

## The Determinants of Nursing Team Effectiveness; A Systematic Review

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**Abstract:** *Background* Nursing team effectiveness is increasingly recognized as a critical determinant of high-quality patient care, workforce well-being, and organizational performance in healthcare settings. Effective teamwork among nurses influences communication, coordination, decision-making, and patient safety, while poor teamwork has been linked to missed nursing care, burnout, and adverse clinical outcomes. Despite growing interest in this topic, evidence on the determinants and outcomes of nursing team effectiveness remains fragmented across disciplines, making it necessary to systematically synthesize existing research. *Objective* This systematic review aims to identify and synthesize contemporary evidence on the determinants of nursing team effectiveness and examine its key outcomes for nurses, healthcare organizations, and patients. *Methods* A systematic review was conducted following the PRISMA 2020 framework, including the four stages of identification, screening, eligibility, and inclusion. Multiple electronic databases were searched using structured keywords related to nursing teamwork, leadership, communication, staffing, workload, digital tools, and patient safety. Peer-reviewed studies published between 2021 and 2025 were included if they focused on nursing teams in hospital or clinical settings. A standardized literature review matrix was used for data extraction, and findings were synthesized thematically across behavioral, organizational, and contextual domains. *Results* Thirty studies met the inclusion criteria. The review identified three major categories of determinants influencing nursing team effectiveness: behavioral factors (communication, psychological safety, trust, competence), organizational factors (leadership style, staffing adequacy, workload, work environment), and contextual factors (digital technologies, organizational culture, safety climate). Strong nursing teamwork was consistently associated with positive outcomes, including higher nurse-reported quality of care, reduced missed nursing care, lower occupational fatigue, improved job satisfaction, and enhanced patient-centered care. Conversely, weak teamwork was linked to increased workload strain, higher burnout risk, and compromised patient safety. *Conclusions* Nursing team effectiveness is a complex, multilevel phenomenon shaped by the interaction of individual, organizational, and contextual factors. Strengthening teamwork requires integrated strategies that address leadership development, staffing policies, communication practices, and digital system design simultaneously. Healthcare organizations should adopt comprehensive, system-wide approaches that foster collaborative cultures and empower nursing teams to deliver safer, higher-quality care.

**Keywords:** Nursing teamwork; team effectiveness; patient safety; leadership in nursing; missed nursing care.

## 1. Introduction

Nursing teamwork has become a central focus in contemporary healthcare systems because of its direct influence on patient safety, quality of care, and organizational performance. Modern hospital environments are increasingly complex, characterized by high patient acuity, advanced digital technologies, multidisciplinary collaboration, and chronic workforce shortages. Within this context, nursing teams play a critical role in coordinating care, managing clinical risks, and ensuring continuity of patient services. Evidence indicates that stronger nursing teamwork is associated with better patient-centered care, suggesting that teamwork is not merely a supportive process but a core determinant of care quality (Baek et al., 2023). Leadership is widely recognized as a foundational determinant of nursing team effectiveness. The behavior of nurse managers and clinical leaders shapes communication patterns, psychological safety, and collective performance within nursing units. Studies demonstrate that transformational and emotionally intelligent leadership behaviors are positively associated with nurses' teamwork competencies and overall unit functioning (Furukawa & Kashiwagi, 2021). Similarly, shared and relational leadership approaches have been shown to strengthen collaboration and collective problem-solving in healthcare teams, highlighting leadership as both an individual and team-level determinant of effectiveness (Zaheer et al., 2021).

Beyond leadership, structural and environmental factors significantly influence how nursing teams operate. Staffing levels, workload distribution, and organizational support shape the capacity of teams to function effectively. Research consistently shows that excessive workload increases occupational fatigue and stress among nurses, whereas effective teamwork can buffer these negative effects and promote resilience in high-demand clinical settings (Nemati-Vakilabad et al., 2025). In addition, balanced team composition and supportive work environments contribute to better nursing outcomes and stronger team performance, emphasizing that team effectiveness is embedded within broader organizational systems (Vleminckx et al., 2024). Communication and digital tools have also emerged as key determinants of nursing teamwork. Effective communication facilitates coordination, reduces errors, and strengthens collaborative relationships among nurses. However, the increasing use of electronic health records has altered nurse–patient and nurse–nurse interactions, sometimes constraining face-to-face communication and shifting attention toward task-oriented documentation (Forde-Johnston et al., 2023). At the same time, digital platforms and informatics systems can enhance teamwork by enabling real-time information sharing and more accurate capture of team processes when used appropriately.

