INSIGHTS-JOURNAL OF
HEALTH AND REHABILITATION

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

COMPETENCY AMONG NURSES AND ITS ASSOCIATED FACTORS: A NARRATIVE REVIEW

Narrative Review

Khalid Khan[1], Santosh Kumar[2]*, Anny Ashiq[3], Kheenpal Das[4]
[1]MSN Scholar, Ziauddin University Faculty of Nursing and Midwifery, Karachi, Pakistan.
[2]Associate Professor, Ziauddin University Faculty of Nursing and Midwifery, Karachi, Pakistan.
[3]MSN, Assistant Professor, IQRA University Nursing College (IUNC), Pakistan.
[4]Assistant Professor, Psychiatry Department, Dow University of Health Sciences, Pakistan.
Corresponding Author: Santosh Kumar, Associate Professor, Ziauddin University Faculty of Nursing and Midwifery, Karachi, Pakistan, santosh.kumar1@zu.edu.pk
Acknowledgement: The authors acknowledge all researchers whose work contributed to this review.

Conflict of Interest: None
Grant Support & Financial Support: None

ABSTRACT

Background: Nursing competency is a critical determinant of patient safety, quality of care, and overall health outcomes within healthcare systems. Competent nursing practice integrates clinical knowledge, technical skills, ethical judgment, and professional behavior to reduce adverse events and improve patient outcomes. Variability in competency levels across healthcare settings has been linked to differences in education, organizational support, and professional development opportunities. Understanding current competency levels and the factors influencing them is essential for strengthening nursing practice, particularly in complex tertiary care environments.

Objective: To assess the level of competency and identify factors associated with competency among nurses working in tertiary care hospitals.

Methods: A structured narrative review was conducted using multiple electronic databases, including CINAHL, PubMed, Google Scholar, and ResearchGate. The search strategy applied Boolean operators, relevant keywords, and Medical Subject Headings to retrieve studies published in English within the last five years. From an initial yield of 21,700 records, duplicates were removed and titles and abstracts were screened for relevance. Full-text evaluation was performed based on predefined inclusion criteria, resulting in the selection of 16 studies from diverse geographical regions. Data were systematically extracted and synthesized using a narrative approach due to heterogeneity in study designs and assessment tools.

Results: Across the included studies, overall nursing competency levels ranged from moderate to high. Approximately 55–80% of nurses demonstrated moderate-to-high competency across different healthcare contexts. Higher competency was more frequently reported among nurses with stable employment, day-shift duties, and access to structured training programs. Variations in competency were also associated with workload, organizational support, and opportunities for continuing professional development, while sociodemographic factors showed limited and inconsistent influence.

Conclusion: Nurses working in tertiary care settings generally exhibit moderate to high levels of competency, influenced predominantly by organizational and professional factors. These findings emphasize the importance of supportive work environments, standardized competency assessment, and continuous professional development to sustain and enhance nursing competency.

Keywords: Clinical Competence; Education, Nursing; Hospitals, Tertiary Care; Patient Safety; Professional Competence; Staff Development; Workforce, Nursing.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

INTRODUCTION

Competency is a cornerstone of effective healthcare delivery, shaping patient safety, quality of care, and clinical outcomes across diverse healthcare settings. In nursing practice, competency is not a static achievement but a continuous developmental process that refines attitudes, knowledge, and skills while fostering creativity, adaptability, and innovation in patient care (1). It reflects a nurse's ability to perform professional responsibilities effectively within varying clinical contexts, responding appropriately to complex patient needs and system demands (2). Evidence consistently demonstrates that higher levels of nursing competency are associated with improved patient safety and better health outcomes, reinforcing its central role in healthcare systems worldwide (3). Professional competence in nursing encompasses the effective application of clinical knowledge, technical skills, ethical principles, ongoing professional development, and collaborative practice, all grounded in an understanding of patient-centered care (4). As the backbone of healthcare delivery, nurses play a critical role in disease prevention, health promotion, and the provision of safe and effective care (5). To practice safely and ethically, nurses must integrate scientific knowledge, clinical judgment, technical proficiency, and professional values, thereby reducing medical errors, minimizing harm, and ensuring patient safety (6–8). These attributes are particularly vital in high-acuity and teaching hospital environments, where patient complexity and system pressures are often greater. The quality of nursing care has a direct and measurable impact on patient satisfaction and overall healthcare outcomes (9). Conversely, inadequate nursing care has been linked to adverse events such as increased morbidity, patient falls, healthcare-associated infections, pressure injuries, and higher hospital readmission rates (10). For this reason, systematic assessment of nursing competency and identification of factors that influence it are essential steps toward delivering safe, high-quality care (11). Existing literature highlights that competency is shaped by both organizational and individual factors. Organizational influences include interprofessional collaboration, effective communication, supportive clinical and educational environments, and robust training systems, while individual determinants encompass age, clinical experience, educational level, emotional intelligence, professional commitment, and motivation (12,13).

