

PROFESSIONAL COMPETENCE AND MEDICATION ADMINISTRATION PROFICIENCY AMONG STAFF NURSES AT ST. PAUL SURIGAO UNIVERSITY HOSPITAL IN CARAGA, PHILIPPINES

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Article #: 2026-02-02-11

Paper ID: IJOMAHIP_S0nYF5YJ

International Journal of Medicine and Health Innovations Perspectives Vol. 2, No.2 (2026)

DOI: 10.69481/KMHW5392

Page No.: 198-220

Pages: 23

Submitted: 5 July 2026

Resubmitted: 30 September 2026

Accepted: 10 October 2026

Similarity Index: <10.00%

Originality: 90.00%

Abstract

Background. Medication administration is a high-risk nursing responsibility requiring pharmacological knowledge, clinical skills, ethical accountability, communication, legal compliance, and clinical judgment. Professional competence is essential to medication safety and prevention of patient harm.

Objective. This study determined professional nursing competence and medication administration proficiency among staff nurses at St. Paul Surigao University Hospital in Caraga, Philippines and examined their relationships and differences according to selected demographic characteristics.

Methods. A quantitative descriptive-correlational design was used among 42 staff nurses involved in direct patient care and medication administration. Professional nursing competence was assessed across clinical care, ethical nursing practice, leadership and management, effective communication and collaboration, and legal nursing practice. Medication administration proficiency was assessed in knowledge, skills, and decision-making. Descriptive statistics, Pearson correlation, independent-samples t-test, and analysis of variance were applied at the .05 significance level.

Results. Respondents demonstrated high professional nursing competence ($\bar{X} = 3.68 \pm 0.33$) and medication administration proficiency ($\bar{X} = 3.77 \pm 0.30$). Professional competence was positively correlated with knowledge ($r = .894, p < .001$), skills ($r = .689, p < .001$), decision-making ($r = .790, p < .001$), and overall medication administration proficiency ($r = .865, p < .001$). Age, sex, and area of assignment showed no significant differences, while years of experience significantly differentiated skills, decision-making, and overall proficiency.

Conclusion. Professional nursing competence is strongly associated with medication administration proficiency. Structured mentorship, continuing medication-safety education, simulation, competency validation, and medication audits may strengthen medication safety and quality improvement.

Nursing Implications and Recommendations. Nursing services should prioritize experience-sensitive mentorship, continuing education, simulation-based training, and regular competency assessment. Future studies should include larger, multi-hospital samples and objective competency measures.

Keywords: *Clinical decision-making; medication administration; patient safety; professional nurse competence scale; professional nursing competence; staff nurses; Philippines*

Cite this Article (APA): Ensomo, Pearl Joy M. (2026). Professional competence and medication administration proficiency among staff nurses at St. Paul Surigao University Hospital in Caraga, Philippines. *International Journal of Medicine and Health Innovations Perspectives*, 2(2), 198-220. DOI: 10.69481/KMHW5392

Research Highlights

What is the current knowledge?

- Medication administration is a multidimensional nursing activity that requires pharmacological knowledge, procedural skill, clinical judgment, communication, documentation, and adherence to safety standards.
- Medication administration errors are influenced by both individual competence and system factors, including workload, interruptions, staffing, protocols, and safety culture.
- Professional nursing competence extends beyond technical performance to ethical practice, leadership, communication, collaboration, and legal accountability.
- Clinical experience and structured competency development can strengthen medication-related judgment and performance.

What is new in this study?

- The study provides localized evidence from a provincial Philippine hospital linking broad professional nursing competence with medication administration proficiency.
- Professional competence showed strong to very strong positive associations with medication knowledge, skills, decision-making, and overall medication administration proficiency.
- Years of experience differentiated medication administration skills, decision-making, and overall proficiency, whereas age, sex, and area of assignment did not.
- The findings support an integrated medication-safety strategy combining technical training with mentoring, professional competence development, simulation, auditing, and clinical feedback.

INTRODUCTION

Nursing competence is fundamental to safe, effective, and accountable healthcare because nurses provide continuous direct care and frequently constitute the final clinical checkpoint before medications and other interventions reach patients. Contemporary nursing practice requires the integration of scientific knowledge, psychomotor performance, ethical reasoning, communication, teamwork, legal accountability, and evidence-based decision-making rather than isolated task completion (Baker et al., 2021; Mlambo et al., 2021; Melnyk & Fineout-Overholt, 2022). As healthcare systems become more complex, competence must also include the capacity to recognize risk, communicate concerns, adapt to changing clinical conditions, and participate in quality-improvement processes.

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Medication administration is among the most visible and safety-critical expressions of nursing competence. Errors involving patient identification, drug selection, dose, route, timing, preparation, documentation, monitoring, or communication can produce preventable harm. Systematic and empirical evidence consistently shows that medication administration errors arise through interactions among individual knowledge and skill, environmental pressures, interruptions, workload, staffing, communication failures, and organizational processes (Afaya et al., 2021; Luokkamäki et al., 2021; Thelen, 2022; Brabcová et al., 2023; Alotaibi, 2024). Accordingly, medication safety is not adequately addressed through procedural reminders alone; it requires competent nurses working within reliable systems.

