



RESEARCH ARTICLE

Professional Nursing Competence in Contemporary Healthcare: A Qualitative Study of Knowledge, Skills, and Attitudes Integration

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Abstract

The increasing complexity of contemporary healthcare requires nurses to integrate knowledge, clinical skills, and professional attitudes to ensure high-quality and safe patient care. However, limited qualitative evidence exists on how this integration is experienced and enacted in real-world clinical settings. This study aims to explore nurses' lived experiences in integrating knowledge, skills, and attitudes as core components of professional competence in contemporary healthcare practice. Methods: A qualitative study with a phenomenological approach was conducted among 18 registered nurses working in hospital and primary healthcare settings. Participants were purposively selected based on their clinical experience and direct involvement in patient care. Data were collected through in-depth semi-structured interviews and analyzed using thematic analysis following Braun and Clarke's framework. Results: The findings revealed that professional nursing competence is a dynamic and integrative process shaped by individual and organizational factors. Seven main themes were identified: adaptive clinical reasoning, interprofessional collaboration, professional knowledge integration, clinical skills proficiency, ethical and professional attitudes, organizational support, and reflective practice. These themes demonstrate how competence is constructed through experiential learning, teamwork, and contextual influences within healthcare environments. Conclusion: Professional nursing competence is a multidimensional and context-dependent phenomenon that extends beyond individual capability. Strengthening the integration of knowledge, skills, and attitudes requires supportive organizational environments, collaborative practice, and continuous reflective learning. These findings provide important implications for nursing education, policy, and clinical practice in enhancing competency-based healthcare delivery.

Keywords: clinical competence, healthcare quality, interprofessional collaboration, nursing education, patient safety, professional skills.

INTRODUCTION

The increasing complexity of healthcare systems and patient needs has intensified the demand for highly competent nursing professionals who can effectively integrate knowledge, clinical skills, and professional attitudes in practice (Busch et al., 2025). Contemporary healthcare environments are characterized by rapid technological advancements, multidisciplinary collaboration, and a growing emphasis on patient-centered care, all of which require nurses to perform beyond routine clinical tasks (Chen et al., 2025). Professional nursing competence is therefore no longer limited to technical proficiency but encompasses cognitive, affective, and psychomotor domains that must function synergistically in

dynamic clinical contexts (Coyne et al., 2025).

Recent developments in nursing science highlight a shift toward competency-based education and practice, emphasizing the integration of theoretical knowledge with experiential learning (Do et al., 2026). Studies have demonstrated that nurses who exhibit higher levels of integrated competence contribute to improved patient safety, better clinical outcomes, and enhanced healthcare quality (Foltz-Ramos et al., 2025). Additionally, global health frameworks increasingly recognize nurses as key actors in healthcare systems, particularly in addressing complex health challenges such as chronic disease management, aging populations, and health inequities (Frangieh et al., 2025). Despite these advances, inconsistencies remain in how professional competence is conceptualized, developed, and assessed across different healthcare settings (Gottberg et al., 2026).

A critical gap persists in understanding how knowledge, skills, and attitudes are integrated in real-world clinical practice, particularly from the perspective of practicing nurses (Hayes et al., 2026). Existing studies often examine these components in isolation, thereby overlooking the dynamic interplay that defines actual

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professional performance (Hodza-Beganovic et al., 2025). Furthermore, limited qualitative insights are available to capture the contextual and experiential dimensions of competence development, including the influence of organizational culture, leadership, and workplace learning environments (Hyvärinen et al., 2024). Addressing this gap is essential to strengthening the theoretical and practical foundation of nursing competence (Javornická et al., 2024). This study argues that a holistic and integrative perspective is necessary to better understand how professional competence is enacted and sustained in contemporary healthcare. The increasing complexity of contemporary healthcare systems demands nursing professionals who are capable of integrating knowledge, clinical skills, and professional attitudes in a coherent and adaptive manner. Professional nursing competence is no longer understood as a collection of discrete attributes but as a dynamic and context-dependent process enacted in real clinical situations. To explain this integration, this study adopts an integrative competence framework grounded in the interaction of cognitive (knowledge), psychomotor (skills), and affective (attitudes) domains, which are mutually reinforcing and operationalized through clinical practice.