Finally, the consequences of ineffective teamwork are evident in missed nursing care, job dissatisfaction, and compromised patient safety. Systematic evidence shows that poor teamwork, lack of trust, and inadequate leadership are significant predictors of missed nursing care in acute settings (Kohanová et al., 2024). Conversely, strong teamwork is associated with higher job satisfaction, greater retention, and improved patient outcomes, reinforcing the importance of understanding what determines nursing team effectiveness (Bragadóttir et al., 2023). Despite growing research in this area, findings remain fragmented across leadership, staffing, culture, communication, and digital domains. A comprehensive synthesis is therefore needed to clarify the key determinants of nursing team effectiveness and how they interact across behavioral, organizational, and system levels. This systematic review seeks to address this gap by integrating empirical evidence on the determinants of nursing team effectiveness and their implications for practice, policy, and future research.

## 2. Methodology

This study employed a systematic review methodology guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) framework to ensure transparency, rigor, and replicability in identifying, selecting, and synthesizing evidence on the determinants of nursing team effectiveness. The use of PRISMA 2020 allowed for a structured and auditable process of literature identification, screening, eligibility assessment, and final inclusion of studies relevant to nursing teamwork and team effectiveness. A comprehensive search strategy was developed to capture empirical and review-based evidence on nursing teamwork, leadership, communication, staffing, digital tools, organizational climate, and patient safety outcomes. Electronic searches were conducted across multiple academic databases, including PubMed, CINAHL, Scopus, Web of Science, and Google Scholar. Search terms combined key concepts related to nursing teamwork and team effectiveness using Boolean operators such as “nursing teamwork,” “team effectiveness,” “nursing leadership,” “communication in nursing,” “staffing and workload,” “burnout,” “electronic health records,” and “patient safety.” These search terms were iteratively refined based on preliminary results to ensure comprehensive coverage of relevant literature.

Studies were included if they met the following criteria: (1) focused on nursing teams or nursing teamwork in hospital or clinical settings, (2) examined determinants or outcomes related to team effectiveness, (3) were peer-reviewed journal articles, and (4) were published between 2021 and 2025. This time frame was selected to ensure the review reflected contemporary healthcare contexts, including digital transformation, evolving leadership models, and post-pandemic workforce challenges. Studies were excluded if they were opinion pieces, editorials, conference abstracts without full texts, or focused solely on non-nursing professional groups without clear relevance to nursing teamwork. The study selection process followed the four sequential PRISMA stages: Identification, Screening, Eligibility, and Inclusion. During the identification phase, all records retrieved from the databases were compiled and duplicates were removed. In the screening phase, titles and abstracts were reviewed to exclude clearly irrelevant studies. In the eligibility phase, full texts of potentially relevant articles were assessed against the inclusion and exclusion criteria. Finally, in the inclusion phase, 30 studies were retained for in-depth analysis based on their direct relevance to nursing teamwork and team effectiveness.

To enhance methodological quality, each included study was appraised for rigor using established quality assessment principles appropriate to its design. Quantitative studies were evaluated based on sampling methods, measurement validity, and statistical analysis. Qualitative studies were assessed for credibility, dependability, and analytical transparency. Systematic reviews were appraised based on adherence to PRISMA guidelines and clarity of synthesis methods. This quality appraisal process strengthened the reliability of the review findings and reduced the risk of bias in the final synthesis. Data extraction was conducted using a standardized literature review matrix (Table 1), which captured key characteristics of each study, including author and year, country, study design, sample, and core findings related to nursing teamwork. Determinants such as leadership, communication, staffing, workload, burnout, organizational support, and digital tools were coded using a binary checkmark system to indicate explicit coverage of each concept in the study. This approach ensured consistency in data extraction and facilitated comparative analysis across all included studies. The synthesis of findings followed a thematic approach, integrating evidence across behavioral, team-level, organizational, and system-level determinants of nursing team effectiveness. This approach enabled the identification of recurring patterns, relationships, and gaps in the literature, forming the basis for the Results and Discussion sections of this review. This study employed a systematic review methodology guided by the PRISMA 2020 framework, which structured the review process into four

sequential stages Identification, Screening, Eligibility, and Inclusion as illustrated in Figure 1 (PRISMA 2020 Flow Diagram).

