Caring Competency among Nurses in Private Hospitals in Santiago City: A Multidimensional Assessment across Core Nursing Practice Domains

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ABSTRACT

Caring competence is a fundamental component of nursing practice that influences the quality and safety of patient care. Despite its importance, limited local evidence exists regarding the multidimensional structure of caring competence among nurses in Philippine private hospital settings. This study aimed to determine the level of caring competence among registered nurses and validate its higher-order structure based on the Quality and Safety Education for Nurses (QSEN) framework using Structural Equation Modeling (SEM). A quantitative, non-experimental, cross-sectional research design was employed among 157 registered nurses from five selected private hospitals in Santiago City, Isabela, Philippines. Data were collected using the Nurse Quality and Safety Self-Inventory (NQSSI) Scale developed by Piscotty et al. (2013). Descriptive statistics were used to determine the level of caring competence, while higher-order confirmatory factor analysis (CFA) using SEM in the Lavaan package in R was utilized to validate the proposed model. Findings revealed that nurses demonstrated a competent level of caring competence across all six QSEN domains, namely patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. Among the domains, safety (M = 4.77) and teamwork and collaboration (M = 4.70) obtained the highest mean scores. SEM results confirmed that caring competence is a robust higher-order latent construct reflected by the six QSEN domains, with strong standardized path coefficients ranging from $\beta = 0.87$ to $\beta = 0.93$. The model demonstrated excellent fit indices (CFI = 0.96, TLI = 0.95, RMSEA = 0.05, SRMR = 0.04), indicating good model fit and structural validity. Reliability and convergent validity measures also demonstrated excellent psychometric properties. The findings support the multidimensional nature of caring competence and validate the QSEN-based framework among nurses in private hospital settings. The study highlights the importance of strengthening nursing competencies through continuous professional development to improve the quality and safety of patient care.

Keywords: Caring Competency, Nursing Practice, Quality, Safety

INTRODUCTION

Nursing is inherently a caring profession in which the delivery of quality healthcare is largely dependent on the competence and compassion of nurses. In contemporary healthcare systems, caring competency has become a fundamental component in ensuring high-quality nursing care and positive patient outcomes. Caring competency encompasses not only clinical knowledge and technical skills but also interpersonal abilities, ethical practice, and the capacity to respond holistically to patients' needs. As emphasized in the concept analysis by Abunab et al. (2023), competency in nursing practice is a multidimensional construct that integrates knowledge, skills, attitudes, and values essential for effective and safe patient care. Recent literature highlights that nursing competency plays a crucial role in improving the quality of healthcare services. Competent nurses are more capable of delivering patient-centered care, reducing medical errors, and

enhancing patient satisfaction. A cross-sectional study revealed that nurses' competency levels significantly influence their clinical performance and the overall quality of care provided in healthcare settings (Albougami et al., 2021). Furthermore, continuing professional development has been identified as a key factor in strengthening nurses' competencies, enabling them to adapt to the evolving demands of healthcare environments (Al-Mugheed et al., 2022).

In support of this, a systematic review emphasized that nursing competencies must continuously evolve to address changing healthcare systems and demographic challenges (Notarnicola et al., 2025). In addition to competency, caring behaviors are increasingly recognized as essential indicators of quality nursing care. Caring efficacy, which reflects a nurse's confidence in delivering caring behaviors, has been shown to influence how nurses interact with patients and provide holistic care (Choi, 2024). Similarly, factors such as age and clinical experience significantly affect nurses' caring behaviors, suggesting that competency and caring are shaped through both education and practice (Choi & Kim, 2023). Moreover, competency development in caring behaviors begins during nursing education and continues throughout professional practice, as demonstrated in studies involving nursing students across academic and clinical settings (Yulia et al., 2024). Patient-centered care has also emerged as a vital dimension of quality nursing care, closely linked to nurses' competencies. Health literacy competencies, for instance, significantly influence nurses' ability to deliver patient-centered care, highlighting the importance of communication and understanding in clinical practice (Yang, 2022). Furthermore, recent evidence indicates that nurses' patient-centered care competencies are directly associated with patients' perceptions of care quality, reinforcing the role of competency in shaping patient experiences (Kocatepe et al., 2025).

In the context of modern healthcare, technological advancements have further expanded the scope of caring competency. Nurses are now expected to integrate technology with caring practices to deliver efficient and holistic care. A study among Filipino nurse educators highlighted the importance of technological caring competence in nursing education, emphasizing its role in preparing nurses for contemporary clinical environments (Narvaez et al., 2024). This underscores the evolving nature of caring competency in response to innovations in healthcare delivery. However, various factors may hinder the development and application of caring competency in clinical settings. Organizational challenges, workplace dynamics, and even social factors such as gender biases in nursing education can influence how competencies are developed and practiced (Cudé & Winfrey, 2022). Additionally, newly licensed nurses may experience difficulties in translating theoretical knowledge into practice, which can affect their confidence and performance in delivering quality care (Kovner et al., 2022).

Despite international research, there is limited local evidence on caring competence among nurses in Philippine clinical settings, particularly within private hospitals. This research gap exists even as national policies emphasize the need for competent nursing practice. For example, the Philippine Nursing Act (Republic Act No. 9173) mandates the provision of safe, quality, and competent nursing care and requires nurses to pursue continuing professional development. Similarly, the Universal Health Care Act (Republic Act No. 11223) reinforces the need for a competent health workforce to ensure equitable access to quality health services.

Philippine healthcare statistics highlight continued workforce challenges. In 2020, there were approximately 90,205 nurses comprising 56 % of the human resources for health in the country, with many practicing in hospital settings (Falguera & Sana, 2023). However, workforce shortages persist; ongoing migration, unequal distribution of health professionals, and insufficient workplace positions reduce available nursing personnel in many areas. Recent workforce planning reports show that the Philippines has only about 21.2 healthcare workers per 10,000 population, which is less than half the World Health Organization's recommended ratio of 44.5 per 10,000, indicating significant workforce gaps that threaten health service delivery (EDCOM II, 2026). Additionally, although the Philippines produces a large number of nursing graduates yearly, a substantial proportion choose to work abroad, further reducing the domestic nursing workforce available to provide high quality care.

