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A Quarterly Peer-Reviewed International Research Journal

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About the Journal

The **International Journal of Clinical, Nursing, and Population Health Sciences (INCLINPHS)** is a scholarly, open-access, quarterly, peer-reviewed, international print and online research journal dedicated to the advancement of knowledge in **clinical medicine, nursing science, public health, epidemiology, population health, and healthcare systems research**. INCLINPHS serves as a global platform for **nurses, clinicians, nurse researchers, public health professionals, epidemiologists, healthcare administrators, and interdisciplinary scholars** to disseminate high-quality empirical, clinical, nursing, population-based, and policy-relevant research that contributes to **safe patient care, improved health outcomes, and evidence-based nursing and healthcare practice**. The journal is committed to maintaining **rigorous scientific and ethical standards, patient- and nurse-centered research integrity**, and global visibility through international indexing, Crossref DOI registration, and print and electronic ISSN accreditation.

Aims and Scope

Aims

INCLINPHS aims to:

1. Promote high-quality **clinical, nursing, and population health research** grounded in scientific rigor
2. Advance **evidence-based nursing practice, clinical care, and public health interventions**
3. Provide a venue for global, comparative, and community-based **nursing and health studies**
4. Support research that informs **health policy, nursing practice, healthcare delivery, and systems improvement**
5. Encourage interdisciplinary collaboration among **nursing, clinical medicine, public health, and allied health sciences**

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Scope

The journal welcomes original research articles, systematic reviews, meta-analyses, clinical and nursing reports, and population-based studies in, but not limited to, the following areas:

- Clinical medicine and allied health sciences
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- Public health and population health studies
- Epidemiology and disease surveillance
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- Community health nursing and primary healthcare
- Global health, health equity, and vulnerable populations
- Environmental and occupational health
- Maternal, child, adolescent, and geriatric nursing
- Infectious and non-communicable diseases
- Patient safety, quality of care, and nursing leadership

Publication Frequency and Format

- Frequency: Quarterly (4 issues per year)
- Formats: Print and Online
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  - o Print ISSN
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Manuscripts are received with the understanding that they contain **original scholarly work** that has **not been previously published** nor is under consideration for publication elsewhere.

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Funding Disclosure

All authors must disclose **all funding sources or financial support**, if any, related to the research.

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With regard to research submitted for possible publication, authors must ensure that they follow **the journal format**, including the template, header, footer, font size and font style. Author/s must download and follow the sample manuscript found via this link: https://tinyurl.com/TemplatesINCLINPHS Kindly reduce the manuscript to **10-12 pages only, including the References**. Kindly choose only the most salient parts of the paper

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2. **English Usage (or Filipino, as may be applicable)**
   The manuscript must adhere to the rules of grammar and language usage, whether in English or Filipino.
   - Use **past tense** consistently since the study is already completed.
   - Avoid first-person point of view ("I," "we"); instead, maintain a **third-person scientific tone**.
   - Avoid contractions; spell out complete words to retain formality.
   - Provide **English translations** for words, terms, or items not understandable to international readers.
3. **Abstract**
   The abstract should follow the journal's prescribed format and accurately reflect the study's major components. Ensure that it correctly presents the **aim, methodology, key findings or results, and conclusion** in a concise and logical manner.
4. **Introduction / Background of the Study**
   The introduction must:
   - Present a clear rationale or background from the **global to Philippine/local contexts**.
   - Show the **trends and issues** related to the study, supported with recent and relevant citations (2021–2026 preferred).
   - Identify and explain the **research gap/s**, highlighting why the present study is necessary and how it differs from prior works.
5. **Statement of the Problem, Research Objectives and Research Questions**
   The Statement of the Problem, Research Objectives and Research Questions must be clearly, explicitly, and logically stated.
   - The **statement of the problem** is a detailed explanation of the issue, gap, or challenge that the study seeks to address. It frames the context and justifies why the study is necessary, usually written in declarative form as a narrative or paragraph. Its purpose is to highlight the significance, scope, and urgency of the study, providing a broad and contextual background of the issue at hand. For example, a

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study may state: *"Despite government programs, many senior citizens in rural areas experience delays in receiving social pensions, raising concerns about accessibility and efficiency."*

- The **research objectives** represent the specific aims or intentions of the study, focusing on what the researcher seeks to accomplish. These are written in infinitive form such as "To determine…" or "To examine…," ensuring that the targets are clear, measurable, and achievable. Unlike the broad statement of the problem, objectives are narrower and centered on actionable outcomes. For instance, a general objective could be *"To assess the implementation of the Social Pension Program in Balbalan, Kalinga."* This may be broken down into specific objectives, such as: (1) To determine the accessibility of the program, (2) To examine its impact on beneficiaries, and (3) To identify challenges faced in its implementation.
- The **research questions** are the interrogative form of the objectives, expressed as direct questions the study seeks to answer. They are usually written in formats such as "What is…?" or "How does…?" and serve the purpose of guiding data collection and analysis by pointing to specific inquiries. Research questions are even more specific than objectives, as they operationalize the study's goals into answerable items. Using the same example, the research questions could include: *RQ1: How accessible is the Social Pension Program to senior citizens in Balbalan? RQ2: What impact does the program have on the beneficiaries' quality of life? RQ3: What challenges hinder the effective implementation of the program?*

6. **Review of Related Literature and Studies**
   This section must include sufficient, relevant, and **up-to-date references** to support the rationale and conduct of the research.
   - Avoid outdated sources (1–2 decades old) for dynamic or evolving concepts.
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   - Ensure citations are aligned with the arguments and logically linked to the study.
   - There must be a clear synthesis at the end of the RRLS that captures key insights, connects the reviewed works, and justifies the need for the present study.
7. **Theoretical and/or Conceptual Framework**
   An appropriate theoretical and/or conceptual framework must be presented to anchor the study.
8. **Research Methodology (Research Design, Population and Sampling, Instrument, Data Collection, Treatment of Data, Ethics in Research)**
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- **Instrument/s:** State whether the instrument was adopted or researcher-made. Describe its validation process, including the qualifications of validators.
- **Data Collection:** Focus on *how, when, and where* the data was collected. Do not include ethics approval here.
- **Treatment of Data:** Clearly describe the methods of data analysis or statistical treatment. For qualitative analysis, avoid generic discussions (e.g., what thematic analysis is according to authors). Instead, show how the method was applied in your study.
- **Ethical Considerations:** Include ethical approval, informed consent, and permissions here, not in other subsections.

Important Reminders:

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- If the study used a **mixed-method approach**, discuss both parts separately (quantitative and qualitative)—design, participants, instruments, data collection, treatment of data, ethical considerations—and explain how the two sets of data were integrated.
- Use plural ("researchers") consistently if the paper has co-authors.

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   - Present results clearly, logically, and aligned with the research questions.
   - Support findings with **relevant and recent literature**.
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    - Conclusions must be logically drawn from the study's findings.
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    References must strictly adhere to APA 7th edition. Authors must review their entire manuscript carefully:
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    - Avoid old references; prioritize recent ones.
    - If a citation was included but missing in the References, update it properly (do not erase it without explanation). Similarly, remove unused entries from the References list.
    - The paper will not be published if even one citation/reference entry is non-compliant.

APA 7th requires:

- All sources listed in the References Section must match 100% with the actual sources used in the entire manuscript, and all sources cited in the entire manuscript are reflected in the list of sources in the References section.

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- Year of publication in parentheses.
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- Accept after minor revisions
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In cases of split reviewer decisions, a **third reviewer** will be assigned. Authors are given **two weeks** for revisions. Final decisions are made by the **Editor-in-Chief**.

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Editor's Note

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The maiden issue of INCLINPHS marks ETCOR's commitment to advancing nursing science alongside clinical and population health research. Nursing remains central to patient care, community health, and healthcare systems worldwide.

As healthcare challenges grow increasingly complex, the integration of nursing research, clinical evidence, and public health perspectives becomes essential. INCLINPHS provides a scholarly platform that values nurses not only as care providers but as researchers, leaders, and policy influencers**.**

This journal bridges bedside care, community health, and population-level outcomes, highlighting the indispensable role of nursing in improving health equity, quality, and safety.

As a peer-reviewed international journal, INCLIPS upholds the highest standards of scientific integrity through a double-blind review process, strict adherence to research ethics, and commitment to methodological rigor. Each article published undergoes careful evaluation to ensure its relevance, validity, and contribution to health sciences knowledge.

The journal seeks to strengthen the link between research and practice. Clinical and public health research attains its greatest value when it informs patient care, community health strategies, and policy decisions. INCLIPS therefore encourages submissions with clear implications for practice and health system improvement.

This maiden issue represents the collaborative efforts of authors, reviewers, editors, and technical experts who share a dedication to scholarly excellence and ethical research conduct. Their contributions have enabled the journal to meet international publishing standards while remaining responsive to diverse health contexts.

INCLIPS is positioned as a global journal that welcomes contributions from researchers across different regions and healthcare systems. By fostering comparative and cross-national perspectives, the journal enriches understanding of health challenges and solutions in varied settings.

The journal is also committed to supporting early-career clinicians, public health professionals, and emerging researchers. INCLIPS aims to provide a supportive yet rigorous platform where new voices can contribute meaningfully to global health discourse.

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As we launch this first issue, we reaffirm our commitment to ethical publishing, transparency, and continuous improvement. INCLIPS will continue to evolve alongside advances in medicine, public health, and research methodologies.

On behalf of the Editorial Board, we extend our sincere gratitude to all who contributed to this maiden issue. We invite clinicians, public health researchers, and healthcare scholars worldwide to join us in shaping future issues of INCLIPS as we collectively advance health, equity, and evidence-based practice.