The concept of medication competence is itself multidimensional. Thelen (2022) identified pharmacovigilance, effective skills competence, and interprofessional practice as defining attributes, while Dijkstra et al. (2021) demonstrated through expert consensus that pharmaceutical-care competence for nurses includes assessment, medication management, patient education, communication, monitoring, and interdisciplinary collaboration. These perspectives are consistent with evidence that registered nurses require competence across medication preparation, administration, documentation, drug calculations, assessment, collaboration, patient communication, and reporting (Luokkamäki et al., 2021).

Professional nursing competence provides a broader platform from which medication administration proficiency can develop. Clinical care competence supports patient assessment and monitoring; ethical competence supports autonomy, informed care, confidentiality, and accountability; communication competence helps prevent misunderstandings in orders and endorsements; leadership and management competence supports prioritization and workflow control; and legal competence supports accurate documentation and adherence to professional standards. The Professional Nurse Competence Scale (PNCS) operationalizes this multidimensional perspective across clinical care, ethical nursing practice, leadership and management, effective communication and collaboration, and legal nursing practice (Chuang et al., 2025).

Experience is also relevant to the development of competence. Benner's Novice to Expert framework proposes that nurses progress from rule-dependent practice toward increasingly contextualized and intuitive clinical judgment as they encounter recurrent patient-care situations (Benner, 1984). Contemporary studies continue to indicate that limited work experience, insufficient on-the-job training, interruptions, and lack of accessible medication guidelines can increase medication-administration risk, whereas structured supervision and repeated competency verification can strengthen performance (Gebrye et al., 2023; Agoglia et al., 2024). Experience should therefore be

considered not simply as length of service, but as an opportunity for guided exposure, reflection, feedback, and consolidation of clinical reasoning.

The Philippine health system continues to emphasize patient safety, professional accountability, quality assurance, and institutional improvement. Hospital performance measures increasingly include patient-safety indicators, while nursing services are expected to support standardized clinical processes and continuing professional development (Tamondong-Lachica et al., 2024). In provincial hospitals, however, workforce characteristics, resource constraints, staffing patterns, and opportunities for continuing education may differ from large metropolitan institutions. Local evidence is therefore necessary to inform context-specific competency development and medication-safety interventions.

In the context of provincial tertiary hospitals in the Philippines, nursing workload refers to the combined demands of direct patient care, medication administration, documentation, patient monitoring, and coordination of care within available staffing and institutional resources. Workload pressures may arise from varying patient acuity, nurse-to-patient assignments, shift rotations, and competing clinical responsibilities. These conditions can increase interruptions and cognitive demands during medication administration, highlighting the importance of professional competence, effective prioritization, and sound clinical decision-making (Gebrye et al., 2023; Alotaibi, 2024).

The rationale for the present study arose from the institutional context of St. Paul Surigao University Hospital (SPSUH) in the Philippines, where staff nurses assigned to general ward areas directly undertake bedside care and medication administration. As the hospital pursues quality-management improvement and service excellence, systematic assessment of nursing competence is relevant to staff development, risk reduction, and patient-safety planning. Medication administration offers a clinically meaningful area in which professional competence can be linked with observable domains of knowledge, skills, and decision-making.

Despite a substantial international literature on medication errors, fewer studies have examined whether nurses' broader professional competence is associated with their medication administration proficiency, particularly in provincial Philippine hospital settings. Many studies focus on medication-error incidence, safety culture, reporting behavior, or nursing-student competence as separate concerns (Yousef et al., 2021; Brabcová et al., 2023; Tomas & Fillipus, 2024). This leaves a contextual gap concerning how multidimensional professional competence relates to medication knowledge, skills, and decision-making among practicing staff nurses. Addressing this gap can help administrators move from generic training toward targeted, evidence-informed competency development.

Hence, this study examined the relationship between professional nursing competence and medication administration proficiency among staff nurses at SPSUH. Within its general ward setting, nursing responsibilities require continuous patient assessment, medication administration, documentation, and clinical decision-making. Shift rotations, competing patient-care demands, and interruptions may contribute to cognitive fatigue and influence medication-related judgment. These potential pressures emphasize the relevance of clinical care, ethical practice, leadership and management, communication, and legal accountability in maintaining medication safety. Guided by these professional competence domains, the study assessed medication administration knowledge, skills, and decision-making and examined differences according to selected demographic and

professional characteristics. The findings provide a basis for targeted competency development, mentoring, and institutional medication-safety initiatives.

Theoretical and Conceptual Framework

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The study was anchored on two complementary perspectives. First, the Professional Nurse Competence Scale (PNCS) conceptualizes competence as a multidimensional construct encompassing clinical care, ethical nursing practice, leadership and management, effective communication and collaboration, and legal nursing practice (Chuang et al., 2025). These domains provide a broad professional foundation relevant to medication safety. Second, Benner's Novice to Expert framework explains competence as progressively developed through clinical exposure, experiential learning, pattern recognition, and situated judgment (Benner, 1984). Together, these perspectives support the proposition that medication administration proficiency is influenced by both broad professional competence and experience-related development.

Figure 1.