Given these gaps, there is a need to empirically validate nursing caring competence as a multidimensional

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construct within the Philippine context. This study therefore examines caring competence among nurses using a structural equation modeling (SEM) approach, conceptualizing it as a higher-order latent construct reflected by the six QSEN competency domains in selected private hospitals in Santiago City, Isabela, Philippines. Therefore, this study aims to determine whether caring competency serves as a predictor of the quality of nursing care and examine its underlying structure as a higher-order construct encompassing the six QSEN competencies in selected private hospitals in Santiago City, Isabela, Philippines. The findings of this study are expected to provide valuable insights for healthcare administrators, nurse educators, and policymakers in developing strategies and interventions that enhance caring competency and ultimately improve the quality of nursing care.

Research Questions

This study sought to answer the following:

1. What is the level of nurses' caring competence across the six QSEN domains?

2. Does the proposed higher-order model of caring competence demonstrate acceptable construct validity?

3. Do the six QSEN domains significantly load onto the higher-order construct of caring competence?

4. Does the model demonstrate acceptable reliability and goodness-of-fit?

Research Hypothesis

H_0: Caring competence is not adequately represented as a higher-order construct composed of the six QSEN domains (Patient-Centered Care, Teamwork and Collaboration, Evidence-Based Practice, Quality Improvement, Safety, and Informatics).

H_a: Caring competence is adequately represented as a higher-order construct composed of the six QSEN domains (Patient-Centered Care, Teamwork and Collaboration, Evidence-Based Practice, Quality Improvement, Safety, and Informatics).

Conceptual Framework

The conceptual framework of this study is anchored on the multidimensional nature of caring self-efficacy among nurses working in selected private hospitals in Santiago City. Guided by the Caring Efficacy Scale (CES), the framework identifies two primary latent variables that influence nurses' overall caring self-efficacy: Confidence to Care and Doubts and Concerns. Confidence to Care represents the positive dimension of caring self-efficacy. It reflects nurses' beliefs in their ability to provide effective, safe, compassionate, and holistic nursing care. This construct encompasses perceived competence, assurance in clinical decision-making, readiness to engage in caring behaviors, and confidence in establishing therapeutic nurse–patient relationships. Conversely, Doubts and Concerns represent the negative dimension of caring self-efficacy. It includes emotional and cognitive barriers that may hinder nurses' caring performance, such as fear of committing errors, anxiety in patient care situations, feelings of inadequacy, uncertainty in clinical practice, and self-doubt regarding professional competence. The framework posits that these two latent variables directly influence the endogenous variable, Caring Self-Efficacy. Specifically, Confidence to Care is hypothesized to exert a significant positive effect on Caring Self-Efficacy, whereas Doubts and Concerns is hypothesized to exert a significant negative effect. To examine these relationships, the study utilizes Structural Equation Modeling (SEM). SEM enables simultaneous assessment of both the measurement model, which evaluates how well the CES indicators represent the latent constructs, and the structural model, which tests the hypothesized causal relationships among the variables.

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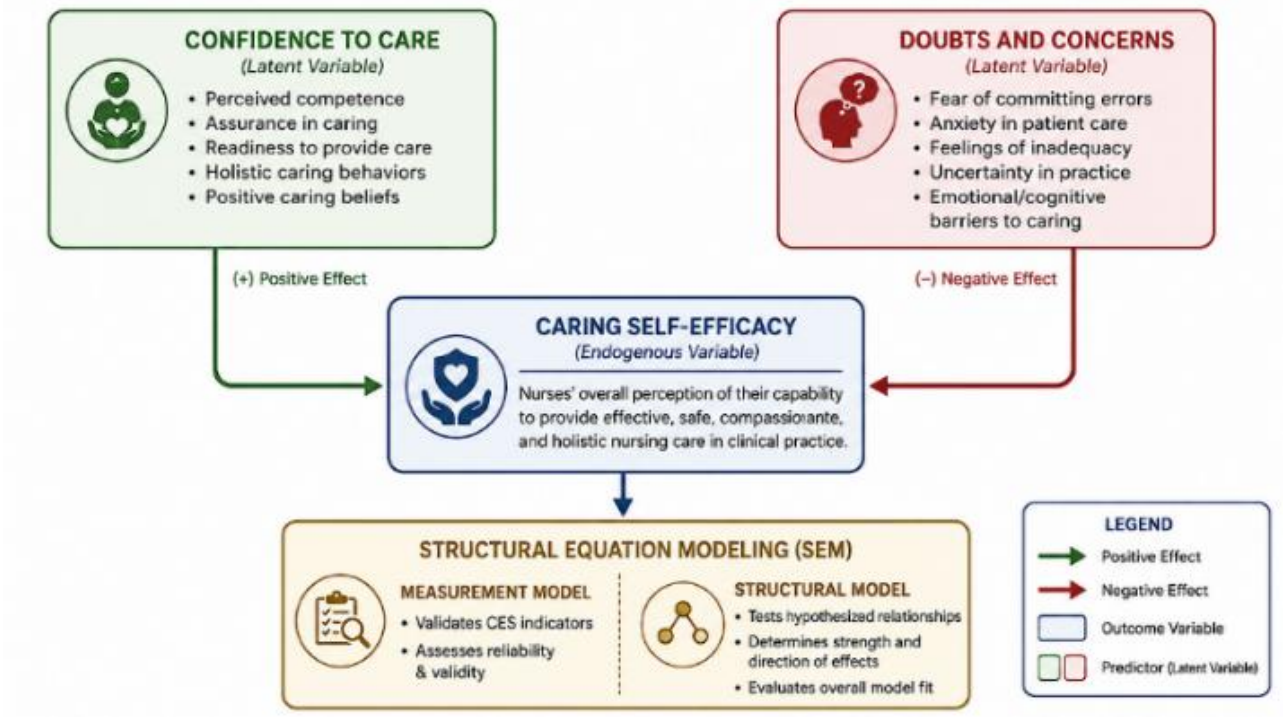

Figure 1. Conceptual Framework of the Study

Through this approach, the study determines the validity and reliability of the constructs, examines the strength and direction of the relationships, and evaluates the overall fit of the proposed theoretical model to the empirical data gathered from the nursing population.

METHODOLOGY

Research Design

This study employed a quantitative, non-experimental, cross-sectional research design utilizing Structural Equation Modeling (SEM), specifically a higher-order confirmatory factor analysis (CFA), to validate the structure of nursing caring competence among registered nurses. A cross-sectional design was appropriate as it allows the collection of data from respondents at a single point in time to describe variables without manipulation (Creswell & Creswell, 2018). In this study, the primary objective was not only to describe the level of caring competence but also to validate its underlying multidimensional structure based on the QSEN framework using SEM techniques.

Unlike causal or experimental designs, this study focused on measurement validation and structural representation of latent constructs rather than testing intervention effects.

