Jurnal Ners

Volume 21 Issue 2, May 2026, p. 255-266
http://dx.doi.org/10.20473/jn.v21i2.89168

Original Article

Open Access

Transformational leadership and nursing outcomes: An integrative review of empirical evidence (2010–2025)

Tri Ismu Pujiyanto[1]*, and I Made Moh. Yanuar Saifudin[2]

[1] Nursing Department, Faculty of Nursing and Health Science, Universitas Karya Husada Semarang, Semarang, Indonesia

[2] Departement of Nursing, Faculty of Medicine, Universitas Tanjungpura, Pontianak, Indonesia

*Correspondence: Tri Ismu Pujiyanto. Address: Nursing Department, Faculty of Nursing and Health Science, Universitas Karya Husada Semarang, Semarang, Indonesia. Email: triismupujiyanto@unkaha.ac.id

Responsible Editor: Rifky Octavia Pradipta

Received: 15 March 2026○ Revised: 12 May 2026 ○ Accepted: 21 May 2026

ABSTRACT

Introduction: This integrative review synthesizes the existing literature on transformational leadership in nursing practice and its aggregated influence on patient outcomes, staff performance, and healthcare quality indicators.

Methods: Following Whittemore and Knafl's five-stage framework and PRISMA guidelines, a systematic search of PubMed/MEDLINE, Scopus, and Web of Science was conducted for peer-reviewed empirical articles published in English between 2010 and 2025. Eligible studies explicitly addressed transformational leadership and reported empirical results for at least one target domain. Data were extracted using a standardized template, and the methodological quality was appraised using the Mixed Methods Appraisal Tool (MMAT). As all the included studies employed quantitative designs, a structured narrative synthesis was applied, tabulating the findings by outcome domain and identifying within-domain patterns.

Results: Eight studies were included, encompassing approximately 1,944 nursing participants (registered nurses, nurse managers, and charge nurses) and 1,209 patients across hospital settings in seven countries; the methodological quality was moderate to high. Transformational leadership is consistently associated with positive patient outcomes, including reduced adverse events, improved patient satisfaction, and higher-quality care. Staff-level benefits include reduced burnout, greater job satisfaction, and lower turnover intention. Healthcare quality indicators, particularly team climate and organizational commitment, improved substantially. Empowerment and social identity emerged as preliminary mediating mechanisms, warranting confirmatory research.

Conclusions: Given the predominance of cross-sectional designs and modest evidence base, transformational leadership appears to be associated with, rather than definitively causing, improved nursing outcomes. Healthcare organizations should invest cautiously in leadership development, and longitudinal and interventional studies are needed to confirm the causal pathways and identify contextual moderators.

Keywords: health personnel, leadership, nurses, nursing staff, patient outcome assessment, quality of health care

Introduction

Healthcare systems worldwide are facing unprecedented challenges that threaten both the quality-of-care delivery and the sustainability of management. The World Health Organization has documented a persistent global nursing shortage, estimating an ongoing deficit of approximately 5.8 million nurses worldwide, with the largest gaps concentrated in low- and middle-income countries (World Health Organization, 2025). This shortfall disproportionately affects the most vulnerable populations and adversely impacts healthcare utilization. At the same time, healthcare organizations face substantial financial pressures, with reported nursing turnover rates of approximately 16–18% and replacement costs of US$56,300 per registered nurse, contributing to an estimated annual organizational burden of US$4.4–6.9 million (National Academies of Sciences, 2019). Such workforce challenges occur in the context of increased

demand for quality improvement, safety, and digital transformation, fueled by the COVID-19 pandemic (Fletcher, Read, and D-Adderio, 2023). In such a complex environment, powerful nursing leadership has been identified as being significant in improving organizational performance, effectively retaining staff, and achieving positive patient outcomes (Perez-Gonzalez *et al.*, 2024).

Transformational leadership is distinguished from other leadership styles by four principal components (Bass, 1985). These dimensions encompass idealized influence, in which leaders act as role models who demonstrate ethical behavior to inspire trust and respect among their followers; inspirational motivation, involving the articulation of compelling visions that inspire others to work towards a collective goal; intellectual stimulation, where followers are encouraged to innovate, be creative, and think critically; and individualized consideration, focused on providing personalized support for the growth of those working with the leader (Bass and Riggio, 2006). Transformational leadership cultivates followers who not only perform what is required of them but also exceed expectations through intrinsic motivation, ethical commitment, and alignment with organizational values (Northouse, 2025). This association between transformational leadership and a positive patient safety culture, as well as reduced adverse events, increased staff satisfaction, and improved healthcare organizational outcomes, has been reported in multiple studies (Sfantou *et al.*, 2017).

Nursing leadership affects nursing practice, work environment, care quality, and patient safety outcomes through multiple pathways. Nurse leaders are well-positioned to serve as linchpins within the healthcare delivery system, leading multidisciplinary teams, managing resources, implementing evidence-based practices, and cultivating cultures of safety and excellence (American Organization for Nursing Leadership, 2024). Recent studies have shown that transformational leadership in nursing accounts for 47.2% of the variance in patient safety culture (Seljemo, Viksveen, and Ree, 2020) and is significantly associated with mortality rates, medication errors, and hospital-acquired infections (Sfantou *et al.*, 2017). A survey by the American Hospital Association revealed that transformational leadership behaviors were deemed important for addressing modern challenges, including staff recruitment and retention, quality improvement initiatives, and digital health transformation(American Hospital Association, 2024; American Organization for Nursing Leadership, 2025). In addition, transformational nursing leadership is associated with greater job satisfaction ($r = 0.42$-0.67, $p < 0.001$), organizational commitment, and reduced burnout among nursing personnel, thus addressing the international workforce crisis in healthcare (Asif *et al.*, 2019).

Despite the growing recognition of transformational leadership in nursing, the existing evidence base remains limited in terms of its practical application and theoretical development. Although interest in the longitudinal effects of leadership behavior on outcomes has grown, recent systematic reviews indicate that approximately 85% of published studies use cross-sectional designs (Gebre-Michael, Teame, and Costa, 2023). Methodological issues include the use of self-reported measures, potential social desirability bias, and failure to control for covariates, all of which can affect the observed relationships (Hong *et al.*, 2018). Most concerningly, the research is highly focused on Western and high-income nations, while developing countries facing acute nursing shortages have received far less attention (Perez-Gonzalez *et al.*, 2024). New contexts, including digital health transformation, leading virtual teams, and integrating artificial intelligence in healthcare delivery, also pose new challenges that are not adequately covered by the current evidence for nursing leaders.