Competency among nurses is also closely associated with important clinical and professional outcomes. Prior studies report positive relationships between nursing competency, patient safety, and critical thinking ability (14,15), alongside evidence suggesting an inverse relationship between competency and occupational stress levels (16). However, reported competency levels vary across regions and healthcare systems, with some studies indicating high competency among nurses (8), while others report moderate levels (17,18). Such variability underscores the need for context-specific evaluations to better understand local competency profiles and address identified gaps through targeted interventions (19). Despite growing international evidence, there remains a notable lack of local data on nursing competency in tertiary care teaching hospitals in Karachi, Pakistan. This gap is particularly important given the complexity of care, educational responsibilities, and patient safety challenges inherent to these settings. Generating local, multicenter evidence is essential to inform policy, guide educational and training initiatives, and strengthen clinical practice standards. Therefore, the objective of this study is to assess the level of competency among nurses working in tertiary care teaching hospitals in Karachi and to identify the individual and organizational factors associated with competency, with the aim of informing targeted strategies to enhance nursing practice and improve patient care outcomes.

METHODS

A structured narrative review methodology was adopted to synthesize recent evidence on nursing competency and its associated demographic factors. A comprehensive literature search was conducted across multiple electronic databases and academic search engines, including Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, and ResearchGate, to ensure broad coverage of peer-reviewed and scholarly literature. The search strategy was designed to capture contemporary evidence and was therefore restricted primarily to studies published within the preceding five years. Key search terms included *competence*, *clinical competence*, and *nursing competence*, which were combined using Boolean operators (AND/OR). Truncation symbols (asterisks) and Medical Subject Headings (MeSH) were applied where appropriate to enhance search sensitivity and precision. The initial database search yielded a total of 21,700 records. All retrieved citations were exported to a reference management system, where duplicate records were identified and removed. Subsequently, titles and abstracts were independently screened against predefined inclusion criteria to assess relevance. Studies were considered eligible if they were published in English within the last five years, directly addressed nursing competency, and examined competency in relation to demographic or professional characteristics of nurses. Articles that were outdated, not focused on nursing competency, lacked relevance to the review objectives, or were published in languages other than English were excluded. Full-text screening was then performed for potentially eligible studies to confirm suitability

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

for inclusion. Following the screening and eligibility assessment, 16 studies met the inclusion criteria and were incorporated into the final analysis. These studies represented diverse healthcare settings and geographic regions, allowing for a broader understanding of nursing competency across different contexts. Data were extracted systematically using a standardized data extraction form that captured key study characteristics, including study design, sample characteristics, measurement tools used to assess competency, and principal findings related to competency levels and influencing factors. Due to heterogeneity in study designs and outcome measures, a narrative synthesis approach was employed rather than a meta-analysis. The study selection process was documented and summarized using a PRISMA flow diagram to enhance transparency and reproducibility. Ethical approval was not required for this review, as it involved analysis of previously published studies and did not include direct interaction with human participants or access to identifiable personal data. Nevertheless, all included studies were reviewed to ensure that they reported appropriate ethical approval and informed consent procedures, where applicable, in accordance with international research ethics standards.