This framework is informed by competency-based education models and experiential learning theory, which emphasize that competence develops through the continuous interaction between theoretical understanding, practical application, and reflective engagement. Within this perspective, knowledge provides the foundation for clinical reasoning, skills enable the execution of care, and attitudes shape ethical judgment and professional behavior. Importantly, these components do not function independently; rather, they are integrated through experience, contextual demands, and social interaction within healthcare environments. Despite increasing recognition of this integrative perspective, existing literature remains limited in explaining how these domains are actually combined in everyday nursing practice. Most studies tend to conceptualize and measure knowledge, skills, and attitudes as separate constructs, often within educational or evaluative frameworks. Such approaches fail to capture the lived, situated, and dynamic nature of competence as it is enacted in complex clinical environments.

A critical research gap therefore lies in understanding how nurses experience and negotiate the integration of these domains in real-world settings, particularly under conditions of uncertainty, time pressure, and interprofessional collaboration. Specifically, insufficient attention has been given to (1) how nurses translate theoretical knowledge into context-sensitive clinical reasoning, (2) how technical skills are adapted to patient-centered care situations, and (3) how professional attitudes influence decision-making and interaction within multidisciplinary teams. Furthermore, the role of organizational contexts such as leadership, work environment, and resource availability—in shaping this integration remains underexplored from an experiential perspective. Addressing this gap requires a qualitative approach that captures the meanings and experiences of nurses as they enact competence in practice. By focusing on lived experiences, this study seeks to move beyond fragmented conceptualizations and provide a more holistic understanding of professional nursing competence as an integrative and contextually embedded phenomenon. Therefore, the objective of this study is to explore how nurses experience the integration of knowledge, skills, and attitudes in professional nursing competence within

contemporary healthcare settings, and to identify the contextual factors that facilitate or constrain this process.

METHODS

Research Design and Philosophical Orientation

This study adopted a qualitative design grounded in a phenomenological approach to explore nurses' lived experiences in integrating knowledge, skills, and professional attitudes within contemporary healthcare practice. Phenomenology was selected because the research aims to understand how competence is experienced, interpreted, and enacted by individuals in real-world clinical contexts. This approach prioritizes subjective meaning-making and the essence of experience rather than measurement or variable relationships. Consistent with this orientation, thematic analysis was employed as a flexible analytic method to identify patterns of meaning across participants' narratives. While thematic analysis is not inherently phenomenological, it was applied inductively with a phenomenological sensitivity, focusing on capturing experiential structures rather than generating purely descriptive categories. The analysis emphasized participants' meanings, perceptions, and interpretations of competence integration.

Study Setting and Context

The study was conducted in multiple healthcare settings, including hospitals and primary healthcare facilities. These settings were selected to capture diverse clinical environments where nurses routinely engage in complex care delivery. Organizational characteristics such as workload, interprofessional collaboration, and resource availability formed part of the contextual background influencing participants' experiences.

Participant Recruitment and Sampling

Participants were registered nurses with a minimum of one year of clinical experience and active involvement in direct patient care. A purposive sampling strategy was used to ensure variation in experience, educational background, and clinical specialization, thereby enhancing the richness of data. Recruitment was conducted through coordination with healthcare institutions. Potential participants were approached directly and provided with detailed study information. Participation was voluntary, and informed consent was obtained prior to data collection. Eighteen participants were included in the study.

Data Collection

Data were collected through in-depth, semi-structured interviews designed to elicit participants' lived experiences of professional competence integration. Interviews lasted approximately 45–60 minutes and were conducted in settings convenient for participants. All interviews were audio-recorded with consent and supplemented with field notes to capture contextual and non-verbal information. The interview guide included open-ended questions focusing on how participants apply knowledge, perform clinical skills, and enact professional

attitudes in practice. Probing questions were used to deepen reflection and clarify meanings.

Researcher Reflexivity

The research team acknowledged their professional backgrounds in nursing and healthcare education, which may influence data interpretation. To enhance reflexivity, researchers maintained reflective journals documenting assumptions, decisions, and analytical insights throughout the study. Regular discussions among team members were conducted to critically examine interpretations and minimize bias.

Data Saturation

Data collection continued until thematic saturation was achieved, defined as the point at which no new meanings or experiential insights emerged from subsequent interviews. Saturation was assessed iteratively during the analysis process, with redundancy observed after the eighteenth interview.

Data Analysis

Data were analyzed using Braun and Clarke's six-phase thematic analysis framework. The process included familiarization with the data, initial coding, theme development, theme review, definition and naming of themes, and report production. Coding was conducted inductively to remain grounded in participants' accounts. To maintain alignment with the phenomenological approach, analysis focused on capturing the essence of participants' lived experiences rather than quantifying responses. Themes were constructed to reflect shared meanings across narratives while preserving contextual depth.