Dr. Christian V. Villan, Editor-in-Chief
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A Comparative Study on the Knowledge and Attitude of Nurses About Nursing Information Systems

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Abstract
Aim: This study evaluated the knowledge and attitudes of nurses towards Nursing Information Systems (NIS) at a private hospital in Dagupan City.
Methodology: This study used descriptive-comparative design, employing total enumeration in a hospital in Dagupan City with 49 respondents. Statistical tests used were frequency, percentage, mean, standard deviation, t-test, and one-way ANOVA.
Results: Nurses at a private hospital in Dagupan City ranked their proficiency with gadgets, computer terminology, and Microsoft Word as 'Very Good', showing assurance in their technological skills. They acknowledge the significance of Nursing Information Systems (NIS) in enhancing nursing care, streamlining documentation, and safeguarding patient data privacy. Demographic variables as age, sex, education, rank, and experience did not have a significant effect on nurses' understanding of NIS. However, female nurses displayed a more favorable attitude towards NIS compared to male nurses. Nurses generally believe that Nursing Information Systems (NIS) improve healthcare delivery and advocate for formal education and technical skills to effectively utilize NIS.
Conclusion: The researchers concluded that nurses at a private hospital in Dagupan City have a high level of trust in their computer and NIS-related skills, recognizing the major advantages of NIS in nursing care and documentation. Demographic factors such as age, education, and years of experience had no significant impact on knowledge and attitudes towards NIS. However, there is a noticeable difference between male and female nurses, with females displaying more positive attitudes. The significant impact of gender on technology acceptability and the generally positive attitude of nurses regarding NIS in the LMC.

Keywords: Attitudes towards Healthcare Technology, Gender Differences in Technology Acceptance, Nursing Information Systems (NIS), Nurses Technology Proficiency, NIS Impact on Nursing Care

INTRODUCTION

Technology integration into nursing practice is now an important part of modern healthcare that helps improve patient care and operating efficiency.

Nursing Information Systems (NIS) are a big step forward in this integration because they offer a set of features that make administrative tasks easier, make it easier to manage patient information, and improve the quality and safety of care for patients (Ferdousi et al., 2020; Cai et al., 2019; Rouleau et al., 2017). NIS, which are complex computer systems, are very important to nursing because they help nurses give better care by managing patient information, work, and communication more efficiently (Nguyen et al., 2017; Ismailzadh & Mahmoudifar, 2015; Nunes & Nunes, 2014). NIS is important for more than just making things easier for administrators; it is a key part of providing accurate, quick, and patient-centered care by lowering the chance of mistakes that could have very bad results (Bhati et al., 2023; Kwame & Petrucka, 2021). Moreover, NIS is the field that combines nursing science with information and computer science. NIS plays a big role in supporting this field so that it can improve many areas of nursing practice, such as documentation, decision-making, and professional growth (Darvish et al., 2014).

Worldwide, there is a growing trend towards the adoption of nursing information systems (NIS), which is a result of the expanding use of digital technology in the healthcare industry. These systems have a vital role in improving patient care, maximizing workflow efficiency, and safeguarding confidential patient information (Bibi et al., 2024). The shift towards NIS is marked by an increasing focus on user-friendly designs that facilitate evidence-based treatment, along with the incorporation of modern technologies such as artificial intelligence for decision support systems (Koohjani et al., 2024; Yangöz et al., 2024). In the Philippines, the implementation of NIS is primarily motivated by the necessity to enhance healthcare provision in a geographically divided environment and to facilitate communication among

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healthcare practitioners. Despite encountering obstacles such as uneven technology access and the necessity for more extensive training, the shift towards digitalized nursing care in the Philippines mirrors the worldwide trend of adopting digital solutions to improve the standard of nursing practice (Ramos et al., 2024).

This study is anchored to two theories namely the Technology Acceptance Model (TAM) and Roger's Diffusion of Innovation. TAM posits that users' decision to adopt a new technology is influenced by two key perceptual factors: perceived usefulness (PU) and perceived ease of use (PEOU). TAM can be utilized to comprehend the aspects that impact nurses' attitudes towards Nursing Information Systems (NIS) (Lee and Change, 2024). An analysis of these two parameters might be used to examine the gender disparity in attitudes about NIS. This analysis could help in designing interventions that specifically target male nurses, with the aim of improving their acceptability and utilization rates. The theory of Rogers' Diffusion of Innovations. This theory elucidates the mechanisms, reasons, and pace at which novel ideas and technologies disseminate throughout different societies. Rogers' model delineates the sequential phases that an individual or organization undergoes in the process of embracing novel technology: awareness, conviction, determination, execution, and validation (Dearing, 2009). This could facilitate comprehension of the phases of acceptance among the nursing staff and enable the customization of educational programs accordingly.

Despite the obvious benefits of NIS, uptake and optimal use are difficult. Nurses, who are the primary users of these systems, frequently face challenges such as insufficient training, resistance to switching from manual to electronic systems, and the stress associated with adjusting to new technology (Borges do Nascimento et al., 2023; Cheraghi et al., 2023; Talwar et al., 2023). These challenges highlight the importance of a thorough understanding of nurses' informatics competency, which includes the knowledge, abilities, and attitudes required for the efficient use of information technology in nursing.

Research in the Philippines shows that nurses have variable levels of adoption and utilization of NIS (Pajarillo et al., 2021; Faustorilla, 2020; Lupiáñez-Villanueva et al., 2011), highlighting the challenges of integrating technology into healthcare. This diversity highlights the essential need for study to better understand the factors that influence nurses' attitudes and knowledge about NIS. Such insights are critical for establishing focused interventions to strengthen nurses' informatics competencies, ensuring NIS implementation success and, ultimately, improving patient care quality.

Objectives

This comparative study evaluated the knowledge and attitudes of nurses towards NIS at a private hospital in Dagupan City. This research aimed to improve nurses' knowledge and confidence in Nursing Information Systems (NIS) to enhance patient care standards and the field of healthcare informatics.

Specifically, it answered the following questions:

1. What is the profile of the respondents?
2. What is the level of knowledge of the respondents regarding NIS?
3. What is the attitude of the respondents towards NIS?
4. Is there a significant difference between the respondents' knowledge and attitude about NIS across their profile?

This study is guided by the hypothesis: There is no significant difference between the respondents knowledge and attitude about NIS across their profile.

METHODOLOGY

Research Design

This study employed a comparative research design to explore variances in knowledge and attitudes about Nursing Information Systems (NIS) among nurses (Lau & Holbrook, 2017). It identifies factors that influence these variances, such as age, gender, level of education, job title, and years of experience.

Setting

The study took place at a private hospital in Dagupan City and has a capacity for 150 beds.

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Participants and Sampling Scheme

The respondents of the study consist of 49 Registered Nurses in a private hospital in Dagupan City. The assessment was conducted with 49 Nurses respondents: (8) Operating Room Nurses, (3) NICU Nurses, (8) ICU Nurses, (12) Station 1 Nurses, (6) OB Nurses, (8) Emergency Nurses, (1) Chief Nurse, (1) Assistant Chief Nurse and (2) Dialysis Nurses, for the total of 49 Nurses. The researcher asked for the assistance from the Chief Nurse and from the Medical Director of the Hospital to determine the total number of registered. Further, this study employed total enumeration to prevent selection.

Instrumentation

In this study, the researcher used an online survey for the target respondents through google form. The questionnaire was adapted to the study of Sinha and Joy (2022), entitled Nurses' knowledge of and attitude to nursing information systems. The questionnaire is a set of orderly arranged questions carefully. It is composed of three (3) parts: Part I, is focused on the respondent's demographic data, such as age, sex, highest educational attainment, job title/position, and years of nursing experience. Part II are sets of questions to determine the level of nurse's knowledge about information technology and information systems. It is based on a 5-point Likert scale from 'excellent' to 'below average'. Part III are question is about the attitudes of nurses toward using a nursing information system. It is based on a 3-point Likert scale from 'agree' to 'disagree' on a scale from 3 to 1.

The questionnaire underwent a reliability test due to the absence of literature confirming its prior use in the Philippines. The researchers conducted a one-time pilot test to assess the questionnaire's reliability using an online survey in a Google Form at a separate hospital. Pilot testing conducted once helps assess the reliability of the research approach and provides insight into the prospective results of the proposed study (In, 2017). Pilot studies are typically conducted on persons who closely resemble the target respondents to prevent bias. The pilot study was conducted in a different private hospital, utilizing the Nursing Information System (NIS) with 25 participants. The Cronbach's alpha value of 0.78 suggests a satisfactory level of reliability (Taber, 2018).

Ethical Consideration

The University of Luzon College of Nursing Research Ethics Committee approved the study under Approval Number NR-SL-003-23. The researchers obtained authorization from the hospital director and the head nurse to carry out the study. The researchers obtain informed consent from all individuals. The consent form detailed the study's goals, possible advantages depending on the study's results, and the approximate time needed to fill out the questionnaire, which is viewed as the main drawback of the study. This study did not involve any incentives or pressure. Additionally, participants can choose to withdraw from the study at any time. The survey was performed in February 2024.

Recruitment and Data Collection

During the initial inspection, the chief nurse mentioned the number of respondents, and the researchers tried to ask the nurses who were on duty at that time if they were willing to participate. After five days, the researchers returned to formally start the data collection.

The researcher personally went to the hospital to distribute the questionnaires . For those who were not available at that time, the link was entrusted to the nurse managers.

Handling and Treatment of Data

The data was organized and structured using Microsoft Excel. Advanced statistical analysis was conducted using SPSS version 25.

The descriptive statistics utilized included frequency, percentage, mean, and standard deviation. Knowledge level is interpreted using the following scores: 1.00-1.80: below average; 1.81-2.60: average; 2.61-3.40: good; 3.41-4.20: very good; 4.21-5.00: excellent. Regarding attitude: 1.00-1.66: negative; 1.67-2.32: neutral; 2.33-3.00: positive. The analysis employed in this study was an independent sample t-test for inferential statistics.

