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Competency-Based Leadership Development for Nursing Managers and Executive-Track Nurses: Implications for Workforce Retention, Quality Outcomes, and Strategic Human Capital Planning

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ABSTRACT

Background: *Healthcare systems face persistent shortages in nursing leadership, high turnover among nurse managers, and variability in quality outcomes. Leadership instability contributes to workforce disengagement, increased burnout, and diminished patient care quality, underscoring the need for structured, competency-based approaches to leadership development.*

Objective: *This study synthesizes empirical and theoretical evidence on nursing leadership competency frameworks and advances an integrated competency-to-outcome model linking leadership development to workforce retention, quality outcomes, and strategic human capital optimization.*

Methods: *An integrative review methodology was employed following Whittemore and Knafl [1], incorporating PRISMA-aligned processes for transparency. A comprehensive search of PubMed, CINAHL, Scopus, and Web of Science (2010–2025) yielded 1,320 records, of which 65 studies met the inclusion criteria. Data were analyzed using thematic synthesis to identify core competency domains and their relationships to workforce, clinical, and organizational outcomes. Findings were mapped onto a multilevel conceptual framework that incorporates mediating mechanisms and feedback loops.*

Results: *Four interrelated competency domains emerged: foundational, operational, strategic, and transformational leadership. These competencies influence outcomes through key mediators, including leadership behaviors, organizational culture, psychological safety, and work environment quality. Evidence consistently demonstrates that competency-based leadership development is associated with reduced turnover, lower burnout, increased job satisfaction, improved patient outcomes, and strengthened leadership pipelines. The proposed model highlights dynamic feedback loops in which improvements in retention and performance enable reinvestment in leadership development, thereby reinforcing organizational capability.*

Conclusion: *Competency-based leadership development serves as a strategic infrastructure within healthcare organizations, shaping workforce stability, care quality, and long-term organizational performance. Integrating leadership competencies into human capital strategies, including succession planning, workforce analytics, and competency-based advancement, offers a scalable and sustainable approach to leadership pipeline development and organizational resilience. These findings support a paradigm shift from episodic training to continuous, system-integrated leadership development.*

Keywords
Nursing leadership, Competency models, Workforce retention, Quality outcomes, Human capital strategy, Leadership development, Healthcare management, Evidence-based practice.

Introduction

Problem Context

Healthcare systems worldwide continue to face significant challenges in nursing workforce sustainability, particularly in leadership roles. Nurse managers operate at the nexus of clinical care delivery, workforce management, and organizational performance. Despite their critical role, turnover rates among nurse managers frequently exceed 18-25 percent annually in hospital settings, contributing to instability in care delivery environments and diminished staff morale [2].

Leadership instability has measurable consequences. Units with frequent leadership turnover demonstrate higher rates of nurse burnout, increased vacancy rates, and poorer patient outcomes, including higher rates of hospital-acquired conditions and lower patient satisfaction scores [3]. The growing complexity of healthcare delivery, including technological transformation, regulatory pressures, and evolving patient needs, further exacerbates the demands placed on nursing leaders.

Significance of Nursing Leadership Competencies

Nurse managers influence a substantial proportion of workforce outcomes. Empirical evidence suggests that leadership behaviors account for up to 70% of the variance in staff engagement and retention [4]. Effective leadership is associated with improved teamwork, reduced adverse events, and higher psychological safety in clinical environments.

Despite this, many nurse managers are promoted based on clinical expertise rather than leadership preparedness. This misalignment contributes to competency gaps in financial management, strategic planning, and workforce development. As a result, there is increasing recognition that structured, competency-based leadership development is essential for both operational effectiveness and long-term workforce sustainability.

Purpose of the Study

The purpose of this study is threefold:

1. To synthesize existing evidence on nursing leadership competency frameworks
2. To identify competency domains most strongly associated with retention and quality outcomes
3. To propose an integrated competency-based model for leadership development aligned with human capital strategies

Research Questions

This study addresses the following research questions:

1. What competencies are most predictive of effective nursing leadership?
2. How do competency-based leadership models influence workforce retention and quality outcomes?
3. How can healthcare organizations operationalize competency-based leadership development within human capital planning frameworks?

Literature Review

Theoretical Foundations

Competency-based leadership development in nursing is grounded in several theoretical frameworks. Human Capital Theory posits that investments in education and skill development enhance productivity and organizational performance [5]. In healthcare, leadership competencies represent a form of human capital that directly influences care delivery outcomes.

The Resource-Based View (RBV) further suggests that organizations achieve sustained competitive advantage by developing unique, valuable, and difficult-to-replicate resources, including leadership capabilities [6]. Nursing leadership competencies, when systematically developed, represent a strategic asset.

Social Cognitive Career Theory (SCCT) provides additional insight into leadership development pathways, emphasizing the role of self-efficacy, outcome expectations, and environmental supports in shaping career progression [7]. Structured competency models can enhance self-efficacy among emerging leaders and support advancement into executive roles.

Nursing Leadership Competency Frameworks

Several established frameworks define competencies for nursing leadership. The American Organization for Nursing Leadership (AONL) outlines domains including communication, knowledge of the healthcare environment, leadership, and business skills. Similarly, the National Center for Healthcare Leadership (NCHL) identifies competencies spanning transformation, execution, and people management.

Across frameworks, common domains include:

- Interpersonal and communication skills
- Clinical and operational knowledge
- Financial and business acumen
- Strategic and systems thinking
- Professionalism and ethical leadership

These frameworks provide a foundation for leadership development, but are often implemented inconsistently across organizations.

Competency Models and Organizational Outcomes

Empirical studies demonstrate strong relationships between leadership competencies and organizational outcomes. Duffield et al. [8] found that supportive leadership behaviors were associated with lower nurse turnover and higher job satisfaction. Similarly, Wong et al. [3] reported that authentic leadership was positively correlated with perceived quality of care and reduced adverse events.

Leadership competencies also influence team performance. Units led by highly competent nurse managers demonstrate improved communication, stronger collaboration, and higher adherence to evidence-based practices. These factors contribute to measurable improvements in patient safety and clinical outcomes.

Workforce Retention in Nursing

Retention remains a critical challenge in healthcare. The cost of nurse turnover ranges from $40,000 to $64,000 per nurse, with system-wide implications for financial performance and care continuity [2]. Key drivers of retention include leadership support, professional development opportunities, and the quality of the work environment.

Leadership plays a central role in shaping these factors. Nurse managers who demonstrate strong communication, recognition, and support behaviors foster higher levels of engagement and commitment among staff. Conversely, poor leadership contributes to burnout and intentions to leave.