Adaptive leadership styles that can be tailored to specific healthcare delivery demands within a transformational framework are critical to advancing nursing practice. The COVID-19 pandemic highlighted the importance of nursing leadership in crisis management, workforce resilience, and delivery of quality care during extreme conditions (Wymer, Stucky, and De Jong, 2021). The data show that healthcare organizations experiencing transformational nursing leadership achieved better staff retention and higher patient satisfaction and quality outcomes during the pandemic than those with more traditional models of nursing leadership (Sihvola, Kvist, and Nurmeksela, 2022). However, a systematic synthesis of the evidence on crisis leadership remains lacking, leaving healthcare organizations without the means to develop transformational leadership capacity in anticipation of recurring challenges. Additionally, the transformative nature of healthcare during the pandemic, including enhanced telemedicine use, electronic health record optimization and efficiency, as well as IT-enabled clinical decision-making, forces nurse leaders to demonstrate transformational behaviors digitally, where conventional face-to-face leadership structures may not be applicable (Fletcher, Read,and D-Adderio, 2023).

The economic implications of effective nurse leadership warrant a rigorous synthesis of the evidence. Transformational leadership development pays off for healthcare organizations in the form of reduced turnover costs, fewer adverse events, higher patient satisfaction scores, and improved regulatory compliance (National Academies of Sciences, 2019). In contrast, workplace stress and burnout cause 610,000 nurses to leave direct

patient care each year (National Council of State Boards of Nursing, 2024), imposing substantial costs on healthcare systems and reducing the capacity to deliver care. Evidence that transformational nurse managers lead units with higher compliance with evidence-based practices, lower infection rates, and improved patient safety indicators is consistent with the proposition that leadership development may strengthen organizational quality and performance (Merrill, 2015).

Many reviews related to nursing leadership have been conducted; however, none have specifically focused on transformational leadership and its effects on a wide range of patient outcomes, staff performance outcomes, and quality indicators in healthcare. Existing systematic reviews have focused only on limited domains of nursing leadership and specific outcomes. However, none of the studies have integrated how transformational leadership has multiple effects in different healthcare settings and populations (Alilyyani, Wong, and Cummings, 2018). Although prior reviews have addressed adjacent areas—Sfantou et al. (2017) examined leadership style and quality of care broadly, and Alilyyani et al. (2018) synthesized authentic (rather than transformational) leadership—none have integrated empirical evidence specifically on transformational leadership across the three outcome domains of patient outcomes, staff performance, and healthcare quality within a single synthesis. This gap is significant due to the increasing focus on evidence-based management practices in healthcare organizations and the lack of actionable guidance on investments in leadership development.

This integrative review aimed to systematically analyze and synthesize the published literature on transformational leadership in nursing practice and its holistic impact on patient outcomes, professional staff performance, and health care quality indicators. This review seeks to provide an overview of transformational leadership in current nursing environments by collating evidence across methodological approaches, health settings, and populations and assessing transformational leadership as a potential mechanism for delivering quality improvement.

Materials and Methods

Design

An integrative review methodology, as outlined by, Whittemore and Knafl (2005) guided this study. This five-step framework accommodates diverse methods and research designs, enabling comprehensive insights into multilayered phenomena. The review protocol was prospectively registered with the International Prospective Register of Systematic Reviews (PROSPERO; registration number CRD420251132895), and reporting followed the PRISMA 2020 statement.

Problem Identification

The Sample, Phenomenon of Interest, Design, Evaluation, and Research type (SPIDER) framework was used to develop the research question, as it is most appropriate for integrative reviews that incorporate a variety of methodological approaches. The components of the SPIDER framework were defined as follows: Sample (S) – registered nurses in leadership positions and nursing staff in various healthcare settings; Phenomenon of Interest (PI) – transformational leadership behaviors, practices, and interventions implemented within the nursing context; Design (D) – any primary research design, including quantitative, qualitative, or mixed-methods studies; Evaluation (E) – patient outcomes, staff performance indicators, and healthcare quality measures; and Research type (R) – empirical research presenting original findings regarding transformational leadership effectiveness within nursing contexts. The key research question of this integrative review was: "What is the effect of transformational leadership in nursing practice on patient outcomes, staff performance, and healthcare quality indicators across various healthcare settings?"

Literature Search

Three electronic databases were searched: PubMed/MEDLINE, Scopus, and the Web of Science. The search strategy combined controlled vocabulary (MeSH) and free-text keywords connected using appropriate Boolean operators. The overarching search strategy comprised three related conceptual blocks joined by the AND operator: (1) transformational leadership concepts, including "transformational leadership"; (2) nursing and healthcare settings, including "nurs*" and "healthcare worker"; and (3) outcome measures, including "patient outcome*" and "healthcare quality." Studies were limited to peer-reviewed empirical articles published in English between January 2010 and August 2025; 2010 was selected as the lower limit to capture the contemporary post–Institute of Medicine "Future of Nursing" era of leadership scholarship. The search strategy was adapted to each database to account for indexing differences while preserving the conceptual consistency.

To optimize comprehensiveness and reduce the possibility of missing potentially relevant studies, supplementary search strategies were employed. All included articles and relevant systematic reviews identified through database searches were subjected to forward and backward citation searches. All search results were imported into Rayyan to remove duplicates and manage the screening. The complete search strategy across all databases is described in Supplementary File 1.

Data Evaluation

Study Selection

The selection of studies was carried out in two stages. All titles and abstracts were screened independently by two reviewers using predefined inclusion and exclusion criteria. Inter-rater agreement at the title/abstract stage was substantial (Cohen's $\kappa = 0.81$), and at the full-text stage was almost perfect ($\kappa = 0.92$). Disagreements that could not be resolved by discussion were arbitrated by a third senior reviewer. Full-text articles were obtained for all studies that appeared potentially eligible and were assessed independently by the reviewers. Studies were eligible if they met all of the following criteria: (1) examined transformational leadership being implemented as a practice or intervention in nursing contexts; (2) included registered nurses in leadership positions (i.e., nurse managers, charge nurses, clinical leaders) or nursing staff as participants; (3) reported empirical outcomes relating transformational leadership to one or more patient outcomes, staff performance indicators, or healthcare quality measures; (4) consisted of quantitative, qualitative, or mixed-methods research designs; (5) were published in peer-reviewed journals; and (6) were conducted within healthcare settings such as hospitals, long-term care facilities, community health centers, and/or other clinical settings.

Data Extraction

The data extraction form captured multiple categories of information required for a meaningful synthesis, including study characteristics (author, year, country, setting, design, sample size, and participant characteristics), transformational leadership (TL) measures and approaches, outcome measures, key findings, and quality indicators. Two reviewers independently extracted data from each included study, and discrepancies were resolved through discussion.