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RESULTS AND DISCUSSION

Table 1. Demographic Data of the Respondents N=49

Variables		Frequency	Percentage
Age	aged 21-25 years	8	16.30
	aged 26-30 years	4	8.20
	31-35 years	24	49.00
	aged 36 years and above	13	26.50
Sex	Female	39	79.60
	Male	10	20.40
Highest Educational Attainment	Bachelor's Degree	44	89.90
	Master's Degree	5	10.20
Job Title/Position	Nurse on ward	37	75.50
	Department Head	10	20.40
	Assistant Head Nurse	1	2.00
	Head Nurse	1	2.00
Years of Nursing Experience	First Patient - 6 months	2	4.10
	6 months - 1 year	9	18.40
	2 years	6	12.20
	3 years	8	16.30
	5 years and above	24	49.00

Regarding Table 1. The data indicates that 49% of nurses fall between the 31-35 age range, while just 8.2% are aged 26-30. Female nurses make up a substantial majority, accounting for 79.6% of the total. 89.9% of nurses possess a Bachelor's Degree. Approximately 75.5% of nurses are employed in ward positions. 49% of nurses have 5 or more years of experience, while only 4.1% are in their first 6 months of nursing.

The data about demographics suggests a workforce that is predominantly female and in their early thirties, with a strong base of experience in nursing, as indicated by the high percentage of nurses with 5 or more years in the field. Most have a Bachelor's degree and work as nurses on the ward, with a few in leadership positions.

Table 2. Perceive Level of Knowledge about NIS N=49

Items	Mean	±SD	Interpretation
Computers: laptop, desktop, tablet?	4.02	0.67	Very Good
Computer vocabulary?	3.73	0.81	Very Good
MS Word	3.82	0.85	Very Good
MS Excel?	3.61	0.93	Very Good
Computer information system for patient data (HIS, EMR, HMIS, etc.)?	3.57	0.87	Very Good
Operating system (Microsoft Windows, macOS, Linux, etc.)?	3.57	0.94	Very Good
Handling the problems with hardware/software?	3.26	0.88	Good
Using computers for presentations?	3.61	0.86	Very Good
Use of apps and browsing?	3.92	0.79	Very Good
Mean Perceived Knowledge	**3.67**	**0.75**	Very Good

Legend: 1.00-1.80: below average; 1.81-2.60: average; 2.61-3.40: good; 3.41-4.20: very good; 4.21-5.00: excellent.

Table 2 indicates that the average score for gadgets was 4.02, with a standard deviation of 0.67. Participants rate their expertise as 'Very Good'. The mean score for computer vocabulary is 3.73 with a standard deviation of 0.81, categorized as 'Very Good'. Participants assessed their skill in Microsoft Word as 'Very Good', with an average score of 3.82 and a standard deviation of 0.85. The mean score of 3.61 and standard deviation of 0.93 suggest that individuals exhibit a little lower level of confidence in Excel. The mean is 3.57 and the standard deviation is 0.87 for patient data in the computer information system. The average score for addressing hardware or software issues is 3.26, with a

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standard deviation of 0.88. The participants exhibit a high level of confidence in their computer presenting skills, as indicated by a mean score of 3.61 and a standard deviation of 0.86. The mean score is 3.92 with a standard deviation of 0.79, categorized as 'Very Good'. The average perceived knowledge level is 3.67 with a standard deviation of 0.75, signifying a 'Very Good' level of comprehension.

The participants are confident in their computer-related knowledge and skills, particularly in general computer use, app usage, browsing, and MS Word (Kuek A., & Hakkennes, 2020). Utilizing computer systems in healthcare presents problems and duties, necessitating individuals to possess proficiency in IT and understanding of the systems they utilize (Alotaibi & Federico, 2017). Inadequate computer skills can lead to failure in meeting professional and legal obligations, perhaps resulting in compromised patient care and legal actions against individuals. Nurses must be proficient and self-assured in computer-related duties to thrive in the modern healthcare setting characterized by advanced technology. It is crucial for assuring effective patient care, adhering to professional norms, and fostering personal and professional growth in the nursing industry (Zaman et al., 2021).

However, nurses feel less confident in fixing hardware and software difficulties compared to other areas (Ahmadian et al., 2017). The ability to troubleshoot technical issues is critical in maintaining the flow of patient care and ensuring that electronic health records, patient monitoring systems, and other healthcare technologies function optimally (Vos et al., 2020). When nurses can quickly resolve these issues, it minimizes disruptions in patient care and ensures that vital health information is accessible when needed. Moreover, as nurses are often the first to encounter such difficulties in a clinical setting, their ability to address these problems can enhance overall healthcare efficiency and safety (Flaubert et al., 2021).

Table 3. Perceive Attitude of the Nurses towards NIS N=49

Item	Mean	±SD	Interpretation
To enhance nursing care, a nursing information system (NIS) is necessary.	2.95	0.29	Positive
Patients and employees have benefited from enhanced communication among healthcare providers made possible by the NIS.	2.76	0.43	Positive
Retrieving patient care information (such as medical records and pathology results) is made easier by the NIS.	2.82	0.39	Positive
Compared to a paper-based record, the NIS makes patient care documentation easier and more practical, which has enhanced patient care documentation.	2.82	0.39	Positive
Nursing care gets less personal when a NIS is used in healthcare.	2.63	0.57	Positive
Using an NIS in patient care	**2.80**	**0.23**	**Positive**
Patient data privacy is protected by the NIS.	2.86	0.41	Positive
Duplicate entry and paperwork are decreased by the NIS.	2.82	0.39	Positive
The NIS helps in statistical analysis and reporting the patient's data in different formats.	2.84	0.43	Positive
The total cost of healthcare is decreased by the NIS.	2.84	0.37	Positive
Workload has been lessened by the NIS.	2.85	0.41	Positive
The NIS requires more formal education to use the application of information technology in nursing.	2.73	0.44	Positive
Technical skills are necessary for the NIS and are fundamental to lifelong learning.	2.88	0.33	Positive
SD Using an NIS in medical documentation	**2.83**	**0.29**	**Positive**
Total Perceived Attitude	**2.81**	**0.24**	**Positive**

Legend: attitude: 1.00-1.66: negative; 1.67-2.32: neutral; 2.33-3.00: positive

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Table 3 shows that respondents largely agree that a Nursing Information System (NIS) is important to improve nursing care, with a mean of 2.95 and a low standard deviation of 0.29. The average score of 2.76 with a standard deviation of 0.43 suggests a favorable opinion that both patients and staff experience advantages from enhanced communication through the NIS, albeit with slightly higher variability in responses compared to the first question. With a mean of 2.82 and a standard deviation of 0.39, respondents have a positive perception of the NIS in terms of facilitating the retrieval of patient care information. The mean of 2.82 and a standard deviation of 0.39 suggest that NIS is perceived as facilitating documentation more effectively and practically than paper-based records. The average score of 2.63 with a higher standard deviation of 0.57 indicates that although the general assessment is good, there is more diversity in opinions regarding the impact of NIS use on personal nursing care. An average score of 2.80 with a low standard deviation of 0.23 suggests a high level of agreement among respondents regarding the use of NIS in patient care, with minimal variation in their opinions.

In Table 3, the average score is 2.86 with a standard deviation of 0.41, suggesting a favorable opinion that NIS safeguards patient data privacy, albeit with significant response variability. Respondents feel that NIS reduces duplicate entries and paperwork, with a mean of 2.82 and a standard deviation of 0.39. A mean of 2.84 and a standard deviation of 0.43 indicate that NIS is beneficial for statistical analysis and allows for various reporting formats of patient data. The NIS is believed to lower healthcare costs, with a mean of 2.84 and a standard deviation of 0.37, indicating agreement among respondents on this advantage. An average score of 2.85 with a standard deviation of 0.41 indicates a favorable outlook on the National Information System (NIS) and its ability to lessen the burden on healthcare providers. The average score of 2.73 with a standard deviation of 0.44 indicates a moderately positive view in the necessity of more formal education for efficient utilization of the NIS. Technical abilities are seen vital for managing a NIS and are considered crucial for lifelong learning in nursing because to the mean of 2.88 and low standard deviation of 0.33, indicating a high favorable agreement.The average score of 2.83 with a standard deviation of 0.29 suggests a favorable perception and high consensus on the benefits of NIS in medical documentation.

The nurses exhibited a favorable disposition towards utilizing a Nursing Information System in patient care (Kahouei et al., 2014). They saw that the system improved treatment, communication, access to information, and documenting processes. Nurses who have a favorable outlook on healthcare information technology are more inclined to acknowledge and make use of NIS for the betterment of patient results (Sinha & Joy, 2022). This can result in enhanced recordkeeping, improved patient care management, and increased communication efficiency among healthcare providers. Positive attitudes are associated with higher levels of computer experience, leading to enhanced satisfaction with NIS and increased sustainability of its usage (Rababah et al., 2021).

The data indicates that nurses had a positive perception of the deployment of a NIS in medical documentation, particularly in aspects such as data privacy, efficiency, cost, and education within healthcare delivery (Ramoo et al., 2023). With the increasing prevalence of electronic health records, there are significant concerns about patient privacy. Ensuring that an NIS has robust privacy protections is crucial to maintaining trust between patients and healthcare providers. Privacy-preserving methods of data sharing and analytics are essential to prevent unauthorized access and use of patient data (Price & Cohen, 2019).

The implementation of NIS can increase the efficiency of documentation, which in turn can enhance the workflow of nursing staff (Moghaddasi et al., 2017). While the initial cost of implementing an NIS can be high, the long-term savings associated with improved efficiency, reduced errors, and better resource management can justify the investment. Evaluating the completeness of documentation before and after the implementation of an NIS can guide improvements in patient care decisions and potentially reduce costs (Shafiee et al., 2022).

There is a consistent good perception, particularly in technical abilities and formal education for IT application in nursing. Nurses with strong technical skills can use various information systems and technologies more efficiently, improving the quality of patient care (Altmiller & Pepe, 2022). Nurses who are competent in IT can utilize electronic health records to access and document patient information more effectively, which can lead to better patient outcomes. Technical abilities and formal IT education contribute to the professional development of nurses. As healthcare technology evolves, continuing education and adaptation are necessary for nurses to stay current with new systems and protocols (Booth et al., 2021). Healthcare is a rapidly changing field, and nurses with a good perception of their own technical abilities are more likely to adapt to new technologies and changes within the healthcare system (Mansour, S., & Nogues).

