

Exploring the Impact of Transformational and Transactional Style of Leadership on Nursing Care Performance and Patient Outcomes

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Background: The form of leadership that can positively influence nursing care performance and patient outcomes remains a crucial subject in the healthcare sector.

Aim: This study examines the effect of leadership style at different managerial levels on nursing care performance and patient outcomes.

Methods: A retrospective cohort study was conducted in a public hospital, focusing on two primary settings: the general ward and the critical care unit. The study sample included 60 nurses and 300 patients. The leadership style is a predictor of this study and was measured using a cross-sectional survey of Jordanian nurses using the Multifactor Leadership Questionnaire (MLQ). Nursing care performance and patient outcomes were measured by surveying patients, observing practice, and reviewing health records. The analysis involved descriptive statistics, chi-square tests, odds ratios, and multivariate regression analysis.

Results: The study found that transformational leadership was predominant in the general ward, while transactional leadership was more common in the critical care unit. Leadership styles significantly influence clinical nursing performance. Nurses under transformational leaders were more likely to follow generic policies like patient surveillance but less consistent with specific care standards. Nurses under transactional leaders were linked to higher adherence to standardized care protocols like fall risk assessment and medication rights. Patient outcomes were similar between units, except for higher readmission rates under transactional leadership.

Conclusion: The study's findings underscore the complexities of nurse leadership styles and clinical nursing performance. Nurse manager should adapt their leadership style to the particular setting and a one-size-fits-all approach to leadership may not be effective in healthcare.

Keywords: nursing leadership, transformational leadership, transactional leadership, nurse manager, patient outcome, nursing care performance

Introduction

Evidence-Based Practice (EBP) is an essential component of effective healthcare institutions, contributing to high-quality care and productivity.¹ Healthcare leadership is necessary to inspire and guide nursing staff to implement and adopt EBP for improved patient care. Leadership includes various behavior techniques applied to coordinate and direct the activities of a group of individuals (nurses in this context) to achieve a common goal. Different leadership behaviors, commonly known as leadership styles, promote different patterns of relationships between leaders and their followers. The relationship patterns, in turn, affect the followers' motivation and commitment to the organizational goals.² Therefore, leaders must proactively learn, adopt, and implement robust leadership knowledge and skills to promote excellent nursing staff and outcomes.

The relationship between nursing leadership and the competency of nursing teams is reflected in outcomes among nurses and patients.³ At the nursing level, effective leadership translates to improved knowledge and skills, stronger

leader-follower relationships, and enhanced nurse satisfaction. For patients, these components promote high-quality care characterized by safety, effectiveness, reliability, patient-centeredness, efficiency, and equity.⁴ Transformational leadership and transactional leadership are two common styles of oversight in contemporary nursing education and practice.^{5–7} The components of care, including structure, process, outcome, and patient satisfaction, are major areas of focus for quality assessment functions. The structure of nursing care primarily entails how people, resources, and institutions are arranged to meet the needs of patients satisfactorily.

Nurses require empowerment to foster core healthcare domains such as access, utilization, efficiency, quality, sustainability, and learning.⁸ While technical skills and knowledge obtained through higher education form the foundation of nursing, performance in these domains depends on how nurses' needs, including personal and professional growth, motivation, mentorship, and cultural integration, are addressed. Adequate access to these needs helps solve the biggest challenges for nursing, including burnout, technological dynamics, and nurse bullying, and consequently, optimize patient care based on input from a team of competent and devoted professionals.⁹ A supportive (not accommodative) leadership approach is mandatory for these goals. Transformational and transactional leadership are two common nursing leadership styles exhibiting distinct outcomes among nurses and patients. Therefore, this study aims to investigate the impacts of transformational and transactional leadership styles on clinical nursing performance and patient outcomes across two clinical units: the general ward unit and the critical care unit.