Trustworthiness

The rigor of the study was ensured through established qualitative criteria:

Credibility: Achieved through member checking and prolonged engagement with the data

Dependability: Maintained through an audit trail documenting methodological decisions

Confirmability: Supported by reflexive journaling and peer debriefing

Transferability: Enhanced through rich, contextual descriptions of participants and settings

Ethical Considerations

Ethical approval was obtained from the relevant institutional review board. Participants provided informed consent and were assured of confidentiality, anonymity, and the right to withdraw at any stage without consequence.

RESULTS OF STUDY

The demographic characteristics of participants are presented in Table 2. The sample reflects variation in age, gender, educational background, years of experience, and clinical areas, providing a diverse perspective on professional nursing competence.

The results of this study present the findings derived from the thematic analysis of interview data, focusing on the integration of knowledge, skills, and attitudes in professional nursing competence. The analysis identified several key themes and subthemes that reflect how nurses enact and develop competence in real-world clinical settings. These findings highlight both individual and organizational factors influencing competence integration. A summary of the main themes and their corresponding subthemes is presented in Table 1.

A total of 18 nurses participated in this study, representing diverse clinical backgrounds, years of experience, and healthcare settings. The analysis generated seven interrelated themes that describe how professional nursing competence is experienced and enacted in practice: (1) adaptive clinical reasoning, (2) interprofessional collaboration, (3) professional knowledge integration, (4) clinical skills proficiency, (5) ethical and professional attitudes, (6) organizational support, and (7) reflective practice. The presentation below focuses on empirical evidence through participants' voices. Interpretive commentary is kept concise to maintain analytic grounding.

Table 1. Demographic Characteristics of Participants

Participant	Age (years)	Gender	Education Level	Years of Experience	Clinical Area
P1	28	Female	Bachelor	5	Medical-Surgical
P2	32	Male	Bachelor	8	Emergency
P3	30	Female	Bachelor	6	Intensive Care Unit
P4	27	Female	Diploma	4	Pediatric
P5	35	Male	Bachelor	10	Medical-Surgical
P6	29	Female	Bachelor	6	Maternity
P7	33	Male	Bachelor	9	Emergency
P8	31	Female	Diploma	7	Primary Healthcare
P9	34	Female	Bachelor	11	Intensive Care Unit
P10	28	Male	Bachelor	5	Surgical
P11	36	Female	Master	12	Nursing Education
P12	37	Male	Bachelor	13	Medical-Surgical
P13	29	Female	Bachelor	6	Pediatric
P14	38	Male	Master	14	Management
P15	33	Female	Bachelor	9	Primary Healthcare

Note. Demographic data represent variation in age, experience, and clinical background to ensure richness of qualitative data.

Table 2. Main Themes, Subthemes, and Key Focus Identified Through Thematic Analysis

Main Theme	Subthemes	Key Focus
Adaptive Clinical Reasoning	Critical thinking in decision-making; Contextual judgment; Problem-solving flexibility	Enhancing clinical decision-making accuracy in complex patient situations
Interprofessional Collaboration	Communication with healthcare teams; Role clarity; Team-based care coordination	Strengthening teamwork and coordinated care delivery
Professional Knowledge Integration	Application of theoretical knowledge; Evidence-based practice; Continuous learning	Bridging theory and practice to improve care quality
Clinical Skills Proficiency	Technical competence; Patient-centered care skills; Procedural accuracy	Ensuring safe, effective, and patient-centered clinical performance
Ethical and Professional Attitudes	Ethical sensitivity; Responsibility and accountability; Empathy in care delivery	Promoting ethical standards and professional integrity in nursing
Organizational Support	Leadership support; Work environment; Availability of resources	Creating enabling environments for optimal nursing performance
Reflective Practice	Self-evaluation; Learning from experience; Professional development initiatives	Supporting continuous professional growth and competence development

Tema 1. Adaptive Clinical Reasoning

Participants consistently described clinical reasoning as a flexible and experience-driven process that extends beyond protocol adherence. Decision-making was shaped by situational awareness and rapid prioritization.