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Table 4. The Difference between Knowledge and Attitude of Nurses across their Profile N=49

Variables		Mean	Test Value	df	p-value
Knowledge					
Age	aged 21-25 years	3.85	(F) 0.43	SSb= 3 SSw=45 SSt= 48	0.73
	aged 26-30 years	3.53			
	31-35 years	3.60			
	aged 36 years and above	3.78			
Sex	Male	3.64	(t) -0.87	47	0.39
	Female	3.84			
Highest Educational Attainment	Bachelor's Degree	3.65	(t) -0.81	47	0.42
	Master's Degree	3.91			
Job Title/Position	Nurse on ward	3.68	(F) 0.12	SSb= 3 SSw=45 SSt= 48	0.95
	Department Head	3.63			
	Assistant Head Nurse	3.89			
	Head Nurse	4.00			
Years of Nursing Experience	First Patient - 6 months	3.94	(F) 0.52	SSb= 4 SSw=44 SSt= 48	0.72
	6 months - 1 year	3.94			
	2 years	3.65			
	3 years	3.58			
	5 years and above	3.60			
Attitude					
Age	aged 21-25 years	2.66	(F) 1.66	SSb= 3 SSw=45 SSt= 48	0.19
	aged 26-30 years	2.86			
	31-35 years	2.86			
	aged 36 years and above	2.79			
Sex	Female	2.84	(t) -1.98	47	0.04
	Male	2.68			
Highest Educational Attainment	Bachelor's Degree	2.81	(t) -0.15	47	0.88
	Master's Degree	2.83			
Job Title/Position	Nurse on ward	2.80	(F) 0.25	SSb= 3 SSw=45 SSt= 48	0.86
	Department Head	2.86			
	Assistant Head Nurse	2.72			
	Head Nurse	2.92			
Years of Nursing Experience	First Patient - 6 months	2.79	(F) 0.53	SSb=4 SSw=44 SSt= 48	0.72
	6 months - 1 year	2.72			
	2 years	2.83			
	3 years	2.89			
	5 years and above	2.82			

Table 4 evaluates the difference in nurses' knowledge concerning NIS and their attitude towards NIS based on their profile.

Regarding knowledge, an analysis of variance (ANOVA) indicated that there is no significant difference between the nurses' knowledge level on NIS and their age ($F(3,48) = 0.43$, $p = 0.73$). An independent sample t-test showed no significant difference in nurses' knowledge of NIS when categorized by sex ($t(47) = -1.98$, $p = 0.19$). An independent sample t-test showed no significant difference between nurses' awareness of NIS and their educational attainment ($t(47) = -0.15$, $p = 0.88$). The one-way ANOVA analysis indicated that there is no statistically significant difference between nurses' knowledge of NIS and their rank ($F(3,48) = 0.12$, $p = 0.95$). The one-way ANOVA yielded

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a F(4,48) score of 0.52 with a p-value of 0.72, indicating a lack of significant difference between participants' knowledge of NIS and their years of experience.

Referring to attitude, one-way ANOVA means that F(3,45) = 1.66, p = 0.19, which means that there is no significant difference between the nurses' attitude towards NIS and their age. A t-test revealed that there is a significant difference between the nurses' attitude towards NIS and their sex (t(47) = 1.98, p = 0.04). The females slightly scored better than the males. However, a t-test revealed that there is no significant difference between the nurses' attitude towards NIS and their educational attainment (t(47) = -0.15, p = 0.88). Regarding position, a one-way ANOVA revealed that there is no significant difference between the nurses' attitude towards NIS and their position (F(3,45) = 0.25, p = 0.86). Finally, a one-way ANOVA revealed that there is no significant difference between the nurses' attitude towards NIS and their years of experience (F(4,44) = 0.25, p = 0.86).

The results in Table 4 demonstrate that nurses' knowledge of NIS is consistent and not significantly affected by demographic or professional factors (Galani, 2015). Since demographic and professional factors do not significantly influence nurses' knowledge of NIS, education and training programs on NIS can be uniformly designed and implemented across different groups of nurses (Shin et al., 2018). This suggests that a standard curriculum can effectively raise NIS knowledge and competency levels among nurses regardless of their age, sex, rank, or years of experience. The findings suggest that NIS designers can focus on creating systems that are universally usable and accessible to all nurses, regardless of their demographic or professional background. The emphasis can be on intuitive design and user-friendliness to accommodate users with varying levels of technical expertise (Ghorayeb et al., 2023).

Regarding attitude towards NIS, while age, educational attainment, position, and years of experience do not significantly influence nurses' attitudes toward NIS, there is a noted difference between male and female nurses, with females showing a more positive attitude (Salameh et al., 2019). This finding could be indicative of underlying factors such as differences in technology acceptance or usage patterns between male and female nurses, which could be explored further for targeted interventions to improve NIS utilization (Korte & Bohnet-Joschko, 2023).

The study's results may have important implications for nurses in the Philippines, given the country's current initiatives to incorporate technology and digital systems into healthcare, and the limited data about the research theme in the Philippines. Nurses' proficiency and comfort in utilizing common computer applications, internet browsing, and specialized software such as MS Word can establish a strong basis for their future education and integration of healthcare-specific technologies like Nursing Information Systems (NIS). Readiness and adaptability are essential in the Philippines due to the significant disparities in healthcare facilities regarding resources and technology accessibility. Nurses' proficient use of NIS can enhance patient care, simplify documentation procedures, and improve communication among healthcare workers, which is crucial in a diverse country with many healthcare facilities spread throughout islands.

Furthermore, the difficulties nurses encounter while resolving hardware and software problems highlight the necessity for extensive IT assistance and training in the Philippine healthcare system. It is crucial for nurses to be skilled in using technology and able to handle technological problems to ensure continuous patient care in modern healthcare. This is crucial in the Philippines, as distant and rural areas may lack immediate access to IT professionals. Improving nurses' technical troubleshooting abilities could greatly enhance the resilience and effectiveness of healthcare services nationwide. Moreover, the overall favorable attitudes towards NIS among Filipino nurses, regardless of their demographic or professional backgrounds, indicate that nationwide efforts to introduce or enhance these systems may be widely embraced and welcomed, thereby enhancing the quality and effectiveness of healthcare services in the nation.

Limitations

The study is constrained to a sample of 49 nurses from a solitary in one medical center, perhaps lacking representation of all nurses in the region or in the Philippines. The results may not be applicable to other hospitals, particularly those with varying sizes, resources, or patient populations. Using a questionnaire, especially one that evaluates subjective factors like attitudes, might be influenced by bias. Respondents may offer answers that are socially acceptable or may lack complete awareness of their own knowledge and attitudes, resulting in mistakes.

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Conclusion

The researchers concluded that nurses in a private hospital have a high level of trust in their computer and NIS-related skills, recognizing the major advantages of NIS in nursing care and documentation. Demographic factors such as age, education, and years of experience had no significant impact on knowledge and attitudes towards NIS. However, there is a noticeable difference between male and female nurses, with females displaying more positive attitudes. The significant impact of gender on technology acceptability and the generally positive attitude of nurses regarding NIS in LMC.

Recommendation

In line with the findings and conclusions of this study the following are recommended: (1) Create and execute extensive IT training initiatives specifically designed for nurses, with a particular emphasis on basic computer skills, application utilization, internet navigation, MS Word, and specialist healthcare technologies such as NIS. These programs should incorporate both fundamental and sophisticated modules to accommodate the diverse range of IT skills among nursing staff. (2) Conduct regular seminars and simulations specifically focused on resolving typical hardware and software problems that arise in healthcare environments. This will enable nurses to autonomously address small technical issues, hence minimizing disruptions in patient care caused by technology problems. (3) Given the observed disparity in technology acceptability between male and female nurses, it is crucial to formulate gender-sensitive approaches that promote the adoption of technology. Customized communication and training may be required to effectively address the distinct requirements and preferences of male and female nursing personnel. (4) Enhance the IT support infrastructure in healthcare facilities to provide nurses with prompt and efficient assistance for intricate IT problems that cannot be managed autonomously. This is particularly vital in isolated and rural regions where access to IT professionals may be limited.

Moreover, the following are recommended for future research: Subsequent research should involve a more extensive sample size gathered from various medical centers throughout Luzon and other locations in the Philippines. Encompassing public hospitals, rural clinics, and specialized healthcare facilities would offer a more thorough insight into nurses' knowledge and attitudes on NIS. Conduct a longitudinal study to examine the progression of nurses' knowledge and attitudes regarding NIS over time, particularly as they accumulate more experience with these systems and as technology progresses.

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Competencies of Entry-Level Nurses Towards Quality Nursing Care in the Hospitals of Rinconada: Basis for Onboarding Training Program

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Abstract

Aim: This study aimed to assess the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada which served as a basis for developing an onboarding training program.

Methodology: The research employed a descriptive-correlational design and gathered data from five privately-owned hospitals in Rinconada area. The hospitals were selected using stratified random sampling, and total enumeration was used to identify the entry-level nurse respondents. The gathered data were then tallied, tabulated and analyzed using the percentage, weighted mean, and chi-square test of independence.

Results: Findings showed that the majority of the workforce is composed of females aged 25 to 34 years, who are the youngest in the family, with most holding bachelor's degrees and fell within the 10,001 to 20,000 pesos family monthly income bracket. Competency areas such as patient care prioritization, decision making, assessment and identifying and addressing medication errors were strongly demonstrated in the study. However, gaps were identified in the areas of stress management, emotional support, and advanced clinical procedures, while factors affecting nurse competencies are confidence in basic nursing skills, access to resources, and the presence of a collaborative work environment. The profile was found to have no significant relationship with the identified competencies. The proposed plan can improve the level of competencies of entry-level nurses in the hospitals of Rinconada.

Conclusion: By addressing key competency areas, factors and promoting continuous professional growth, the study underscores the importance of equipping entry-level nurses to meet the demands of quality nursing care effectively in the Rinconada area.

Keywords: Entry-Level Nurses, Competencies, Onboarding Training Program, and Nursing Competency Development

INTRODUCTION

Entry-level nurses play an important role in shaping the patient care experience, serving as the frontline providers in ensuring the quality of healthcare services. Their competencies directly impact patient safety, satisfaction, and overall healthcare outcomes. In this field, where diverse and multidisciplinary challenges arise, providing entry-level nurses with the essential skills and knowledge needed to manage the complexities of patient care is crucial.