Literature Review

Tasks and interpersonal relationships are fundamental elements of interest for effective leadership.² Transformational leadership attempts to establish a balance between these two elements to promote a common goal. Essentially, the transformative leader embodies attributes and behavior necessary for follower empowerment and motivation.⁵ Transformational leadership achieves these goals with its four foundational pillars. The leader uses idealized (exemplary) influence to establish trust and uphold integrity. Inspirational motivation serves to create a common vision and motivate followers towards its achievement. Through intellectual stimulation, the leader introduces followers to new concepts challenging the status quo.¹⁰ Finally, transformational leadership employs individualized consideration to empower or reward followers based on their unique demands.¹¹

On the other hand, the transactional leadership style focuses on goal achievement-based exchanges of rewards with followers; three elements characterize this leadership approach, and each can function exclusively.¹² The first approach, active management by exception, involves active surveillance of the followers' performance to make corrective interventions when the leader detects errors compromising the common goal. Contrarily, the passive transactional leader clarifies expectations for followers and allows them to execute processes uninterrupted with negative feedback or warnings, even when errors occur.¹³ Essentially, this leader expects the follower to notice and rectify task deviation errors. Finally, in the contingent reward approach, the leader sufficiently articulates duties and processes to followers and explains how various performance levels will be rewarded.¹³

Organizational success primarily depends on employee loyalty.¹⁴ In turn, employee loyalty is governed by fundamental factors, including an unwavering belief and embracement of organizational goals and values, a willingness to surpass organizational targets, and an entrenched desire to maintain an organizational identity.¹⁴ The transformational leadership behavior comprehensively fosters these factors because, besides challenging nurses to transcend their contractual obligations, it provides necessary empowerment, including exemplary guidance, follower education, and individual-based support, enabling each nurse to fulfill their job demands with different levels of expertise.^{15,16} Such leadership enhances employee satisfaction, which is crucial for healthcare quality optimization with appropriate allocation of resources and nurses' commitment to critical thinking and innovativeness skills on achieving excellent patient outcomes, including reduced healthcare costs.

Organizations may focus on task processes and completion to limit errors, particularly in critical conditions.¹⁷ Transactional leadership in nursing is usually appropriate in high-risk conditions where simple errors can impose devastating consequences.¹⁸ Transactional leadership in nursing involves minimal cooperation between leaders and followers from the perspective that the nurses are sufficiently competent and thus suited to assigned tasks. Indeed, experienced nurses and gifted professionals have the autonomy under this leadership style to make decisions about

technical issues with strict resolution deadlines. Patients enjoy the benefits of services from such nurses, including efficiency and innovative solutions to health complications.¹⁹ On the other hand, experienced nurses derive satisfaction from autonomous operation and exceptional rewards based on exceptional performance, which could form the foundation for career development opportunities, including job promotions. However, less experienced nurses face the overwhelming challenges of providing effective care under transactional leadership.

Hypotheses Development

The relationship between leadership styles, nursing performance, and patient satisfaction is essential in understanding how to optimize healthcare quality. Transformational leaders are focused on inspiring and motivating their followers, creating a vision for the future, and fostering an environment of empowerment, trust, and innovation.^{5,20–22} These elements are essential to help nurses develop their confidence and skills, which leads to enhanced nursing performance, improved patient care, and improved patient satisfaction. Transactional leaders are more directive and focus on completing tasks on time, adhering to protocols, clarifying expectations, and providing immediate feedback.²³ These elements can be efficient in critical situations where errors can have significant consequences. Based on the above review of leadership styles, nursing performance, and patient outcomes, the following hypotheses are proposed:

Hypothesis 1: Transformational leadership is positively associated with nursing performance and patient outcomes in clinical settings, particularly in general ward units.

Hypothesis 2: Transactional leadership is positively associated with nursing performance and patient outcomes in clinical settings, particularly in critical units.

Methods

Design

The research design was a retrospective cohort design. A retrospective cohort design is a type of observational study in which researchers look back at existing data to analyze the relationship between exposures and outcomes in a defined group of people. The retrospective cohort design allowed for the analysis of existing data from multiple cohorts of nurses and patients across two different clinical units: the general ward and the critical care unit. The study also used a cross-sectional survey of nurses from the selected clinical units to measure the leadership style.

Setting

The sample was collected from Prince Hamza Hospital, one of the largest public educational hospitals in Jordan. The hospital is an ideal setting to conduct the study because it has a high-volume facility that provides a wide range of medical services. The study researchers selected two clinical units within the hospital: the general ward and the critical care unit. These units were chosen due to their contrasting care demands and patient acuity levels, providing an opportunity to examine the impact of different leadership styles on nursing performance and patient outcomes. Also, both units have had the same direct unit manager since 5 years ago, making those units an appropriate setting to conduct the study since staff nurses have adequate exposure to the leadership style of their direct manager. Therefore, this study conducted chart reviews between the years 2018 and 2023. The chart reviews provided quantifiable and objective evidence of leadership styles and their impact on patient outcomes and nursing performance. The five-year timeframe was selected to allow for the accumulation of a robust dataset and the examination of long-term trends in patient outcomes under sustained exposure to leadership style across two clinical units: the general ward unit and the critical care unit. The five-year timeframe also provided sufficient data to capture patterns over different operational challenges, patient demographics, and staff shifts.