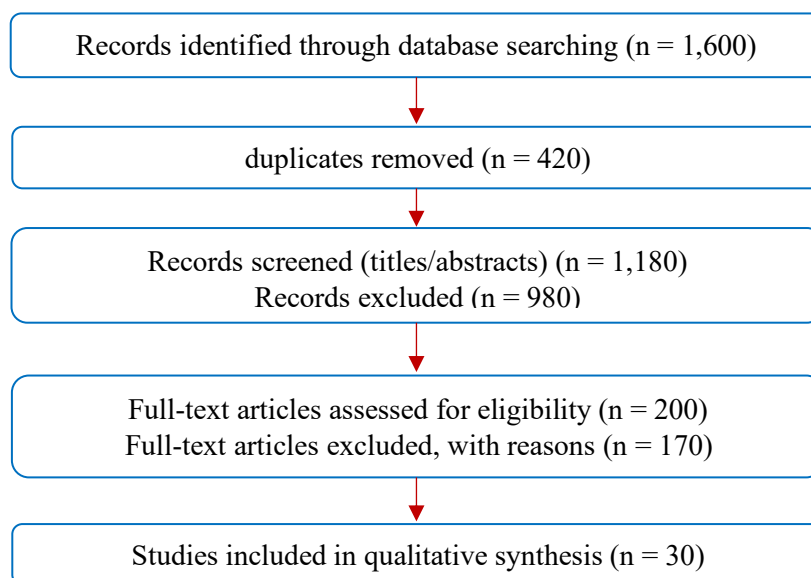


Figure 1. PRISMA 2020 Flow Diagram

### 3. Results

#### 3.1 Study Selection and Characteristics

A total of 30 studies met the eligibility criteria and were included in this systematic review. These studies were conducted across diverse geographical contexts, including South Korea, Iceland, Turkey, Iran, Jordan, Peru, Saudi Arabia, Japan, Canada, and several European countries, reflecting the global relevance of nursing teamwork and team effectiveness in contemporary healthcare systems. The included studies comprised quantitative cross-sectional designs, qualitative explorations, mixed-methods investigations, systematic reviews, scoping reviews, and methodological validation studies, providing a broad and methodologically diverse evidence base for synthesizing determinants of nursing team effectiveness. Table 1 presents the Literature Review Matrix, which summarizes key characteristics of each included study and maps their explicit focus across standardized determinants, including burnout/stress, job satisfaction, work environment/climate, leadership/management, staffing/workload, demographics, organizational support, and policy/system factors. This matrix enabled a structured comparison of how frequently and in what ways these determinants were addressed across the literature.

Several studies focused on the measurement and conceptualization of team effectiveness in nursing units. Kim et al. (2024) refined and validated the Team Effectiveness Scale for Nursing Units (TES-NU), identifying five core subdomains: head nurse leadership, job satisfaction, cohesion, work performance, and nurses' competence. This study provided a robust methodological foundation for assessing team effectiveness in clinical settings. Other studies examined teamwork processes and their contextual influences. Beiboer et al. (2023) used qualitative methods to explore how clinical leadership and environmental conditions shaped teamwork and missed nursing care in hospital wards. Similarly, Vleminckx et al. (2024) conducted a systematic scoping review identifying multiple organizational, workload, and relational factors influencing balanced care teams and patient outcomes. Several studies investigated leadership, climate, and communication within nursing teams. Furukawa and Kashiwagi (2021) demonstrated that emotional intelligence leadership behaviors of

nurse managers were positively associated with nurses' teamwork competencies. O'Donovan et al. (2021) synthesized evidence on focal leader behaviors and their impact on healthcare team performance.

Zaheer et al. (2021) used a mixed-methods approach to show how leadership, teamwork, and turnover intention shaped nurses' perceptions of patient safety. Research on staffing, workload, and burnout was also prominent. Nemati-Vakilabad et al. (2025) found that high perceived workload increased occupational fatigue but that effective teamwork mitigated these effects. Griffiths et al. (2023) reviewed evidence on nurse staffing levels and cost-effectiveness, linking staffing adequacy to improved outcomes. Musker and Othman (2024) synthesized interventions to reduce nurse burnout, highlighting the role of supportive leadership and supervision. Studies addressing communication and digital tools emphasized their dual role in enabling and constraining teamwork. Forde-Johnston et al. (2023) showed that electronic health records can both impede and reshape nurse-patient communication. Fischer-Suárez et al. (2022) demonstrated that digital technologies can enhance collaborative learning and engagement among nursing students. Will and Lamb (2022) highlighted how informatics and EHR data can more accurately capture nursing teamwork processes.

Table 1. Literature Review Matrix

No	Author(s) & Year	Burnout / Stress	Job Satisfaction	Work Environment / Climate	Leadership / Management	Staffing / Workload	Demographics (Age/Gender/SES)	Organizational Support	Policy / System Factors
1	Kim et al. (2024)		✓		✓				
2	Meneses-La-Riva et al. (2025)			✓				✓	
3	Sanderson et al. (2021)						✓	✓	✓
4	Beiboer et al. (2023)			✓	✓				
5	Vlemingckx et al. (2024)	✓	✓	✓	✓	✓			
6	Kim & Ko (2023)		✓		✓				
7	Fuchshuber & Greif (2022)			✓				✓	
8	Al-Ajarmeh et al. (2022)			✓		✓	✓		
9	Orukwowa (2022)				✓			✓	
10	Furukawa & Kashiwagi (2021)				✓				
11	Daniels et al. (2021)			✓	✓			✓	
12	Suraya et al. (2024)			✓				✓	
13	Levesque et al. (2022)			✓	✓			✓	
14	Morales-Huamán et al. (2023)			✓	✓			✓	
15	Griffiths et al. (2023)					✓			✓
16	Nemati-Vakilabad et al. (2025)	✓			✓	✓		✓	
17	Musker & Othman (2024)	✓			✓			✓	
18	Baek et al. (2023)			✓	✓	✓		✓	
19	AlThubaity & Shalby (2023)			✓				✓	✓
20	Fischer-Suárez et al. (2022)			✓			✓	✓	