Quality Outcomes and Leadership

Nursing leadership is closely linked to patient outcomes. Studies comparing Magnet and non-Magnet hospitals indicate that leadership quality is associated with lower mortality rates, reduced complications, and higher patient satisfaction [9]. Nurse-sensitive indicators, including falls, infections, and pressure injuries, are influenced by leadership effectiveness.

Leadership competencies enable nurse managers to implement evidence-based practices, coordinate care, and optimize staffing models, thereby improving outcomes.

Gaps in the Literature

Despite the growing body of evidence, several gaps remain:

- Limited integration of competency models with workforce analytics
- Insufficient focus on executive leadership pipelines
- Lack of standardized approaches to competency assessment and development

These gaps highlight the need for an integrated framework linking competencies to organizational outcomes.

Conceptual Framework

Integrated Competency-to-Outcome Model

This study advances an integrated competency-to-outcome model that positions nursing leadership competencies as foundational inputs within a multilevel system influencing workforce and organizational performance. The model is grounded in Human Capital Theory, the Resource-Based View (RBV), and contemporary healthcare leadership science, conceptualizing leadership capability as a strategic asset that produces measurable organizational value [5,6].

At its core, the model delineates three primary components:

Inputs: Leadership Competency Domains

Leadership competencies represent accumulated human capital embodied in nurse managers and executive-track nurses. These competencies encompass knowledge, skills, abilities, and behavioral attributes that enable effective role performance across clinical, operational, and strategic contexts [10]. In healthcare organizations, leadership competency development has been associated with improved workforce stability and enhanced care delivery performance [3].

Mediating Mechanisms

The relationship between leadership competencies and organizational outcomes is not direct, but operates through several critical mediators:

- **Leadership Behaviors:** Competencies manifest as observable leadership behaviors, including coaching, communication, decision-making, and conflict resolution. Transformational and authentic leadership behaviors, in particular, have been shown to improve staff engagement, trust, and psychological safety [3,11].
- **Organizational Culture:** Leadership behaviors shape unit-level and organizational culture, influencing norms related to teamwork, accountability, and continuous improvement. High-reliability organizations (HROs) demonstrate cultures characterized by preoccupation with failure, sensitivity to operations, and commitment to resilience, all of which are influenced by leadership capability [12].
- **Team Dynamics and Work Environment:** Nurse managers directly affect team cohesion, communication patterns, and workload distribution. Favorable practice environments, often measured through instruments such as the Practice Environment Scale, are strongly associated with both nurse retention and patient outcomes [9,13].
- **Psychological Safety and Engagement:** Leadership competencies contribute to environments where staff feel safe to speak up, report errors, and participate in improvement initiatives. Psychological safety has been linked to reduced burnout and improved quality of care [4,14].

Outputs: Organizational and Workforce Outcomes

Through these mediating mechanisms, leadership competencies influence three primary categories of outcomes:

- **Workforce Retention and Stability:** Effective leadership reduces turnover, improves job satisfaction, and enhances organizational commitment. Turnover reduction has significant financial implications, with replacement costs for bedside nurses estimated between $40,000 and $64,000 per individual [2].
- **Quality and Patient Outcomes:** Leadership competency is associated with improved nurse-sensitive indicators, including reduced falls, infections, and mortality rates. Hospitals with strong nursing leadership, such as Magnet-designated organizations, consistently outperform peers on quality metrics [9].
- **Human Capital Development and Leadership Pipeline Strength:** Competency-based leadership systems enable

organizations to identify, develop, and retain high-potential leaders. Structured leadership pipelines reduce vacancy durations and support succession planning, contributing to long-term organizational resilience [15].

Dynamic Feedback Loops

Importantly, the model incorporates feedback loops in which improved outcomes reinforce organizational investment in leadership development. For example, reductions in turnover generate financial savings that can be reinvested into training and development programs, creating a virtuous cycle of human capital enhancement.

Competency Domains

Building on established frameworks such as those from the American Organization for Nursing Leadership (AONL) and the National Center for Healthcare Leadership (NCHL), this study synthesizes four interrelated competency domains that reflect progressive leadership capability across career stages.

Foundational Competencies

Foundational competencies represent the behavioral and interpersonal core of effective nursing leadership. These competencies are critical for frontline leadership effectiveness and form the basis for more advanced capability development.

- **Emotional Intelligence (EI):** Emotional intelligence, defined as the ability to perceive, understand, and regulate emotions, is strongly associated with leadership effectiveness in healthcare settings [16]. Nurse managers with high EI demonstrate improved conflict management, enhanced team cohesion, and reduced staff burnout.
- **Communication and Relationship Management:** Effective communication is consistently identified as one of the most critical leadership competencies. It influences staff engagement, interdisciplinary collaboration, and patient safety outcomes. Structured communication practices, such as SBAR and daily huddles, are often driven by leadership behavior [17].
- **Ethical Decision-Making and Professionalism:** Ethical leadership fosters trust, accountability, and adherence to professional standards. In complex clinical environments, nurse leaders must navigate ethical dilemmas related to resource allocation, patient care decisions, and staff management [18].
- These competencies align closely with authentic leadership theory, which emphasizes transparency, ethical conduct, and relational integrity [11].

Operational Competencies

Operational competencies enable nurse managers to effectively manage clinical units and ensure efficient, high-quality care delivery.

- **Staffing and Resource Management:** Effective staffing models are essential for balancing patient acuity, workload, and cost constraints. Evidence demonstrates that appropriate nurse staffing levels are associated with lower mortality and improved patient outcomes [19].
- **Process Improvement and Quality Methodologies:** Competence in Lean, Six Sigma, and Plan-Do-Study-Act (PDSA) cycles enables nurse leaders to drive continuous improvement. These methodologies are central to reducing variation and improving care processes [20].
- **Performance Management and Data Utilization:** Nurse leaders must interpret and act on performance metrics, including quality indicators, financial data, and workforce analytics. Data-driven decision-making is increasingly critical in value-based care environments [21].
- Operational competencies reflect the execution dimension of leadership and align with RBV concepts of organizational capability development.

Strategic Competencies

Strategic competencies distinguish executive-track nurses and enable alignment between unit-level operations and organizational strategy.

- **Financial and Business Acumen:** Nurse leaders must understand budgeting, cost structures, and reimbursement models. Financial literacy is essential for aligning clinical decisions with organizational sustainability [22].
- **Policy and Regulatory Knowledge:** Healthcare operates within a complex regulatory environment. Nurse leaders must interpret and respond to policies related to quality reporting, reimbursement, and accreditation [23].
- **Population Health and Systems Thinking:** Strategic leaders must move beyond unit-level perspectives to address population health outcomes, care coordination, and social determinants of health. Systems thinking enables leaders to identify interdependencies across care delivery networks [24].
- These competencies are particularly relevant in the context of value-based care and integrated delivery systems.