Sample

Nurse Participants: There are 132 RNs who meet the inclusion criteria for the study in both units. The sample consisted of 60 nurses; 30 RNs from each unit who were selected using a stratified random sampling method to ensure a representative mix of

nursing staff from both units. The sample size was calculated based on a power analysis. A significance level was set at 0.05 and $\beta = 0.20$ assuming a moderate standardized effect size of 0.70; therefore, the study required a sample size of 33 nurses. This calculation indicated that a sample of 60 participants was adequate to achieve reliable results.²⁴ The 60 nurses completed the Multifactor Leadership Questionnaire (MLQ), which was used to assess their perceptions of the leadership style of their direct unit managers either transformational or transactional. The inclusion criteria for RN participants are as follows: (a) being employed full-time, (b) having worked at least six months in the same unit (ward unit or critical care unit) to ensure adequate exposure to the leadership style of their direct unit manager, and (c) working under a nurse manager. Exclusion criteria include non-clinical nursing personnel.

Patient Participants: The patient sample included 300 patients who were admitted to the general ward and critical care unit during the study period. The sample size was calculated based on a power analysis. A significance level was set at 0.05 and $\beta = 0.20$ assuming a moderate standardized effect size of 0.70; therefore, the study required a sample size of 34 patients or more participants in each setting ($n = 68$). If we estimate the attrition rate at 30% due to missing information, the study required an additional 30 participants.²⁴ This calculation indicated that a sample of 300 patients was adequate to achieve reliable results.

Patients were followed to assess the effect of nursing leadership styles on nursing care performance and clinical outcomes. The inclusion criteria for patient participants are as follows: (a) being admitted to the general ward or critical care unit during the study period and (b) having a hospital stay with a minimum of 48 hours to ensure adequate exposure to the nursing care provided under different leadership styles. Exclusion criteria include being admitted directly with unstable conditions that required immediate life-saving interventions to the intensive care unit, as patient outcomes could be affected by factors other than leadership style.

Measures

The leadership style was evaluated using the Multifactor Leadership Questionnaire (MLQ). The MLQ is a 45-item questionnaire that is used to examine and measure the styles of leadership.²⁵ Registered nurses completed the questionnaire to evaluate their nursing leaders' styles. The survey assesses two different leadership styles transformational and transactional. The MLQ is rated with scoring using a Likert scale that ranges from 0 to 4, with numerical values representing: 0 (not at all), 1 (once in a while), 2 (sometimes), 3 (fairly often), and 4 (frequently, if not always). Transformational leadership is measured by five scales: idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration. Three subscales measure transactional leadership: contingent reward, management-by-exception (active), and management-by-exception (passive).

Nursing care performance was evaluated using 15 indicators ([Supplementary File 1](#)). Nursing performance indicators were collected by observing the practice and reviewing the patients' charts. These indicators were determined after selecting patient outcomes. They reflect the best nursing performance and action that can best result in positive health outcomes. For example, one of the outcomes is a patient fall, and therefore, the study chose Morse Fall Risk Assessment as a process indicator for this outcome. Morse Fall Risk Assessment is a standard nursing practice for all admitted patients.²⁶ Outcome indicators were measured by surveying the patients through telephone surveys and reviewing the health records. These outcome indicators include 25 variables categorized in the domains of safety, patient comfort and quality of life, changes in patient knowledge and behavior, patient satisfaction, and joint outcomes such as morbidity and mortality ([Supplementary File 1](#)). Data were collected by conducting chart reviews using a standardized chart review form (CRF). A pilot test of the CRF was performed, and changes were made as necessary to enhance the rigor and minimize biases. Also, a random selection of 40% of the sample was checked to ensure proper data coding and entry. Further, triangulation of data collection was used to measure nursing care performance using non-participatory observation to measure indicators that cannot be measured by reviewing the health records such as infection control practices.