Study Site and Participants

This study was conducted in five selected private hospitals in Santiago City, Isabela, Philippines: De Vera Medical Center Incorporated, Callang General Hospital and Medical Center, Santiago Medical City, Flores Medical Center, and one additional private hospital within the city. These institutions were selected due to their accessibility, availability of registered nurses, and their representation of private healthcare facilities in the locality, making them appropriate settings for examining nursing caring competence in clinical practice. The participants were registered nurses currently employed in the selected hospitals and actively engaged in direct patient care during the data collection period. A purposive sampling technique was used. Participants were selected based on the following inclusion criteria:

1. Must be a Registered Nurse
2. Currently assigned in direct patient care or clinical bedside units

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3. Willing to participate in the study

Purposive sampling was appropriate because the study required information-rich respondents who directly demonstrate and apply caring competence in clinical practice, which is essential for valid measurement of latent constructs in SEM. Only those who provided informed consent were included in the study.

Population, Sample size, and Sampling Procedures

The study population consisted of 262 registered nurses employed across the five selected private hospitals in Santiago City, Isabela, Philippines as of October 2024. The sample size was determined using the Raosoft sample size calculator, with a 95% confidence level and a 5% margin of error, yielding a minimum required sample of 157 respondents. Given the clinical setting constraints and duty schedules of nurses, a complete probabilistic sampling design was not feasible. Therefore, purposive sampling was implemented to select eligible respondents who met the inclusion criteria and were available during the data collection period. To ensure institutional representation, respondents were recruited from all five hospitals, with participants selected proportionally based on availability of eligible nurses in each institution. This approach ensured adequate representation across settings while maintaining alignment with the requirements of SEM, which emphasizes the use of respondents capable of accurately reflecting latent psychological or behavioral constructs.

Research Instrument

The study utilized a self-administered questionnaire composed of two parts to measure the variables of interest.

- **Demographic Profile.**

This section collected data on the respondents' demographic characteristics, including age, sex, marital status, educational attainment, years of experience in nursing service, and nursing practice area. This information was used to describe the profile of the respondents and to examine differences in caring competence when grouped according to these variables.

- **Nurse Quality and Safety Self-Inventory (NQSSI) scale**

The study adopted the Nurse Quality and Safety Self-Inventory (NQSSI) developed by Piscotty et al. (2013) as the primary instrument for measuring caring competence. The NQSSI consists of 18 items designed to assess nurses' perceived knowledge, skills, and attitudes across competencies conceptually aligned with caring competence, specifically patient-centered care, teamwork and collaboration, quality improvement, and safety. Each competency area is represented by three items reflecting the integration of knowledge, skills, and attitudes. Respondents rate each item using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree), with a neutral midpoint. The overall caring competence score is obtained by computing the mean of all item responses. Higher mean scores indicate higher levels of perceived caring competence, while lower scores indicate lower competence. The interpretation of the mean scores is categorized as follows: 1.00–2.50 indicates very low competence, 2.51–4.00 indicates low competence, 4.51–5.50 indicates high competence, and 5.51–7.00 indicates very high competence. All items in the instrument are positively worded to facilitate ease of scoring and interpretation. To establish internal consistency reliability, the instrument yielded a Cronbach's alpha coefficient of 0.93, indicating excellent reliability.

Data Gathering Procedure

The data collection process for this study will commence upon the approval of the research title by the Research Director to ensure compliance with institutional research policies and ethical standards. Following approval, formal letters requesting permission to conduct the study will be submitted to the selected private hospitals in Santiago City, subject to their respective institutional requirements and protocols. Upon securing institutional approval, formal communication will be established with the hospital administrators to identify the total population of potential respondents and to coordinate the distribution of the research instruments. After coordination, eligible nurse respondents will be invited to participate in the study. Prior to participation,

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the researchers will explain the purpose of the study, procedures, and ethical considerations, including informed consent, confidentiality, anonymity, and voluntary participation.

Survey questionnaires will be administered to the respondents during their available free time to avoid disruption of their duties. Only those who provide informed consent will be included in the study. Clear instructions will be provided to ensure that respondents fully understand how to accomplish the questionnaire. The estimated time for completion of the survey is approximately 5–10 minutes. Completed questionnaires will be collected immediately after completion. The gathered data will then be checked for completeness, encoded, tabulated, and prepared for statistical analysis. Throughout the process, strict adherence to ethical standards will be observed, ensuring the privacy and confidentiality of all respondents. Appreciation will be extended to the participants for their cooperation and contribution to the study. At the time of the study, it remains in the proposal stage, and the implementation of data collection will proceed only after obtaining all necessary institutional approvals and ethical clearances.

Data Analysis Procedure

The data gathered in this study were analyzed using descriptive statistics and Structural Equation Modeling (SEM). All responses were encoded, organized, and processed with the assistance of a licensed research statistician. Descriptive statistics such as frequency and percentage were used to present the demographic profile of the respondents in terms of age, sex, marital status, educational attainment, years of experience in nursing service, and nursing practice area. In addition, mean and standard deviation were used to determine the level of caring competence among the respondents.

The Nurse Quality and Safety Self-Inventory Scale (NQSSI) was utilized to measure caring competence using a 7-point Likert scale. The weighted mean scores were interpreted using the following scale: 6.16–7.00 (Expert), 5.30–6.15 (Proficient), 4.44–5.29 (Competent), 3.58–4.43 (Slightly Competent), 2.72–3.57 (Advanced Beginner), 1.86–2.71 (Beginner), and 1.00–1.85 (Novice). Higher mean scores indicate higher levels of perceived caring competence.

The measurement model was first assessed for reliability and validity prior to evaluating the structural model. A two-step Structural Equation Modeling (SEM) approach was employed, involving the evaluation of the measurement model using confirmatory factor analysis (CFA), followed by the assessment of the higher-order structural model. The model specified Caring Competence as a second-order latent construct reflected by six first-order latent factors based on the QSEN framework, each measured by three indicators (Knowledge, Skills, and Attitudes). Model fit was evaluated using Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Robust Maximum Likelihood (MLR) estimation was used to account for potential non-normality and the ordinal nature of Likert-scale data.

Ethical Considerations

To protect the study participants and the organization involved, the researchers will strictly uphold and comply the Data Privacy Act of 2012 (RA 10173). Researchers will make participants fully aware of the goals of the study and get their consent before starting the research. In the process, they will clearly indicate the objectives of the study, as well as the ethical requirements and measures to keep the personal as well as institutional data confidential. Discussions with the researchers will emphasize honesty, transparency, and integrity. There is also regard for the participants' human dignity. Voluntary participation will be acknowledged. Participation will be completely voluntary, and this will be clearly communicated to participants so they understand they can withdraw at any time, without any consequences or penalties. All means will be taken to protect personal data besides respecting the privacy of the respondents during this research process.