Transformational Competencies

Transformational competencies represent advanced leadership capabilities required for organizational change and innovation.

- **Change Management:** Healthcare organizations face constant change driven by technological advancements, regulatory shifts, and evolving patient needs. Competence in change management frameworks, such as Kotter's model, enables leaders to implement sustainable transformation [25].
- **Innovation Leadership:** Nurse leaders play a critical role in fostering innovation, including the adoption of new care models, technologies, and workflows. Innovation capability is increasingly recognized as a determinant of organizational performance [26].
- **Digital Health and Technology Integration:** The rapid expansion of digital health technologies, including electronic health records, telehealth, and artificial intelligence, requires leaders who can integrate technology into care delivery while maintaining quality and safety [27].
- Transformational competencies align with theories of transformational leadership, which emphasize vision, inspiration, and organizational change [28].

Developmental Progression Across Domains

These four domains reflect a developmental progression from frontline management to executive leadership. Foundational competencies underpin all leadership roles, while operational competencies dominate early management positions. Strategic and transformational competencies become increasingly important as leaders advance into executive roles.

This progression supports the development of structured leadership pipelines, enabling organizations to prepare nurse managers for executive roles systematically. Competency-based advancement, rather than tenure-based promotion, offers a more effective approach to leadership development and succession planning.

Methods

Study Design

This study employed an integrative review methodology to synthesize empirical and theoretical literature on nursing leadership competencies and their relationships to workforce and organizational outcomes. The integrative review approach, as articulated by Whittemore and Knafl [1], enables the inclusion and synthesis of diverse research designs, including quantitative, qualitative, and mixed-methods studies, thereby providing a comprehensive understanding of complex healthcare phenomena.

Integrative reviews are particularly appropriate in emerging or multifaceted areas of inquiry, such as leadership competency development, where evidence is distributed across methodological traditions and disciplinary boundaries [29]. This approach allows for both descriptive and conceptual contributions, including the development of new frameworks and models.

To enhance methodological rigor and transparency, this review was conducted in alignment with established guidance for integrative and systematic reviews, incorporating elements of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) where applicable [30]. Although not a full systematic review or meta-analysis, the study adhered to structured processes for literature identification, screening, data extraction, and synthesis.

A total of 1,320 records were identified through database searching and supplementary citation tracking. After removal of 275 duplicates, 1,045 records were screened based on title and abstract. Of these, 812 were excluded due to lack of relevance to nursing leadership competencies or organizational outcomes. A total of 233 full-text articles were assessed for eligibility, of which 168 were excluded for reasons including a lack of focus on nursing leadership, the absence of outcome measures, insufficient methodological rigor, or a non-empirical design. Ultimately, 65 studies met the inclusion criteria and were included in the integrative review.

The review process followed five stages consistent with Whittemore and Knafl [1]:

1. Problem identification
2. Literature search
3. Data evaluation
4. Data analysis
5. Presentation of findings

Data Sources and Search Strategy

Database Selection

A comprehensive literature search was conducted across four major electronic databases commonly used in healthcare and nursing research:

- PubMed/MEDLINE
- CINAHL (Cumulative Index to Nursing and Allied Health Literature)
- Scopus
- Web of Science

These databases were selected to ensure broad coverage of clinical, managerial, and interdisciplinary research relevant to nursing leadership and healthcare outcomes.

Search Strategy Development

The search strategy was developed iteratively using a combination of keyword searches and controlled vocabulary (e.g., MeSH terms in PubMed). Boolean operators (AND, OR) and truncation were used to enhance sensitivity and specificity.

Core search strings included combinations of the following terms:

- “nursing leadership competencies” OR “nurse leader competencies”.
- “nurse manager” OR “nursing executive”.
- “retention” OR “turnover” OR “workforce stability”.
- “quality outcomes” OR “patient outcomes” OR “patient safety”.
- “leadership development” OR “competency framework”.

An example PubMed search string included:
(“nursing leadership” OR “nurse manager”) AND (“competency” OR “leadership development”) AND (“retention” OR “turnover” OR “quality outcomes”)

Search Limits and Filters

- Publication years: 2010–2025
- Language: English
- Article type: Peer-reviewed journal articles

Reference lists of selected articles were also manually reviewed to identify additional relevant studies, a process consistent with backward citation tracking [31]. Forward citation tracking was conducted using Scopus and Web of Science to identify more recent studies citing foundational articles.

Search Yield and Screening Process

The initial search yielded a broad pool of articles. After removal of duplicates, titles and abstracts were screened for relevance. A full-text review was conducted for articles that met the inclusion criteria. While a formal PRISMA flow diagram is not presented in

this manuscript, the process followed standard screening stages: identification, screening, eligibility, and inclusion.

Inclusion and Exclusion Criteria

Inclusion Criteria

Studies were included if they met the following criteria:

- Published in peer-reviewed journals between 2010 and 2025
- Focused on nursing leadership, nurse managers, or executive nursing roles
- Examined leadership competencies, leadership behaviors, or leadership development frameworks
- Included outcomes related to:
  - Workforce retention or turnover
  - Patient or quality outcomes
  - Organizational performance or workforce development
- Employed quantitative, qualitative, or mixed-methods designs, or provided robust theoretical or conceptual contributions

The inclusion of multiple study designs is consistent with integrative review methodology, which seeks to capture the full scope of evidence [1].

Exclusion Criteria

Studies were excluded if they:

- Were not published in English
- Focused exclusively on clinical competencies without leadership relevance
- Lacked empirical data, theoretical grounding, or clear methodological rigor
- Were editorials, opinion pieces, or conference abstracts without sufficient detail for evaluation
- Focused on non-healthcare leadership contexts without clear applicability to nursing

Quality Appraisal

To ensure methodological rigor, included studies were evaluated for quality using criteria adapted from established appraisal tools:

- For quantitative studies: internal validity, sample size adequacy, statistical rigor
- For qualitative studies: credibility, transferability, dependability, confirmability [32]
- For mixed-methods studies: integration of qualitative and quantitative findings

Rather than excluding studies solely based on methodological limitations, quality assessment informed the weighting of evidence during synthesis, consistent with integrative review standards [1].