No	Author(s) & Year	Burnout / Stress	Job Satisfaction	Work Environment / Climate	Leadership / Management	Staffing / Workload	Demographics (Age/Gender/SES)	Organizational Support	Policy / System Factors
21	Forde-Johnston et al. (2023)			✓				✓	
22	Will & Lamb (2022)			✓				✓	
23	Alberti et al. (2021)			✓				✓	
24	O'Donovan et al. (2021)			✓	✓			✓	
25	Bragadóttir et al. (2023)		✓	✓		✓		✓	
26	Zaheer et al. (2021)			✓	✓			✓	
27	Kuşçu Karatepe & Türkmen (2023)			✓	✓			✓	
28	Janssens et al. (2021)			✓	✓			✓	
29	Ystaas et al. (2023)		✓	✓	✓			✓	
30	Kohanová et al. (2024)			✓	✓			✓	

### 3.2 Prevalence and Determinants of Nursing Team Effectiveness

Analysis of the included studies revealed several recurring determinants of nursing team effectiveness, which can be broadly categorized into leadership, communication and climate, staffing and workload, organizational support, and digital systems. Leadership and management emerged as one of the most consistently reported determinants. Transformational and emotionally intelligent leadership behaviors were associated with stronger teamwork competencies, higher nurse performance, and more positive safety cultures. Furukawa and Kashiwagi (2021) demonstrated that supportive leadership behaviors significantly enhanced nurses' teamwork skills, knowledge, and attitudes. Ystaas et al. (2023) similarly found that transformational leadership positively influenced nurses' work environment, job satisfaction, and patient safety outcomes. Janssens et al. (2021) highlighted the growing importance of shared leadership models in healthcare action teams, suggesting that distributed leadership can strengthen collective performance.

Work environment and team climate were also frequently emphasized as critical determinants. Baek et al. (2023) showed that units with higher teamwork levels had more supportive climates, adequate staffing, and stronger patient-centered care. Morales-Huamán et al. (2023) linked organizational culture to teamwork, knowledge exchange, and safety climate across public and private organizations. Beiboer et al. (2023) further demonstrated that environmental factors such as ward structure and informal leadership practices shaped how teamwork was enacted in daily nursing practice. Communication and psychological safety played a central role in effective teamwork. Daniels et al. (2021) found that psychological safety in simulation-based nursing education enabled open communication, learning behaviors, and collaborative problem-solving. Suraya et al. (2024) identified effective communication practices as essential for reducing errors and enhancing patient safety. Levesque et al. (2022) showed that structured communication processes in the operating room supported interprofessional collaboration and shared decision-making. Staffing, workload, and burnout were strongly linked to team effectiveness. Nemati-Vakilabad et al. (2025) found that high workload increased fatigue, but strong teamwork reduced its negative impact.

Bragadóttir et al. (2023) demonstrated that perceived staffing adequacy was a significant predictor of job satisfaction and teamwork quality. Griffiths et al. (2023) provided economic evidence that higher registered nurse staffing levels were associated with better outcomes and cost-effectiveness. Organizational support and system factors were also prominent determinants. Zaheer et al. (2021) showed that senior leadership support for safety significantly influenced teamwork and patient safety perceptions. AlThubaity and Shalby (2023) highlighted the importance of institutional strategies and policy-level interventions to reduce nursing errors and strengthen safety culture. Vleminckx et al. (2024) emphasized that balanced team composition and transparent organizational processes were essential for effective teamwork. Digital tools and informatics were increasingly recognized as shaping teamwork dynamics. Forde-Johnston et al. (2023) showed that EHR use could constrain face-to-face communication but also enable structured information exchange. Fischer-Suárez et al. (2022) found that digital collaboration tools enhanced engagement and knowledge sharing among nursing students. Will and Lamb (2022) argued that EHR data could more accurately capture team processes and contributions.