World Health Organization (WHO, 2020) describes competencies as the combination of knowledge, skills, and behaviors needed for efficient job performance. In the field of nursing, these competencies are used as standards for assessing clinical capabilities and providing patient care. Additionally, Weeks et al. (2019) emphasize that nursing competencies encompass cognitive, psychomotor, and affective areas, allowing nurses to effectively meet the evolving demands of patient care.

Fukada (2020) identified nursing core competencies as the ability to employ sound judgment and precise nursing skills to meet client needs. These competencies form the foundation for delivering high-quality, patient-centered care. However, a significant challenge in nursing education is the practical application of these competencies in real-world settings (Gregersen et al., 2021). To bridge this gap, it is essential to provide entry-level nurses with hands-on opportunities to develop and refine their skills during onboarding and training programs.

As Chunling (2024) emphasized, clinical nurses form the largest group of healthcare providers and are integral to safeguarding patient safety. In delivering comprehensive care and ensuring constant health monitoring, nurses mitigate adverse events and promote patient well-being. Central to this mission is the concept of Patient Safety Competency (PSC), which encompasses the knowledge, skills, and attitudes essential to preventing harm caused by medical errors.

In the Philippines, nursing laws and standards reinforce the importance of competency among nursing professionals. The Philippine Nursing Act of 2002 (Republic Act No. 9173) outlines the scope of practice, requiring

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nurses to demonstrate proficiency in delivering safe and effective care. This law underscores the need for continuous professional development and adherence to global nursing standards.

Provided also in Republic Act No. 10912 (Continuing Professional Development Act of 2016) whereby the Professional Regulation Commission (PRC), through the Board of Nursing, sets the competencies required for licensure, aligning them with the country's healthcare needs. Additionally, the Philippine Qualifications Framework (PQF) ensures that nursing curricula equip students with the foundational skills needed to transition seamlessly into professional practice.

The Rinconada area, with its unique social challenges and diverse patient demographics, necessitates that entry-level nursing staff should have the skills and knowledge needed to handle the problems of patient care. Patient safety continues to be a significant issue worldwide. regarded as a cornerstone of healthcare quality. Locally, hospitals in the Rinconada area must address the specific challenges faced by entry-level nurses. These challenges include managing diverse patient demographics, understanding cultural sensitivities, and adapting to resource-limited environments. With these global standards with local realities aligned, an effective onboarding program can be developed to enhance nurses' competencies and confidence.

This research holds critical importance for both healthcare institutions and the broader field of nursing profession. By identifying gaps in the competencies of entry-level nurses, hospitals can design and specialize onboarding training programs tailored to address specific deficiencies. Such programs can focus on enhancing clinical competencies, improving patient safety awareness, enhance nurse satisfaction and retention and ultimately fostering a culture of continuous professional development among nurses.

As the healthcare environment evolves with advancements in technology, demographic changes, and policy reforms, the preparedness of entry-level nurses becomes more crucial. This study seeks to provide a foundation for designing an onboarding training program that addresses the specific needs of nurses in the Rinconada area. The need to improve core competencies and readiness gaps to be addressed, this initiative would ultimately improve the quality of care provided, enhance patient satisfaction, and contribute to the professional growth of nursing personnel. This study determined the importance of continuous learning and professional development, ensuring that the healthcare system remains responsive to the needs of the community.

Objectives

This study aimed to examine the competencies of entry-level nurses towards patient care in selected hospitals within Rinconada.

Specifically, it sought to achieve the following objectives:

1. to determine the profile of the respondents in terms of:
    a. age
    b. sex
    c. civil status
    d. birth order
    e. year graduated
    f. family monthly income
2. to identify the extent of competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
3. to investigate the factors affecting the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
4. to test the significant relationship between profile and extent of competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
5. to test the significant relationship between extent of competencies of entry-level nurses and factors affecting the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
6. to propose an action plan to improve the competencies of entry- level nurses towards quality nursing care in the hospitals of Rinconada.

Hypothesis

The study has aimed to investigate the following research questions, which translate into the following hypotheses:

Ho_1 There is no significant relationship between the profile and extent of competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.

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H_{o2} There is no significant relationship between the extent of competencies of entry-level nurses and the factors affecting the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.

METHODS

Research Design

This study employed a descriptive-correlational research design. Descriptive research aims to provide a detailed account of a particular group, situation, or event. It focuses on understanding the characteristics, behaviors, or occurrences within the subject of study. Essentially, it answers questions like 'what,' 'how,' 'when,' and 'where,' rather than exploring the reasons or causes behind these observations (McCombes, 2022). Meanwhile, correlational research is a type of non-experimental research method used to measure the relationship or association between two or more variables without manipulating them. The goal is to determine whether a relationship exists, the direction of the relationship (positive or negative), and the strength of the relationship.

Population and Sampling

All entry-level nurses employed in the selected hospitals, namely Sta. Maria Josefa Hospital Foundation Inc., Our Lady of Lourdes, Our Lady of Mediatrix, Villanueva-Tanchuling Maternity and General Hospital, and the Medical Mission Group Hospital and Health Services Cooperative of Cam Sur, were the respondents of this study. Out of 50 respondents, 13 were entry-level nurses in Sta. Maria Josefa Hospital Foundation Inc., 11 from Medical Mission Group Hospital and Health Services Cooperative of Cam Sur, 10 from Our Lady of Mediatrix Hospital, eight from Villanueva-Tanchuling Maternity and another eight from General Hospital, and Our Lady of Lourdes Hospital. The study was conducted from August-December 2024.

This study used purposive sampling method, meaning entry-level nurses chosen intentionally because they met certain criteria relevant to the study from the above-mentioned hospitals were included in the research. This approach ensured complete data collection and analysis of their clinical competencies, thereby guaranteeing the reliability and accuracy of the research findings.

Instrument

The researchers used a questionnaire as the primary data collection tool, which was designed based on professional standards, Civil Service Commission (CSC) guidelines, and hospital policies for entry-level positions, aligned with the required job qualifications and competencies. Additionally, the factors identified in the study helped guide the creation of relevant questions, ensuring the collection of valuable data from the respondents.

Data Collection

After the questionnaire was finalized, the researcher obtained approval from the hospital administrators to distribute the surveys and proceed with the study. The questionnaires were distributed in person to ensure accuracy. After completion, the questionnaires were collected immediately from the respondents once they were fully and anonymously answered. After retrieval, the data was tallied, analyzed, and interpreted.

Treatment of Data

Statistical analysis of the collected data involved the use of several methods. These included calculating percentages, determining weighted means, and employing the Chi-Square Test of Independence to analyze the relationships between different variables.

Ethical Considerations

With ethical authorization granted by the hospital administrations, the researchers diligently followed established research ethics guidelines to safeguard the rights and interests of all individuals and entities involved in the study.

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RESULTS and DISCUSSION

1. Profile of the Respondents

The profile presented in this section are those of the entry-level nurses in the hospitals in Rinconada.

Table 1. Profile of the Respondents

Profile	Indicators	Frequency	Percentage	Rank
Age	**25 years old and below**	20	40.00	1
	25-34 years old	14	28.00	2
	35-44 years old	13	26.00	3
	45-54 years old	3	6.00	4
	Total	**50**	**100.00**	
Sex	**Male**	11	22.00	2
	Female	39	76.00	1
	Total	**50**	**100.00**	
Civil Status	**Single**	33	66.00	1
	Married	17	34.00	2
	Total	**50**	**100.00**	
Birth Order	**Eldest**	8	16.00	3
	Middle	18	36.00	2
	Youngest	22	44.00	1
	Only Child	2	4.00	4
	Total	**50**	**100.00**	
Year Graduated	**2023**	20	40.00	1
	2022	12	24.00	2
	2021	9	18.00	3
	2020	3	6.00	5
	2019	4	8.00	4
	2018 & below	2	4.00	6
	Total	**50**	**100.00**	
Family Monthly Income	**Below Php 10,000.00**	6	12.00	3.5
	Php 10,001 - Php 20,000.00	19	38.00	1
	Php 20,001 - Php 40,000.00	16	32.00	2
	Php 40,001- Php 70,000.00	6	12.00	3.5
	Php 70,001- Php 100,000.00	1	2.00	6
	Above Php 100,000.00	2	4.00	5
	Total	**50**	**100.00**	

a. Age. Exhibited in Table 1, were the age group of the respondents. Out of fifty (50), twenty (20) or 40 percent belong to the under 25 years old age group; fourteen (14) or 28 percent belong to age group 25–34 years old; thirteen (13) or 26 percent belong to age group 35-44 years old; and three (3) or 6 percent belong to age group 45–54 years old. The results showed a predominantly young and early-career profile among the nurses surveyed. Feliciano (2023) reported that among Filipino nurses, a mean age of 31 years with 60.7 percent have 1 to 30 years of service experience. This suggested that the nursing workforce in the Philippines is predominantly young.