Data Collection

The study commenced by selecting two units (ward unit and critical unit) that fit the study's eligibility criteria. The leadership styles present in the two units were not known. To identify the leadership style in each unit, the survey regarding leadership style (MLQ) was distributed by a research assistant to 60 RNs (30 RNs from each unit) which were

then categorized into transformational or transactional leadership based on the scores obtained across both units. The assistant ensured that participation was voluntary and agreed upon by signing a consent form. Another research assistant was hired and trained to observe and evaluate nursing care performance in the designated departments. The research assistant collected information regarding 15 indicators using the Non-Participant Observation Form. Further, another research assistant was hired to review the health records and collect data concerning the provision of care in the included departments. The data collection process was conducted for three months, from October 23, 2022, to January 23, 2023.

Ethical Considerations

The Institutional Review Board (IRB) of The Hashemite University reviewed and approved the study on August 1, 2021 (No. 6/13/2020/2021). The researchers also obtained ethical approval from the Institutional Review Board at Prince Hamza. The principles of the Declaration of Helsinki conducted this study. Participants and patients were provided with essential information for informed consent, including the purpose, the possible risks or discomfort, and the benefits of participating in this study. Participation was voluntary and participants could withdraw from the study at any time without any penalties. Participants' anonymity was maintained, and informed consent was obtained from nurses. Patients were assigned a unique study code to protect the confidentiality of their information. All data was protected, stored in an encrypted computer, and transcribed electronically.

Statistical Analysis

The continuous variables were summarized using means and standard deviations (SD) as part of the descriptive statistical analysis. The categorical variables (eg, sex and admission time) were summarized using frequencies and percentages. Descriptive statistics were employed to provide an overview of the data characteristics for the study groups (Tables 1 and 2). Chi-square (χ^2) tests were used to evaluate the relationships between leadership styles and categorical clinical outcomes (Table 3). Odds Ratios (OR) with Confidence Intervals (CI) are utilized in Table 4 for categorical outcomes stratified by leadership styles. Multivariate regression analysis to identify predictors of hospital length of stay, with beta coefficients (β), confidence intervals (CI), and p-values reported (Table 4). Results were considered significant at a threshold of $p < 0.05$. The analysis was conducted using SAS software.

Results

Leadership Style

Sixty nurses (45.5%) returned the Multifactor Leadership Questionnaire. The settings were stratified according to the means of different domains of each leadership style. The mean transformational domains score was higher than the transactional domains score among nurses in the general ward. The opposite was found, in which the transactional domain score was higher among critical care nurses. This defined the ward setting as transformational compared to the transactional leadership style detected in the critical care unit. Leadership style across settings is summarized in Table 1.

Table 1 Leadership Style Across Departments (N = 60 Registered Nurses)

Department	Leadership Domains Mean (SD)							Leadership Style n (%)		
	TM1	TM2	TM3	TM4	TM5	TA1	TA2	TA3	Transactional	Transformational
Ward	12.1 (2.7)	10.9 (2.2)	11.0 (3.1)	11.2 (2.9)	11.1 (2.5)	11.2 (2.6)	11.1 (3.5)	8.8 (3.2)	11 (36.6)	19 (63.3)
Critical Care	9.4 (3.6)	9.0 (3.8)	9.7 (4.4)	9.2 (3.7)	8.4 (4.3)	8.9 (3.9)	10.2 (3.6)	8.5 (3.4)	17 (56.6)	13 (43.4)

Notes: Generated using SAS for descriptive statistics. Mean values and standard deviations (SD) were calculated for each leadership domain across departments.

Abbreviations: TM1, Transformational Idealized Attributes; TM2, Transformational Idealized Behaviors; TM3, Transformational Inspirational Motivation; TM4, Transformational Intellectual Stimulation; TM5, Transformational Individual Consideration; TA1, Transactional Contingent Reward; TA2, Transactional management by Exception (Active); TA3, Passive Avoidant Management by Exception (Passive).

Table 2 Clinical Characteristics (N = 300 Patients)

Characteristic		Leadership Style n (%)	
		Transformational (n=143)	Transactional (n=157)
Sex	Male	75 (52.4)	85 (54.1)
	Female	68 (47.6)	72 (45.9)
Admission Time	Morning	108 (75.5)	117 (74.5)
	Evening	25 (17.5)	24 (15.3)
	Night	10 (7.0)	16 (10.1)
Ambulatory Status	Self	58 (40.5)	9 (5.7)
	Wheelchair	63 (44.1)	106 (67.5)
	Restricted	22 (15.4)	42 (26.7)
Age	< 45 yrs.	26 (18.1)	62 (39.5)
	45–59.9 yrs.	53 (37.0)	42 (26.7)
	60–70 yrs.	64 (44.8)	53 (33.8)

Notes: Data was processed and analyzed using SAS for categorical variables, with frequency and percentage distributions computed.