RESULTS AND DISCUSSION

This research indicates the results obtained from the use of a questionnaire based on responses from the respondents. The data collected were analyzed and interpreted to gain an increased understanding of the study.

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The results collected are presented in tabular form for further details. Each table is preceded by an analysis and discussion.

Demographic Profile of the Participants

The demographic profile of the respondents indicates that most nurses are young adults, predominantly female, single, and early in their professional careers. This reflects the current composition of the nursing workforce, where nursing is still largely dominated by younger and female professionals, consistent with global and local trends (Cudé & Winfrey, 2022; Kovner et al., 2022). The predominance of respondents with 1–5 years of experience suggests that many nurses are still in the early stages of competency development. Nursing competency is a multidimensional construct that evolves through knowledge, skills, attitudes, and continuous professional exposure (Abunab et al., 2023). Similarly, continuing professional development plays a crucial role in strengthening nurses' competencies and supporting their transition from novice to more advanced levels of practice (Al-Mugheed et al., 2022). Most respondents are assigned to general clinical areas such as wards and emergency rooms, where fundamental and continuous patient care is required. These settings demand a strong foundation in caring behaviors and patient-centered practices, which are essential components of nursing competence and quality care (Majait et al., 2021; Kocatepe et al., 2025).

The limited number of nurses with advanced educational attainment further reflects that many respondents are practicing with baseline qualifications, although higher education and specialization are associated with enhanced competency and improved clinical performance. This is supported by evidence indicating that nurses' competency is influenced by both education and clinical experience (Albougami et al., 2021). Furthermore, the demographic characteristics suggest a workforce composed largely of early-career nurses who are still developing their caring competence. Factors such as age, experience, and professional exposure have been shown to influence caring behaviors and competence levels (Choi & Kim, 2023). Given that competency development is continuous and shaped by both educational preparation and clinical practice, the profile of the respondents provides important context in understanding their level of caring competence in clinical settings.

Level of Caring Competence among the Respondents

Patient-Centered Care

The findings indicate that respondents demonstrated a competent level of caring competence in terms of patient-centered care, with an overall category mean of 4.59. All indicators—knowledge (M = 4.56), skills (M = 4.53), and attitudes (M = 4.68)—were consistently interpreted as competent, suggesting that nurses perceive themselves as adequately prepared to deliver patient-centered care in clinical practice. Among the three domains, attitudes obtained the highest mean score, indicating that respondents place strong value on empathy, respect, and responsiveness to patient needs, which are core principles of patient-centered care.

Table 1 Caring Competence among the Respondents in terms of Patient-Centered Care.

Patient-Centered Care	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to practice patient centered care.	4.56	Competent
2. I feel confident I have the necessary skills to practice patient-centered care	4.53	Competent
3. I feel confident I have the necessary attitudes to practice patient centered care.	4.68	Competent
Category Mean	**4.59**	**Competent**

This aligns with the concept that nursing competence is multidimensional, encompassing not only technical knowledge and skills but also affective attributes that guide therapeutic relationships and holistic care delivery (Abunab et al., 2023). The slightly lower scores in knowledge and skills may reflect areas that continue to

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develop through experience and ongoing clinical exposure. The results are consistent with evidence highlighting that patient-centered care competencies are influenced by clinical experience and continuous professional development, which enhance nurses' ability to communicate effectively, assess patient needs, and provide individualized care (Kocatepe et al., 2025; Al-Mugheed et al., 2022). Additionally, studies show that nurses' caring behaviors and patient-centered practices improve as they gain experience and refine their clinical judgment over time (Choi & Kim, 2023).

Teamwork and Collaboration

The results indicate that respondents demonstrated a competent level of caring competency in terms of teamwork and collaboration, with an overall category mean of 4.70. All indicators—knowledge (M = 4.69), skills (M = 4.71), and attitudes (M = 4.71)—were consistently rated as competent, suggesting that nurses perceive themselves as adequately prepared to engage in collaborative nursing practice.

This finding reflects the integrated nature of nursing competence, where effective teamwork is supported by the combination of cognitive, psychomotor, and affective domains. Competence in nursing develops through continuous clinical exposure and professional experience, enabling nurses to communicate effectively, coordinate care, and function within interdisciplinary teams (Abunab et al., 2023).

Table 2 Caring Competency among the Respondents in terms of Teamwork and Collaboration

Teamwork and Collaboration	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to ensure an effective nursing practice based on teamwork and collaboration.	4.69	Competent
2. I feel confident I have the necessary skills to ensure an effective nursing practice based on teamwork and collaboration.	4.71	Competent
3. I feel confident I have the necessary attitudes to ensure an effective nursing practice based on teamwork and collaboration.	4.71	Competent
Category Mean	**4.70**	**Competent**

The relatively balanced scores across knowledge, skills, and attitudes further suggest that respondents possess a well-rounded foundation for teamwork and collaboration. Moreover, the results align with literature emphasizing that teamwork and collaboration are essential components of patient care delivery, requiring not only technical proficiency but also interpersonal skills such as communication, mutual respect, and shared decision-making (Kocatepe et al., 2025). Prior studies also highlight that nurses with greater experience tend to demonstrate stronger collaborative behaviors and more effective participation in team-based care (Choi & Kim, 2023).

Evidenced-Based Practice

The findings indicate that respondents demonstrated a competent level of caring competence in terms of evidence-based practice, with an overall category mean of 4.64. All indicators—knowledge (M = 4.66), skills (M = 4.64), and attitudes (M = 4.62)—were consistently rated as competent, suggesting that nurses perceive themselves as adequately prepared to integrate evidence into clinical decision-making. The slightly higher mean in knowledge suggests that respondents have a solid understanding of evidence-based practice principles, which is essential in guiding clinical decisions and ensuring quality care. Evidence-based practice requires the integration of scientific evidence, clinical expertise, and patient preferences, making competency in this area a critical component of modern nursing practice (Notarnicola et al., 2025).