### 3.3 Outcomes of Nursing Team Effectiveness

The reviewed studies consistently demonstrated that effective nursing teamwork is associated with improved clinical, organizational, and professional outcomes. Patient safety and quality of care were the most frequently reported outcomes. Baek et al. (2023) found that higher levels of nursing teamwork were significantly associated with better patient-centered care. Zaheer et al. (2021) demonstrated that stronger teamwork improved nurses' perceptions of overall patient safety. AlThubaity and Shalby (2023) showed that enhanced teamwork and error-reduction strategies contributed to safer care delivery. Reduction in missed nursing care was another key outcome. Kohanová et al. (2024) found that poor teamwork, lack of trust, and weak leadership were significant predictors of missed nursing care in acute settings. Kim and Ko (2023) showed that better coordination within nursing units reduced the amount of nursing care left undone and improved nurse-reported quality of care.

Nurse job satisfaction and retention were strongly linked to teamwork. Bragadóttir et al. (2023) found that nurses reporting better teamwork were almost five times more likely to be satisfied with their jobs. Kim et al. (2024) incorporated job satisfaction as a core dimension of team effectiveness, highlighting its centrality to well-functioning units. Reduction of burnout and occupational fatigue was also associated with effective teamwork. Nemati-Vakilabad et al. (2025) demonstrated that teamwork moderated the relationship between workload and fatigue, reducing the negative psychological burden on nurses. Musker and Othman (2024) further showed that supportive leadership and clinical supervision were effective in mitigating burnout. Improved nurse performance and professional development were reported across multiple studies. Kuşçu Karatepe and Türkmen (2023) found that clinical leadership, creative team climate, and structural empowerment significantly enhanced nurse performance. Alberti et al. (2021) demonstrated that team-based learning improved communication skills, interprofessional collaboration, and self-directed learning among nursing students.

## 4. Discussion

### 4.1 Interplay of Behavioral, Organizational, and Contextual Determinants

The findings of this systematic review indicate that nursing team effectiveness is not determined by a single factor but rather emerges from the dynamic interplay of behavioral, organizational, and contextual determinants within healthcare settings. At the behavioral level, individual attributes such as communication skills, psychological safety, trust, and professional competence strongly shape how nurses collaborate and function as a team. Effective communication has been consistently associated with stronger teamwork, better conflict resolution, and improved coordination among nurses, demonstrating that interpersonal behaviors are foundational to team performance (Meneses-La-Riva, 2025). Psychological safety further enables nurses to speak up, share concerns, and engage in collective learning without fear of blame, which strengthens team functioning and shared responsibility for patient care (Daniels, 2021). At the organizational level, leadership, staffing, and workplace climate play a central role in shaping nursing team effectiveness. Emotionally intelligent leadership behaviors from ward nurse managers have been shown to enhance nurses' teamwork competencies, suggesting that leadership style directly influences collaboration, trust, and shared decision-making within nursing units (Furukawa, 2021). Transformational leadership further contributes to team effectiveness by fostering empowerment, organizational commitment, and a positive work environment that supports collaborative practice (Ystaas, 2023). Shared leadership approaches have also been associated with improved team functioning in high-pressure clinical environments, indicating that distributed leadership can enhance adaptability and collective problem-solving (Janssens, 2021).

Structural factors such as staffing adequacy and workload strongly interact with behavioral and team-level processes. High nursing workload increases occupational fatigue, but strong teamwork can buffer these negative effects by promoting mutual support, shared responsibility, and effective task coordination (Nemati-Vakilabad, 2025). Perceived staffing adequacy has been closely linked to both teamwork quality and job satisfaction, highlighting that supportive working conditions enable nurses to collaborate more effectively (Bragadóttir, 2023). When staffing levels are insufficient, teamwork deteriorates, missed care increases, and nurse stress intensifies, demonstrating the interdependence between structural conditions and team dynamics (Kohanová, 2024). Contextual determinants, particularly digital technologies and organizational culture, further shape how nursing teams function. The use of electronic health records can facilitate structured information exchange but may also reduce face-to-face communication, potentially limiting relational aspects of teamwork (Forde-Johnston, 2023). Conversely, digital collaboration tools have been shown to enhance engagement, knowledge sharing, and teamwork when designed to support collective work rather than solely documentation (Fischer-Suárez, 2022). Organizational culture that values communication, trust, and collaboration has also been found to strengthen teamwork and promote safer patient care practices (Morales-Huamán, 2023).

### 4.2 Policy, Practical, and Theoretical Implications

From a policy perspective, this review underscores the importance of prioritizing adequate nurse staffing, leadership development, and supportive work environments. Economic evidence indicates that increasing registered nurse staffing levels improves patient outcomes and is often cost-effective, suggesting that health systems should invest in higher proportions of qualified nurses rather than substituting less skilled staff (Griffiths, 2023). Institutional strategies aimed at reducing nursing errors

and strengthening patient safety culture are essential for improving overall care quality and team performance (AlThubaity, 2023). Policies should also promote leadership accountability for patient safety and teamwork by embedding these responsibilities into organizational governance structures (Zaheer, 2021). Healthcare systems should further encourage shared leadership models that distribute decision-making across the nursing team rather than relying solely on hierarchical structures (Janssens, 2021). At the national and institutional levels, policies should support ongoing professional development in teamwork, communication, and leadership to strengthen collaborative practice across clinical settings.