Quality Assessment

The methodological quality of the studies included in this systematic review was assessed using the 2018 version of the Mixed Methods Appraisal Tool (MMAT), a standardized tool for assessing the quality of qualitative, quantitative, and mixed-methods studies. The MMAT is best suited to assess meaningful quality across a variety of designs while allowing sufficient breadth and methodological rigor for integrative reviews. Two reviewers assessed the quality, and disagreements were resolved through structured discussions and consensus. Similar to the guidance for integrative review methodology, quality ratings were used to interpret the findings but not for study exclusion. Studies were rated based on MMAT criteria as having high/moderate or low methodological quality, and these ratings informed the synthesis discussions and implications for evidence strength.

Data Analysis

Because all included studies used quantitative designs, a structured narrative synthesis was conducted, consistent with Whittemore and Knafl's (2005) provision for analytical flexibility in integrative reviews. The synthesis followed four sequential steps. First, study characteristics (author, year, country, setting, design, sample size, participant type, leadership measurement instrument, outcome measures, key findings) were extracted into a structured data table (Table 1). Second, findings from each study were coded and grouped into three pre-specified outcome domains: (i) patient outcomes (adverse events, patient satisfaction, perceived quality of care), (ii) staff performance and well-being (burnout, job satisfaction, turnover intention), and (iii) healthcare quality indicators (team climate, organizational commitment, clinical leadership behaviors). Third, within each outcome domain, reported effect sizes (Pearson r, standardized β, R^2) were tabulated as reported in the primary studies and summarized in Table 2; the direction and statistical significance of associations were compared across studies to identify consistent and divergent patterns. Fourth, mediating and moderating factors (empowerment, social identity, organizational characteristics, individual nurse characteristics) were identified from studies that reported indirect or interaction effects and were narratively integrated to inform interpretation. Methodological quality (MMAT) was considered when weighing findings, with greater interpretive weight given to high-quality studies. No statistical pooling or formal meta-analysis was undertaken, and effect sizes are reported as extracted rather than transformed.

Presentation of Findings

This presentation of findings adheres to the established reporting standards for integrative reviews, providing both a narrative synthesis and systematic tabular presentation to enhance comprehensiveness and accessibility. Results are presented thematically, by outcome domains that emerged during data extraction and analysis, with systematic attention to study characteristics, methodological quality of the pooled evidence within each domain, and strength of evidence for each finding domain. Discussions around the findings involve explicit consideration of methodological limitations, generalizability, and implications for practice and policy.

Results

Study Selection

A systematic literature search of the three electronic databases yielded 6,249 records (PubMed/MEDLINE n = 4,737; Scopus n = 1,468; Web of Science n = 44), figures harmonized with the PRISMA flow diagram, and the

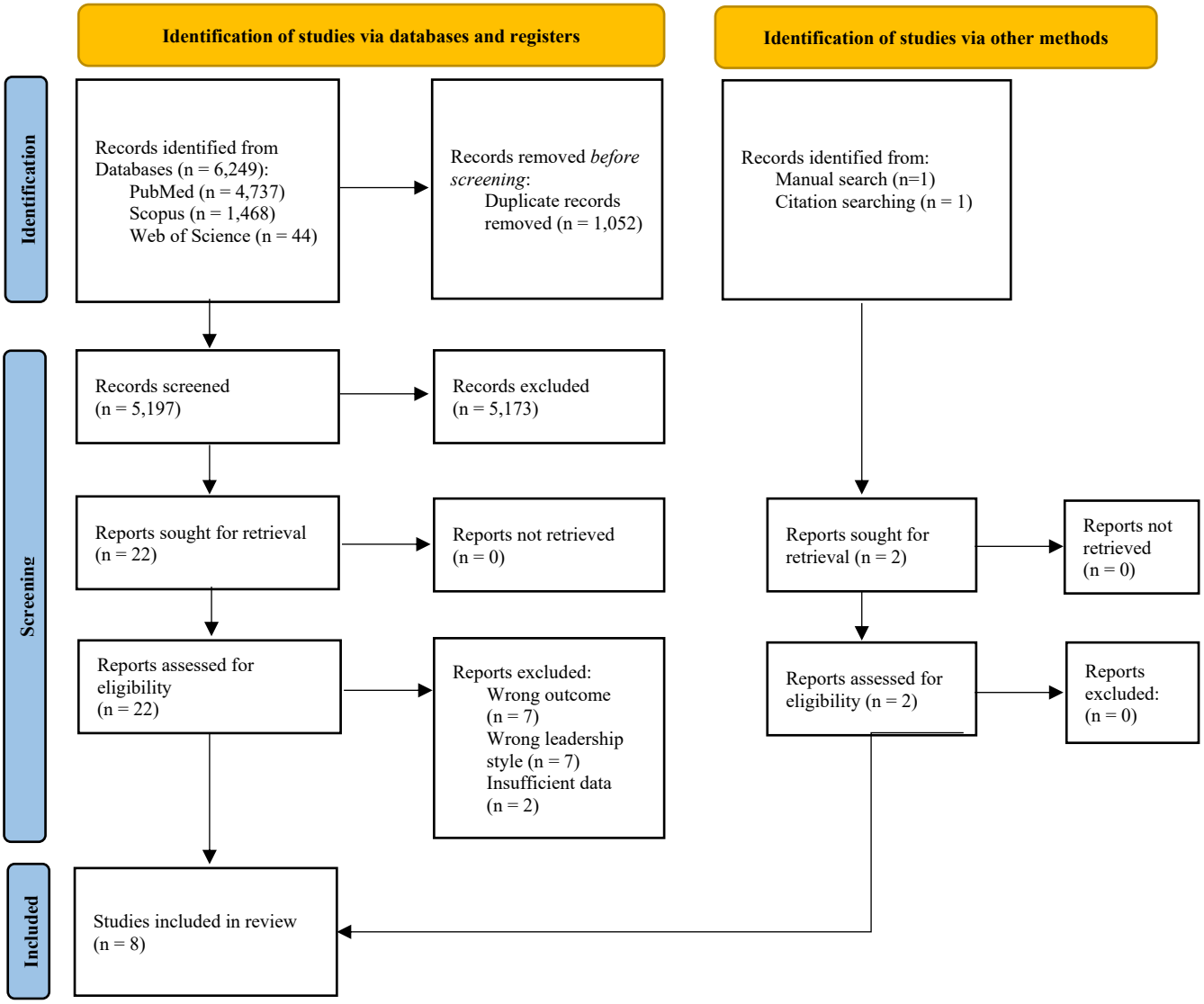

Figure 1. PRISMA Flow Chart

search strategy tables are presented in Supplementary File 1. Additional relevant sources were identified through supplementary search strategies, including manual searching of reference lists (n = 1) and forward and backward citation searches (n = 1), resulting in 6,251 records before deduplication.

Duplicate records were then removed (n = 1,052), leaving 5,197 unique records for the title and abstract screening. This resulted in 5,173 records being eliminated at this first stage (mainly irrelevant subjects, non-nursing population, or not aimed at transformational leadership). This process resulted in 22 full-text articles requested for retrieval, all of which were retrieved (n = 22, 100% retrieval).