Data Extraction and Analysis

Data Extraction

A standardized data extraction process was used to ensure consistency across studies. Key variables extracted included:

- Study characteristics:
  - Author(s), year, country
  - Study design and sample characteristics
- Leadership variables:
  - Competency domains
  - Leadership styles or behaviors
- Outcome variables:
  - Retention or turnover metrics
  - Quality or patient outcomes
  - Organizational performance indicators
- Key findings and conclusions

Data were organized into evidence tables to facilitate cross-study comparison and synthesis.

Analytical Approach

A thematic synthesis approach was employed to identify recurring patterns across studies [33]. This involved three stages:

1. **Open Coding:** Initial coding of text segments related to leadership competencies and outcomes
2. **Category Development:** Grouping codes into broader categories reflecting competency domains and outcome pathways
3. **Theme Abstraction:** Development of higher-order themes linking competencies to mediating mechanisms and organizational outcomes

This process enabled the identification of four dominant competency domains and their relationships to retention, quality, and human capital outcomes.

Framework Mapping

Findings from the thematic synthesis were mapped onto the proposed conceptual framework. This mapping process involved:

- Aligning identified competencies with domain categories
- Linking competencies to mediating variables (e.g., leadership behaviors, culture)
- Associating outcomes with specific competency domains

This approach supports theory-building and enhances the model's explanatory power [29].

Addressing Bias and Limitations

Several steps were taken to reduce bias:

- Use of multiple databases to minimize publication bias
- Inclusion of diverse study designs to enhance comprehensiveness
- Transparent reporting of inclusion and exclusion criteria

However, inherent limitations of integrative reviews remain, including potential selection bias and variability in study quality. These limitations were addressed through systematic processes and critical appraisal.

Results

Competency Clusters

The integrative review identified four dominant and consistently replicated competency clusters across the literature: (1) interpersonal and relational competencies, (2) operational and administrative competencies, (3) strategic and systems-level

competencies, and (4) transformational leadership competencies. These clusters align with established frameworks such as those developed by the American Organization for Nursing Leadership and the National Center for Healthcare Leadership, while also reflecting broader leadership theory and empirical findings in healthcare management.

Interpersonal and Relational Competencies

Interpersonal competencies emerged as the most frequently cited and foundational domain across studies. These competencies include communication, emotional intelligence, conflict resolution, and relationship management. Evidence suggests that these competencies directly influence staff engagement, psychological safety, and team cohesion.

Wong, Cummings, and Ducharme [3], in a systematic review of nursing leadership and patient outcomes, found that relational leadership behaviors were strongly associated with improved nurse job satisfaction and reduced adverse patient events. Similarly, Laschinger et al. [34] demonstrated that authentic leadership, characterized by transparency and relational integrity, significantly reduced emotional exhaustion and cynicism among nurses.

Emotional intelligence, in particular, has been linked to improved team functioning and reduced burnout. Codier, Muneno, and Freitas found that higher emotional intelligence among nurse leaders was associated with increased patient satisfaction and improved communication outcomes. These findings reinforce the centrality of interpersonal competencies as a prerequisite for effective leadership across all levels.

Operational and Administrative Competencies

Operational competencies, including staffing management, resource allocation, and process improvement, were identified as critical for translating leadership intent into measurable performance outcomes. These competencies are closely tied to execution and day-to-day unit management.

Aiken et al. [19] demonstrated that appropriate nurse staffing levels, often influenced by managerial decision-making, are significantly associated with reduced mortality and improved patient outcomes. Nurse managers with strong operational competencies are better equipped to align staffing with patient acuity, thereby reducing workload strain and improving care quality.

Process improvement capabilities, including familiarity with Lean and Six Sigma methodologies, were also frequently cited. Toussaint and Berry [20] reported that healthcare organizations implementing Lean principles achieved reductions in waste, improved patient flow, and enhanced care quality. Nurse leaders play a central role in operationalizing these methodologies at the unit level.

Additionally, performance management competencies, including the use of dashboards and key performance indicators (KPIs), enable leaders to monitor and improve clinical and financial outcomes. Kaplan and Porter [21] emphasized the importance of outcome measurement in healthcare, highlighting leadership's role in linking cost and quality data to decision-making.

Strategic and Systems-Level Competencies

Strategic competencies were less frequently observed among frontline managers but were consistently associated with executive-level nursing roles. These competencies include financial acumen, policy understanding, and systems thinking.

Finkler, Smith, and Calabrese [22] argue that financial literacy is essential for healthcare leaders to align clinical priorities with organizational sustainability. Nurse leaders who understand cost structures and reimbursement mechanisms are better positioned to advocate for resources and implement cost-effective care models.

Systems thinking emerged as a critical competency for navigating complex healthcare environments. Sterman [24] emphasized that healthcare systems are characterized by interdependencies and feedback loops, requiring leaders to understand how decisions in one area affect outcomes elsewhere. Nurse leaders with systems-level competencies are more effective in coordinating care across departments and improving population health outcomes.

Policy and regulatory knowledge also play a significant role, particularly in environments shaped by value-based care and quality reporting requirements. Leaders must interpret and respond to evolving regulatory frameworks, including those related to reimbursement, accreditation, and patient safety [23].

Transformational Leadership Competencies

Transformational competencies, including change management, innovation, and vision-setting, were consistently associated with high-performing organizations and advanced levels of leadership effectiveness.

Bass and Riggio [28] describe transformational leadership as the ability to inspire and motivate followers toward shared goals, fostering innovation and organizational change. In nursing contexts, transformational leadership has been linked to improved staff engagement, reduced turnover, and enhanced patient outcomes [35].

Change management competency is particularly critical in healthcare, where continuous adaptation is required. Kotter [25] emphasizes the importance of structured change processes that nurse leaders must implement to ensure the successful adoption of new technologies, workflows, and care models.

Innovation leadership, including the ability to integrate digital health technologies, has become increasingly important. Topol [27] highlights the transformative potential of artificial intelligence and digital tools in healthcare, underscoring the need for leaders who can effectively guide technological integration.

Retention Outcomes

Across the reviewed literature, leadership competencies were consistently associated with improved workforce retention and reduced turnover. This relationship was mediated through factors such as job satisfaction, burnout, organizational commitment, and work environment quality.

Shanafelt et al. [4] found that leadership quality accounted for a significant proportion of variance in physician and nurse burnout, with better leadership associated with lower emotional exhaustion and higher professional fulfillment. Similarly, Cummings et al. [36] reported that supportive leadership behaviors were strongly correlated with reduced turnover intentions among nursing staff.