Flow Diagram:

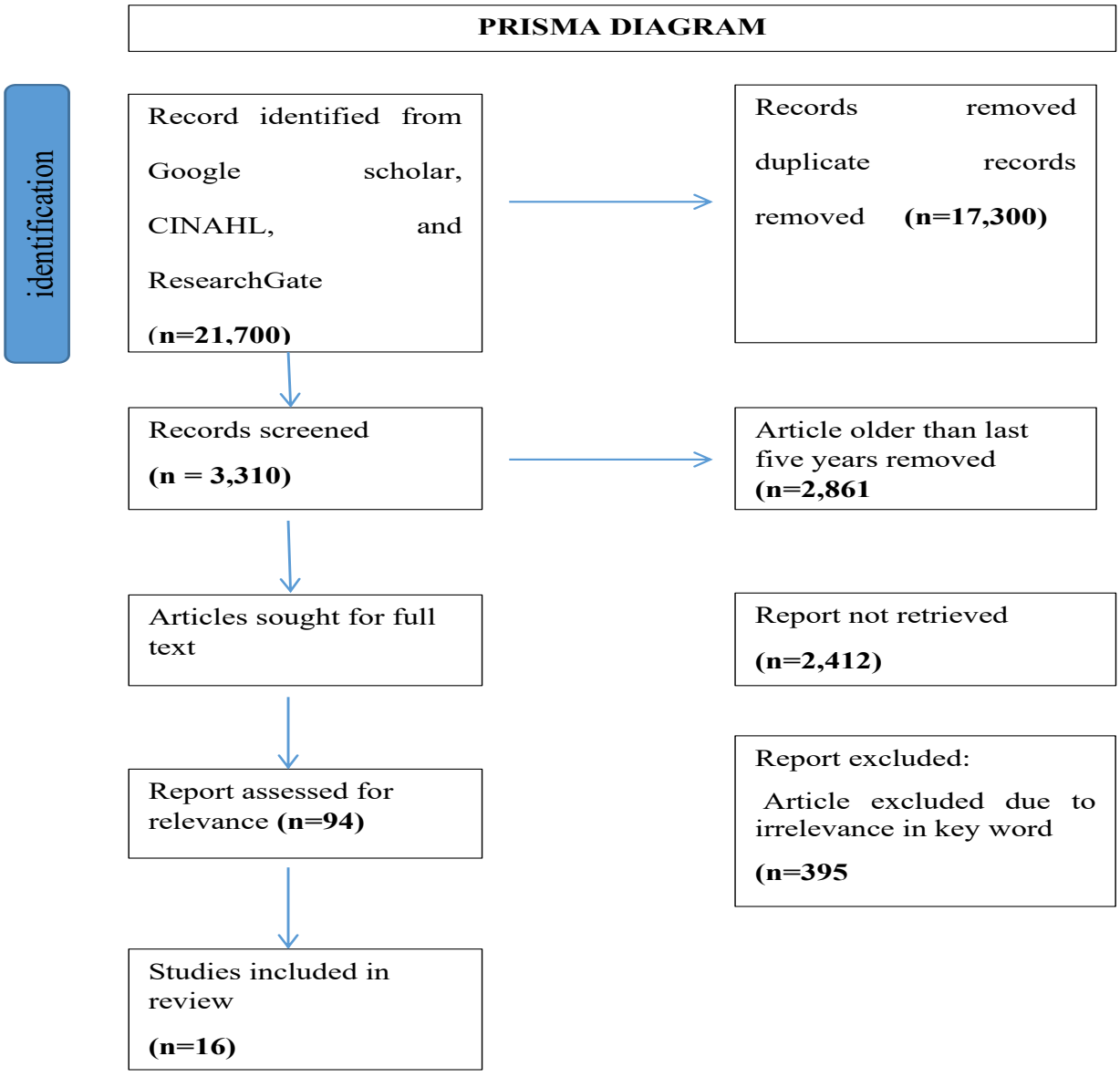


Figure 1 PRISMA Diagram

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.