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b. Sex. Out of fifty (50) respondents surveyed, a significant majority of thirty-nine (39) or 76 percent are female while only eleven (11) or 22 percent are male. This indicates that entry-level nurses in these hospitals are predominantly a female-dominated field. Elmaco (2022) in his study, revealed that in the Philippines, 74.1 percent of nurses were female, and 25.9 percent were male. This reflects a global trend where nursing is predominantly a female profession.

c. Civil Status. Majority of the respondents, thirty-three (33) or 66 percent are single, while seventeen (17) respondents or 34 percent are married. This distribution indicates that a significant portion of the nursing workforce is composed of individuals who are single. This aligns with the study of Fukuzaki et al. (2021) that single nurses often have fewer familial obligations, potentially allowing for greater flexibility in work schedules and participation in professional development activities.

d. Birth Order. Of the total respondents, Twenty-two (22) or 44 percent are youngest in the family; eighteen (18) or 36 percent are middle child; eight (8) or 16 percent are eldest; and two (2) or 4 percent are only child. The results highlight a diverse range of family dynamics among the respondents. As discussed on Alfred Adler's birth order theory 2022, he stated that youngest children often develop traits such as sociability and a free-spirited nature, which may make them more receptive to collaborative and adaptable training approaches.

e.Year Graduated. Out of fifty (50) respondents, twenty (20) or 40 percent graduated in 2023; twelve (12) or 24 percent graduated in 2022; nine (9) or 18 percent graduated in 2021; four (4) or 8 percent graduated in 2019; three (3) or 6 percent graduated in 2020; and two (2) or 4 percent graduated in 2018 indicating a mix of recent graduates and those with more years of professional exposure. Pertiwi, et al., (2019) emphasized that effective orientation programs for new graduate nurses are crucial in enhancing their competence, confidence, and job satisfaction. The study suggested that orientation programs should be tailored to the specific needs of new graduates, considering factors such as their educational background and prior experience.

f. Family Monthly Income. Of the total respondents, nineteen (19) or 38 percent have a family monthly income ranging from Php 10,001 to Php 20,000; sixteen (16) or 32 percent have a family monthly income ranging from Php 20,001 and Php 40,000; earning below Php 10,000 and between Php 40,001 and Php 70,000, both with six (6) respondents or 12 percent; two (2) or 4 percent have family monthly incomes above Php 100,000; and one (1) or 2 percent has a family monthly income between Php 70,001 and Php 100,000 ranked sixth. This income distribution highlights economic diversity among the respondents, which can be significant in designing onboarding training program. Nurses from lower-income brackets might face financial constraints that could affect their ability to participate in unpaid or costly training sessions. This supported by Leedahl et al., 2023 exploring lower-income participants' experiences in healthcare training programs found that financial challenges can impede participation and success.

2. Extent of Competencies of Entry-Level Nurses Towards Quality Nursing Care in the Hospitals of Rinconcada

This part revealed the extent of competencies of entry-level nurses on quality nursing care in the hospitals of Rinconada. This evaluation determines whether entry-level nurses possess the necessary competencies and skills to effectively perform their professional duties in a real-world medical setting.

As reflected in table 2 are the responses of entry-level nurses regarding their competencies in various nursing tasks and skills. Among all the indicators, four garnered the highest ranked and these include the ability to prioritize and delegate patient care tasks efficiently; make informed patient care decisions based on established protocols and doctors' orders; effectively assess patient vital signs and symptoms; and promptly identify and address medication administration errors (WM = 4.26, Rank 2.5). These skills are crucial for ensuring quality care and patient safety. Other competencies that scored highly include collaboration with healthcare teams (WM = 4.24, Rank 5) and diligent medication administration (WM = 4.22, Rank 6), both of which are essential for effective teamwork and patient management in a hospital setting. The competencies related to communication, patient safety, and time management also scored highly (WM = 4.18, Rank 7.5), reflecting the importance of clear and timely interactions with patients and colleagues. In contrast, some competencies received relatively lower scores. These include offering emotional support to patients and their families, demonstrate effective leadership skills when required in a clinical setting confidently, accurately assess patients' conditions and identify potential health concerns, and handle interactions with rude and manipulative relatives of patient professionally and calmly (WM = 3.90, Rank 28.5); managing stress effectively in a demanding environment (WM = 3.86, Rank 32); and assisting with more advanced procedures as instructed by doctors (WM = 3.84, Rank 33), respectively.

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Conclusions

On the basis of the findings, the following conclusions are drawn:

1. Predominantly the respondents are aged 25 years old and below, females, single, youngest in the family, graduated in the year 2023 and have a family monthly income of 10,001 to 20,000.00.
2. The entry-level nurses demonstrated competence in core nursing skills such as patient care prioritization, decision-making, vital signs assessment, and teamwork, but there is a need for improvement in advanced clinical tasks, stress management, and emotional support to enhance overall performance and patient care quality.
3. The data showed high responses in the factors affecting competency such as confidence in performing basic nursing skills, supported by adequate resources, manageable workloads, and collaborative hospital culture which is pivotal for ensuring quality patient care, while factors like salary and personal well-being play a less dominant but still relevant role in influencing nursing performance.
4. There is no significant relationship between the profile and extent of competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
5. There is no significant relationship between the extent of competencies of entry-level nurses and the factors affecting the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.
6. There is plan that can be proposed to improve the competencies of entry-level nurses towards quality nursing care in the hospitals of Rinconada.

Recommendations

After a thorough and systematic review of data gathered from the research study conducted and with the support of the findings and conclusions of the study, the following were recommended:

1. The hospital should strengthen mentorship programs by assigning senior nurses to guide new nurses in developing advanced skills, managing emotional and stressful aspects of patient care.
2. The nursing training officer should focus on emotional support and stress management by introducing programs that address nurse well-being, emotional intelligence, and stress reduction.
3. The nursing service office should optimize resource allocation and workload management by ensuring adequate staffing and supplies, as well as a supportive work environment to manage workloads effectively.
4. The human resources should revise orientation and training programs to include more hands-on experiences and structured training on protocols, patient care, and teamwork.
5. The nursing supervisor or head nurse should monitor nurse-to-patient ratios and the work environment to reduce burnout and improve care quality by ensuring a manageable workload.
6. Implement the proposed plan on how to improve the level of competencies of entry-level nurses in the hospitals of Rinconada.

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Assessing Digital Health Competencies on Nursing Practices in Bahrain Hospital

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Abstract
Aim: This study assessed the digital health competency levels of nurses in relation to their nursing practices involving digital technologies in a hospital in Bahrain. Specifically, it examined nurses' competencies in digital transformation, leadership and advocacy, data and information quality, and information-enabled care and technology, as well as their practices in terms of utilization, perception, legal concerns, availability, and challenges.
Methodology: A quantitative, descriptive-correlational research design was employed with 47 nurses from different units of the hospital as respondents. A structured questionnaire, validated and confirmed reliable (Cronbach's α = 0.89), was used to measure both digital competencies and nursing practices. Descriptive statistics (mean, frequency, and percentage) summarized the data, while Pearson's Product-Moment Correlation determined the relationship between the two variables.
Results: The analysis revealed a negligible correlation ($r = 0.01$) between nursing practices and digital health competencies, suggesting that variations in one do not significantly influence the other. Based on these findings, a proposed program was developed to address challenges and strengthen digital health integration in nursing practice.
Conclusion: In conclusion, the study highlights the need for targeted training programs to enhance nurses' digital competencies, thereby improving healthcare delivery and facilitating better integration of technology in clinical settings.
Keywords: *Nursing Informatics, Digital Competencies, Healthcare Technology, Nursing Practice, Bahrain*

INTRODUCTION

Healthcare systems worldwide are undergoing rapid digital transformation, driven by innovations such as telehealth, remote patient monitoring, and data-driven care. These technologies improve accessibility, reduce the need for in-person consultations, and enhance overall healthcare delivery (Chauhan, 2023). Furthermore, the integration of electronic health records and advanced analytics has strengthened decision-making processes, quality assurance, and patient outcomes. These developments underscore the growing importance of digital health competencies in nursing practice (Longhini et al., 2022; Ratwani et al., 2021; Pangilinan, 2025).

While these global trends are well documented, their adoption varies significantly across regions. In Bahrain, the government has introduced national strategies such as the Digital Health Strategy 2024 and Tamkeen's Workforce Transformation Program to support healthcare digitalization (Tamkeen, 2024). Despite these initiatives, implementation remains uneven, with hospitals experiencing limited interoperability, infrastructure constraints, and varying levels of technology readiness. Cultural and workforce factors also play a role; Bahrain's nursing workforce is highly diverse, with a large proportion of expatriate nurses who may have different levels of digital literacy and adaptability. Resistance to technological change often stems from insufficient training, reliance on traditional workflows, and hierarchical decision-making structures within clinical settings. Establishing a Bahrain-specific competency framework that aligns with local policies, infrastructure capabilities, and cultural realities is therefore essential (Amihan et al, 2023).

Although studies from other regions have examined digital health competencies among nurses, little is known about how these competencies are defined, measured, and applied within Bahrain's healthcare system. This knowledge gap is critical because local policy mandates, institutional readiness, and cultural dynamics strongly influence digital adoption. Addressing this gap will help identify barriers, set standards, and design interventions tailored to Bahrain's unique healthcare ecosystem (Bontuyan, 2025).

Unlike prior research, which has largely focused on Western or broader Gulf contexts, this study provides an in-depth assessment of nurses' digital health competencies in a Bahraini hospital setting. It not only evaluates current competency levels but also proposes a context-sensitive framework for competency enhancement through targeted training and education. The findings aim to strengthen digital readiness in alignment with Bahrain's national eHealth vision, ensuring nurses are equipped to leverage technology for improved patient care and health outcomes. This study is anchored on the Technology Acceptance Model (TAM), which posits that individuals' acceptance and use of technology are primarily influenced by their perceived usefulness and perceived ease of use. This framework is

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relevant as it provides a basis for understanding how nurses' attitudes toward digital health tools affect their competency development and actual utilization in clinical practice within the Bahraini healthcare context.

Review of Related Literature

Across hospital settings, nurses' digital health competence (e.g., EHR use, data governance, telehealth workflows) is now a core practice capability linked to care quality, safety, and efficiency. Recent syntheses emphasize that competence spans technical, cognitive, and ethical domains and must be cultivated systematically (Longhini et al., 2022). Regionally, the WHO Eastern Mediterranean strategy (2023–2027) urges countries—including Bahrain—to invest in workforce skills and interoperable platforms to operationalize digital, person-centred care (WHO EMRO, 2023). Bahrain's I-SEHA program operationalizes this vision in hospitals by giving clinicians real-time access to unified medical records, streamlining documentation and clinical decision-making—capabilities that raise the bar for nurses' day-to-day digital practice (Government of Bahrain, 2025; Sanchez et al., 2023).

Recent instrument development offers practical ways to assess nurses' digital practice skills beyond generic "computer literacy." The Digital Competence Questionnaire for Nurses targets clinical digital tasks (e.g., data handling, digital communication) and shows solid psychometrics for hospital use (Golz et al., 2024). Similarly, the Nursing Digital Application Skill Scale (NDASS) captures applied skills such as operating digital devices and using technology to analyze nursing problems—relevant to documentation and workflow in inpatient units (Qin et al., 2024). Complementing tool development, a 2025 meta-analysis on hospital digitalization found workforce "digital readiness" strongly hinges on targeted training and supportive environments—implicating nurse education, leadership, and protected learning time as levers for better practice uptake (Alotaibi et al., 2025; Carvajal et al., 2025).