Quantitatively, organizations with high leadership effectiveness reported:

- **Lower burnout rates:** Burnout prevalence decreased by up to 30 percent in units with supportive leadership [34]
- **Higher job satisfaction:** Positive leadership behaviors were associated with significant increases in job satisfaction scores [3]
- **Increased intent to stay:** Intent-to-stay metrics improved in environments characterized by strong leadership and supportive practice environments [37]

Retention outcomes also have substantial financial implications. NSI Nursing Solutions [2] estimates that reducing RN turnover by even 1 percent can save hospitals hundreds of thousands of dollars annually, depending on size and staffing levels.

Importantly, the findings suggest that leadership competencies function as a primary lever for retention, often outweighing compensation and workload factors. This reinforces the strategic importance of leadership development in workforce sustainability.

Quality Outcomes

Leadership competencies were strongly associated with improved patient and quality outcomes across multiple studies. These outcomes included both clinical indicators and patient experience measures.

Clinical Outcomes

Studies consistently demonstrated that effective nursing leadership contributes to reductions in:

- **Hospital-acquired infections (HAIs):** Improved adherence to protocols and stronger accountability mechanisms [3]
- **Patient falls and adverse events:** Enhanced supervision, communication, and safety culture [9]
- **Mortality rates:** Better staffing and care coordination driven by leadership decisions [19]

These findings align with the concept of nurse-sensitive indicators, which are directly influenced by nursing care and leadership practices.

Patient Experience Outcomes

Leadership competencies also influence patient satisfaction, often measured through HCAHPS scores. McHugh et al. [38] found that hospitals with better nurse work environments, shaped by leadership, had significantly higher patient satisfaction ratings.

Relational leadership behaviors, including communication and empathy, contribute to patient-centered care, which is increasingly emphasized in value-based reimbursement models.

Mechanisms Linking Leadership to Quality

The relationship between leadership competencies and quality outcomes is mediated through:

- Improved staff engagement and accountability
- Enhanced communication and teamwork
- Stronger adherence to evidence-based practices
- Development of high-reliability organizational cultures

Weick and Sutcliffe [12] emphasize that leadership is central to fostering high-reliability practices, including sensitivity to operations and preoccupation with failure, both of which are critical for patient safety.

Leadership Pipeline Development

A key finding across the literature was the role of competency-based development programs in strengthening leadership pipelines and ensuring organizational continuity.

Organizations that implemented structured leadership development programs reported:

- **Increased internal promotion rates:** Internal candidates filled a higher proportion of leadership roles, reducing reliance on external recruitment [15]
- **Reduced time-to-fill vacancies:** Leadership vacancies were filled more quickly, minimizing operational disruption
- **Enhanced leadership continuity:** Succession planning reduced gaps in leadership and maintained organizational stability

Succession planning and leadership pipeline development are critical components of human capital strategy. Groves [39] found that organizations with formal leadership development programs experienced stronger bench strength and improved organizational performance.

In nursing, pipeline development is particularly important given the aging workforce and increasing demand for leadership roles. Structured programs that integrate competency assessment, mentorship, and experiential learning have been shown to accelerate leadership readiness [40].

Integration with Human Capital Strategy

Competency-based leadership development supports broader human capital objectives, including:

- Workforce planning and forecasting
- Talent identification and development
- Alignment of leadership capabilities with strategic priorities

These findings suggest that leadership competency models should be embedded within organizational talent management systems, rather than treated as standalone training initiatives.

Synthesis of Results

Collectively, the findings demonstrate that leadership competencies function as a central mechanism linking workforce management, quality improvement, and organizational performance. The four competency domains operate synergistically, with foundational competencies enabling operational effectiveness, and strategic and transformational competencies driving long-term organizational success.

The results support the proposed conceptual framework, reinforcing the importance of competency-based leadership development as a strategic priority for healthcare organizations.

Discussion

Interpretation of Findings

The findings of this integrative review suggest that competency-based leadership development functions not as a discrete educational intervention but rather as a strategic organizational infrastructure that shapes workforce stability, clinical quality, and long-term institutional performance. This interpretation aligns with Human Capital Theory, which positions leadership capability as a productive asset that yields measurable returns through improved organizational outcomes [5] and with the Resource-Based View, which emphasizes leadership as a source of sustained competitive advantage in complex environments [6].

Across the reviewed literature, leadership competencies demonstrated both direct and indirect effects on organizational outcomes. Direct effects were observed in areas such as staffing decisions, communication practices, and the implementation of quality improvement initiatives. Indirect effects were mediated by organizational culture, psychological safety, and staff engagement. This multilevel influence supports prior findings that leadership behaviors significantly shape work environments and, consequently, patient outcomes [3].

Importantly, the results reinforce the concept of leadership as a systems-level determinant of performance rather than an individual attribute. Nurse leaders function as "organizational integrators", aligning clinical operations, workforce management, and strategic priorities. This perspective is consistent with high-reliability organization theory, which emphasizes leadership's role in creating cultures of safety, resilience, and continuous learning [12].

A critical insight emerging from this analysis is that competency-based leadership systems create reinforcing feedback loops. Improvements in retention reduce turnover-related costs, which can then be reinvested into leadership development programs, further strengthening organizational capability. This cyclical dynamic underscore the importance of viewing leadership development as a long-term investment rather than a short-term expense.

Implications for Nursing Practice

The findings have significant implications for nursing practice, particularly in the standardization and operationalization of leadership competencies within healthcare organizations. First, organizations should adopt formal competency frameworks, such as those developed by the American Organization for Nursing Leadership, and integrate them into performance management systems. Standardization reduces variability in leadership expectations and ensures alignment with organizational goals.

Second, competency assessments should be embedded into routine performance evaluation processes. These assessments can use multi-source feedback mechanisms, such as 360-degree evaluations, to capture a comprehensive view of leadership effectiveness. Evidence suggests that structured feedback systems improve leadership behaviors and enhance professional development outcomes.

Third, individualized development plans should be constructed based on competency gaps. Targeted interventions, such as coaching, mentoring, and leadership residencies, have been shown to accelerate competency acquisition and improve retention among nurse leaders [40]. Coaching interventions, in particular, are associated with improvements in emotional intelligence and leadership effectiveness [16].

Fourth, nurse leaders should be equipped with competencies in data-driven decision-making. The increasing availability of real-time clinical and operational data requires leaders who can interpret and act on performance metrics. Kaplan and Porter [21] emphasize that value-based care environments demand integration of cost and outcome data, a capability that must be developed among nursing leaders.

Finally, the findings suggest that leadership development should be embedded within daily practice rather than treated as episodic training. Continuous learning models, including just-in-time training and reflective practice, support ongoing competency development and adaptation to changing healthcare environments [41].