RESULTS

Competency among Nurses

The synthesized findings demonstrated that nurse competency levels ranged from moderate to high across most international settings. Nurses from Italy reported high self-perceived competency, with more than three-quarters indicating strong confidence in their professional abilities (13). Similarly, nurses working in Iran and Egypt predominantly demonstrated high competency levels, with approximately 70–75% classified within the moderate-to-high competency range, reflecting favorable professional capacity within these healthcare systems (14,15). In contrast, nurses from Turkey and Ethiopia most frequently reported moderate competency, with estimated proportions ranging between 55% and 60%, suggesting potential variations related to differences in educational preparation, clinical exposure, and resource availability (11,16). Lower proportions of nurses demonstrating good competency were reported in Palestine, where fewer than half met higher competency thresholds, coinciding with high workload demands and limited opportunities for continuing professional development (10,17). Job-related and organizational characteristics were also reported alongside competency outcomes. Nurses holding permanent positions and those assigned to day shifts showed higher competency levels, with approximately 65–70% falling into the higher competency categories, compared with nurses working rotating or night shifts (18). However, some studies reported that increased years of experience alone did not consistently translate into higher competency, highlighting variability in competency distribution across professional seniority levels (19).

Competency among Pakistani Nurses

Evidence from Pakistan revealed mixed competency patterns among nurses. Nurses demonstrated comparatively stronger performance in patient assessment and equitable patient care domains, with more than half of participants rated as competent in these areas. Conversely, notable deficiencies were observed in documentation and communication skills, where competency rates fell below 50%, indicating critical gaps in core professional functions (20). These findings suggested uneven skill distribution across competency domains, potentially influenced by workload intensity and limited access to structured training programs. Findings from studies involving nursing students in Lahore further indicated generally low competency across all assessed domains, with a majority scoring below acceptable competency thresholds. This pattern reflected limited clinical exposure and insufficient supervised practical training during undergraduate education, emphasizing a gap between theoretical instruction and applied clinical skills (19). Collectively, these results highlighted variability in competency not only among practicing nurses but also at the pre-licensure level within Pakistan.

Competency and Its Related Factors

Across included studies, multiple individual and work-related factors showed measurable associations with nursing competency. Higher competency levels were more frequently observed among nurses working day shifts, those with permanent employment status, and

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

individuals receiving comparatively higher salaries, with reported competency proportions ranging from 65% to 80% in these groups (18,19). Age and professional experience demonstrated variable associations; some studies reported that combined effects of age, years of experience, and employment region explained a substantial proportion of competency variance, accounting for nearly one-third of observed differences (20,21). In contrast, several studies found minimal or no association between length of job experience and competency scores, indicating that experience alone was insufficient to ensure sustained professional competence in the absence of structured training and mentorship (21). Job satisfaction and supportive work environments showed strong positive associations with higher competency levels, whereas demographic variables such as gender, marital status, and general educational level demonstrated limited influence on competency outcomes (18-20). The influence of educational background yielded inconsistent findings across studies, suggesting context-dependent effects across healthcare systems (22).

DISCUSSION

The present findings aligned with the growing international evidence suggesting that nursing competency generally falls within a moderate to high range across diverse healthcare systems, while also revealing meaningful contextual variations. Comparable studies conducted in high- and middle-income settings have consistently reported stronger self-perceived and observed competency where structured professional development, stable employment conditions, and supportive organizational cultures were present (11,12). In contrast, settings characterized by workforce shortages, heavy workloads, and limited continuing education opportunities have demonstrated comparatively lower competency profiles, underscoring the sensitivity of nursing competence to system-level constraints rather than individual capability alone (13,14). These patterns reinforced the view that competency is a dynamic construct shaped by both professional preparation and the environments in which nurses practice. The discussion of organizational determinants highlighted an important and ongoing debate within the literature. While stable employment and predictable work schedules have repeatedly been associated with stronger professional performance, evidence has remained inconsistent regarding the independent role of clinical experience. Several studies have suggested that experience contributes meaningfully to skill refinement only when accompanied by mentoring, feedback mechanisms, and access to continuing education, whereas experience in isolation may lead to routine-based practice rather than competency growth (15-17). This interpretation was supported by reports showing stronger competency in environments that prioritized teamwork, leadership support, and skill reinforcement through formal training structures (18). Such findings emphasized that competency development is cumulative and context-dependent rather than automatically acquired over time. Within the regional context, the discussion of Pakistani nursing competency reflected challenges commonly reported in low- and middle-income countries. Gaps in communication and documentation skills have been frequently attributed to high patient-to-nurse ratios, administrative burden, and insufficient emphasis on non-technical skills during training (19). At the same time, relatively stronger performance in patient assessment and equitable care suggested that foundational clinical skills were being developed despite systemic constraints. Evidence from nursing students further highlighted a persistent theory–practice gap, a phenomenon widely documented in the literature, where limited supervised clinical exposure and inconsistent mentorship undermine confidence and skill acquisition during early professional formation (20). These findings collectively pointed toward structural rather than individual shortcomings within nursing education and service delivery models.