From a practical standpoint, nurse managers should cultivate psychologically safe environments that encourage open communication, mutual trust, and collective learning. Psychological safety has been shown to facilitate speaking up, reporting concerns, and engaging in constructive problem-solving, all of which enhance team effectiveness (Daniels, 2021). Hospitals should implement structured communication training programs that promote clarity, consistency, and collaboration in clinical interactions (Suraya, 2024). Nurse leaders should also actively manage workload and team composition to reduce fatigue and prevent burnout, ensuring that responsibilities are distributed fairly among team members (Nemati-Vakilabad, 2025). Management commitment to adequate staffing and supportive working conditions is crucial for strengthening teamwork and improving patient-centered care (Baek, 2023). Clinical leaders should create environments that value collaboration, recognize team contributions, and encourage shared accountability for patient outcomes. Leadership behaviors that emphasize empathy, support, and professional development have been shown to enhance both teamwork and nurse performance (Kuşçu Karatepe, 2023).

Technology implementation should be guided by nurses' needs and designed to support, rather than hinder, interpersonal communication. While electronic health records can structure information flow, excessive reliance on them may reduce meaningful nurse–patient and nurse–nurse interactions (Forde-Johnston, 2023). Digital tools that facilitate real-time collaboration and shared decision-making can enhance teamwork when integrated thoughtfully into clinical workflows (Fischer-Suárez, 2022). From a theoretical perspective, this review supports a multilevel conceptualization of nursing team effectiveness that integrates behavioral, organizational, and contextual determinants. The refinement of the Team Effectiveness Scale for Nursing Units advances measurement theory by identifying leadership, cohesion, competence, and job satisfaction as core dimensions of effective nursing teams (Kim, 2024). Systems-based perspectives highlight how workload, leadership, team composition, and safety culture collectively influence both nursing and patient outcomes (Vleminckx, 2024). Future theoretical models should explicitly link individual behaviors, team processes, and organizational structures within a unified framework of nursing team effectiveness.

### **4.3 Comparison with Existing Reviews, Limitations, and Future Research**

Compared with earlier reviews, this study provides a broader and more integrated synthesis of nursing team effectiveness by simultaneously examining leadership, staffing, communication, digital tools, burnout, and organizational culture. Previous reviews have tended to focus on single determinants, such as focal leader behaviors (O'Donovan, 2021) or shared leadership in emergency teams (Janssens, 2021). In contrast, this review integrates evidence across multiple determinants and clinical contexts, offering a more comprehensive understanding of how nursing teams function. Similarly, prior reviews on missed nursing care have treated teamwork as one of many predictors without fully integrating leadership, staffing, and digital systems into a single framework. The mixed-method review by Kohanová emphasized the link between teamwork and missed care but did not systematically

examine how leadership, workload, and technology interact to shape these outcomes (Kohanová, 2024). This review extends that work by demonstrating that missed care is closely linked to leadership style, staffing adequacy, communication quality, and organizational support.

Despite its contributions, this review has several limitations. First, the inclusion of primarily English-language peer-reviewed studies may have excluded relevant research published in other languages or grey literature. Second, the included studies varied in design, measurement tools, and clinical settings, which limited direct comparability across findings. Third, most empirical studies were cross-sectional, restricting the ability to draw strong causal conclusions about determinants of team effectiveness. Fourth, the literature review matrix identified whether concepts were present but did not quantify effect sizes across studies. Future research should prioritize longitudinal and intervention-based studies that examine how changes in leadership, staffing, or digital systems affect teamwork over time. Regression-based models linking team effectiveness to missed care and quality outcomes provide a useful foundation for more advanced multilevel analyses (Kim, 2023). Researchers should also explore how teamwork dynamics differ across cultural and healthcare system contexts, as evidence from South Korea and Peru suggests that organizational structures and policies shape collaboration in distinct ways (Baek, 2023; Meneses-La-Riva, 2025).

Further validation of the Team Effectiveness Scale for Nursing Units across diverse clinical settings is needed to enhance its generalizability and applicability in practice (Kim, 2024). Combining quantitative measures of teamwork with qualitative insights from frontline nurses would provide deeper understanding of how teams operate in real-world clinical environments (Beiboer, 2023; Zaheer, 2021). Finally, future studies should investigate how digital technologies can be optimized to support relational communication, shared decision-making, and collaborative care rather than solely documentation and monitoring (Forde-Johnston, 2023). Strengthening the evidence base on the interaction between technology, teamwork, and patient safety will be critical for advancing both theory and practice in nursing team effectiveness.