All 22 retrieved articles underwent full-text assessment for eligibility according to predefined inclusion and exclusion criteria. Sixteen studies were excluded due to incorrect outcomes (n = 7), incorrect leadership style (studies focusing on leadership styles other than transformational leadership, n = 7), or insufficient publicly available data to permit reliable extraction of methods, results, and effect estimates (n = 2). Eligibility was restricted to peer-reviewed empirical studies published in English between January 2010 and August 2025. We acknowledge that this represents a deviation from the original PROSPERO protocol (CRD420251132895), in which broader eligibility was specified; this protocol deviation is further discussed as a methodological limitation.

Citation searching during the full-text review yielded two additional 2 studies, which were evaluated for eligibility using the same methodology. Both studies met the inclusion criteria and were included in the final evaluation. After this process, eight studies met all the inclusion and exclusion criteria and were included in this integrative review. The PRISMA Flow Chart in Figure 1 demonstrates the rigorous process of study selection.

Study Quality Assessment

The methodological quality of the eight studies included was moderate to high. Six studies (75%) were rated as high quality, and two (25%) were rated as

Table 2. Summary of Reported Effect Sizes for Transformational Leadership (TL) by Outcome Domain

Outcome Domain	Study (Year)	Reported Effect Size	Direction
Adverse events	Labrague (2024); Boamah (2018)	r = –0.35; β = –0.638 (p<.001); indirect β = –0.24 (p<.01)	TL → fewer adverse events
Patient satisfaction	Alloubani *et al*. (2019); Zaghini *et al*. (2020); Boshra *et al*. (2025)	r = 0.75–0.87 (p<.001); indirect via burnout/CWB; mean differences (p<.001)	TL → higher satisfaction
Perceived quality of care	Labrague (2024); Al-Hussami *et al*. (2025); Cheng *et al*. (2016); den Breejen-de Hooge *et al*. (2021)	r = 0.21–0.38; β = 0.276 (p<.001); R^2 = 0.000 (NS)	Mostly positive; one null
Burnout	Zaghini *et al*. (2020); Cheng *et al*. (2016)	β = –0.33 (p<.001); r = –0.31 (p<.01)	TL → lower burnout
Job satisfaction	Labrague (2024); Alloubani *et al*. (2019)	r = 0.25 (p<.01); strong positive correlations	TL → higher satisfaction
Turnover intention	Cheng *et al*. (2016)	r = –0.28 (p<.01)	TL → lower intention
Team climate	Cheng *et al*. (2016)	r = 0.49 (p<.01); R^2 = 0.77	TL → stronger climate
Organizational commitment	Al-Hussami *et al*. (2025)	r = 0.42 (p<.001); β = 0.340 (p<.001)	TL → greater commitment
Empowerment (mediator)	Boamah (2018)	β = 0.79 (p<.001) for TL → empowerment	Significant mediation

Note. TL = Transformational leadership; r = Pearson correlation; β = standardized regression coefficient; R^2 = variance explained; NS = non-significant. Effect sizes were extracted as reported in the original studies.

moderate-to-high quality. The MMAT item-level scores for each included study are provided in Supplementary Table S3. All included studies used validated instruments (predominantly the Multifactor Leadership Questionnaire) and reported clear analytic strategies. However, the predominance of cross-sectional designs and reliance on self-reported measures across studies should be considered when weighing the strength of evidence.

Study Settings and Populations

The eight included studies were geographically distributed across seven countries: two from North America (one each from the USA and Canada), three from the Middle East (two from Jordan and one from Saudi Arabia), two from Europe (Italy and the Netherlands), and one from Oceania (Australia). Most were conducted in hospital-based settings, including emergency departments, medical-surgical units, academic medical centers, and multi-site hospital systems. Settings ranged from single-site academic and specialty hospitals to multi-site studies that included up to five hospitals and 42 wards. Study sample sizes ranged from approximately 150 to 479 nursing participants per study, with up to 829 patient participants in studies using multilevel sampling, and most had sufficient statistical power for the planned analyses. Participants represented different nursing populations: direct-care nurses, nurse managers, charge nurses, and emergency department nurses. Multilevel sampling was used in several studies to include patients' and nursing staff's perspectives on outcomes (Table 1).

Impact on Patient Outcomes

The findings revealed that transformational leadership was consistently and positively related to various patient outcome measures across the included studies. The most robust associations were observed between transformational leadership and adverse patient events, with three high-quality studies documenting significant inverse correlations. Labrague (2024) reported a strong negative correlation between transformational leadership and adverse events, with regression analysis indicating that transformational leadership was a significant predictor of fewer adverse events.

In general, the associations between transformational leadership and patient satisfaction outcomes were positive. Alloubani et al. (2019) identified strong positive associations between transformational leadership and patient satisfaction in public and private hospitals. Zaghini et al. (2020) demonstrated that leadership satisfaction indirectly influenced patient satisfaction through lower nursing burnout and fewer counterproductive work behaviors, suggesting complex mediating pathways between leadership and patient outcomes.

Transformational leadership was consistently and positively associated with quality-of-care indicators reported by both nurses and patients. Strong positive associations between transformational leadership and perceptions of nursing care quality have been reported Al-Hussami et al. (2025). In contrast, den Breejen-de Hooge, van Os-Medendorp, and Hafsteinsdóttir (2021) found no significant association between transformational leadership and nurse-reported quality of care.

Impact on Staff Performance and Well-being

Transformational leadership has significant effects on multiple domains of nursing staff performance and well-being indicators. This integrative review synthesizes evidence from the included studies on the relationships between transformational leadership and well-documented staff outcomes that have been shown to correlate with job satisfaction across studies. The included studies converge on the finding that transformational leadership behaviors are positively associated with nursing staff satisfaction and work engagement.

Transformational leadership also had a major effect in the other area of impact: reducing burnout. Zaghini et al. (2020) showed that satisfaction with transformational leadership mitigates emotional exhaustion and cynicism. Cheng et al. (2016) used social identity variables as mediators and found a negative and significant relationship between transformational leadership and burnout. These results are especially significant, given the global nursing shortage and elevated levels of burnout.

Turnover intention, a key predictor of workforce stability, was consistently and negatively associated with transformational leadership. The included studies demonstrated significant reductions in turnover intention associated with transformational leadership behaviors. This relationship has important implications for healthcare organizations seeking to address nursing retention challenges and associated replacement costs.

Empowerment is also a key mediator of transformational leadership effectiveness. Boamah (2018) found that transformational leadership was positively associated with nurses' empowerment and clinical leadership behaviors, which in turn predicted fewer adverse events. This indicates that transformational leadership influences patient and organizational outcomes, at least partially, through empowerment-related processes.