Conceptual Framework of the Study

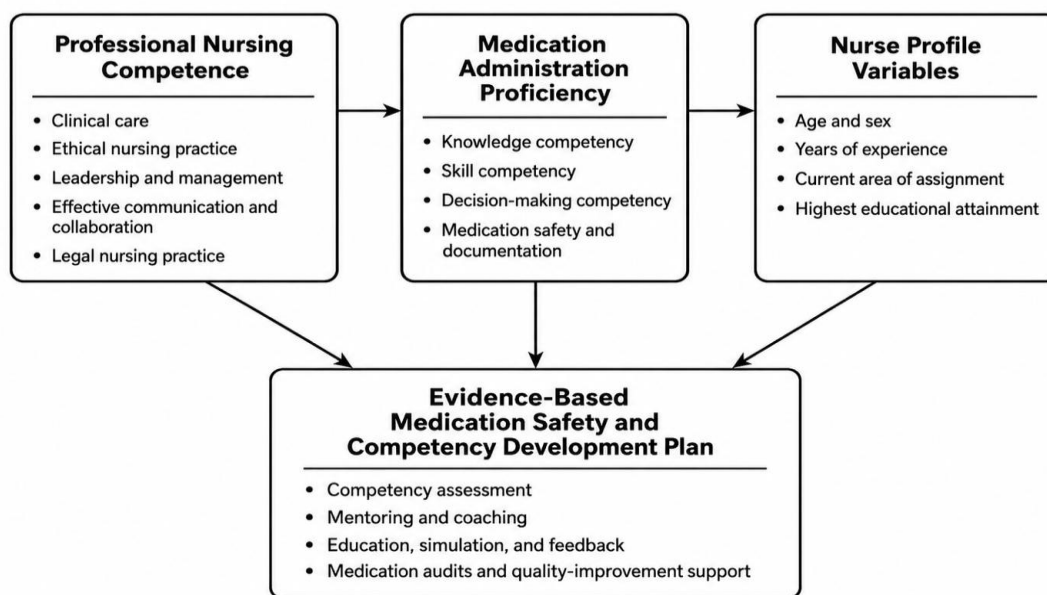


Figure note. The Professional Nurse Competence Scale frames professional competence as a multidimensional foundation for medication administration proficiency in knowledge, skills, and decision making, while nurse profile variables provide the basis for examining group differences.

Figure 1 shows professional nursing competence as the broader predictor construct and medication administration proficiency as the applied clinical outcome. Nurse profile variables provide the basis for examining group differences. The evidence generated from these components informs an Evidence-Based Medication Safety and Competency Development Plan comprising competency

assessment, mentoring and coaching, education and simulation, feedback, medication audits, and quality-improvement support.

Objectives of the Study

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This study determined the level of professional nursing competence and medication administration proficiency among staff nurses at St. Paul Surigao University Hospital in Caraga, Philippines and examined the relationships among these variables.

Specifically, it sought to:

1. describe respondents according to age, sex, years of experience as staff nurse, current area of assignment, and highest educational attainment;
2. determine professional nursing competence in clinical care, ethical nursing practice, leadership and management, effective communication and collaboration, and legal nursing practice;
3. determine medication administration proficiency in knowledge, skills, and decision-making;
4. test the relationship between professional nursing competence and medication administration proficiency; and
5. test differences in professional nursing competence and medication administration proficiency when respondents are grouped according to demographic and professional characteristics.

Null Hypotheses

- *Ho1*: There is no significant relationship between professional nursing competence and medication administration proficiency in knowledge, skills, decision-making, and overall proficiency.
- *Ho2*: There is no significant difference in professional nursing competence when respondents are grouped according to demographic and professional characteristics.
- *Ho3*: There is no significant difference in medication administration proficiency when respondents are grouped according to demographic and professional characteristics.

LITERATURE REVIEW

Professional Nursing Competence

Professional nursing competence is commonly understood as the integrated capacity to apply knowledge, technical skill, clinical judgment, communication, ethical reasoning, and professional responsibility in actual practice. Competence is not static; it develops through education, workplace learning, continuing professional development, and reflective practice. Mlambo et al. (2021) emphasized that continuing professional development supports lifelong learning and role adaptation, while Baker et al. (2021) argued for globally coherent educational standards that prepare nurses for increasingly complex health systems. The PNCS extends this perspective by measuring competence

across clinical care, ethical practice, leadership and management, communication and collaboration, and legal nursing practice (Chuang et al., 2025).

For medication administration, these broad competencies are directly relevant. Clinical competence supports assessment before and after medication delivery. Ethical and legal competence support accountability, informed care, privacy, documentation, and adherence to standards. Communication and collaboration are critical when clarifying prescriptions, reporting adverse events, reconciling medications, and coordinating with physicians and pharmacists. Leadership and management competence support prioritization, workload organization, and safe delegation. Thus, medication administration is best viewed as a clinical activity embedded within wider professional competence rather than as an isolated technical procedure.

Medication Administration Proficiency and Patient Safety

Medication administration involves a sequence of safety-sensitive decisions: verification of the order, patient identification, assessment of contraindications, preparation, dose calculation, route-specific technique, administration, documentation, monitoring, and escalation when a medication appears unsafe. Luokkamäki et al. (2021) identified multiple skill domains needed by registered nurses, including preparation, administration, documentation, assessment, calculation, collaboration, patient communication, and medication information reporting. Thelen (2022) similarly emphasized pharmacovigilance, effective skills competence, and interprofessional practice as core elements of medication competence.

Medication errors remain associated with individual and system-level factors. Afaya et al. (2021) identified recurring problems involving wrong time, dose, medication, route, and patient, while Brabcová et al. (2023) found that nurses perceived numerous organizational and communication barriers to safe administration and error reporting. Alotaibi (2024) likewise described workload, interruptions, communication deficiencies, and punitive responses as important concerns in nurses' accounts of medication errors. Evidence from hospital-based studies has associated short work experience, night work, insufficient training, lack of ward guidelines, and interruptions with greater medication-administration error risk (Gebrye et al., 2023).