## 5. Conclusion

This systematic review synthesizes contemporary evidence on the determinants and outcomes of nursing team effectiveness, highlighting its central role in shaping nursing practice, workforce well-being, and patient care quality. The findings demonstrate that effective nursing teamwork is a complex, multilevel phenomenon influenced by interconnected behavioral, organizational, and contextual factors rather than by isolated variables. At the behavioral level, communication, psychological safety, trust, and professional competence emerged as foundational elements that enable collaboration, shared decision-making, and collective accountability. At the organizational level, leadership style, staffing adequacy, workload management, and supportive work environments were shown to be critical structural conditions that either strengthen or weaken team functioning. Contextually, digital technologies and organizational culture were found to reshape how nurses interact, coordinate care, and engage with patients and colleagues.

The review further confirms that strong nursing teamwork is consistently associated with positive outcomes, including higher nurse-reported quality of care, reduced missed nursing care, lower occupational fatigue, improved job satisfaction, and enhanced patient-centered care. Conversely, weak teamwork was linked to increased workload strain, higher burnout risk, and compromised patient safety. Overall, this study reinforces that improving nursing team effectiveness requires integrated strategies that simultaneously address leadership development, staffing policies,

communication practices, and digital system design. Rather than relying on single interventions, healthcare organizations should adopt comprehensive, system-wide approaches that cultivate collaborative cultures, empower nursing teams, and provide the structural conditions necessary for effective teamwork. Future efforts to strengthen nursing team effectiveness should focus on aligning organizational policies with frontline practice realities, investing in teamwork and leadership capacity-building, and ensuring that technological innovations support not hinder human interaction and collaboration in nursing care.

## References

- Al-Ajarmeh, D. O., Rayan, A. H., Eshah, N. F., & Al-Hamdan, Z. M. (2022). Nurse–nurse collaboration and performance among nurses in intensive care units. *Nursing in Critical Care*, 27(6), 747-755.
- Alberti, S., Motta, P., Ferri, P., & Bonetti, L. (2021). The effectiveness of team-based learning in nursing education: A systematic review. *Nurse education today*, 97, 104721.
- AlThubaity, D. D., & Mahdy Shalby, A. Y. (2023). Perception of health teams on the implementation of strategies to decrease nursing errors and enhance patient safety. *Journal of Multidisciplinary Healthcare*, 693-706.
- Baek, H., Han, K., Cho, H., & Ju, J. (2023). Nursing teamwork is essential in promoting patient-centered care: a cross-sectional study. *BMC nursing*, 22(1), 433.
- Beiboer, C., Andela, R., Hafsteinsdottir, T. B., Weldam, S., Holtrop, T., & van der Cingel, M. (2023). Teamwork, clinical leadership skills and environmental factors that influence missed nursing care—A qualitative study on hospital wards. *Nurse education in practice*, 68, 103603.
- Bragadóttir, H., Kalisch, B. J., Flygenring, B. G., & Tryggvadóttir, G. B. (2023). The relationship of nursing teamwork and job satisfaction in hospitals. *SAGE Open Nursing*, 9, 23779608231175027.
- Daniels, A. L., Morse, C., & Breman, R. (2021). Psychological safety in simulation-based prelicensure nursing education: a narrative review. *Nurse Educator*, 46(5), E99-E102.
- Fischer-Suárez, N., Lozano-Paniagua, D., García-González, J., Castro-Luna, G., Requena-Mullor, M., Alarcón-Rodríguez, R., ... & Nievas-Soriano, B. J. (2022). Use of digital technology as a collaborative tool among nursing students—survey study and validation. *International journal of environmental research and public health*, 19(21), 14267.
- Forde-Johnston, C., Butcher, D., & Aveyard, H. (2023). An integrative review exploring the impact of Electronic Health Records (EHR) on the quality of nurse–patient interactions and communication. *Journal of advanced nursing*, 79(1), 48-67.
- Fuchshuber, P., & Greif, W. (2022). Creating effective communication and teamwork for patient safety. In *The SAGES manual of quality, outcomes and patient safety* (pp. 443-460). Cham: Springer International Publishing.
- Furukawa, A., & Kashiwagi, K. (2021). The relationship between leadership behaviours of ward nurse managers and teamwork competency of nursing staff: a cross-sectional study in Japanese hospitals. *Journal of Nursing Management*, 29(7), 2056-2064.
- Griffiths, P., Saville, C., Ball, J., Dall'Ora, C., Meredith, P., Turner, L., & Jones, J. (2023). Costs and cost-effectiveness of improved nurse staffing levels and skill mix in acute hospitals: A systematic review. *International journal of nursing studies*, 147, 104601.