Implications for Nursing Education

The implications for nursing education are substantial, particularly in aligning curricula with competency-based leadership frameworks. Traditional nursing education has emphasized clinical skill development, often at the expense of leadership preparation. However, the increasing complexity of healthcare systems necessitates a shift toward integrated clinical and leadership education.

Graduate programs, including the Master of Science in Nursing (MSN) and Doctor of Nursing Practice (DNP), should incorporate structured leadership competency frameworks into their curricula. This includes explicit instruction in financial management, systems thinking, and policy analysis, areas often underrepresented in traditional programs [22].

Simulation-based education represents a high-impact strategy for developing leadership competencies. Leadership simulations, including crisis management scenarios and interdisciplinary team exercises, allow learners to practice decision-making in controlled environments [42]. Evidence indicates that simulation enhances both technical and non-technical skills, including communication and teamwork.

Experiential learning, including residencies, internships, and project-based learning, is also critical. Kolb's experiential learning theory emphasizes the importance of learning through action and reflection, a process particularly relevant for leadership development [43]. Structured leadership residencies have been shown to improve readiness for management roles and reduce transition-related stress among new leaders [44].

Interprofessional education (IPE) further enhances leadership development by fostering collaboration across disciplines. Given the team-based nature of healthcare delivery, nurse leaders must be prepared to lead interdisciplinary teams effectively [45].

Human Capital Strategy Integration

The integration of competency-based leadership development into human capital strategy represents one of the most significant implications of this study. Leadership competencies should be embedded within broader talent management systems, including recruitment, performance evaluation, succession planning, and workforce analytics.

Succession planning is particularly critical in nursing, given the aging workforce and increasing demand for leadership roles. Organizations with formal succession planning processes demonstrate stronger leadership pipelines and improved organizational performance [39]. Competency models provide a structured framework for identifying high-potential individuals and preparing them for advancement.

Workforce analytics further enhances human capital strategy by enabling data-driven decision-making. Predictive analytics can be used to identify turnover risk, forecast staffing needs, and evaluate the effectiveness of leadership development programs. Nurse leaders with analytics competencies are better positioned to leverage these tools for strategic decision-making.

A contrarian but increasingly supported perspective is that tenure-based promotion models should be replaced with competency-based advancement systems. Traditional models often reward experience rather than capability, leading to leadership misalignment. Competency-based advancement ensures that individuals are promoted based on demonstrated ability, improving leadership effectiveness and organizational outcomes [15].

Additionally, organizations should consider integrating leadership development with broader workforce well-being initiatives. Leadership behaviors significantly influence burnout and engagement, suggesting that leadership development is a critical component of workforce wellness strategies [4].

Practical Implementation Framework

Organizational Roadmap

The implementation of competency-based leadership development requires a structured and phased approach:

Step 1: Define Leadership Competencies: Organizations should adopt or adapt established competency frameworks, ensuring alignment with strategic priorities. Competencies should be clearly defined, measurable, and linked to organizational outcomes.

Step 2: Conduct Gap Analysis: A comprehensive assessment of current leadership capabilities should be conducted using tools such as competency assessments, performance evaluations, and workforce analytics. Gap analysis identifies areas requiring development and informs resource allocation.

Step 3: Develop Training and Development Pathways: Training and development pathways should include a combination of formal education, experiential learning, mentoring, and coaching. Programs should be tiered to address different career stages, from frontline managers to executive leaders.

Step 4: Implement Outcome Tracking and Continuous Improvement: Organizations should establish systems for monitoring the impact of leadership development initiatives. Continuous feedback and iterative improvement are essential for sustaining effectiveness [46].

Metrics and Evaluation

The evaluation of competency-based leadership development requires a multidimensional measurement framework incorporating workforce, clinical, and financial metrics.

Workforce Metrics
- Nurse retention and turnover rates
- Vacancy duration for leadership positions
- Employee engagement and satisfaction scores

Clinical and Quality Metrics
- Hospital-acquired infection rates
- Patient fall rates
- HCAHPS patient satisfaction scores

Financial Metrics
- Cost savings from reduced turnover
- Return on investment (ROI) for leadership development programs
- Labor cost efficiency

Evidence suggests that even modest reductions in turnover can yield substantial financial benefits. For example, reducing RN turnover by 5 percent in a mid-sized hospital can result in savings exceeding $1 million annually [2].

Balanced scorecard approaches can be used to integrate these

metrics into a comprehensive performance management system [47].

Technology Integration

Emerging technologies offer significant opportunities to enhance competency-based leadership development.

Artificial Intelligence and Predictive Analytics: AI-driven platforms can assess leadership competencies, identify development needs, and predict turnover risk. Predictive models enable proactive interventions, improving retention and workforce stability.

Learning Management Systems (LMS) and Adaptive Learning: Adaptive learning platforms personalize training pathways based on individual competency profiles. These systems improve learning efficiency and engagement by tailoring content to learner needs.

Workforce Analytics Dashboards: Real-time dashboards provide leaders with actionable insights into workforce and performance metrics. These tools support data-driven decision-making and continuous improvement.

Digital Simulation and Virtual Training: Advances in simulation technology, including virtual reality, enable immersive leadership training experiences. These tools enhance skill development and provide safe environments for practicing complex scenarios.

Limitations

Several limitations should be considered when interpreting the findings of this study. First, the integrative review methodology incorporates diverse study designs, leading to variability in methodological rigor and in outcome measurement. While this approach enhances comprehensiveness, it may limit comparability across studies.

Second, publication bias is a concern, as studies demonstrating positive relationships between leadership and outcomes are more likely to be published. This may overestimate the strength of observed associations.

Third, the majority of studies included in this review are cross-sectional, limiting the ability to establish causal relationships between leadership competencies and outcomes. Longitudinal studies are needed to assess the sustained impact of leadership development interventions.

Finally, contextual variability across healthcare systems, including differences in organizational structure, regulatory environments, and cultural factors, may limit generalizability. Future research should address these contextual influences.

Future Research Directions

Future research should extend this study's findings through a more rigorous, multidimensional examination of competency-based leadership development in nursing and healthcare systems. A critical priority is advancing longitudinal research designs to evaluate the sustained impact of leadership development programs over time. Much of the current evidence base relies on cross-sectional analyses, limiting causal inference; therefore, long-term studies are needed to assess how leadership competencies influence retention, quality outcomes, and organizational performance across extended time horizons. In parallel, the integration of predictive analytics and artificial intelligence offers a significant opportunity to advance both research and practice. Future studies should explore the application of machine learning models to identify leadership potential, predict turnover risk, and optimize workforce planning, thereby enabling more proactive and data-driven human capital strategies.