Knowledge, Skills, and Clinical Decision-Making

Medication knowledge provides the cognitive basis for safe practice, including pharmacology, indications, contraindications, interactions, adverse effects, dosage calculation, and institutional protocols. Skill competence concerns accurate preparation, route-specific administration, aseptic technique, identification, monitoring, and documentation. Decision-making integrates these elements by requiring nurses to judge whether a medication should be administered, withheld, clarified, or escalated based on the patient's condition and available evidence. Dijkstra et al. (2021) demonstrated that pharmaceutical-care competence requires both technical and collaborative capabilities, reinforcing the need to assess medication proficiency as more than factual knowledge.

Competency assessment is also important because self-perceived confidence does not necessarily equal objectively demonstrated performance. Irvine et al. (2025) found substantial variation in how

medication-administration competence is assessed and emphasized the value of objective measures in clinical settings. Agoglia et al. (2024) showed the utility of competency-based medication administration checklists and error-reporting exercises, while recent tool-development work has similarly focused on standardized observation of medication administration. These findings support the use of simulation, return demonstration, direct observation, and audit data alongside self-report measures whenever feasible.

Experience, Continuing Education, and Competence Development

Benner's Novice to Expert framework predicts that clinical judgment becomes more contextualized as nurses accumulate meaningful practice experiences. This is relevant to medication administration because experienced nurses may recognize subtle patient cues, anticipate adverse responses, detect unsafe orders, and manage interruptions more effectively. However, experience alone is not sufficient. Continuing education, preceptorship, simulation, and competency reassessment are necessary because medications, technologies, protocols, and evidence change over time (Mlambo et al., 2021; Huun & Slaven, 2023).

Simulation and structured learning can strengthen medication-related competence by allowing nurses or nursing students to practice under controlled conditions. Pol-Castañeda et al. (2022) reported benefits of simulation for medication administration learning, while Huun and Slaven (2023) highlighted the importance of appropriately designed competency testing. Tomas and Fillipus (2024) further showed that learners' perceptions of medication competence are shaped by opportunities to integrate knowledge and practice. For healthcare institutions, these findings justify repeated competency validation rather than reliance on initial licensure or orientation alone.

Organizational Context and Safety Culture

Medication safety is also a property of the clinical system. Staffing, interruptions, workflow design, technology, leadership response to errors, and availability of protocols influence whether nurses can consistently perform safely. Mulac et al. (2021) showed that barcode medication administration can reduce some errors but may also generate process deviations when technology and workflow are poorly aligned. Wang et al. (2020) linked nurse staffing with patient-safety outcomes, illustrating how workforce conditions can shape clinical risk. Hospital-level safety measures in the Philippines similarly underscore the importance of systematic monitoring and quality-improvement processes (Tamondong-Lachica et al., 2024).

The literature therefore supports an integrated model in which professional competence, medication-specific knowledge and skill, experiential learning, and organizational support jointly shape medication safety. The present study adds localized evidence by testing whether professional nursing competence is associated with medication administration proficiency among staff nurses in a provincial Philippine hospital and by examining whether selected profile variables differentiate these outcomes.

Research Gap

Three gaps informed the study. First, much medication-safety research focuses on errors, reporting behavior, or nursing-student competence rather than the association between broad professional nursing competence and medication administration proficiency among practicing nurses. Second, available studies commonly examine medication knowledge or procedural skill in isolation, whereas the present study considers knowledge, skills, and decision-making together. Third, evidence from provincial Philippine hospital settings remains limited. By addressing these gaps, the study provides context-specific evidence for competency development and medication-safety planning at SPSUH.

METHODOLOGY

Research Design

A quantitative descriptive-correlational design was used. The descriptive component characterized the respondents and estimated their levels of professional nursing competence and medication administration proficiency. The correlational component examined the strength and direction of association between professional nursing competence and medication administration proficiency. Group-comparison analyses were also conducted to determine whether competence and proficiency differed according to selected demographic and professional variables. This design was appropriate because the study sought to measure naturally occurring variables without manipulating clinical conditions.

Study Setting and Temporal Context

The study was conducted at St. Paul Surigao University Hospital in Surigao City, Philippines, among staff nurses assigned to the second- and third-floor general ward areas. These units provide comparable general inpatient care and involve routine bedside medication administration. Data gathering covered the month of February 2026 (February 10-28, 2026).

Participants, Eligibility, and Sampling

The study population consisted of 60 staff nurses from St. Paul Surigao University Hospital (SPSUH), Surigao City, Caraga, Philippines. The study employed total enumeration sampling, wherein all 42 staff nurses who met the eligibility criteria were invited to participate. All 42 eligible nurses participated, resulting in a 100% response rate among the eligible population and representing 70% of the total staff nurse population (42/60). Eligible participants included regular, probationary, and contractual staff nurses assigned to direct patient care areas who were actively providing bedside nursing care and administering medications. Nurses who were on extended leave or were not directly involved in patient care and medication administration were excluded. Participation was voluntary, and informed consent was obtained before data collection, which was conducted throughout February 2026.