Table 3 Clinical Nursing Performance Across Settings with Different Leadership Styles

Variable		Leadership Style n (%)		x ²	p-value
		Transformational (n=143)	Transactional (n=157)		
Morse Fall Risk Assessment	Yes	44 (30.8)	75 (47.8)	9.0	< 0.01*
	No	99 (69.2)	82 (52.2)		
Medication Rights Adherence	Yes	84 (58.7)	133 (84.7)	25.2	< 0.001*
	No	59 (41.3)	24 (15.3)		
Patient Surveillance According to Unit Policy	Yes	34 (23.8)	0 (0)	42.1	< 0.001*
	No	109 (76.2)	157 (100)		
Comprehensive Assessment and Delivery of Care were Consistent Across Nurses	Yes	56 (39.2)	16 (10.2)	34.4	< 0.001*
	No	87 (60.8)	141 (89.8)		
Unnecessary Nursing Intervention or Procedure	Yes	0 (0)	8 (5.1)	7.4	< 0.01*
	No	143 (100)	149 (94.1)		
Failure to Identify Risk Factors and Conditions	Yes	13 (9.1)	0 (0)	14.9	< 0.001*
	No	130 (90.9)	157 (100)		

Notes: *At a significance level 0.05. Chi-square tests were conducted using SAS to determine the association between leadership styles and nursing performance variables.

Patient Characteristics

Three hundred patients were followed to investigate the effect of leadership style on nursing performance and patient outcomes. Patient characteristics are illustrated in [Table 2](#).

Clinical Nursing Performance

The chi-squared test results identified significant performance differences between nurses with different nurse leadership styles. Nurses with transformational leaders had a higher compliance rate to follow generic departmental policies such as patient surveillance and assessment of patients than nurses with transactional leaders. Despite that, they were more likely not to assess patients properly and identify risk factors and conditions. This was also evidenced in the lack of adherence to standardized care, such as fall risk assessment and medication rights. In such terms, nurses with transactional leadership seemed to follow such care standards better. Frequencies and percentages of these occurrences are reported in [Table 3](#).

Table 4 Categorical Patients Outcome Variables Stratified by Settings with Different Leadership Style

Patients Outcomes		Leadership Style n (%)		OR	95% CI	p-value
		Transformational (n=143)	Transactional (n=157)			
Patient-centered Care	Yes	13 (9.1)	20 (12.7)	0.6	0.3, 1.4	0.31
	No	130 (90.9)	137 (87.3)			
Fall	Yes	3 (2.1)	2 (1.3)	1.6	0.2, 10.1	0.58
	No	140 (97.9)	155 (98.7)			
Medication Error	Yes	3 (2.1)	11 (7.1)	0.3	0.1, 1.0	0.05
	No	140 (97.9)	146 (92.9)			
Fluids or drug extravasation	Yes	15 (10.5)	28 (17.8)	0.5	0.2, 1.1	0.07
	No	128 (89.5)	129 (82.2)			
Pressure injury	Yes	0	0	0.9	0.6, 1.7	0.67
	No	143 (100)	157 (100)			
HAI	Yes	9 (6.3)	6 (3.8)	1.7	0.5, 4.9	0.33
	No	134 (93.7)	151 (96.2)			
Development of Complication	Yes	3 (2.1)	1 (0.6)	3.3	0.3, 32.4	0.29
	No	140 (97.9)	156 (99.4)			
Readmission	Yes	39 (27.3)	76 (48.4)	0.4	0.2, 0.6	< 0.001*
	No	104 (72.7)	81 (51.6)			

Notes: *At a significance level 0.05. Odds ratios (OR) and confidence intervals (95% CI) were calculated using multivariate logistic regression in SAS. P-values were computed for statistical significance. In the predictor variable, leadership style “transformational style” was selected as the reference group. Percentages were calculated using the column totals.

Abbreviation: HAI, healthcare-associated infection.

Effect of Nursing Performance on Patient Outcomes

Multiple logistic regression analyses found that patient outcomes were not significantly different between the two departments with different leadership styles (Table 4). Despite the significant differences noted in nursing performance between the two leadership styles, this was not translated into patient outcomes except for the occurrence of readmission. Patients cared for by nurses with a transactional leader were four times more likely to be readmitted to the hospital than if admitted to the department with a transformational leader ($p < 0.001$). Other investigated outcome variables of patient-centered care, falls, medication error, pressure sore, and healthcare-associated infection, were not significantly related to the leadership style (Table 4).