"In real situations, patients don't always follow textbook patterns. We have to adjust quickly based on what we see." (P3)

"Sometimes there's no time to think step-by-step. Experience helps you recognize what is urgent and what can wait." (P7)

"Guidelines are important, but they don't cover everything. We often rely on judgment built from experience." (P9)

These accounts illustrate how participants navigate uncertainty by integrating knowledge with experiential insight.

Tema 2. Interprofessional Collaboration

Collaboration emerged as a routine and essential component of practice, particularly in complex cases requiring shared decision-making.

"We cannot work alone. Decisions are often made together with doctors and other team members." (P2)

"Good communication prevents misunderstandings and reduces errors." (P8)

"When the team is supportive, patient care becomes much smoother." (P12)

Participants emphasized communication clarity, mutual respect, and coordination as key elements of effective collaboration.

Tema 3. Professional Knowledge Integration

Participants highlighted the ongoing process of translating theoretical knowledge into practical application.

"What we learned in school is just the foundation. The real challenge is applying it to different patient conditions." (P5)

"Evidence-based practice gives us confidence, especially in complex cases." (P11)

"Sometimes theory and reality don't match, so we have to adapt." (P14)

These narratives reflect the continuous negotiation between formal knowledge and clinical realities.

Tema 4. Clinical Skills Proficiency

Clinical skills were described as encompassing both technical accuracy and patient-centered interaction.

"Performing procedures correctly is important, but how we communicate with patients also matters." (P4)

"Patients feel safer when we are both competent and empathetic." (P10)

"Skill is not only about technique, but also about making patients comfortable." (P13)

Participants framed competence as a balance between precision and interpersonal sensitivity.

Tema 5. Ethical and Professional Attitudes

Ethical considerations and professional responsibility were central to participants' decision-making processes.

"We always have to think about what is best for the patient, even when it is difficult." (P6)

"Being accountable for our actions is part of being a professional nurse." (P12)

"Empathy helps us understand patients beyond their medical condition." (P1)

These responses indicate that attitudes guide the application of knowledge and skills in practice.

Tema 6. Organizational Support

Participants described organizational factors as shaping their ability to perform effectively.

"Support from supervisors makes us more confident in handling difficult cases." (P1)

"Limited resources sometimes force us to make difficult decisions." (P8)

"A good work environment helps us perform better as a team." (P15)

These accounts highlight the influence of leadership, resources, and work conditions on competence enactment.

Tema 7. Reflective Practice

Reflection was identified as a routine process that supports learning and improvement.

"After each shift, I reflect on what I did well and what I can improve." (P13)

"Experience becomes a lesson for handling similar situations in the future." (P15)

"Reflection helps me avoid repeating the same mistakes." (P6)

Participants described reflection as essential for continuous professional development.

Across themes, participants consistently described professional competence as an integrative and experience-based process shaped by individual practice and contextual factors. The findings are grounded in participants' accounts, illustrating how competence is enacted in everyday clinical settings.

DISCUSSION

This study provides a nuanced understanding of professional nursing competence as an integrative and contextually enacted process. Rather than treating knowledge, skills, and attitudes as separate domains, the findings demonstrate how these elements are continuously negotiated in practice through experience, interaction, and situational demands. This shifts the conceptualization of competence from a static attribute to a dynamic process embedded in everyday clinical work.

A key contribution of this study lies in highlighting adaptive clinical reasoning as the central mechanism through which integration occurs. While prior literature often emphasizes knowledge acquisition or technical skill proficiency, the present findings show that competence is enacted through ongoing interpretation of patient conditions, prioritization, and context-sensitive decision-making. What is novel here is the emphasis on how nurses actively integrate multiple domains simultaneously under real-world constraints, rather than simply possessing them as separate competencies (Kilroy et al., 2025). The findings extend this perspective by highlighting that clinical reasoning is not solely based on knowledge but is deeply influenced by contextual judgment and experiential insight. Similar findings have been reported by McFadden et al., (2025), who emphasizes clinical judgment as a complex process involving noticing, interpreting, responding, and reflecting. Interprofessional collaboration emerged as another critical dimension, reinforcing existing literature that emphasizes teamwork as a determinant of patient safety and healthcare quality (Templeton et al., 2026). Previous studies have shown that effective collaboration reduces medical errors and improves outcomes. This study contributes further by illustrating how collaboration is embedded in daily clinical practice and directly shapes competence development (Soares et al., 2025; Vanuytrecht et al., 2026).