Because total enumeration of the eligible population was used, an a priori power analysis was not used to determine the sample size. Nevertheless, the relatively small sample size ($n = 42$) may limit the statistical power of the inferential analyses, particularly for detecting small effects and differences among subgroups. Therefore, the results of the Pearson correlation, t-test, and ANOVA should be interpreted with appropriate caution, particularly when subgroup sizes are small. The findings are primarily applicable to the study population and may have limited generalizability to nurses in other healthcare settings.

Research Instruments

Two self-administered instruments were used. The first assessed professional nursing competence using the Professional Nurse Competence Scale (PNCS) developed by Chuang et al. (2025) and adapted for this study. The adapted PNCS consisted of 25 items covering five domains: Clinical Care, Ethical Nursing Practice, Leadership and Management, Effective Communication and Collaboration, and Legal Nursing Practice.

The second instrument assessed medication administration proficiency and was adapted and modified from the medication administration observation checklist of Taylor et al. (2024) to fit the context of the study. It consisted of 25 items distributed across three domains: Knowledge (8 items), Skills (9 items), and Decision-Making (8 items). Both instruments used a four-point Likert-type response format, with higher scores indicating greater competence or proficiency.

Both instruments underwent expert validation to establish content validity. Internal consistency was assessed using Cronbach's alpha, with $\alpha \geq .70$ considered acceptable. Based on the responses of the 42 participants, the PNCS demonstrated excellent overall internal consistency ($\alpha = .942$). The domain coefficients were .864 for Clinical Care, .827 for Ethical Nursing Practice, .841 for Leadership and Management, .756 for Effective Communication and Collaboration, and .888 for Legal Nursing Practice. The medication administration instrument also demonstrated excellent overall internal consistency ($\alpha = .956$), with coefficients of .888 for Knowledge, .897 for Skills, and .920 for Decision-Making. Mean scores were interpreted using the study's four-point scale: 3.26–4.00, Highly Competent/ Highly Proficient; 2.51–3.25, Competent/Proficient; 1.76–2.50, Slightly Competent/Slightly Proficient; and 1.00–1.75, Not Competent/Not Proficient.

Data Collection Procedure

Data collection commenced after permission was obtained from hospital administration. Coordination with the Nursing Service Department was undertaken to minimize disruption of clinical operations. Eligible nurses received an informed-consent form explaining the study purpose, procedures, voluntary nature of participation, confidentiality safeguards, and right to withdraw without penalty. Questionnaires were completed at convenient times and returned using coded forms without personally identifying information. Completed questionnaires were checked for completeness before data encoding.

Data Analysis

The data were checked for completeness, coded, tabulated, and analyzed using SPSS and Microsoft Excel. Frequency and percentage were used to describe the respondents' demographic profiles. Weighted mean and standard deviation were used to determine professional nursing competence across the five PNCS domains and medication administration proficiency in Knowledge, Skills, and Decision-Making.

In addition, Pearson Product-Moment Correlation was used to determine the relationship between professional nursing competence and medication administration proficiency. Independent-samples *t*-test and one-way ANOVA were used to determine differences according to demographic variables. Age and years of experience were analyzed using one-way ANOVA, whereas sex and area of assignment were analyzed using independent-samples *t*-tests. Highest educational attainment was excluded from inferential group comparisons because all respondents were BS Nursing graduates. For significant ANOVA findings, partial eta-squared (η^2) was calculated from the reported *F* statistic and degrees of freedom to quantify effect magnitude.

Ethical Considerations and AI Disclosure

Before data collection, institutional approval was obtained through a formal Letter of Request to Conduct the Study, approved by the Hospital Administrator of SPSUH, who also served as Chairperson of the Ethics Committee. This approval was obtained through the hospital's administrative review pathway, with the Hospital Administrator acting in the dual capacity of institutional approving authority and Ethics Committee Chairperson. The approval document did not contain a formal ethics reference number. Written informed consent was obtained from all participants. Confidentiality and voluntary participation were maintained throughout the study in accordance with institutional procedures and the Philippine Data Privacy Act of 2012 (Republic Act No. 10173). AI-assisted tools were used only for language refinement, formatting support, and manuscript organization. The author reviewed and verified the scholarly content, statistical results, and interpretations and retained full responsibility for the final manuscript.

RESULTS

Profile of the Respondents

Respondents were predominantly 21–25 years old (64.29%), female (76.19%), and early in their nursing careers. The largest experience group had 2–3 years of practice (30.95%), while 19.05% had at least five years of experience. Respondents were equally distributed between the two general ward areas, and all were BS Nursing graduates. Because educational attainment showed no variation, it was descriptive rather than analytically informative for group-difference testing.

Table 1.

Profile of the Respondents

Profile Variable	Category	Frequency	Percentage
Age	21–25 years	27	64.29%
	26–30 years	8	19.05%
	31–35 years	2	4.76%
	36–40 years	3	7.14%
	41 years and above	2	4.76%
Sex	Female	32	76.19%
	Male	10	23.81%
Years of experience	0–1 year	9	21.43%
	1–2 years	7	16.67%
	2–3 years	13	30.95%
	3–5 years	5	11.90%
	5 years and above	8	19.05%
Area of assignment	2nd Floor General Area	21	50.00%
	3rd Floor General Area	21	50.00%

Note. N= 42.