The relationship between competency and demographic or occupational factors remained complex and, at times, contested. While several studies supported associations between higher competency and factors such as job satisfaction, employment stability, and favorable working conditions, others reported minimal influence of characteristics such as gender, marital status, or formal educational level (21,22). The mixed findings related to educational background suggested that the quality, relevance, and clinical integration of education may be more influential than qualification level alone, particularly across heterogeneous healthcare settings (23). This variability reinforced the argument that competency frameworks must be context-sensitive and aligned with local practice realities. The strengths of the present synthesis lay in its inclusion of recent, multinational evidence and its focus on both individual and organizational dimensions of nursing competency. By integrating findings across diverse healthcare systems, the discussion provided a broader understanding of shared challenges and facilitators of competency development. However, several limitations warranted consideration. The reliance on predominantly cross-sectional studies limited causal inference, and variations in competency measurement tools reduced comparability across studies. Additionally, the absence of standardized reporting of domain-specific competency scores constrained deeper analysis of specific skill gaps. Future research would benefit from longitudinal designs, standardized competency assessment instruments, and stratified analyses by clinical specialty and healthcare setting to better capture competency trajectories over time.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

Overall, the discussion supported the interpretation that nursing competency is a multifactorial and evolving construct influenced by professional preparation, workplace conditions, and continuous learning opportunities. Strengthening supportive practice environments, integrating competency-based education with early and sustained clinical exposure, and implementing regular, structured competency assessments emerged as critical strategies for advancing nursing practice. Continued empirical investigation using robust and standardized methodologies remains essential to inform policy and practice aimed at sustaining safe, high-quality nursing care across healthcare systems.

CONCLUSION

This study underscores that nursing competency is a fundamental determinant of safe, effective, and high-quality patient care, with competency levels reflecting the combined influence of professional preparation and the environments in which nurses practice. The findings highlight that organizational support, access to continuous training, and favorable working conditions play a more decisive role in shaping competency than sociodemographic characteristics alone. Strengthening institutional policies, investing in structured professional development, and fostering supportive clinical and educational environments are therefore essential for sustaining and enhancing nursing competency across healthcare settings. By addressing these areas, healthcare systems can promote safer practice, improve care quality, and support the ongoing professional growth of the nursing workforce.

AUTHOR CONTRIBUTION

Author	Contribution
Khalid Khan	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Santosh Kumar*	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Anny Ashiq	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Kheenpal Das	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

REFERENCES

1. Ibrahim MM, Abdul-Rahaman F, Sayibu MS, Alhassan DN, Awudu RT, Sisala IM, et al. Assessing the impact of nurses' patient safety competencies on key performance indicators (KPIs) for patient safety outcomes at Tamale Teaching Hospital: the mediating role of leadership and barriers to competency development. BMC Health Serv Res. 2025;25(1):1176.

2. John AM, Nayak UK, Lobo G, Thaleppaddy M. Assessment of pressure injury knowledge using PZ-PUKT questionnaire among Indian nurses and the evaluation of impact of an educational intervention on the knowledge scores: A quasi-experimental study. J Tissue Viability. 2024;33(2):215-9.

3. Kakemam E, Ghafari M, Rouzbahani M, Zahedi H, Roh YS. The association of professionalism and systems thinking on patient safety competency: A structural equation model. J Nurs Manag. 2022;30(3):817-26.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

4. Pruthi M, Bhatnagar S, Indrayan A, Chanana G, Thakur I. Basic knowledge and understanding of palliative care among nurses working in a group of tertiary care hospitals. Int J Palliat Nurs. 2025;31(9):439-45.

5. Ryder M, Browne F. Changing the delivery of continuing professional education: An action research approach. Nurse Educ Today. 2024;139:106248.

6. Wan F, Yang L, Zhou N, He Y. Construction of learning objectives and content for newly graduated nurses in tertiary teaching hospitals: A Delphi study. Nurse Educ Today. 2023;121:105716.