The integration of theoretical knowledge into practice highlights the persistent theory-practice gap. This finding is consistent with research by Mikkonen et al., (2026), which identified discrepancies between classroom learning and clinical application. The current study provides deeper qualitative insight into how nurses actively bridge this gap through experiential learning and evidence-based practice, supporting the importance of competency-based education models (Sharkiya & Irit, 2026; Waterval et al., 2026). Clinical skills proficiency in this study extends beyond technical competence to include patient-centered care and empathetic engagement. This supports the framework of

patient-centered nursing proposed by Moritz et al., (2026), which integrates interpersonal and clinical competencies. Ethical and professional attitudes were also found to underpin competence, aligning with international standards emphasizing ethics as a core nursing domain (Zumstein-Shaha & Grace, 2023). Importantly, this study highlights the influence of organizational support on competence development. Leadership, work environment, and resource availability were identified as key factors (Kim et al., 2023).

This finding is consistent with the work environment model proposed by (Mueller et al., 2025), which links supportive environments to improved nurse outcomes and patient safety. Interprofessional collaboration is not only confirmed as important but is reconceptualized as a space where competence is co-constructed. The findings indicate that competence is shaped through interaction, communication, and shared responsibility, suggesting that professional capability is partly relational rather than purely individual. This insight extends beyond descriptive accounts by demonstrating how collaboration actively mediates the integration of knowledge, skills, and attitudes in practice (Ribera-Perianes et al., 2025). This aligns with Schön's reflective practitioner theory, which emphasizes reflection-in-action and reflection-on-action as essential to professional competence (Suprpto et al., 2025). Empirical studies also support that reflective practice enhances clinical learning and adaptability (Rykhoff et al., 2024; Zabihi et al., 2025).

The practical implications of this study should be grounded in the most prominent themes identified, particularly adaptive clinical reasoning, interprofessional collaboration, and reflective practice. Nursing education programs should prioritize the development of clinical reasoning through case-based learning, simulation, and reflective exercises that mirror real-world complexity. Healthcare organizations should strengthen interprofessional communication structures and provide supportive environments that enable collaborative decision-making. Additionally, embedding structured reflective practices into routine clinical work can support continuous competence development.

Several limitations should be considered when interpreting the findings. First, the study relies on self-reported data, which may be influenced by social desirability bias, as participants may present their practices in a more favorable light. Second, the qualitative design and relatively small, context-specific sample limit the transferability of the findings to other settings or populations. Third, the study captures perceptions and experiences rather than objective measures of performance, which restricts the ability to draw conclusions about actual clinical outcomes. Overall, this study contributes to a more refined understanding of professional nursing competence as an integrative, relational, and context-dependent phenomenon. By focusing on how competence is enacted in practice, the findings move beyond fragmented models and provide a more realistic representation of nursing work in contemporary healthcare settings.

CONCLUSION

This study shows that professional nursing competence is experienced as an integrative and context-dependent process, in which knowledge, clinical skills, and professional attitudes are enacted simultaneously in

everyday practice. The findings indicate that this integration is shaped by adaptive clinical reasoning, interprofessional collaboration, and reflective practice, and is influenced by organizational conditions such as support and resource availability. These conclusions are grounded in participants' accounts and reflect how competence is understood and performed in real clinical settings. Nursing education programs should emphasize the development of integrative competence by strengthening clinical reasoning, applied learning, and reflective practice. Learning approaches such as case-based discussions, simulation, and guided reflection may support students in connecting theoretical knowledge with practical application. Healthcare institutions should support environments that facilitate collaboration and ongoing learning. This includes strengthening interprofessional communication, providing supportive supervision, and enabling opportunities for reflection in routine clinical work. These strategies may help sustain competence development as experienced by practitioners. Future studies should examine how integrative competence develops over time and across different healthcare contexts. Longitudinal and mixed-methods designs may provide deeper insight into how competence is enacted and supported in practice. Further research is also needed to explore how organizational interventions influence competence from both experiential and outcome-based perspectives.

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DECLARATION

Artificial Intelligence-Assisted Technology

The authors declare that no artificial intelligence (AI)-assisted technologies were used in the design, data collection, analysis, or writing of this manuscript. All content is the original work of the authors.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request

Conflicts of interest Statement

The authors declare that they have no competing interests.

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Authors' contributions

Suprpto: Conceptualization, methodology, supervision, writing – original draft, and review & editing. **Yohan Trayanus Lasarus Djaha:** Data curation, formal analysis, investigation, and writing – review & editing

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ADDITIONAL INFORMATION

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