Level of Professional Nursing Competence Based on the PNCS

Professional nursing competence was high across all PNCS domains (overall $\bar{X} = 3.68 \pm 0.33$). Ethical nursing practice obtained the highest mean ($\bar{X} = 3.73 \pm 0.31$), followed by effective communication and collaboration ($\bar{X} = 3.71 \pm 0.30$). Leadership and management obtained the lowest mean ($\bar{X} = 3.58 \pm 0.36$), although it remained within the highly competent range. This pattern suggests that respondents perceived strong ethical and interpersonal competence while leadership-related competencies may offer the clearest opportunity for further development.

Table 2.

Level of Professional Nursing Competence Based on the PNCS

PNCS Domain	Mean	SD	Interpretation
Clinical Care	3.69	0.32	Highly Competent
Ethical Nursing Practice	3.73	0.31	Highly Competent
Leadership and Management	3.58	0.36	Highly Competent
Effective Communication and Collaboration	3.71	0.30	Highly Competent
Legal Nursing Practice	3.67	0.34	Highly Competent
Overall	3.68	0.33	Highly Competent

Note. N= 42.

Level of Medication Administration Proficiency

Medication administration proficiency was high overall ($\bar{X} = 3.77 \pm 0.30$). Skills received the highest mean ($\bar{X} = 3.83 \pm 0.28$), followed by decision-making ($\bar{X} = 3.79 \pm 0.33$), while knowledge had the lowest mean ($\bar{X} = 3.70 \pm 0.36$). Although all domains were rated highly, the comparatively lower knowledge score supports continued pharmacology updating, dosage-calculation review, and reinforcement of medication-safety standards. Because the measures were self-reported, objective competency validation remains advisable.

Table 3.

Level of Medication Administration Proficiency

Domain	Items	Mean	SD	Interpretation
Knowledge	8	3.70	0.36	Highly Proficient
Skills	9	3.83	0.28	Highly Proficient
Decision-making	8	3.79	0.33	Highly Proficient
Overall	25	3.77	0.30	Highly Proficient

Note. N= 42.

Relationship Between Professional Nursing Competence and Medication Administration Proficiency

Professional nursing competence was significantly and positively associated with all medication administration domains. The strongest relationship was observed for knowledge ($r = .894, p < .001$), followed by overall medication administration proficiency ($r = .865, p < .001$), decision-making ($r = .790, p < .001$), and skills ($r = .689, p < .001$). H_01 was therefore rejected. The results indicate that higher self-reported broad professional competence coincided with higher self-reported medication knowledge, skills, and decision-making; this does not establish objective performance or causation.

Table 4.

Relationship Between Professional Nursing Competence and Medication Administration Proficiency

Variables Correlated	<i>r</i> - value	<i>p</i> -value	Interpretation
Professional competence and Knowledge	.894	< .001	Very strong positive
Professional competence and Skills	.689	< .001	Strong positive
Professional competence and Decision-making	.790	< .001	Strong positive
Professional competence and Overall medication proficiency	.865	< .001	Very strong positive

Note. N= 42.

Significant Differences in the Professional Competence and Medication Administration Proficiency According to Age and Sex

No significant differences in professional nursing competence or medication administration proficiency were observed by age or sex ($p > .05$). These findings do not support age or sex-specific differences in the measured outcomes within this sample. Competency-development opportunities should therefore be available across age and sex groups rather than allocated on demographic assumptions.

Table 5.

Significant Differences in the Professional Competence and Medication Administration Proficiency According to Age and Sex

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Profile variable	Dependent Variable	Test	Statistic	<i>p</i> -value	Remarks
Age	Professional competence	<i>F</i>	0.343	.847	Not Significant
	Knowledge	<i>F</i>	0.862	.496	Not Significant
	Skills	<i>F</i>	1.744	.161	Not Significant
	Decision-making	<i>F</i>	1.258	.304	Not Significant
	Overall proficiency	<i>F</i>	1.256	.305	Not Significant
Sex	Professional competence	<i>t</i>	−0.911	.374	Not Significant
	Knowledge	<i>t</i>	−0.593	.560	Not Significant
	Skills	<i>t</i>	−1.703	.097	Not Significant
	Decision-making	<i>t</i>	−0.111	.913	Not Significant
	Overall proficiency	<i>t</i>	−0.788	.437	Not Significant

Note. *N* = 42. $\bar{X}$ = mean; *SD* = standard deviation. One-way ANOVA was used for age; independent-samples *t*-tests were used for sex. Statistical significance was evaluated at $\alpha = .05$.

Significant Differences in the Professional Competence and Medication Administration Proficiency According to Years of Experience and Area of Assignment

Years of experience did not significantly differentiate professional competence, $F(4, 37) = 1.140$, $p = .353$, or knowledge, $F(4, 37) = 1.909$, $p = .129$. Significant differences occurred for skills, $F(4, 37) = 3.127$, $p = .026$, partial $\eta^2 = .253$; decision-making, $F(4, 37) = 2.880$, $p = .036$, partial $\eta^2 = .237$; and overall proficiency, $F(4, 37) = 2.807$, $p = .039$, partial $\eta^2 = .233$. Tukey HSD identified higher scores among nurses with 2–3 years compared with 3–5 years of experience for skills (mean difference = 0.438, adjusted $p = .019$) and overall proficiency (mean difference = 0.419, adjusted $p = .045$). The corresponding decision-making comparison was not significant after adjustment (mean difference = 0.423, adjusted $p = .088$), and no other pairwise comparison was significant. Area of assignment showed no significant differences ($p > .05$).