Impact on Healthcare Quality Indicators

Associations between transformational leadership and healthcare quality indicators were included in the studies, but they varied by the study. Team climate and collaboration were consistently reported as outcomes of transformational leadership behaviors. Cheng et al. (2016) provided the strongest evidence, finding that transformational leadership was significantly and positively related to team climate.

Organizational commitment is another quality indicator that is greatly influenced by transformational leadership. Al-Hussami et al. (2025) reported positive links between transformational leadership and organizational commitment, which in turn emerged as strong predictors of perceived care quality. This association indicates that transformational leadership improves the quality of healthcare by stimulating staff commitment and aligning with organizational objectives.

Frontline quality improvement activities, as reflected in clinical leadership behavior, were significantly associated with transformational leadership. Boamah (2018) demonstrated that empowerment mediated the relationship between transformational leadership and clinical leadership behaviors, which, in turn, predicted reductions in adverse events. This finding suggests that transformational leadership may catalyze improvements in quality of care through cascading effects on clinical leadership capacity across all levels of nursing organizations.

However, certain quality indicators showed mixed or nonsignificant results. den Breejen-de Hooge, van Os-Medendorp and Hafsteinsdóttir (2021) found no significant associations between transformational leadership and nurse-reported quality-of-care measures, implying that contextual factors, measurement approaches, or organizational characteristics may moderate these relationships. This variability underscores the complexity of the effects of transformational leadership and the need for further research on boundary conditions and implementation.

Mediating and Moderating Factors

The synthesis identified several mediating and moderating factors that define transformational leadership effectiveness in nursing contexts. Empowerment emerged as one of the strongest mediating variables, Boamah (2018) providing evidence for an indirect pathway in which transformational leadership increased empowerment, which in turn led to subsequent clinical leadership behaviors that reduced adverse events. This finding suggests that transformational leaders exert their influence by facilitating the nursing staff's involvement in leadership activities and quality improvement efforts.

Social identity and team identification were other important processes that mediated this model (Cheng *et al.*, 2016). Transformational leadership was associated with multiple outcomes, including reduced intention to leave the organization, decreased burnout, and improved team climate, with these effects being partially or fully mediated by nurses' social identification with their work teams. This suggests that transformational leaders enhance outcomes by fostering nurses' identification with their teams and workgroups.

Organizational characteristics also emerged as important moderators of transformational leadership effectiveness. Boshra et al. (2025) also made a meaningful distinction between hospital management in the public and private sectors, illustrating variations in organizational effectiveness, specifically showing that transformational leadership was more strongly associated with patient satisfaction in private than in public hospitals. Likewise, diversity in organizational culture, resource availability, and management structure seemed to impact the strength of the correlation between leadership behavior and outcomes.

Several studies have identified the individual characteristics of nurses (e.g., education level, experience level, and professional role) as potential moderating factors. Specifically, in a cross-sectional study, den Breejen-de Hooge, van Os-Medendorp, and Hafsteinsdóttir (2021), individual factors may moderate the relationship between leadership behaviors and effectiveness. Nurse characteristics were found to be significant predictors of quality outcomes, more so than nurse leadership behaviors. This highlights that the

individual context is an essential determinant of variability in the effectiveness of transformational leadership interventions.

Discussions

This integrative review demonstrated consistent positive relationships between transformational leadership and key nursing outcomes. Findings across three domains—patient safety, staff performance, and organizational quality indicators—suggest that transformational leadership is well positioned to respond to the contemporary challenges facing healthcare systems (Fletcher, Read, and D-Adderio, 2023), including the post-pandemic context in which nursing workforce resilience has become a central concern. These findings align closely with recent work (Gebre-Mariam, Teame, and Costa, 2023), reinforcing confidence in the resilience of the effects of transformational leadership. This review replicated the same mediating pathways in terms of structural empowerment, organizational commitment, and job satisfaction, with effect sizes consistent with quantitative meta-analyses suggesting that medium to large effects were found for job satisfaction, small to medium effects for organizational commitment, and reduced turnover intent.

The review findings offer preliminary empirical evidence supporting theoretical models depicting the mechanisms through which transformational leadership in nursing can affect multiple outcomes through a series of mediating pathways. Psychological empowerment is frequently identified as one of the most widely supported mediating mechanisms, with Boamah (2018) showing the significant indirect effects of transformational leadership on clinical leadership behaviors through empowerment. This is in line with theoretical models, whereby a transformational leader promotes nurses' sense of meaning, competence, self-determination, and impact, creating a cascading effect in which transformational leadership fosters structural empowerment, leading to organizational commitment, resulting in job satisfaction, which subsequently influences patient outcomes through staff-mediated pathways (Ibrahim *et al.*, 2024).

Another important theoretical avenue is social identity theory, which is particularly evident in Cheng et al. (2016), in which transformational leadership was mediated by nurses' social identity in their work teams, with this association associated with a series of outcomes. This is especially important in nursing environments, where professional identity affects behavior (Hughes *et al.*, 2023). Effective transformational leadership galvanizes organizational identification and professional nursing identity, creating dual-commitment pathways that improve retention and performance (Sihvola, Kvist, and Nurmeksela, 2022). This finding implies generalizability across the nursing workforce because the nursing professional culture often transcends national cultural boundaries.

The COVID-19 pandemic has, in several ways, confirmed the value of transformational leadership within healthcare, even representing a natural experiment on the efficacy of crisis leadership (Sihvola, Kvist, and Nurmeksela, 2022). None of the included studies were designed primarily as crisis leadership investigations; the pandemic-era observations described here draw on external literature and are presented for contextual framing only. Within the included evidence base, behaviors associated with idealized influence and individualized consideration appeared to be positively associated with staff outcomes relevant to crisis adaptation (Boamah, 2018). This is consistent with Zaghini et al. (2020), who found that leadership satisfaction was negatively related to followers' burnout and cynicism, indicating that satisfaction with leadership may serve as a protective buffer during stressful periods.

Beyond the included studies, external literature (Fletcher et al., 2023) has described nurse leaders' role in digital transformation during the pandemic; we draw on this contextual literature here only to situate the included findings and explicitly distinguish it from the synthesized evidence base (Fletcher, Read,and D-Adderio, 2023). Two transformational leadership dimensions described by Bass and Riggio (2006), intellectual stimulation and inspirational motivation, plausibly retain their relevance in periods of organizational disruption. However, none of the included studies in this review directly examined telehealth adoption, electronic health record optimization, or virtual team leadership; these are therefore areas for future empirical investigation rather than established findings from the present synthesis (Fletcher, Read,and D-Adderio, 2023).

