range of studies, including those conducted by (Gashaye et al., 2023), (Khan & Tidman, 2022), (Zaghini et al., 2020), (Walsh, 2004), (Akbiyik et al., 2020), (Lappalainen et al., 2020), (Odberg et al., 2019), (Merill, 2015), (Flores et al., 2023), (Farag et al., 2017), (Mughal, 2023), (Alharbi & Kundi, 2023).

The study conducted in Saudi Arabia has shown that nurse leaders who use effective leadership styles promote better outcomes, including staff nurses' medication administration and work effectiveness. In addition, studies have shown that the transformational leadership style of nurse leaders brings positive outcomes among staff nurses and leads to high-quality nursing care and staff nurse satisfaction.

Ineffective utilization of leadership style can cause staff turnover of 21%, and low staff nurse satisfaction, reduced productivity, and low effectiveness by 17%, 17.1%, and 17.7%, respectively. Effective utilization of leadership style has been associated with reduced length of hospital stay and lower rates of medication errors, patient falls, urinary tract infections, and pneumonia. Additionally, it improves the quality of care and patient outcomes and lowers patient mortality. (Gashaye et al., 2023)

The results of the study indicate that the commonly perceived leadership style among nurses in public health facilities is a transformational leadership style that is often utilized. This indicates that transformational leadership improves medication administration and client care by increasing staff nurses' motivation. The findings are congruent with studies conducted in Saudi Arabia and the United States but incongruent with a study conducted in Iran, which stated that the dominant head nurses' "utilized leadership style from [the perspective of] nurses" was transactional leadership. This difference may be due to the setup of health institutions and policies.

The study demonstrates that staff nurses perceived a transformational leadership style to be utilized more often than transactional and laissez-faire leadership styles. This result is similar to that of previous studies in different areas of Saudi Arabia and the United States. Moreover, the results showed that nurses perceived that their head nurses had fairly often used all domains of the transformational leadership style (Gashaye et al., 2023). Among the transformational leadership style inspirational motivation has highest mean score, which is similar to studies conducted in Indonesia and Saudi Arabia but incongruent with studies conducted in Nigeria and the United States; while domains of transactional leadership style vary, ranging from sometimes to fairly often. Head nurses have sometimes used active and passive management by exception style and often used a contingent reward style, which is similar to a study conducted in Saudi Arabia.

Leadership styles are associated with medication administration and patient health and safety. The nurse managers opt for different leadership styles, researched servant leadership and effectiveness, and concluded that there is a considerable connection between the two concepts, similar to Khan et al. (2018). However, as of now, there is a shortage of investigation about servant leadership and leadership efficacy. Leaders and staff nurses in multicultural institution in Saudi Arabia have congruent leadership values majorly focusing on transformational leadership practices along with other leadership styles that are perceived as essential to achieving institutional goals and, ultimately, safe and high-quality patient care.

Implications

The current systematic review on the impact of leadership styles opted by nurses in healthcare settings and their impact on medication administration and management which also associated with overall performance of their duties. The review help to follow suitable leadership style to improve medication administration to overcome medication errors, which cause serious health related outcomes for the patients and their families.

Recommendations

The review helps to identify the leadership style of nurses and its link with medication administration in healthcare organizations. As it has been found that transformational leadership style is found to be supportive for nurses to improve their work performance in which medication administration is an important task of their job.

Addition in Existing Literature

The review is an addition to the existing literature as leadership styles and medication administration were found to be important areas that need more exploration by the researchers, healthcare professionals, management, and nurses working in different settings. Although Transformational leadership was found to be an effective leadership, style apart from all other leadership styles.

Impact and Contributions

The review will create a tremendous impact on healthcare professionals especially nurses working with different leadership styles and providing services to the patients. It helps them to critically analyze and opt for the suitable style for themselves to perform better at the workplace. Although the literature suggests the transformational leadership style would be more reliable to develop and follow.

Limitations

Despite the auspicious findings, it is important to acknowledge the limitations across the studies. Due to limited studies with similar variables, the heterogeneity in this study's design, nurses' leadership styles, and medication administration by various researchers is a challenge for direct comparison and generalization of results. This study was limited to data collected from digital databases and web search engines and thus could have missed relevant research in public libraries and university databases.

Conclusion

The systematic review collectively contributes to the body of knowledge on leadership style. Effective and balanced use of various leadership styles requires knowledge (training), from both leader and staff nurses, relevant to medication administration. A collaborative approach is needed to employ the most effective leadership styles to improve the quality of nursing care, patient satisfaction, and the creation of suitable working environments. An overwhelming body of literature on medication administration has recognized the perennial, multifaceted problem of such medication errors and their impact on patients, families, health professionals, hospitals, and the community at large. The present study has provided an overview of the individual and system challenges to safe medication administration in clinical practice that move beyond the traditionally advocated mantra of the five rights in medication administration. An analysis of the causes of medication administration, which is linked to the leadership styles of nurses, needs much attention to be explored. Recognizing the influence of the work environment on the process of medication administration, Nurses need to acknowledge that nurses are the final link in the medication administration chain and their leadership style has an inevitable effect on patient health and safety.

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