Table 6.

Significant Differences in the Professional Competence and Medication Administration Proficiency According to Years of Experience and Area of Assignment

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Profile variable	Dependent Variable	Test	Statistic	p- value	Remarks
Years of experience	Professional competence	<i>F</i>	1.140	.353	Not Significant
	Knowledge	<i>F</i>	1.909	.129	Not Significant
	Skills	<i>F</i>	3.127	.026	Significant
	Decision-making	<i>F</i>	2.880	.036	Significant
	Overall Proficiency	<i>F</i>	2.807	.039	Significant
Area of assignment	Professional competence	<i>t</i>	-1.222	.229	Not Significant
	Knowledge	<i>t</i>	-1.471	.149	Not Significant
	Skills	<i>t</i>	-0.605	.549	Not Significant
	Decision-making	<i>t</i>	-1.279	.209	Not Significant
	Overall Proficiency	<i>t</i>	-1.234	.225	Not Significant

Note. N= 42. One-way ANOVA was used for years of experience and independent-samples t tests for area of assignment. Tukey HSD comparisons are reported below. Educational attainment was excluded because all respondents were BS Nursing graduates. $F(4, 37)$ for experience comparisons; two-sided tests, $\alpha = .05$. Partial η^2 for skills = .253, decision-making = .237, and overall proficiency = .233. Tukey-adjusted pairwise p values appear in Table 7.

Table 7.

Tukey HSD Post-Hoc Comparisons by Years of Experience

Dependent Variable	Comparison	Mean difference	Adjusted p
Skills	2–3 vs. 3–5 years	0.438	.019
Decision-making	2–3 vs. 3–5 years	0.423	.088
Overall proficiency	2–3 vs. 3–5 years	0.419	.045

DISCUSSION

Professional Nursing Competence

The respondents reported high competence across all PNCS domains, supporting the view that professional nursing competence is multidimensional rather than limited to bedside technical performance. Ethical nursing practice and communication/collaboration received the highest ratings, which is clinically relevant because medication safety depends on accountability, patient advocacy, clarification of orders, interprofessional communication, and accurate handover. The comparatively lower leadership and management score identifies a developmental area even though the rating remained high. Leadership competence can influence prioritization, interruption management, delegation, and escalation of medication-related concerns.

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Medication Administration Proficiency

Respondents also reported high medication administration proficiency across knowledge, skills, and decision-making. The strong skills score may reflect repeated exposure to routine preparation and administration activities in the general wards. However, the lower relative knowledge score supports continuous pharmacology and medication-safety education because medication information changes and safe administration depends on current knowledge of indications, contraindications, interactions, adverse effects, and dosage calculations. Luokkamäki et al. (2021) and Thelen (2022) similarly characterize medication competence as a broad combination of knowledge, technical performance, assessment, communication, and safety-oriented judgment.

The high decision-making score is important because safe administration requires nurses to detect discrepancies, assess patient readiness, and decide when to withhold or clarify a medication. Nevertheless, self-reported proficiency may overestimate actual performance. Objective approaches such as simulation, direct observation, competency checklists, medication audits, and review of documented errors can complement self-report measures (Agoglia et al., 2024; Irvine et al., 2025). The present findings should therefore be interpreted as perceived competence rather than direct proof of error-free medication practice.

Relationship Between Professional Competence and Medication Administration

Professional nursing competence showed a strong positive correlation with overall medication administration proficiency ($r = .865, p < .001$). Significant positive correlations were also observed with knowledge ($r = .894$), skills ($r = .689$), and decision-making ($r = .790$), all $p < .001$. These findings suggest that nurses reporting stronger professional competence also tend to report higher medication administration proficiency. However, the descriptive-correlational design does not establish a causal relationship.

The findings highlight the importance of integrating clinical care, ethical practice, communication, leadership, and legal accountability into medication-safety programs. At SPSUH, this may be achieved through targeted pharmacology refreshers, dosage-calculation reviews, simulation-based training, return demonstrations, and structured clinical audits. These interventions can help translate broader professional competencies into medication-specific practices, including accurate preparation, safe administration, documentation, monitoring, and clinical judgment.

Role of Experience and Profile Variables

Years of nursing experience showed significant differences in medication administration skills, decision-making, and overall proficiency, whereas age, sex, and area of assignment showed no significant differences. This pattern is consistent with Benner's Novice to Expert framework, which emphasizes the development of clinical judgment through repeated practice, experiential learning, and recognition of recurring clinical situations (Benner, 1984).

In provincial hospital settings such as SPSUH, repeated medication rounds, rotating shifts, patient monitoring, and exposure to varying clinical conditions may provide opportunities for nurses to refine technical skills and recognize medication-related risks. Through cumulative experience, nurses may become better prepared to identify adverse reactions, clarify questionable prescriptions, manage interruptions, and make timely clinical decisions.

Unlike chronological age or sex, years of clinical experience may more closely reflect opportunities for repeated medication administration and practical learning. However, these explanations remain interpretive because the study did not directly measure shift patterns, workload, or clinical exposure. The nonsignificant findings for age and sex also do not establish that these characteristics have no influence, particularly given the small sample and uneven subgroup sizes.

These findings support structured preceptorship, experience-sensitive mentoring, supervised medication rounds, and simulation-based decision-making exercises, particularly for novice and early-career nurses.