The evidence indicates that successful implementation requires a sophisticated approach that goes beyond conventional leadership training to encompass broader organizational development (Damschroder *et al.*, 2022). Multi-modal programs, that is, replicable, scalable formal education, experiential learning, mentoring, and coaching developed over months to years, are also instrumental strategies. The best organizations use evidence-based frameworks to simultaneously address the elements of intervention, organizational context, and individual differences. Using validated instruments, such as the Multifactor Leadership Questionnaire and Leadership Practices Inventory, can help organizations measure prior leadership capabilities and map their overall enterprise-level progress on a continuous basis (Lui and Johnston, 2019). Economic arguments also favor large-scale investments, as successful programs have paid for themselves through higher patient satisfaction scores, lower rates of healthcare-associated infections, and reduced turnover (National Academies of Sciences, 2019).

Taken together, the synthesized evidence—while predominantly cross-sectional and observational—is consistent with the proposition that healthcare organizations would benefit from piloting and evaluating transformational leadership development programs, particularly in the post-pandemic context of nursing workforce strain. Such initiatives could plausibly be incorporated into nursing career advancement pathways and quality improvement frameworks, but their effectiveness should be tested rather than assumed. The observed associations of transformational leadership with patient safety outcomes—adverse event reduction (Labrague, 2024), together with the quality-of-care improvements reported by Al-Hussami et al. (2025), suggest that regulatory bodies and accreditation organizations may consider incorporating transformational leadership metrics into quality assessment frameworks.

The mixed outcomes reported by several studies, especially den Breejen-de Hooge, van Os-Medendorp, and Hafsteinsdóttir (2021), those of boundary conditions for the theory, warrant deeper examination. Several plausible explanations should be considered for this. First, the study was conducted in a single Dutch academic hospital, where high baseline professional autonomy and flatter hierarchies may attenuate the incremental effect of transformational leadership relative to settings with steeper hierarchies. Second, the study used the Leadership Practices Inventory (LPI) rather than the Multifactor Leadership Questionnaire (MLQ) used in most other included studies, which may capture different leadership dimensions and reduce the comparability. Third, nurse-level characteristics (gender, profession, and practice area) explained more variance in quality of care than leadership ratings, suggesting that individual and unit-level factors may overshadow leadership influence in certain contexts. Together, these considerations imply that the apparent universality of transformational leadership effects observed in other studies should be interpreted with attention to the setting, measurement instrument, and individual-level moderators rather than assumed to generalize uniformly across all nursing contexts.

These considerations highlight a further layer of complexity: different healthcare settings require differently tailored approaches. Alloubani et al. (2019) found significant differences between public and private hospitals. However, Boshra et al. (2025) identified differential leadership styles across hospitals, reporting that passive-avoidant styles were most prevalent among nurse managers and associated with the lowest patient satisfaction, whereas transactional and transformational styles were associated with higher patient satisfaction; the public-versus-private hospital comparison reported by Alloubani et al. (2019) is a distinct finding, and the two studies should not be conflated. Although transformational behaviors are associated with adverse event reduction in emergency settings (Labrague, 2024), Labrague (2024) suggests that other environments would benefit more from hybrid paradigms that call for a mixed leadership style combining transformative and situational or contingency models.

Several limitations should be considered when interpreting these findings. First, the included evidence base is small (n = 8) and methodologically constrained: nearly all included studies used cross-sectional designs, precluding causal inference; reliance on self-reported instruments raises the possibility of common-method bias. Second, the predominance of hospital-based samples, mostly drawn from convenience samples in single organizations, limits generalizability to community health, long-term care, and ambulatory settings. Third, included studies were geographically concentrated in seven countries, with limited representation of low- and middle-income contexts despite their disproportionate burden of nursing workforce challenges. Fourth, the search was restricted to PubMed/MEDLINE, Scopus, and Web of Science; additional nursing-specific databases such as CINAHL were not searched due to access constraints, which represents an acknowledged limitation of the search strategy. Fifth, publication bias may inflate the apparent strength of associations; however, the inclusion of a study with null and mixed findings (den Breejen-de Hooge et al., 2021) provides some attenuation. Finally, the eligibility criteria applied in the final review deviated from those originally specified in the PROSPERO protocol (CRD420251132895); the date range, language, and study-type restrictions were narrowed during the review process. This protocol deviation may have introduced a degree of selection bias and is acknowledged as a methodological limitation.

The consistent finding across studies that empowerment serves as a mediator underscores the need for organizations to cultivate conditions in which nurses experience their work as meaningful, competent, self-determined and impactful. Healthcare organizations would benefit from regular investment in transformational leadership development programs rather than conventional management training focused narrowly on people-oriented skills. Supporting evidence suggests that effective programs require multimodal education, combining formal teaching, experiential learning, mentoring, and coaching delivered over extended time scales. Organizations should also adopt holistic evaluation strategies using validated instruments to establish capability baselines and track development progress over time. The relatively modest organizational investment required for leadership development infrastructure is justified by the documented economic benefits, including lower turnover costs, fewer adverse events, and higher patient satisfaction scores.

Conclusion

This integrative review of eight predominantly cross-sectional studies indicates that transformational leadership is consistently associated with, rather than causally established as a determinant of, improved nursing outcomes across the patient safety, workforce, and organizational quality domains. The synthesized associations included reduced adverse events, higher patient satisfaction, lower nursing burnout, greater job satisfaction, and stronger organizational commitment. Empowerment and social identity emerged as preliminary mediating mechanisms that require confirmatory testing. Given the methodological limitations of the included evidence base—particularly the predominance of cross-sectional designs, reliance on self-report measures, and under-representation of low- and middle-income contexts—the certainty of these conclusions remains modest. Priority directions for future research include: (1) longitudinal and quasi-experimental designs to test directionality; (2) cluster-randomized evaluations of leadership development interventions; (3) multi-country studies with attention to low- and middle-income settings; (4) examination of contextual moderators (organizational culture, hospital type, professional hierarchy); and (5) confirmatory mediation studies of empowerment and social identity pathways. Pending such evidence, transformational leadership can reasonably be positioned as a promising organizational strategy worth piloting and evaluating rather than as a definitively proven solution to contemporary nursing workforce challenges.

Acknowledgments

The authors thank Universitas Karya Husada Semarang for the supports provided.

Decleration Of Generative Artificial Intelligence (AI) Use

The authors declare that ChatGPT and Grammarly were used during the preparation of this manuscript to assist with language editing, grammar refinement, clarity, and coherence. The AI tools did not contribute to the study design, data collection, data analysis, interpretation of the results, or creation of original scientific content. All intellectual content, interpretations, and conclusions presented in this manuscript remain the sole responsibility of the authors, who have carefully reviewed and validated the final version in accordance with ethical publishing standards.

Funding source

None to declare.

Availability of data and materials

The datasets generated during and analyzed during the current study are available from the corresponding author upon reasonable request.

Authors' contributions

All authors contributed in this study in substantial contributions to the conception or design of the work, analysis, or interpretation of data for the work; drafting the work; final approval of the version to be published.