In Bahrain, hospital-based telehealth and EHR services have expanded alongside I-SEHA. Healthcare workers, including nurses, generally report favorable telehealth perceptions but also flag training and workflow integration needs that map directly onto digital competence domains (Haffadh et al., 2024). Patient-facing evaluations likewise show high satisfaction with teleconsultations, underscoring how competent clinical use of digital tools can sustain care quality (Shareef et al., 2023). Current government guidance highlights I-SEHA's role in providing clinicians with unified records and histories, reinforcing the everyday digital tasks nurses must perform reliably in Bahrain's hospital services (Ministry of Health—Kingdom of Bahrain, 2025).

Theoretical Framework

The Technology Acceptance Model (TAM) serves as the foundation of this study because nurses' ability to apply digital health tools effectively depends on both their competency and their acceptance of these technologies. Even if nurses possess technical skills, low perceived usefulness or difficulty in using systems such as I-SEHA or telehealth platforms may hinder their integration into daily practice. By linking digital competence with TAM constructs, the study can explain how proficiency in digital health technologies influences nurses' attitudes, confidence, and actual usage in clinical workflows. This theoretical alignment helps interpret whether improving digital health competencies directly supports the acceptance and sustained use of digital innovations in Bahrain's hospital setting (Amihan & Sanchez, 2023).

Statement of the Problem

The rapid integration of digital health technologies in hospital settings has significantly transformed the delivery of nursing care worldwide. In Bahrain, initiatives such as the I-SEHA program seek to improve patient outcomes through electronic health records, telehealth services, and digital documentation. These innovations require nurses to possess strong digital competencies to ensure efficiency and quality in healthcare delivery. However, variations in nurses' proficiency and adaptability to such technologies may influence the effectiveness of nursing practices and, ultimately, the overall performance of the healthcare system.

General Objective

This study aims to assess the digital health competencies of nurses and their influence on nursing practices in a hospital in Bahrain.

Specific Objectives

1. To evaluate the extent to which nursing practices rely on digital technologies.
2. To determine the level of digital health competency among nurses.

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3. To examine the relationship between digital health competencies and nursing practices on digital technologies.
4. To develop an intervention program based on the salient findings of the study.

Research Questions

1. What is the level of nursing practices in the use of digital technologies?
2. What is the level of digital health competency among nurses?
3. Is there a significant relationship between digital health competencies and nursing practices on digital technologies?
4. Based on the findings of the study, what intervention program may be proposed to enhance nurses' digital health competencies and nursing practices?

Hypotheses

At the 0.05 level of significance, the following hypotheses were tested:

- ***Ho:*** There is no significant relationship between digital health competencies and nursing practices on digital technologies among nurses.
- ***H_a:*** There is a significant relationship between digital health competencies and nursing practices on digital technologies among nurses.

METHODS

Research Design

This study employed a descriptive-correlational research design to examine the relationship between the level of digital health competencies and nursing practices on digital technologies among nurses. This design was appropriate because the study aimed to measure existing variables without manipulation and determine whether an association exists between the two constructs, rather than establishing causation. Similar to how academe-industry collaborations explore existing literacy gaps without altering variables, descriptive-correlational studies provide a structured way of uncovering relationships in real-world contexts (Amihan & Sanchez, 2023). This approach allowed for a comprehensive assessment of both competency levels and practice behaviors in a real hospital setting.

Population and Sampling

The study was conducted at Awali Hospital in Bahrain and included 47 purposively selected nurse-respondents. Purposive sampling was chosen because the study required participants who had direct exposure to and experience with digital technologies in their nursing practice. Inclusion criteria included being an active staff nurse in Awali Hospital with at least six months of continuous service and involvement in patient care using digital health tools. The sample consisted of 10 nurses from Nursing Services, 11 from the Outpatient Department and Occupational Health, 6 from the Operating Theatre, 12 from the Inpatient Ward, 3 from the Inpatient Maternity Unit, and 5 from the Refinery Clinic.

Instrument

A self-constructed, structured questionnaire was used, developed based on existing literature and modified items from validated tools to ensure contextual relevance. The instrument consisted of two major sections:

- **Nursing Practices on Digital Technologies**
  - Domains: (a) Utilization, (b) Perception, (c) Legal Concerns, (d) Availability, and (e) Challenges.
  - Scale: 4-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree).
- **Digital Health Competencies**
  - Domains: (a) Digital Transformation, (b) Leadership and Advocacy, (c) Data and Information Quality, (d) Information-Enabled Care, and (e) Technology.
  - Scale: 5-point Likert scale (1 = Never to 5 = Always).

Validation Process: The instrument was reviewed by three experts in nursing research and healthcare informatics (two with doctoral degrees in nursing and one with extensive experience in hospital IT systems). Their feedback led to revisions in item clarity and domain alignment. A pilot test was conducted with five nurses (not part of the final sample), and reliability was established using Cronbach's alpha, which yielded an acceptable coefficient of 0.89, indicating high internal consistency. The careful validation process aligned with recent findings that robust instruments are necessary to address varying challenges in competency assessment (Pangilinan, 2025).

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Data Collection

Data were collected between March and April 2025. Permission to conduct the study was obtained from the Chief of Awali Hospital. Following approval, the researcher distributed the questionnaires personally to nurses across different hospital units and provided email notifications beforehand. This approach ensured accessibility and allowed respondents to ask for clarifications when needed. Completed questionnaires were collected within the same work shifts to ensure timely retrieval.

Treatment of Data

Data were processed and analyzed using descriptive and inferential statistics:

- Frequency and Percentage were used to describe respondents' demographic characteristics.
- Mean and Standard Deviation were applied to summarize responses on interval-scale items.
- Weighted Mean was used to determine the overall level of digital health competencies and nursing practices, addressing the first and second research objectives.
- Pearson's Product-Moment Correlation was employed to test the relationship between nursing practices and digital health competencies, addressing the third research objective.

Ethical Considerations

The study strictly adhered to ethical research standards. Prior to data collection, informed consent was obtained from all participants, ensuring they understood the purpose of the study, procedures, confidentiality measures, and their right to withdraw at any time without consequences. Participation was voluntary, and no identifying information was collected. Institutional approval was secured through the hospital's ethics committee, which reviewed and approved the study protocol before implementation.

RESULTS and DISCUSSION

This section provides an overview of nursing practices on digital technologies, digital health competencies, and the correlation between nursing practices on digital technologies and digital health competencies.

Nursing Practices on Digital Technologies

The table shows the level of nursing practices on digital technologies in terms of utilization, perception on the use of digital technology, legal concerns related to digital technology, availability of digital technology and artificial intelligence.

Table 1. Nursing Practices on Digital Technologies

Nursing Practices on Digital Technologies in terms of Utilization	WX	Interpretation
I understand the concept of digital technology and artificial intelligence	3.3	Strongly Agree
I am technically comfortable of utilizing digital technology and artificial intelligence	3.1	Agree
I confidently apply the digital technology in nursing practices	3.2	Agree
I've read the concept of digital technology, but I am not adept at applying it in nursing practices	2.7	Agree
I have no idea of digital technology and artificial intelligence	1.7	Strongly Disagree
Grand Mean	2.8	Agree
Nursing Practices on Digital Technologies in terms of Perception on the use of digital technology	WX	
Digital nursing technology plays an important role in nursing practices	3.1	Interpretation
The digital nursing technology makes my work efficient	3.2	Agree

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The digital nursing technology improves the quality of healthcare of patients	3.1	Agree
The uses of digital technologies in the healthcare system are safe and effective	2.9	Agree
Digital technology will replace nursing practices in the future	2.2	Agree
Digital technology improves communication and collaboration in the hospital system	3.1	Agree
Digital technology strengthens communications and healthcare literacy with patients and patient's care-dependent individuals.	3	Agree
Grand Mean	2.94	Agree
Nursing Practices on Digital Technologies in terms Legal Concerns related to digital technology	WX	Agree
Digital technology protects the demographic data of the patients	2.9	Interpretation
Digital technology is free from identity theft	2.4	Agree
Digital technology provides consent to disclose medical information to the third party and consent for admission	2.9	Agree
On-line booking, appointment, reservation, and confirmation using digital technology is free from mischievous act	2.8	Agree
Medical procedures, laboratory tests, and hospital billing statement produce by digital technology is accurate	2.9	Agree
Grand Mean	2.78	Agree
Nursing Practices on Digital Technologies in terms Availability of Digital Technology and Artificial Intelligence	WX	Agree
Artificial Intelligence is available in digital technology	3	Interpretation
Digital Technology can access health monitoring system and devices	3.2	Agree
Medical procedures for patient can be check using digital technology	3	Agree
Patient information and documentation system is found on digital technology	3.2	Agree
Telemedicine such as assessment, diagnosis and referral system can be provided by digital technology	3	Agree
Grand Mean	3.08	Agree
Nursing Practices on Digital Technologies in terms Challenges of Digital Technology	WX	Agree
Digital technology is widely accepted in nursing practices	3.2	Interpretation
Nurses' lacks competencies in utilizing digital technology	2.9	Agree
There is a need for continuous professional development training for nurses in employing digital technology in the workforce	3.3	Agree
Digital technology is highly dependent on internet system	3.3	Strongly Agree

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Digital technology limits the humanistic approach in nursing practices		3.1	Strongly Agree
	Grand Mean	3.16	Agree

	Interval	***Interpretation***
4	*3.26-4.00*	*Strongly Agree*
3	*2.51-3.25*	*Agree*
2	*1.76-2.50*	*Disagree*
1	*1.00-1.75*	*Strongly Disagree*

The findings reveal that nurses' overall practices related to digital technologies were rated Agree (grand mean = 3.22), indicating moderate application in daily work. Utilization of electronic health records and telehealth tools scored relatively higher, reflecting a gradual shift toward digital workflows. However, legal safeguards and identity protection scored the lowest (mean = 2.78), highlighting gaps in compliance with data security and privacy protocols. This aligns with Mendoza et al. (2022), who reported that inadequate legal awareness and weak cybersecurity practices remain significant barriers to digital health adoption among Filipino healthcare professionals. Similarly, Ratwani et al. (2021) emphasized that usability and security challenges in electronic health record systems compromise data protection. Likewise, Longhini et al. (2022) identified insufficient legal and ethical training as a core barrier to digital health integration in nursing practice.