- Janssens, S., Simon, R., Beckmann, M., & Marshall, S. (2021). Shared leadership in healthcare action teams: A systematic review. *Journal of Patient Safety*, 17(8), e1441-e1451.
- Kim, S. Y., & Ko, Y. (2023, May). Influence of the team effectiveness of nursing units on nursing care left undone and nurse-reported quality of care. In *Healthcare* (Vol. 11, No. 10, p. 1380). MDPI.
- Kim, S. Y., Ko, Y., Sim, B. H., Yoon, Y. O., & Jang, C. (2024). Refinement and Validation of the Team Effectiveness Scale for Nursing Units. *Risk Management and Healthcare Policy*, 2385-2396.
- Kohanová, D., Solgajová, A., & Cubelo, F. (2024). The association of teamwork and missed nursing care in acute care setting: A mixed-methods systematic review. *Journal of Clinical Nursing*, 33(9), 3399-3413.
- Kuşçu Karatepe, H., & Türkmen, E. (2023). Nurse performance: A path model of clinical leadership, creative team climate and structural empowerment. *Journal of Clinical Nursing*, 32(3-4), 584-596.
- Levesque, M. J., Etherington, C., Lalonde, M., & Stacey, D. (2022). Interprofessional collaboration in the OR: a qualitative study of Nurses' perspectives. *AORN journal*, 116(4), 300-311.
- Meneses-La-Riva, M. E., Fernández-Bedoya, V. H., Suyo-Vega, J. A., Ocupa-Cabrera, H. G., Grijalva-Salazar, R. V., & Ocupa-Meneses, G. D. D. (2025). Enhancing Healthcare Efficiency: The Relationship Between Effective Communication and Teamwork Among Nurses in Peru. *Nursing Reports*, 15(2), 59.
- Morales-Huamán, H. I., Medina-Valderrama, C. J., Valencia-Arias, A., Vasquez-Coronado, M. H., Valencia, J., & Delgado-Caramutti, J. (2023). Organizational culture and teamwork: A bibliometric perspective on public and private organizations. *Sustainability*, 15(18), 13966.
- Musker, M., & Othman, S. (2024). Effective interventions to reduce burnout in nurses: a meta-analysis. *Complementary therapies in clinical practice*, 54, 101827.
- Nemati-Vakilabad, R., Ebadi, E., Homaei, A., Hoseini, S., & Mirzaei, A. (2025). The relationship between perceived nursing workload and occupational fatigue in clinical nurses: the moderating role of nursing teamwork. *Journal of Clinical Nursing*, 34(10), 4132-4141.
- O'Donovan, R., Rogers, L., Khurshid, Z., De Brún, A., Nicholson, E., O'Shea, M., ... & McAuliffe, E. (2021). A systematic review exploring the impact of focal leader behaviours on health care team performance. *Journal of nursing management*, 29(6), 1420-1443.
- Orukwou, U. (2022). Nursing leadership in healthcare: the impact of effective nurse leadership on quality healthcare outcomes. *IPS Interdisciplinary Journal of Social Sciences*, 1(1), 1-6.
- Sanderson, C. D., Hollinger-Smith, L. M., & Cox, K. (2021). Developing a social determinants of learning™ framework: a case study. *Nursing Education Perspectives*, 42(4), 205-211.
- Suraya, C. S. C., bin Sansuwito, T., Dioso, R. I., & Wisuda, A. C. (2024). Effective communication in nursing: A comprehensive systematic review of best practices. *Journal Of Nursing Science Research*, 1(1), 34-48.
- Vleminckx, S., Van Bogaert, P., De Meulenaere, K., Willem, L., & Haegdorens, F. (2024). Factors influencing the formation of balanced care teams: the organisation, performance, and perception of nursing care teams and the link with patient outcomes: a systematic scoping review. *BMC health services research*, 24(1), 1129.
- Will, K. K., & Lamb, G. (2022). Teamwork and Informatics: Capturing the Work of Nurses as Team Members. In *Nursing and Informatics for the 21st Century-Embracing a Digital World*, Book 1 (pp. 187-202). Productivity Press.

- Ystaas, L. M. K., Nikitara, M., Ghobrial, S., Latzourakis, E., Polychronis, G., & Constantinou, C. S. (2023). The impact of transformational leadership in the nursing work environment and patients' outcomes: a systematic review. *Nursing Reports*, 13(3), 1271-1290.
- Zaheer, S., Ginsburg, L., Wong, H. J., Thomson, K., Bain, L., & Wulffhart, Z. (2021). Acute care nurses' perceptions of leadership, teamwork, turnover intention and patient safety—a mixed methods study. *BMC nursing*, 20(1), 134.