On the other hand, leadership style contributed significantly to the prediction of hospital length of stay (LOS) ($p < 0.001$). Fall was also significantly associated with LOS as its occurrence significantly increased LOS on an average of 19.4 days. The results of the multiple linear regression analysis are summarized in Table 5.

Table 5 Predictors of Hospital Length of Stay (Multivariate Analyses)

Variable	β	95% CI	p-value
Leadership Style	-7.9	-5.2, -10.7	< 0.001*
Fall	19.4	8.6, 30.3	< 0.001*

Notes: *At a significance level 0.05. Multivariate regression analyses were conducted using SAS. Variables included in the model are detailed in the note section. β coefficients, confidence intervals (95% CI), and p-values were used to interpret the predictors. In the predictor variable, leadership style “transformational style” was selected as the reference group. Variables included in the multivariate analysis were age and sex of the patient, leadership style, ambulation status, the provision of unnecessary nursing intervention, the situation of failure to identify or to respond to risk factors and conditions if they existed, or the occurrence of fall, medication error, pressure sore, or healthcare-associated infection. Variables of the final regression model are listed above, with a star sign next to the p-value.

Discussion

Nursing Leadership Style Across Different Hospital Wards

The study findings revealed that the mean transactional domains score was greater among critical care nurses, but the mean transformational domains score was greater among general ward nurses. This shows that the critical care unit has a more transactional leadership style than the general ward environment. These findings are consistent with previous studies, which suggest that transformational leadership is more effective in complex and dynamic healthcare environments (eg, general wards), where teamwork and collaboration are vital for providing high-quality patient care,^{20,21,27} because transformational leadership focuses on inspiring and empowering followers to achieve their goals,^{20,22} therefore, increases job satisfaction, organizational commitment, and achieving better patient outcomes.^{20,21,27} This shows that the higher mean transformative domains score among nurses in the general ward in the current study may have a favorable influence on the team's overall performance.

The finding of a higher transactional leadership style in the critical care unit is similar to that which has been reported elsewhere,^{28,29} demonstrating that transactional leadership is more effective in organized and regulated hospital contexts. This might be due to that transactional leadership stresses rewarding and disciplining followers based on their task performance, which is especially important in critical care settings where adherence to protocols and guidelines is vital to patient safety.^{28,29} It may also be more common in critical care and high-risk settings, such as emergency departments and intensive care units (ICUs),^{30,31} due to the types of patients that nurses care for and the challenges they face. For example, critical care nurses may be more likely to encounter patients with complex medical conditions or life-threatening emergencies, which require a more directive and task-oriented leadership style to ensure that care is delivered quickly and effectively. Critical care nurses frequently work in high-stress, fast-changing circumstances where patient conditions can suddenly worsen, needing prompt decision-making and clear instructions.³² In such cases, a transactional leadership style may be more successful in ensuring that the staff performs tasks rapidly and effectively, resulting in improved patient outcomes.^{28,29} Likewise, Sfantou and colleagues³¹ discovered that ICU nurses place a higher value on transactional leadership behaviors, such as monitoring and enforcing compliance, while transformational leadership behaviors, such as building a shared vision and offering developmental support.

The study findings suggest that nurses should adapt their leadership style to the particular setting and that a one-size-fits-all approach to leadership may not be effective in healthcare, with transformational leadership working better in general wards, and transactional leadership in critical care settings. However, further studies are required to validate and expand on these findings. Future studies might look at those factors that determine nurses' preferences for transformational or transactional leadership styles, as well as how these styles affect patient outcomes and organizational success in various contexts.

Effect of Nursing Leadership Style on Clinical Nursing Performance

The study findings indicate that various nurse leadership styles have a substantial influence on clinical nursing performance. Nurses with transformational leaders were more likely to comply with generic departmental policies such as patient surveillance than those with transactional leaders. This result is consistent with earlier research demonstrating that transformational leadership may promote adherence to organizational policies and procedures.^{33,34} The study findings are also consistent with existing studies in Jordan which highlight the critical role of transformational leadership styles in increased job satisfaction, organizational commitment, and quality of care.^{16,20,35} On the other side, the current study findings suggest that nurses with transactional leaders were more likely to follow standardized care protocols including fall risk assessment and medication rights. This might be because transactional leaders are more concerned with implementing rules and regulations, which can result in more compliance with standardized care standards.^{28,29} Remarkably, the study revealed that nurses with transformational leaders were less likely to assess patients and appropriately identify risk factors and complaints. Given that transformational leadership often fosters greater team communication and cooperation, which could enhance patient assessment, this finding is fairly startling.³⁶ This can be explained as the emphasis on general policy compliance probably inhibited nurses and transformational leaders from focusing on patient assessments.