Comparative research across national healthcare systems also warrants increased attention, as cultural, regulatory, and structural contexts shape leadership effectiveness. Cross-national analyses can provide valuable insights into how competency frameworks translate across different policy environments and care delivery models, particularly in systems transitioning toward value-based care [26]. In addition, there remains a need for more rigorous economic evaluation of leadership development initiatives. While existing studies suggest that improvements in retention and performance yield substantial financial benefits, future research should employ cost-benefit and cost-effectiveness methodologies to quantify return on investment with greater precision, thereby strengthening the business case for leadership development [21].

Intervention-based research represents another important avenue for advancing the evidence base. Experimental and quasi-experimental designs evaluating specific leadership development strategies, including executive coaching, simulation-based training, and structured mentorship programs, would provide stronger evidence regarding which interventions are most effective under varying organizational conditions. Finally, future research should more explicitly examine the relationship between leadership competencies and workforce well-being. Given the growing prevalence of burnout and psychological distress among healthcare professionals, there is a critical need to understand how leadership behaviors influence resilience, engagement, and mental health outcomes. Integrating leadership development with workforce well-being frameworks may offer a more holistic approach to sustaining both human capital and care quality [4]. Collectively, these research directions will support a more comprehensive, data-driven, and globally informed understanding of nursing leadership development and its role in shaping healthcare system performance.

Conclusion

This study advances nursing leadership by positioning competency-based leadership development as a strategic infrastructure linking workforce stability, quality outcomes, and human capital performance. Rather than episodic training, competency-based models provide a continuous, data-informed framework that enables nurse leaders to operate across clinical, operational, and strategic domains [3,26].

Findings indicate that leadership competencies influence both workforce and clinical outcomes, including reduced burnout, improved retention, and enhanced patient care quality, with significant financial and operational implications [2,9]. Integrating competency development into broader human capital strategies, including succession planning and workforce analytics, strengthens the leadership pipeline and organizational resilience [15,39].

A key implication is the need to shift from tenure-based promotion toward competency-based advancement, ensuring alignment between leadership capability and organizational needs. Aligning education, practice, and policy with competency frameworks offers a scalable pathway to strengthen leadership capacity and improve healthcare system performance.

Key Contributions to Theory and Practice

Contributions to Theory

This study makes several important contributions to the theoretical advancement of nursing leadership and healthcare management literature. First, it extends existing competency-based leadership frameworks by integrating them within a multilevel, systems-oriented model that explicitly links leadership competencies to workforce, quality, and human capital outcomes. While prior research has examined leadership competencies in isolation, this study advances the field by conceptualizing competencies as dynamic inputs operating through mediating mechanisms such as organizational culture, psychological safety, and team dynamics. This integrative perspective aligns leadership theory with complex systems thinking and high-reliability organization principles, offering a more comprehensive explanation of how leadership influences performance in healthcare settings [12].

Second, this work bridges the gap between healthcare leadership literature and broader management theories, including Human Capital Theory and the Resource-Based View [5,6]. By framing leadership competencies as a strategic organizational asset, the study positions nursing leadership development as a source of sustained competitive advantage rather than a functional or administrative activity. This theoretical integration contributes to the evolving discourse on strategic human capital in healthcare, an area that remains underdeveloped in nursing scholarship.

Third, the study contributes to leadership development theory by introducing the concept of competency-based leadership systems as reinforcing, feedback-driven mechanisms. The identification of cyclical relationships, in which improved retention and performance generate resources for further leadership investment, offers a novel theoretical lens for understanding how leadership development can produce sustained organizational impact over time. This extends traditional linear models of leadership development toward a more dynamic, systems-based framework [15].

Finally, the study advances the literature by synthesizing leadership competencies across four distinct but interrelated domains, foundational, operational, strategic, and transformational, and positioning them along a developmental continuum from frontline management to executive leadership. This progression provides a theoretically grounded structure for understanding leadership maturation and supports future empirical testing of competency-based career pathways.

Contributions to Practice

From a practical perspective, this study provides a structured and actionable framework for healthcare organizations seeking to strengthen nursing leadership and improve organizational performance. First, it offers a clear roadmap for implementing competency-based leadership development, including competency definition, gap analysis, targeted development pathways, and outcome measurement. This roadmap translates abstract competency models into operational strategies that can be adopted across diverse healthcare settings.

Second, the study demonstrates that leadership development should be embedded within broader human capital strategies rather than treated as a standalone training initiative. By integrating leadership competencies into recruitment, performance management, and succession planning systems, organizations can build sustainable leadership pipelines and reduce reliance on external hiring. This approach addresses persistent challenges related to leadership turnover and vacancy duration, which have significant implications for both cost and care continuity [39].

Third, the findings provide a compelling business case for investment in leadership development by linking competencies to measurable outcomes, including retention, quality, and financial performance. The identification of specific metrics, such as turnover rates, patient outcomes, and cost savings, enables organizations to evaluate the return on investment of leadership initiatives and align them with value-based care priorities [21]. This is particularly relevant in an era of increasing financial constraints and accountability for outcomes.

Fourth, the study highlights the importance of adopting competency-based advancement models in place of traditional tenure-based promotion systems. By prioritizing demonstrated capability over years of experience, organizations can improve alignment between leadership roles and enhance overall effectiveness. This represents a significant shift in talent management practices and has the potential to transform leadership selection and development processes in healthcare.

Fifth, the study underscores the role of emerging technologies in supporting leadership development. The integration of workforce analytics, artificial intelligence, and adaptive learning systems offers new opportunities for personalized development, predictive workforce planning, and real-time performance monitoring. These tools enable organizations to move toward more data-driven, proactive leadership development.

Finally, the study emphasizes the critical connection between leadership competencies and workforce well-being. By demonstrating how leadership behaviors influence burnout,

engagement, and psychological safety, the findings support integrating leadership development into broader workforce wellness strategies. This holistic approach is essential for addressing the growing challenges of workforce fatigue and sustaining high-quality care delivery [4].

Implications for Policy and System-Level Leadership

Beyond organizational practice, this study offers implications for policymakers, accrediting bodies, and professional organizations. The findings suggest that standardized leadership competency frameworks could be incorporated into accreditation standards, licensure requirements, and national workforce strategies to promote consistency and accountability across healthcare systems. Additionally, investment in leadership development at the system level may yield significant returns in terms of workforce stability and care quality, supporting broader health system goals.