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Table 3 Caring Competency among Respondents in terms of Evidence-Based Practice

Evidence-based practice	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to achieve an evidence-based nursing practice.	4.66	Competent
2. I feel confident I have the necessary skills to achieve an evidence-based nursing practice.	4.64	Competent
3. I feel confident I have the necessary attitudes to achieve an evidence-based nursing practice.	4.62	Competent
Category Mean	**4.64**	**Competent**

The relatively close scores across knowledge, skills, and attitudes further indicate a balanced development of competencies necessary for applying evidence in practice. These findings are consistent with literature emphasizing that nursing competence is continuously developed through education, training, and exposure to evolving healthcare demands. In particular, competence development in nursing caring behaviors is strengthened through academic preparation and professional practice, which contribute to the integration of theoretical knowledge into clinical application (Yulia et al., 2024).

Quality Improvement

The findings indicate that respondents demonstrated a competent level of caring competence in terms of quality improvement, with an overall category mean of 4.64. All indicators—knowledge (M = 4.63), skills (M = 4.63), and attitudes (M = 4.65)—were consistently rated as competent, suggesting that nurses perceive themselves as adequately prepared to participate in quality improvement initiatives in nursing practice. The nearly identical scores across knowledge, skills, and attitudes reflect a balanced level of competence, indicating that respondents possess the necessary cognitive understanding, technical ability, and professional disposition to engage in quality improvement activities. The slightly higher mean in attitudes suggests a strong professional commitment to continuous improvement and patient care enhancement, which is essential in maintaining high standards of nursing practice.

Table 4. Caring Competency among Respondents in terms of Quality Improvement

Quality improvement	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to participate in quality improvement in nursing practice.	4.63	Competent
2. I feel confident I have the necessary skills to participate in quality improvement in nursing practice.	4.63	Competent
3. I feel confident I have the necessary attitudes to participate in quality improvement in nursing practice.	4.65	Competent
Category Mean	**4.64**	**Competent**

These findings align with the understanding that nursing competence is multidimensional and continuously developed through education and clinical experience, enabling nurses to contribute effectively to improving care processes and outcomes (Notarnicola et al., 2025). Competence in quality improvement requires not only theoretical knowledge but also the ability to apply learned principles in practice, as well as a proactive attitude toward identifying areas for improvement. Moreover, the development of caring competencies, including

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participation in quality improvement, is reinforced through professional education and clinical training, where nurses progressively integrate knowledge, skills, and attitudes in real-world settings (Yulia et al., 2024). The consistent competency observed in this study suggests that respondents have reached a level of preparedness that supports their involvement in systematic efforts to enhance nursing care. Additionally, quality improvement competency is influenced by the ability of nurses to adapt to evolving healthcare demands and contribute to improving care delivery processes. As healthcare systems continue to change, maintaining competence across knowledge, skills, and attitudes becomes essential for sustaining quality and safety in patient care (Notarnicola et al., 2025).

Safety

The findings indicate that respondents demonstrated a competent level of caring competence in terms of safety, with an overall category mean of 4.77. All indicators—knowledge (M = 4.75), skills (M = 4.81), and attitudes (M = 4.75)—were consistently rated as competent, suggesting that nurses perceive themselves as well-prepared to deliver safe nursing care in clinical practice. Among the three domains, skills obtained the highest mean score, indicating that respondents have strong practical capability in implementing safety measures, adhering to protocols, and responding effectively to clinical situations. The close and relatively high scores across knowledge, skills, and attitudes reflect a well-rounded competency profile, suggesting that respondents possess the essential components required to maintain patient safety in practice

Table 5. Caring Competency among Respondents in terms of Safety

Safety	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to deliver safe nursing care.	4.75	Competent
2. I feel confident I have the necessary skills to deliver safe nursing care.	4.81	Competent
3. I feel confident I have the necessary attitudes to deliver safe nursing care.	4.75	Competent
Category Mean	**4.77**	**Competent**

These findings are consistent with recent literature emphasizing that professional competence in nursing is multidimensional and integrates knowledge, skills, and attitudes necessary for safe and effective care delivery (Sharifikia et al., 2026). Competence development is essential in ensuring that nurses can function effectively in complex healthcare environments where patient safety is a primary priority. In addition, contemporary evidence highlights that competence and collaborative practice are closely linked to quality and safety outcomes. For instance, teamwork and caring ability have been shown to mutually influence nursing performance and reduce missed nursing care, underscoring the importance of both individual competence and collaborative dynamics in ensuring patient safety (Zhang et al., 2026). This suggests that competent nurses are more likely to contribute to safer care environments when working effectively within teams.

Informatics

The findings indicate that respondents demonstrated a competent level of caring competence in terms of nursing informatics, with an overall category mean of 4.64. All indicators—knowledge (M = 4.63), skills (M = 4.65), and attitudes (M = 4.65)—were consistently rated as competent, suggesting that nurses perceive themselves as adequately prepared to integrate and utilize technology in nursing practice. The relatively uniform scores across the three domains reflect a balanced competency profile, indicating that respondents possess the necessary knowledge, technical skills, and professional attitudes to engage with healthcare technologies effectively. The slightly higher means in skills and attitudes suggest that respondents are not only familiar with technological tools but are also confident and willing to apply them in clinical settings.

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Table 6 Caring Competency among Respondents in terms of Nursing Informatics

Informatics	**M**	**Interpretation**
1. I feel confident I have the necessary knowledge to integrate and use technology in nursing practice.	4.63	Competent
2. I feel confident I have the necessary skills to integrate and use technology and in nursing practice.	4.65	Competent
3. I feel confident I have the necessary attitudes to integrate and use technology in nursing practice.	4.65	Competent
Category Mean	**4.64**	**Competent**

Structural Equation Model Analysis of Caring Competence among the Respondents

The structural equation modeling (SEM) analysis supported a well-fitting higher-order confirmatory factor model of nursing caring competence based on data from 157 respondents. As shown in Figure 1, Caring Competence was conceptualized as a second-order latent construct reflected by six first-order dimensions derived from the QSEN framework: Patient-Centered Care (PCC), Teamwork and Collaboration (TC), Evidence-Based Practice (EBP), Quality Improvement (QI), Safety, and Informatics. This hierarchical structure is consistent with contemporary SEM applications that model complex professional competencies as multidimensional constructs (Leng et al., 2025).