Overall, the study's findings underscore the complexities of nurse leadership styles and clinical nursing performance. While transformational leadership may increase organizational policy compliance, it may also result in decreased adherence to standardized procedures and inadequate patient assessments. Transactional leadership, on the other hand, may result in higher adherence to standardized care procedures while being less successful in promoting compliance with corporate standards. This study's findings are consistent with a study in Saudi Arabia.³⁷ This study shows a significant role of transactional leadership in task delegation and efficiency, which demonstrates complementary benefits.

As a result, the study findings might have a significant impact on nurse leadership development and training. Though transformational leadership is frequently seen as the preferable leadership style for nurses, the current study indicates that this approach may have limitations, especially in assessments of patients and compliance with standardized care. To enhance clinical nursing performance, nursing leadership development, and training programs should focus on a balanced leadership approach. Incorporating components of both leadership styles may be required.

Effect of Nursing Performance on Patient Outcomes

The study findings indicate that, while there were substantial variations in nursing performance between departments with various leadership styles, there were no significant changes in patient outcomes, except for the readmission variable. Patients treated by nurses with a transactional leader were four times more likely to be readmitted to the hospital than those admitted to a department with a transformational leader. Other outcome factors including patient-centered care, falls, medication errors, pressure sores, and healthcare-associated infections, did not show a significant relationship with leadership style. These findings are in line with previous research indicating that leadership style may have little impact on patient outcomes and that additional variables such as staffing levels, organizational culture, and communication patterns might serve as significant predictors of patient outcomes.³⁸⁻⁴⁴ The finding that leadership style was only substantially associated with readmissions shows that this outcome is more directly connected to nursing performance than other outcomes such as falls or pressure sores.

Limitation and Future Studies

Various limitations in this study must be addressed. First and foremost, the study's findings were based on self-reported data from nurses, which might be biased and inaccurate. The study's limitations include its cross-sectional nature. Cross-sectional studies provide a "snapshot" without assessing causation. Third, the current study only investigated one healthcare institution, which may limit the findings' application to other settings such as private hospitals. As a result, the findings are not representative of all hospitals.

Future research needs to explore the role of factors other than leadership styles, such as staffing levels, organizational culture, and communication patterns, in predicting patient outcomes. Future studies may also discover the impact of charismatic, ethical, servant, and sustainable leadership influence in public and private hospitals. To consider the generalizability of these findings, future research should examine similar studies across other countries in the Middle East and North Africa (MENA) region, where cultural dynamics and healthcare systems may differ. This would be essential in recognizing the broader impacts of leadership styles on nurses' performance and patient care outcomes in diverse healthcare settings across the MENA region.

Implications for Practice

The identification of leadership styles with a positive impact on nursing care performance and patient health outcomes is essential. Nursing managers and administrators can be informed of the best leadership style. They can adopt the characteristics of leadership style that will enable them to enhance nursing care performance while improving their patient outcomes.

Conclusion

Overall, this study adds to the body of research on the relationship between leadership style and patient outcomes. While leadership style may have some impact on nursing performance and hospital length of stay, its impact on patient outcomes may be limited. Based on this study, future attention should be placed on exploring the role of other factors, such as staffing levels, organizational culture, and communication patterns, in predicting patient outcomes.

Data Sharing and Data Availability

The data that support the findings of this study are available on request from the corresponding author. The data is not publicly available due to privacy or ethical restrictions.

Ethical Considerations

The Institutional Review Board (IRB) of The Hashemite University reviewed and approved the study on August 1, 2021 (No. 6/13/2020/2021). The researchers also obtained ethical approval from the Institutional Review Board at Prince Hamza Hospital. The principles of the Declaration of Helsinki conducted this study. Informed consent was gained from all participants. The confidentiality of all participants is assured by assigning a number for each participant, which was used to analyze and collect the findings.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis, and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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