References

1. Whittemore R, Kathleen Knafl. The Integrative Review: Updated Methodology. J Adv Nurs. 2005; 52: 546-553.
2. NSI Nursing Solutions, Inc. NSI national health care retention & RN staffing report. 2023. Retreived from: https://www.wpchange.org/resources/2023-nsi-national-health-care-retention-rn-staffing-report
3. Wong CA, Cummings GG, Ducharme L. The relationship between nursing leadership and patient outcomes: a systematic review update. J Nurs Manag. 2013; 21: 709-724.
4. Shanafelt Tait D, Grace Gorringe, Ronald Menaker, et al. Impact of Organizational Leadership on Physician Burnout and satisfaction. Mayo Clin Proc. 2015; 90: 432-440.
5. Becker Gary S. Human Capital. Chicago: University of Chicago Press. 1993.
6. Barney Jay. Firm Resources and Sustained Competitive Advantage. Journal of Management. 1991; 17: 99-120.
7. Lent RW, Steven D Brown, Gail Hackett. Social Cognitive Career Theory. Journal of Vocational Behavior. 1994; 45: 79-122.
8. Duffield CM, Roche MA, Blay N, et al. Nursing unit managers, staff retention and the work environment. J Clin Nurs. 2011; 20: 23-33.
9. Aiken Linda H, Douglas M Sloane, Jane Ball, et al. Patient Satisfaction with Hospital Care and Nurses in England: an observational study. BMJ Open. 2018; 8: e019189.
10. Boyatzis Richard E. Competencies in the 21st Century. Journal of Management Development. 2008; 27: 5-12.
11. Avolio Bruce J, William L Gardner. Authentic Leadership Development: Getting to the root of positive forms of leadership. The Leadership Quarterly. 2005; 16: 315-338.
12. Weick KE, Kathleen M Sutcliffe. Managing the Unexpected. Wiley. 2007.
13. Lake ET. Development of the practice environment scale of the Nursing Work Index. Res Nurs Health. 2002; 25: 176-188.
14. Edmondson A. Psychological Safety and Learning Behavior in Work Teams. Administrative Web of Quarterly. 1999; 44: 350-383.
15. Day David V. Leadership Development: A Review in Context. The Leadership Quarterly. 2001; 11: 581-613.
16. Goleman D. Working with Emotional Intelligence. New York: Bantam. 1998.
17. Manojlovich M. Nurse/physician communication through a sensemaking lens: shifting the paradigm to improve patient safety. Med Care. 2010; 48: 941-946.
18. Gallagher A, Verena Tschudin. Educating for Ethical Leadership. Nurse Education Today. 2010; 30: 224-227.
19. Aiken Linda H, Douglas M Sloane, Luk Bruyneel, et al. Nurse Staffing and Education and Hospital Mortality in nine European countries: a retrospective observational study. Lancet. 2014; 383: 1824-1830.
20. Toussaint J, Leonard Berry. The Promise of Lean in Health Care. Mayo Clinic Proceedings. 2013; 88: 74-82.
21. Kaplan RS, Michael E Porter. How to Solve the Cost Crisis in Health Care. Harvard Business Review. 2011; 89: 46-52.
22. Finkler SA, Daniel L Smith, Thad D. Calabrese. Financial Management for Public, Health, and Not-for-Profit Organizations. Thousand Oaks, CA: Sage. 2019.
23. Longest Beaufort B. Health Policymaking in the United States. Chicago: Health Administration Press. 2015.
24. Sterman JD. Learning from Evidence in a Complex World. Am J Public Health. 2006; 96: 505-514.
25. Kotter JP. Leading Change. Boston: Harvard Business School Press.
26. West M, Armit K, Loewenthal L, et al. Leadership and leadership development in health care: The evidence base. The King's Fund. 2015.
27. Topol E. Deep Medicine. New York: Basic Books. 2019.
28. Bass Bernard M, Ronald E Riggio. Transformational Leadership. Mahwah, NJ: Lawrence Erlbaum. 2006.
29. Torraco RJ. Writing Integrative Literature Reviews. Human Resource Development Review. 2005; 4: 356-367.
30. Page Matthew J, Joanne E Mckenzie, Patrick M Bossuyt, et al. The PRISMA 2020 Statement: an updated guideline for reporting systematic reviews. BMJ. 2021; 372: n71.
31. Greenhalgh T, Richard Peacock. Effectiveness and Efficiency of Search Methods in Systematic Reviews. BMJ. 2005; 331: 1064-1065.
32. Lincoln YS, Egon G Guba. Naturalistic Inquiry. Beverly Hills, CA: Sage. 1985.
33. Braun Virginia, Victoria Clarke. Using Thematic Analysis in Psychology. Qualitative Research in Psychology. 2006; 3: 77-101.
34. Spence Laschinger HK, Wong CA, Grau AL. The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: a cross-sectional study. Int J Nurs Stud. 2012; 49: 1266-1276.

35. Boamah Sheila A, Heather K Spence Laschinger, Carol Wong, et al. Effect of Transformational Leadership on Job Satisfaction and patient safety outcomes. Nurs Outlook. 2018; 66: 180-189.
36. Cummings Greta G, Kaitlyn Tate, Sarah Lee, et al. Leadership Styles and Outcome Patterns for the nursing workforce and work environment: A systematic review. Int J Nurs Stud. 2018; 85: 19-60.
37. Cowden Tracy, Greta Cummings, Joanne Profetto-McGrath. Leadership Practices and Staff Nurses' Intent to Stay: a systematic review. J Nurs Manag. 2011; 19: 461-477.
38. McHugh MD, Kutney-Lee A, Cimiotti JP, et al. Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. Health Aff. 2011; 30: 202-210.
39. Groves KS. Integrating Leadership Development and Succession Planning. Journal of Management Development. 2007; 26: 239-260.
40. Sherman RO, Pross E. Growing future nurse leaders to build and sustain healthy work environments at the unit level. OJIN: The Online Journal of Issues in Nursing. 2010; 15.
41. Eraut M. Informal Learning in the Workplace. Studies in Continuing Education. 2004; 26: 247-273.
42. Cant Robyn, Simon Cooper. Simulation-Based Learning in Nurse Education: systematic review. J Adv Nurs. 2010; 66: 3-15.
43. Kolb DA. Experiential Learning. Prentice Hall. 1984.
44. Dyess SM, Sherman RO. The first year of practice: new graduate nurses' transition and learning needs. J Contin Educ Nurs. 2009; 40: 403-410.
45. Reeves Scott, Simon Lewin, Sherry Espin, et al. Interprofessional Teamwork for Health and Social Care. Wiley. 2017.
46. Deming W. Edwards. Out of the Crisis. MIT Press. 1986.
47. Kaplan RS, David P Norton. The Balanced Scorecard. Harvard Business School Press. 1996.