Strengths and Limitations

The study has several strengths. It examines professional nursing competence and medication administration proficiency together rather than as unrelated constructs; it includes multiple competence domains; and it provides localized evidence from a provincial Philippine hospital setting. The analysis also distinguishes medication knowledge, skills, and decision-making and examines their relationship with professional competence.

This study employed total enumeration of all 42 eligible general ward nurses at St. Paul Surigao University Hospital, achieving a 100% response rate within the eligible institutional cohort. The use of structured instruments with excellent internal consistency strengthened the reliability of the findings. Furthermore, the study examined professional nursing competence and medication

administration proficiency across multiple domains, providing evidence to guide institutional competency development and medication-safety initiatives.

However, the single-center design and small sample size limited the generalizability and statistical power of subgroup analyses. Unequal experience-group sizes may have affected the precision of ANOVA and Tukey HSD comparisons. The use of self-reported questionnaires introduced potential response and social desirability biases, while the absence of direct observation and medication-error data prevented objective verification of proficiency. Additionally, the cross-sectional design did not establish causal relationships, and formal statistical assumption checks were not documented. These limitations warrant cautious interpretation and support future multicenter studies using larger samples and objective competency measures.

CONCLUSION

Staff nurses reported high professional nursing competence and high medication administration proficiency. Professional competence was significantly and positively associated with medication administration knowledge, skills, decision-making, and overall proficiency, supporting the proposition that safe medication administration is grounded in broader professional practice. Age, sex, and area of assignment did not significantly differentiate the measured outcomes, whereas years of experience differentiated medication administration skills, decision-making, and overall proficiency. The findings indicate that medication safety depends on the integration of professional competence, medication-specific capability, and experiential learning rather than on demographic characteristics alone.

IMPLICATIONS AND RECOMMENDATIONS

Philippine Nursing Practice. The findings support a competency-development program aligned with the Philippine Nursing Act of 2002 (Republic Act No. 9173), the Professional Regulatory Board of Nursing's professional standards, and the Continuing Professional Development Act of 2016 (Republic Act No. 10912).

At SPSUH, the Nursing Service Department may integrate medication-safety training into continuing professional development activities. Priority areas include pharmacology updates, medication-error prevention, high-alert medication management, clinical decision-making, safe documentation, and communication during shift endorsements. Regular competency assessments, simulation exercises, and medication audits may further strengthen patient safety and professional accountability.

These initiatives should be supported by adequate supervision, accessible clinical protocols, constructive feedback, and a non-punitive medication-error reporting system. Aligning institutional

training with Philippine nursing standards may promote continuous professional development while addressing the practical challenges of medication administration in provincial hospital settings.

Nursing Policy. Hospital policies and quality-improvement activities should address system factors affecting medication safety, including staffing, interruptions, availability of protocols, documentation processes, communication, and non-punitive error reporting. Clear procedures for competency assessment and medication-safety monitoring should be consistently implemented.

Nursing Theory. The findings reinforce the relationship between professional nursing competence and medication administration proficiency. They highlight the importance of integrating clinical care, ethical practice, leadership and management, communication and collaboration, and legal nursing practice in promoting safe medication administration.

Nursing Education. The Nursing Service Department should provide experience-sensitive mentoring and structured preceptorship, particularly for novice and early-career nurses. Leadership and management competence should also be strengthened through unit-based education on prioritization, delegation, interruption management, workflow coordination, escalation of concerns, and safety reporting.

Future Research Directions. Future studies should include multiple hospitals and larger samples to improve generalizability. Prospective or longitudinal designs may also be used, together with objective competency measures, medication-error records, workload and interruption indicators, and nurse-to-patient ratios.

List of Abbreviations

AI – Artificial Intelligence
ANOVA – Analysis of Variance
BS – Bachelor of Science
Ho – Null Hypothesis
PNCS – Professional Nurse Competence Scale
SD – Standard Deviation
SPSS – Statistical Package for the Social Sciences
SPSUH – St. Paul Surigao University Hospital

Declarations

Ethical Approval

Approval to conduct the study was secured through a formal Letter of Request to Conduct the Study submitted to and approved by the Hospital Administrator of St. Paul Surigao University Hospital, who also served as Chairperson of the Ethics Committee. The approval document did not provide an ethics approval/reference number. Written informed consent was obtained from all respondents before data collection. Participation was voluntary, and

respondents were informed of the study purpose, confidentiality of their responses, and their right to withdraw at any time without penalty.

Informed Consent

Participation was voluntary. Respondents were informed of the study purpose, procedures, confidentiality safeguards, and their right to withdraw without penalty.

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Conflict of Interest

The author declares no conflict of interest.

Funding

This research received no external funding.

Data Availability

The de-identified data are available from the author upon reasonable request and subject to institutional and ethical restrictions.

AI Assistance Disclosure

AI-assisted tools were used only for language refinement, formatting support, and manuscript organization. The author reviewed, verified, and approved the final scholarly content and retains responsibility for the accuracy and integrity of the work.

Author Contributions

Pearl Joy M. Ensomo: conceptualization, methodology, investigation, data curation, formal analysis, writing—original draft, writing—review and editing, and final approval.

Acknowledgment

The author acknowledges St. Paul University Surigao, St. Paul Surigao University Hospital, the Nursing Service Department, validators, respondents, and individuals who supported the completion of the study.

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