Declaration of Interest

The authors affirm that there were no financial or commercial conflicts of interest throughout the conduct of this study and state that they have no competing interests with the funders.

References

Al-Hussami, M. *et al.* (2025) 'The Impact of Organizational Commitment and Leadership Behavior on the Quality of Nursing Care as Perceived by Registered Nurses', *American Journal of Lifestyle Medicine*. doi: 10.1177/15598276251356482.

Alilyyani, B., Wong, C. A. and Cummings, G. (2018) 'Antecedents, mediators, and outcomes of authentic leadership in healthcare: A systematic review', *International Journal of Nursing Studies*, 83, pp. 34–64. doi: 10.1016/j.ijnurstu.2018.04.001.

Alloubani, A. *et al.* (2019) 'Leadership styles' influence on the quality of nursing care', *International Journal of Health Care Quality Assurance*, 32(6), pp. 1022–1033. doi: 10.1108/IJHCQA-06-2018-0138.

American Hospital Association (2024) *Nurse leaders identify top challenges, effective solutions*, *American Hospital Association*. Available at: https://www.aha.org/news/headline/2024-01-16-nurse-leaders-identify-top-challenges-effective-solutions (Accessed: 24 August 2025).

American Organization for Nursing Leadership (2024) *Nursing leadership insight study*, *American Organization for Nursing Leadership*. Available at: https://www.aonl.org/resources/nursing-leadership-survey (Accessed: 24 August 2025).

American Organization for Nursing Leadership (2025) *Nursing Leadership Insight Study*, *American Organization for Nursing Leadership*. Available at: https://www.aonl.org/resources/nursing-leadership-survey (Accessed: 18 May 2026).

Asif, M. *et al.* (2019) 'Can Leadership Enhance Patient Satisfaction? Assessing the Role of Administrative and Medical Quality', *International Journal of Environmental Research and Public Health*, 16(17), p. 3212. doi: 10.3390/ijerph16173212.

Bass, B. M. (1985) *Leadership and performance beyond expectations*. Free press New York.

Bass, B. M. and Riggio, R. E. (2006) *Transformational leadership*. Psychology press.

Boamah, S. (2018) 'Linking Nurses' Clinical Leadership to Patient Care Quality: The Role of Transformational Leadership and Workplace Empowerment', *Canadian Journal of Nursing Research*, 50(1), pp. 9–19. doi: 10.1177/0844562117732490.

Boshra, A. Y. *et al.* (2025) 'Impact of leadership styles on patient satisfaction with nursing care quality in public hospitals: A cross-sectional study', *Medicine*, 104(11), p. e41670. doi: 10.1097/MD.0000000000041670.

den Breejen-de Hooge, L. E., van Os-Medendorp, H. and Hafsteinsdóttir, T. B. (2021) 'Is leadership of nurses associated with nurse-reported quality of care? A cross-sectional survey', *Journal of Research in Nursing*, 26(1–2), pp. 118–132. doi: 10.1177/1744987120976176.

Cheng, C. *et al.* (2016) 'Transformational leadership and social identity as predictors of team climate, perceived quality of care, burnout and turnover intention among nurses', *Personnel Review*, 45(6), pp. 1200–1216. doi: 10.1108/PR-05-2015-0118.

Damschroder, L. J. *et al.* (2022) 'The updated Consolidated Framework for Implementation Research based on user feedback', *Implementation Science*, 17(1), p. 75. doi: 10.1186/s13012-022-01245-0.

Fletcher, M., Read, C. and D-Adderio, L. (2023) 'Nurse Leadership Post COVID Pandemic—A Framework for Digital Healthcare Innovation and Transformation', *SAGE Open Nursing*, 9. doi: 10.1177/23779608231160465.

Gebreheat, G., Teame, H. and Costa, E. I. (2023) 'The Impact of Transformational Leadership Style on Nurses' Job Satisfaction: An Integrative Review', *SAGE Open Nursing*, 9. doi: 10.1177/23779608231197428.

Hong, Q. N. *et al.* (2018) 'The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers', *Education for Information*, 34(4), pp. 285–291. doi: 10.3233/EFI-180221.

Hughes, V. *et al.* (2023) 'A qualitative descriptive study of effective leadership and leadership development strategies used by nurse leaders in European island countries', *Nursing Open*, 10(2), pp. 1071–1082. doi: 10.1002/nop2.1374.

Ibrahim, I. A. *et al.* (2024) 'Transformational Leadership, Psychological Empowerment, and Organizational Citizenship Behaviors among Nursing Workforce: A Single Mediation Analysis', *Journal of Nursing Management*, 2024, pp. 1–11. doi: 10.1155/2024/9919371.

Labrague, L. J. (2024) 'Relationship between transformational leadership, adverse patient events, and nurse-assessed quality of care in emergency units: The mediating role of work satisfaction', *Australasian Emergency Care*, 27(1), pp. 49–56. doi: 10.1016/j.auec.2023.08.001.

Lui, J. N. M. and Johnston, J. M. (2019) 'Validation of the nurse leadership and organizational culture (N-LOC) questionnaire', *BMC Health Services Research*, 19(1), p. 469. doi: 10.1186/s12913-019-4290-z.

Merrill, K. C. (2015) 'Leadership Style and Patient Safety', *JONA: The Journal of Nursing Administration*, 45(6), pp. 319–324. doi: 10.1097/NNA.0000000000000207.

National Academies of Sciences, E. and M., National Academy of Medicine and Committee on Systems Approaches to Improve Patient Care by Supporting Clinician Well-Being (2019) *Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being*. Washington, D.C.: National Academies Press. doi: 10.17226/25521.

National Council of State Boards of Nursing (2024) *NCSBN Research Highlights Small Steps Toward Nursing Workforce Recovery; Burnout and Staffing Challenges Persist*, *National Council of State Boards of Nursing*. Available at: https://www.ncsbn.org/news/ncsbn-research-highlights-small-steps-toward-nursing-workforce-recovery-burnout-and-staffing-challenges-persist (Accessed: 24 August 2025).

Northouse, P. G. (2025) *Leadership: Theory and practice*. Sage publications.

Perez-Gonzalez, S. *et al.* (2024) 'Characteristics of Leadership Competency in Nurse Managers: A Scoping Review', *Journal of Nursing Management*, 2024(1). doi: 10.1155/2024/5594154.

Seljemo, C., Viksveen, P. and Ree, E. (2020) 'The role of transformational leadership, job demands and job resources for patient safety culture in Norwegian nursing homes: a cross-sectional study', *BMC Health Services Research*, 20(1), p. 799. Available at: https://doi.org/10.1186/s12913-020-05671-y.

Sfantou, D. *et al.* (2017) 'Importance of Leadership Style towards Quality of Care Measures in Healthcare Settings: A Systematic Review', *Healthcare*, 5(4), p. 73. doi: 10.3390/healthcare5040073.