Table 7. Reliability and Validity of the Measurement Model

Construct	**Cronbach's Alpha**	**Composite Reliability (CR)**	**Average Variance Extracted (AVE)**	**Path Coefficient (ß)**	**Interpretation**
Patient-Centered Care	0.91	0.93	0.81	0.88	Substantial
Teamwork & Collaboration	0.92	0.94	0.83	**0.91**	**Highly Substantial**
Evidence-Based Practice	0.91	0.93	0.80	0.89	Substantial
Quality Improvement	0.90	0.92	0.79	0.87	Substantial
Safety	0.93	0.95	0.86	**0.93**	**Highly Substantial**
Informatics	0.91	0.93	0.81	0.88	Substantial

The measurement model demonstrated strong psychometric properties across all constructs. Cronbach's Alpha values ranged from 0.90 to 0.93, while Composite Reliability (CR) values ranged from 0.92 to 0.95, indicating excellent internal consistency and reliability. All values exceeded the recommended threshold of 0.70, confirming that the instrument consistently measures the intended constructs. In terms of validity, the Average Variance Extracted (AVE) values ranged from 0.79 to 0.86, exceeding the minimum acceptable value of 0.50. This confirms strong convergent validity, indicating that the indicators adequately represent their respective latent constructs. Overall, the results demonstrate that the measurement model is both reliable and valid, providing a strong foundation for structural analysis.

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The structural model results confirm that Caring Competence is strongly reflected by with all six QSEN competency domains. The standardized path coefficients ranged from 0.87 to 0.93, indicating very strong relationships across all constructs. Among the six domains, Safety (β = 0.93) and Teamwork & Collaboration (β = 0.91) showed the strongest associations with Caring Competence. This suggests that higher levels of caring competence are most strongly reflected in safe clinical practice and effective interprofessional collaboration. Meanwhile, the remaining domains (Patient-Centered Care, Evidence-Based Practice, Quality Improvement, and Informatics) also demonstrated strong relationships, indicating that Caring Competence is consistently expressed across all dimensions of nursing practice. Overall, these findings support the interpretation that Caring Competence functions as a higher-order construct that integrates cognitive, technical, and relational aspects of nursing practice rather than operating as a single isolated skill. With CFI = 0.96, TLI = 0.95, RMSEA = 0.05, and SRMR = 0.04 is well within the "Good Fit" range of less than 0.08. These values meet commonly accepted thresholds for SEM model fit, demonstrating that the proposed model adequately represents the observed data structure (Leng et al., 2026). Furthermore, the findings substantiate the multidimensional yet integrative nature of nursing caring competence. The results indicate that knowledge, skills, and attitudes across the six QSEN domains collectively define a coherent higher-order construct. This hierarchical structure is consistent with recent literature emphasizing the use of SEM in validating competency-based instruments in nursing education and practice (Abang, 2025; Leng et al., 2026). The validated 18-item instrument thus provides a reliable and structurally sound measure of caring competence among early-career nurses.

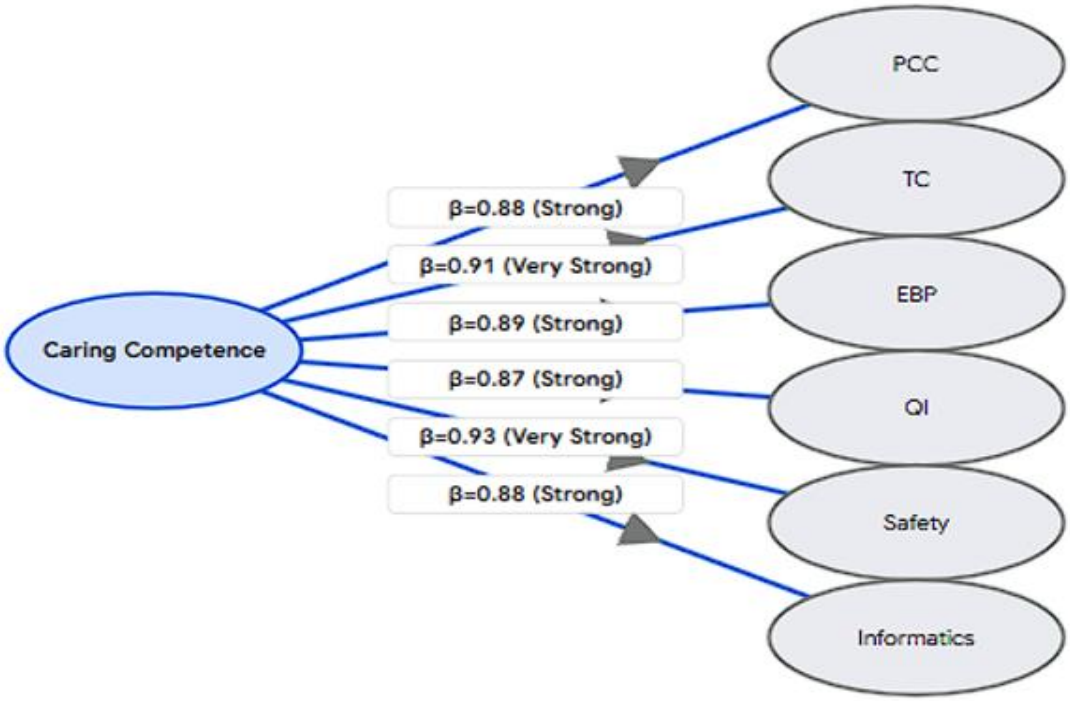

Figure 2. Structural Equation Model Path Analysis Framework of Clinical Competence

Model Fit Indices Justification

The evaluation of the structural model using multiple goodness-of-fit indices provides convergent evidence that the hypothesized model exhibits an acceptable to excellent fit to the observed data. Specifically, the Comparative Fit Index (CFI = 0.96) exceeds the commonly recommended threshold of 0.90 and approaches the more stringent criterion of 0.95, indicating that the specified model substantially improves fit over the null (independence) model and adequately reproduces the observed covariance structure. In parallel, the Tucker–Lewis Index (TLI = 0.95), which penalizes model complexity, also surpasses the 0.90 cutoff, suggesting that the model achieves an optimal balance between goodness of fit and parsimony, thereby minimizing overfitting while maintaining explanatory adequacy.

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In terms of absolute fit indices, the Root Mean Square Error of Approximation (RMSEA = 0.05) is well within the acceptable range (< 0.08) and aligns with the criterion for close fit (< 0.06), indicating that the model exhibits minimal approximation error per degree of freedom and fits the population covariance matrix closely. Complementarily, the Standardized Root Mean Square Residual (SRMR = 0.04), which reflects the standardized difference between observed and predicted correlations, is below the recommended threshold of 0.08, further confirming a low level of residual discrepancy and acceptable absolute fit.