7. Ye J, Tao W, Yang L, Xu Y, Zhou N, Wang J. Developing core competencies for clinical nurse educators: An e-Delphi-study. Nurse Educ Today. 2022;109:105217.

8. Vahedian-Azimi A, Rahimi-Bashar F, Pourhoseingholi MA, Salesi M, Shamsizadeh M, Jamialahmadi T, et al. Effect of the Specific Training Course for Competency in Doing Arterial Blood Gas Sampling in the Intensive Care Unit: Developing a Standardized Learning Curve according to the Procedure's Time and Socioprofessional Predictors. Biomed Res Int. 2021;2021:2989213.

9. Chuang ST, Liao PL, Lo SF, Chang YT, Hsu HT. Effectiveness of an E-Book App on the Knowledge, Attitudes and Confidence of Nurses to Prevent and Care for Pressure Injury. Int J Environ Res Public Health. 2022;19(23).

10. Charette M, McKenna L, McGillion A, Burke S. Effectiveness of transition programs on new graduate nurses' clinical competence, job satisfaction and perceptions of support: A mixed-methods study. J Clin Nurs. 2023;32(7-8):1354-69.

11. Tan X, He Y, Zeng Y, Tang J, Huang Y, Sun M. Facilitators and barriers of African postgraduate nursing students' adaptation to internship: A qualitative study. Nurse Educ Today. 2022;119:105534.

12. Azimirad M, Magnusson C, Wiseman A, Selander T, Parviainen I, Turunen H. Identifying teamwork-related needs of the medical emergency team: Nurses' perspectives. Nurs Crit Care. 2022;27(6):804-14.

13. Piya MK, Fletcher T, Myint KP, Zarora R, Yu D, Simmons D. The impact of nursing staff education on diabetes inpatient glucose management: a pilot cluster randomised controlled trial. BMC Endocr Disord. 2022;22(1):61.

14. Bosma S, Christopher R. Implementing a Unit-Based Alarm Management Bundle for Critical Care Nurses. Crit Care Nurse. 2023;43(2):36-45.

15. Hakvoort L, Dikken J, Dinh Xuan LT, van der Schaaf M, Schuurmans M. Integrated measure for training transfer in nursing practice: Development and validation study. Nurse Educ Today. 2025;144:106482.

16. Sun S, Tao L, Yang L, Zhang Z. Knowledge, Attitude, and Practice (KAP) of ICU Nurses towards Tracheal Intubation Patients' Postextubation Dysphagia: A Cross-Sectional Study. J Nurs Manag. 2024;2024:9981458.

17. Ming JL, Lee SC, Chen SF, Huang HF, Chen YC, Li HJ, et al. Leadership training effectiveness for high-performing young nurses in a teaching hospital - A quasi-experimental study. Nurse Educ Today. 2024;138:106155.

18. Zheng S, Yang L, Zhou N, Zhu H. New nurses' experience during a two year transition period to clinical practice: A phenomenological study. Nurse Educ Today. 2023;121:105682.

19. Kakemam E, Albelbeisi AH, Rouzbahani M, Gharakhani M, Zahedi H, Taheri R. Nurses' perceptions of patient safety competency: A cross-sectional study of relationships with occurrence and reporting of adverse events. PLoS One. 2024;19(1):e0297185.

20. Mahdaviazad H, Keshtkar V, Emami MJ, Kargarshouroki Z, Vosoughi AR. Osteoporosis guideline awareness among Iranian nurses: results of a knowledge and attitudes survey. J Prev Med Hyg. 2021;62(2):E415-e20.

21. Shrestha I, Payakkaraung S, Sanasuttipun W. Pain Management Competency and its Associated Factors among Nurses. J Nepal Health Res Counc. 2023;20(3):623-9.

22. Kefale D, Baih SZ, Ayenew YE. Practice towards care and maintenance of peripheral intravenous cannula among nurses and midwives in teaching hospitals, Amhara, Ethiopia. Pan Afr Med J. 2024;48:166.

23. Liu P, Lyu S, Mireles-Cabodevila E, Miller AG, Albuainain FA, Ibarra-Estrada M, et al. Survey of Ventilator Waveform Interpretation Among ICU Professionals. Respir Care. 2024;69(7):773-81.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.