Sihvola, S., Kvist, T. and Nurmeksela, A. (2022) 'Nurse leaders' resilience and their role in supporting nurses' resilience during the COVID-19 pandemic: A scoping review', *Journal of Nursing Management*, 30(6), pp. 1869–1880. doi: 10.1111/jonm.13640.

Whittemore, R. and Knafl, K. (2005) 'The integrative review: updated methodology', *Journal of Advanced Nursing*, 52(5), pp. 546–553. doi: 10.1111/j.1365-2648.2005.03621.x.

World Health Organization (2024) *Nursing workforce grows, but inequities threaten global health goals*, *World Health Organization*. Available at: https://www.who.int/news/item/12-05-2025-nursing-workforce-grows--but-inequities-threaten-global-health-goals (Accessed: 24 August 2025).

Wymer, J. A., Stucky, C. H. and De Jong, M. J. (2021) 'Nursing Leadership and COVID-19: Defining the Shadows and Leading Ahead of the Data', *Nurse Leader*, 19(5), pp. 483–488. doi: 10.1016/j.mnl.2021.06.004.

Zaghini, F. *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', *International Journal of Nursing Studies*, 101, p. 103446. doi: 10.1016/j.ijnurstu.2019.103446.

How to cite this article: Pujiyanto, T. I., and Saifudin, I. M. M. Y. (2026) 'Transformational Leadership and Nursing Outcomes: An Integrative Review of Empirical Evidence (2010–2025)', *Jurnal Ners*, 21(2), pp. 255-266. doi: http://dx.doi.org/10.20473/jn.v21i2.89168

Table 1. Studies Characteristics

Author (Year)	Country/Setting	Design	Sample & Participants	Leadership Measurement	Outcomes Measured	Key Findings	Quality (MMAT)
(Labrague, 2024)	USA / 5 hospitals, Emergency Units	Cross-sectional	283 ER nurses	Global Transformational Leadership (GTL) Scale; Job Satisfaction Index (JSI)	Nurse-assessed care quality; Adverse patient events	TL ↑ work satisfaction (r=0.247, p<.01); TL ↑ care quality (r=0.374, p<.01); TL ↓ adverse events (r=-0.351, p<.01). Regression: TL predicted fewer adverse events (β=-0.638, p<.001) and higher care quality (β=0.276, p<.001).	High
(Zaghini *et al.*, 2020)	Italy / 5 hospitals, 42 wards	Cross-sectional, multilevel	479 nurses; 829 patients	Leadership satisfaction (NOHQ); Burnout (MBI); Interpersonal Strain; CWBs	Patient satisfaction (Caring Behaviours Scale); burnout; counterproductive work behaviours	Satisfaction with leadership ↓ burnout (β=-0.33, p<.001) and ↓ cynicism (β=-0.38, p<.001); poor leadership ↑ interpersonal strain → ↑ CWBs → ↓ patient satisfaction.	High
(Al-Hussami *et al.*, 2025)	Jordan / multiple hospitals	Cross-sectional correlational	253 nurses	MLQ (α=0.90 TL); Organizational Commitment Questionnaire (OCQ, α=0.82); SERVQUAL QoC	Perceived nursing care quality; organizational commitment	QoC positively correlated with leadership (r=0.375, p<.001) and commitment (r=0.418, p<.001). Regression: predictors were leadership (β=0.276, p<.001), commitment (β=0.340, p<.001), income (β=0.287, p<.05); explained 23.6% variance.	Moderate–High
(Alloubani *et al.*, 2019)	Jordan / 3 public + 3 private hospitals	Cross-sectional, correlational	50 nurse managers, 150 staff nurses, 200 patients (n=400)	MLQ-5X; PSNCQQ (Patient Satisfaction with Nursing Care Quality Questionnaire)	Patient satisfaction; leadership outcomes (effectiveness, job satisfaction, extra effort)	TL strongly positively correlated with patient satisfaction and leadership outcomes (r=0.75–0.87, p<.001). Transactional/passive styles correlated negatively. Significant differences between public vs private hospitals.	High
(Boamah, 2018)	Canada / Ontario hospitals	Cross-sectional	378 direct-care nurses	MLQ-5X; CWEQ-II (empowerment); Clinical Leadership Survey (CLS)	Nurse-assessed adverse events; empowerment; clinical leadership	TL → ↑ empowerment (β=.79, p<.001) → ↑ clinical leadership (β=.27, p<.01) → ↓ adverse events (β=-.24, p<.01). Indirect effects significant.	High
(Cheng *et al.*, 2016)	Australia / Public health service, Victoria	Cross-sectional (SEM)	201 nurses	MLQ-5X (TL subscales); Social Identity Scale	Team climate; perceived QoC; burnout; turnover intention	TL ↓ burnout (r=-.311, p<.01); ↓ turnover intention (r=-.276, p<.01); ↑ QoC (r=.209, p<.01); ↑ team climate (r=.486, p<.01). Effects partly/fully mediated by social identity. Model explained 77% variance in team climate.	High
(den Breejen-de Hooge, van Os-Medendorp and Hafsteinsdóttir, 2021)	Netherlands / Academic hospital	Cross-sectional survey	655 nurses working on clinical wards	MLQ (TL & Laissez-faire); Leadership Practices Inventory (LPI)	Nurse-reported quality of care (NRQC)	No significant association between QoC and TL practices (R^2=0.000, p=.835). Nurse characteristics (gender, profession, practice area) predicted QoC more strongly.	Moderate
(Boshra *et al.*, 2025)	Saudi Arabia / Riyadh MOH hospitals (PSMMC, KFMC, NGH, PMBAH)	Cross-sectional comparative	150 nurses	MLQ (leadership styles); PSNCQQ	Patient satisfaction with nursing care quality	Leadership styles varied across hospitals; non-passive styles linked with higher patient satisfaction; laissez-faire linked with lower satisfaction.	Moderate–High

Note: TL = Transformational Leadership; MLQ = Multifactor Leadership Questionnaire; MLQ-5X = Multifactor Leadership Questionnaire, 5X Short Form; GTL = Global Transformational Leadership Scale; LPI = Leadership Practices Inventory; NOHQ = Nursing Organizational Health Questionnaire; MBI = Maslach Burnout Inventory; CWBs = Counterproductive Work Behaviors; OCQ = Organizational Commitment Questionnaire; QoC = Quality of Care; SERVQUAL = Service Quality Instrument; PSNCQQ = Patient Satisfaction with Nursing Care Quality Questionnaire; CWEQ-II = Conditions of Work Effectiveness Questionnaire-II; CLS = Clinical Leadership Survey; NRQC = Nurse-Reported Quality of Care; SEM = Structural Equation Modelling; ↑ = increase / positive association; ↓ = decrease / negative association; → = leads to / predictive pathway; ↔ = bidirectional or general association