Table 8. Goodness-of-Fit Indices of the Structural Equation Model

Index	Value	Acceptable Threshold	Interpretation
CFI	0.96	> 0.90	Good Fit
TLI	0.95	> 0.90	Good Fit
RMSEA	0.05	< 0.08	Good Fit
SRMR	0.04	< 0.08	Good Fit

Furthermore, the simultaneous satisfaction of both incremental fit indices (CFI, TLI) and absolute fit indices (RMSEA, SRMR) provides robust and triangulated evidence that the proposed model is well-specified. The consistency across these indices strengthens the conclusion that the hypothesized structural relationships adequately capture the underlying data structure, thereby supporting the model's validity for substantive interpretation and inferential purposes.

DISCUSSION

This study employed a higher-order Structural Equation Modeling (SEM) approach grounded in the Quality and Safety Education for Nurses (QSEN) framework to examine the caring competence of registered nurses in selected private hospitals in Santiago City, Isabela, Philippines. The findings confirmed that caring competence is a multidimensional construct composed of six interrelated domains: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. Nurses demonstrated a competent level across all domains, indicating that they possess the knowledge, skills, and attitudes necessary to provide quality nursing care in contemporary healthcare settings.

Among the six domains, safety and teamwork and collaboration obtained the highest category mean scores and the strongest structural loadings within the SEM model. These findings suggest that caring competence among nurses is most strongly manifested through their ability to ensure patient safety and engage effectively in interdisciplinary collaboration. One possible explanation is the increasing emphasis placed on patient safety initiatives, accreditation standards, infection prevention protocols, and quality assurance programs within private healthcare institutions. Nurses are frequently exposed to safety-related policies and clinical guidelines, making safety practices a highly visible and reinforced aspect of professional nursing care. Similarly, the strong performance in teamwork and collaboration reflects the interprofessional nature of healthcare delivery, where nurses routinely coordinate with physicians, allied health professionals, and healthcare teams to ensure continuity and quality of care.

These findings are consistent with the QSEN framework, which identifies safety and teamwork as fundamental competencies necessary for reducing clinical errors and improving patient outcomes. They also support the findings of Kocatepe et al. (2025), who emphasized that collaborative practice contributes significantly to healthcare quality, patient satisfaction, and organizational effectiveness. Within the Philippine healthcare context, where healthcare professionals often work under demanding clinical conditions, strong teamwork and communication may serve as important mechanisms for maintaining patient safety and care quality.

Although patient-centered care, evidence-based practice, quality improvement, and informatics also

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demonstrated competent ratings, their relatively lower scores suggest areas for continued professional development. Patient-centered care requires advanced communication skills, cultural sensitivity, empathy, and individualized care planning, competencies that continue to develop through professional experience and reflective practice. Likewise, evidence-based practice and quality improvement require higher-order cognitive skills, including critical thinking, research utilization, and data-driven decision-making, which may not be routinely exercised in all clinical environments. The informatics domain may reflect varying levels of exposure to healthcare technologies, electronic health records, and digital health systems across institutions. As healthcare increasingly adopts technology-driven approaches, strengthening informatics competence becomes essential for enhancing clinical decision-making and improving patient outcomes.

The SEM findings further revealed that caring competence functions as a higher-order latent construct, with all six QSEN domains contributing significantly to the overall model. This supports the theoretical assumption that caring competence extends beyond interpersonal caring behaviors and encompasses technical, cognitive, ethical, collaborative, and technological competencies. The strong path coefficients observed across all domains indicate that improvements in any QSEN competency may contribute to the enhancement of overall caring competence, highlighting the interconnected nature of professional nursing competencies.

The excellent model fit indices (CFI = 0.96, TLI = 0.95, RMSEA = 0.05, and SRMR = 0.04) further validate the proposed framework and demonstrate that the multidimensional structure adequately represents the observed data. These findings support contemporary nursing literature emphasizing the use of SEM in validating complex competency-based constructs and provide empirical evidence for the applicability of the QSEN framework in assessing caring competence among Filipino nurses.

The findings are consistent with Kocatepe et al. (2025) who argued that collaborative practice skills are crucial to improve the quality of care and patient outcomes. Patient-centered care, evidence-based practice, quality improvement and informatics resulted in scores that were competent, but slightly lower. It indicates that nurses have basic competence but there are opportunities for improvement in the areas that require higher level cognitive integration, critical thinking and technological engagement. These domains may need to be constantly exposed, trained and institutionalized to be fully developed in clinical settings.

Structural Validation of Caring Competence

The SEM results revealed that caring competence is a higher order latent construct and all six QSEN domains significantly contributed to the overall model (β = 0.87–0.93). Safety (β = 0.93) and teamwork and collaboration (β = 0.91) were the two main domains of caring competence, with these being the most salient indicators of caring competence among the nurses in the study environment. The discovery corroborates the theoretical premise that caring competence is a compound of several interrelated caring competencies. High factor loadings for all domains indicate that each of the components of the QSEN is a measure of the construct. This supports Abunab et al. (2023), who noted that nursing competence has multiple dimensions and consists of cognitive, technical and affective components. Moreover, the results reinforce the applicability of SEM in validating complex nursing constructs. Strong loadings suggest that improvements in each of the QSENS is expected to bring improvements in all QSENs of caring competence in clinical practice, thus emphasizing the interdependence of these competencies.

Model Fit and Measurement Validity

The model had very good fit indices (CFI = 0.96, TLI = 0.95, RMSEA = 0.05, and SRMR = 0.04), reflecting the goodness of fit between the hypothesized higher-order structure and the observed data. The results show that the discrepancies between the theoretical model and the empirical observations are small, leading to support of the robustness of the measurement model. In addition, the instrument has obtained high reliability (Cronbach's alpha > 0.90) and good convergent validity (AVE > 0.79) indicates that it has high consistency and accuracy in measuring the intended constructs. The results support the literature on SEM, which have consistently shown that a good model fit with good validity increases the confidence in structural interpretation (Leng et al., 2026).

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Implications for Nursing Practice and Education

The results of this study have significant implications for nursing practice and professional development. The focus on teamwork and safety indicates that existing hospital systems are successful in teaching procedure and team skills. But the moderate level of focus on patient-centered care and informatics suggests there is a need for targeted interventions. Nurse educators and hospital management should have a focus on enhancing evidence-based and informatics related competencies, especially in an increasingly technologically-oriented healthcare system. This can be helped by continuous training programs, simulation learning and enhancing digital literacy. In addition, it is crucial to reinforce patient-centered care competencies to guarantee whole person nursing care in settings where workload and system needs may shift towards task-centered care.

Contribution to Nursing Theory

This study contributes to nursing theory by providing empirical validation of caring competence as a higher-order multidimensional construct within the QSEN framework. The findings confirm that caring competence is not a singular attribute but rather an integrated combination of patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. Through higher-order Structural Equation Modeling, the study demonstrates that these six domains collectively represent a coherent theoretical structure that captures the complexity of contemporary nursing competence.

The study further extends competency-based nursing theories by providing evidence that caring competence encompasses cognitive, technical, relational, and technological dimensions of practice. The strong factor loadings and excellent model fit indices support the conceptual validity of the QSEN framework as a representation of caring competence among nurses. Additionally, the study contributes to the growing body of literature advocating the use of advanced statistical modeling techniques in validating nursing competency frameworks. Moreover, this research provides valuable theoretical evidence from the Philippine healthcare context, where empirical studies utilizing higher-order SEM in examining caring competence remain limited. The validated model may serve as a theoretical foundation for future studies investigating nursing competence, caring behaviors, professional development, and quality-of-care outcomes across various healthcare settings.

Contribution to Nursing Practice

This study contributes to nursing practice by providing empirical evidence that caring competence is a multidimensional and measurable construct reflected through the six QSEN competency domains: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. The findings demonstrated that nurses generally exhibited competent levels across all domains, while the SEM results confirmed that caring competence functions as a higher-order construct strongly associated with each competency area. These findings reinforce the importance of integrating caring behaviors with technical, cognitive, and collaborative nursing competencies in clinical practice. The study further contributes to nursing practice by identifying safety and teamwork and collaboration as the strongest indicators of caring competence. This suggests that strengthening collaborative practice, communication, and patient safety initiatives may significantly enhance overall nursing competence and quality of care delivery. The validated SEM model also provides nurse administrators and educators with a structured framework that can be utilized in competency assessment, staff development programs, performance evaluation, and continuing professional education.

Moreover, the study offers a context-specific contribution to Philippine nursing practice, particularly within private hospital settings where limited local evidence on caring competence currently exists. The validated higher-order model may guide healthcare institutions in developing competency-based interventions and policies aimed at improving patient outcomes, strengthening workforce preparedness, and promoting quality and safe nursing care. Ultimately, the findings support the advancement of evidence-based nursing practice by emphasizing that caring competence is not limited to interpersonal caring behaviors alone, but also encompasses clinical judgment, collaboration, safety, and technological integration essential in modern healthcare systems.

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CONCLUSION

This study revealed that registered nurses in selected private hospitals in Santiago City, Isabela, Philippines demonstrated a competent level of caring competence across all six QSEN domains. Among these domains, safety and teamwork and collaboration obtained the highest ratings, indicating that nurses perceive themselves as particularly competent in maintaining patient safety and participating effectively in interdisciplinary healthcare teams. The higher-order Structural Equation Modeling results confirmed that caring competence is a multidimensional construct composed of patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. All six domains significantly contributed to the overall construct, while the excellent model fit indices supported the validity and stability of the proposed framework. These findings suggest that caring competence is best understood as an integrated combination of knowledge, skills, and attitudes rather than as a single independent competency. The study further highlights the importance of sustaining competency development across all QSEN domains. While nurses demonstrated competence in each area, opportunities remain for strengthening patient-centered care, evidence-based practice, quality improvement, and informatics to ensure balanced professional growth. Furthermore, the validated model provides a reliable framework for assessing caring competence and may serve as a basis for competency assessment, staff development, and quality improvement initiatives within healthcare institutions.

Limitations of the Study

This study has several limitations that should be considered in interpreting its findings. First, the study utilized a cross-sectional research design; therefore, the results only reflect the level of caring competence at a single point in time. This design does not allow for the examination of changes or development of competence across nurses' professional careers, nor does it establish causal relationships among variables.

Second, the study employed purposive sampling, which limits the generalizability of the findings beyond the selected private hospitals in Santiago City, Isabela, Philippines. Although the sample size of 157 respondents was statistically adequate for Structural Equation Modeling (SEM), the non-probability sampling technique may introduce selection bias, as participation was limited to nurses who were available and willing during data collection. Moreover, the study excluded nurses from public hospitals and other regions, further narrowing the external validity of the findings.

Third, the study relied on self-reported data using the Nurse Quality and Safety Self-Inventory (NQSSI) scale. While the instrument demonstrated strong reliability and validity, self-report measures are inherently subject to response biases such as social desirability bias and overestimation of competence due to professional expectations. In addition, the instrument primarily measures perceived competence rather than directly observed clinical behaviors, which may not fully represent actual performance in real clinical settings.

Fourth, the demographic profile of the respondents showed a predominance of young and early-career nurses. This may have influenced the overall results, as less experienced nurses may report different levels of confidence and competence compared to senior or advanced practice nurses. As a result, the findings may not fully capture the competencies of more experienced nursing populations.

Fifth, although Structural Equation Modeling (SEM) provided strong statistical validation of the measurement model, the study did not incorporate contextual or organizational variables such as workload, staffing levels, leadership support, and institutional culture. These factors are known to significantly influence nursing competence but were not included in the model, limiting a more comprehensive understanding of the determinants of caring competence.

Lastly, the study was conducted exclusively in selected private hospitals within one city, which limits the broader applicability of the findings to other healthcare settings such as public hospitals, rural health units, and institutions in other regions of the Philippines. Future research should consider longitudinal designs to examine the development of caring competence over time, incorporate mixed-method or observational approaches to capture actual clinical behaviors, and include broader institutional and contextual variables to provide a more comprehensive and generalizable understanding of nursing caring competence.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are presented:

1. **Hospital Administrators** are encouraged to strengthen initiatives that enhance nurses' confidence to care, as it is a key predictor of caring efficacy. Programs such as mentorship, coaching, clinical supervision, and continuous professional development may help improve nurses' perceived competence and caring behaviors.

2. **Nursing Educators** should further integrate confidence-to-care development into the nursing curriculum through simulation-based learning, therapeutic communication training, and reflective practice activities to better prepare students for clinical practice.

3. **Nursing Management** is encouraged to promote a supportive work environment that fosters emotional readiness, interpersonal competence, and professional confidence among nurses, which may enhance overall caring efficacy.

4. **Healthcare Institutions** may consider implementing policies and interventions that reduce barriers to caring performance, such as workload management strategies and improved staff support systems.

5. **Future Researchers** are encouraged to conduct longitudinal or experimental studies to establish causal relationships among variables and further validate the SEM model over time. Future studies may also expand the model by including additional variables such as workload, leadership style, emotional intelligence, and organizational support to provide a more comprehensive understanding of caring efficacy.

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