Perceptions toward digital health were generally positive, with nurses acknowledging its role in improving patient outcomes. However, resistance to change persists, particularly among older nurses—a finding consistent with Longhini et al. (2022), who observed generational differences in technology acceptance. This is further supported by Lee et al. (2022), who found that younger nurses and nursing students showed higher readiness and positive attitudes toward AI and digital tools compared to older counterparts. Similarly, Mlambo et al. (2022) noted that inadequate training and change management strategies contribute to reluctance among seasoned healthcare workers.

Availability of resources scored moderately, suggesting that while basic tools exist, infrastructure and IT support remain suboptimal for large-scale implementation. This observation parallels Tamkeen (2024), which reported that Bahrain's healthcare system is still transitioning toward comprehensive digital readiness, requiring stronger IT infrastructure and workforce training. Comparable findings were also noted by Liu et al (2021), who highlighted disparities in digital health adoption due to uneven resource distribution, and by Chauhan (2023), who stressed that successful telehealth and digital care require robust technological and organizational support.

Digital Health Competencies

This section shows the digital health competencies in terms of digital transformation, leadership and advocacy, data information and quality, information enabled care, and technology,

Table 2. Digital Health Competencies

Digital Transformation: Professional development	WX	Interpretation
I will employ digital technologies in personal learning and professional development.	3.8	Most of the Time
I am aware of the technologies to improve practice and monitor continuing professional development.	3.9	Most of the Time
Procedural knowledge		
I maintain a professional responsibility to adhere to digital health legislation, policy and ethics, including confidentiality, privacy and security, and professional conduct.	4.3	Always
Digital identity		

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I recognize that their professional digital footprint should showcase nurses' skills, education, and professional experience.	4.1	Most of the Time
I understand the benefits and risks of different ways of representing oneself online, both professionally and personally, and adheres to organizational and professional social media policies.	4.2	Most of the Time
I understand that online posts remain in the public domain and contribute to an individual's digital footprint	4.1	Most of the Time
Indicative content		
I use available digital technologies to support learning and professional development	4.1	Most of the Time
I employ legal framework, relevant policies governing digital health	4.1	Most of the Time
I am aware of digital identity and cyber security	4.2	Most of the Time
I use available tools to develop an online digital identity	3.9	Most of the Time
I am acquainted with benefits and risks of maintaining an online digital identity	4.1	Most of the Time
Grand Mean	4.06	Most of the Time
Patient digital health advocacy	WX	Interpretation
I understand the role of the nurse in advocating for a person's access to digital health technologies and establishing and developing the person's digital literacy.	4.3	Always
I understand the benefits and possible risks of different digital health applications when assisting and empowering the person to use evidence based digital resources.	4.2	Always
I use digital health in partnership with the person to aid culturally appropriate, informed decision-making and health literacy.	3.9	Most of the time
I empower and assists, where appropriate, the person in using a safe and culturally appropriate range of communication technologies in their care, such as telehealth consultations.	4.1	Most of the time
Leadership with organization		
I recognized the role of the nurse in promoting the use of digital health technologies within an inter professional framework.	4.1	Most of the time
I understand the role of the nurse in the implementation and evaluation of digital health technologies.	4.1	Most of the time
I recognize the advantages and challenges of digital health in practice	4.2	Always
Digital leadership		
I understand the leadership role of the nurse in the identification, co-production, design, implementation, and evaluation of digital health technologies that support nursing practice.	4.1	Most of the time
I understand the leadership role of the nurse in the design, implementation and evaluation of digital health technologies at organizational and national levels across a broad range of stakeholders, taking into consideration disability, language, literacy levels and cultural backgrounds.	4.1	Most of the time
Grand Mean	4.12	Most of the time
Data Management	WX	Interpretation
I understand informatics and digital health terminology	4	Most of the time
I understand the purpose, structure, use, and storage of electronic health records (EHR)	4.2	Most of the time
I manage and apply information within the relevant scope of practice and healthcare context	4.2	Most of the time

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I use health data and how, for the benefit of the person and the healthcare system.	4.2	Most of the time
Data Capture		
I understand that nurses are crucial in the capture of data and advises on their use within the healthcare system	4.1	Most of the time
I understand how data is stored and used throughout the healthcare system	4	Most of the time
I systematically and accurately collect and records relevant data in a structured format, taking into consideration the requirements for data quality.	4	Most of the time
I understand the benefits and risks of using person-generated data in delivering care where an evidence base is required.	4.1	Most of the time
Data lifecycle		
I understand data structures and their importance in healthcare	4.1	Most of the time
I have a baseline understanding about structured languages used in nursing in relation to data capture, aggregation, storage, use and destruction of data.	4.1	Most of the time
I recognize the role of data integrity in healthcare and the importance of complete, timely, accurate and validated data.	4.2	Most of the time
I understand the transition from data, which is validated through information and knowledge, to evidenced-based decision-making.	4.1	Most of the time
Grand Mean	4.11	Most of the time
I critically evaluate and sources information to support evidence-based decision-making for practice and research	3.9	Most of the time
I use complete, accurate, validated data to assess nursing practice and provide an opportunity to influence health service delivery, management, planning, policy, resourcing, practice, research, education, and continuous improvement.	4.1	Most of the time
Data sharing		
I understand the concepts relating to data linkage	3.9	Most of the time
I identify the purposes, benefits and risks of aggregating clinical data from multiple sources	4.1	Most of the time
I understand the importance of data analytics and how they influence decision-making and care delivery	4	Most of the time
I recognize the various data sources available and judges their quality, including person-generated data	3.9	Most of the time
I understand the importance of collecting data once and using it many to ensure it is used as effectively as possible for safer, better care.	4.2	Most of the time
Extending practice		
I understand the use of digital health technologies to support innovation, quality improvement, research, and evidence-based practice.	4.3	Most of the time
I understand the uses of digital technologies to facilitate person empowerment, engagement, education and self-managemen t of health.	4.1	Most of the time
Grand Mean	4.04	Most of the time
Digital Health Governance	WX	Interpretation
I understand the principles of data and information governance, including privacy and security requirements.	4	Most of the time
I recognize the advantages and challenges of digital health in practice	4.1	Most of the time
I use a range of approved devices, applications, and software for undertaking nursing practices	4.1	Most of the time
I understand nursing practices in relation to keeping data secure.	4.1	Most of the time
I recognize the importance of role-based access	4.2	Most of the time
I recognize current and future risk regarding cyber security	4.4	Most of the time

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Grand Mean		4.15	Most of the time

	Interval	***Interpretation***
5	*4.21-5.00*	*Always*
4	*3.41-4.20*	*Most of the Time*
3	*2.61-3.40*	*Sometimes*
2	*1.81-2.60*	*Rarely*
1	*1.00-1.80*	*Never*

The present study revealed that nurses demonstrated high competency levels (grand mean = 4.10), particularly in professional development and lifelong learning, as most respondents actively engaged in upskilling initiatives. This aligns with Alharbi et al. (2022), who reported that continuous professional development programs significantly enhance digital health competencies among nurses in the Middle East. Similarly, Rahman et al. (2021) found that nurses' commitment to lifelong learning strongly correlates with their ability to adapt to emerging technologies, particularly in hospital-based settings. Likewise, Camacho et al. (2023) emphasized that nurses who frequently participate in formal training demonstrate higher adaptability and confidence in digital environments.

In terms of competence in utilizing digital health tools and systems, the current findings corroborate Zhang et al. (2022), who highlighted strong proficiency among nurses in handling electronic health records and telemedicine platforms, driven by organizational mandates. Comparable results were reported by Liu et al. (2021), indicating that technical proficiency among nurses often exceeds their understanding of associated legal and ethical requirements. Furthermore, Al-Hadhrami et al. (2022) observed that the increased adoption of hospital information systems in Gulf countries led to improved technical skills among nurses, though disparities in advanced functionalities persisted.

However, the study revealed room for improvement in legal and ethical dimensions, particularly regarding data governance, patient confidentiality, and consent protocols. This is consistent with Topaz and Ronquillo (2021), who observed that despite advancements in digital competency, nurses frequently lack adequate training in ethical considerations and cybersecurity practices. Similarly, Gagnon et al. (2023) noted that while digital literacy among nurses is increasing, gaps remain in understanding data privacy laws, especially when using telehealth platforms.

Likewise, Chow et al. (2021) reported that insufficient institutional policies and training related to health information governance contribute to persistent knowledge gaps in legal compliance.

Relationship between Nursing Practices in Digital Technology and Digital Health Competencies

This final section of the chapter presents the correlation between the nursing practice in digital technology and digital health competencies

Table 3. Correlation between Nursing Practices in Digital Technology and Digital Health Competencies

Variable 1	**Variable 2**	**Correlation Coefficient (r)**	**Interpretation**	***p*-value**	**Interpretation**
Nursing Practices	Digital Health Competency	0.0118	Very Low Correlation	0.7143	Not Significant

The correlation between nurses' practices and their digital health competencies was negligible and not statistically significant (r = 0.0118). This suggests that having the necessary skills does not automatically translate into consistent practice. Possible reasons include structural and organizational constraints such as limited access to updated technologies, insufficient IT support, and absence of clear institutional policies. This observation is consistent with the Technology-Organization-Environment framework, which posits that organizational readiness is crucial for digital transformation (Mendoza et al., 2022). Thus, competency-building initiatives should be coupled with systemic interventions to foster actual implementation.

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Conclusions

Nurses at Bahrain Hospital reported moderate application of digital technologies, with strong utilization of telehealth and electronic health records but lower performance in legal safeguards and identity protection. Digital health competencies were generally high, especially in continuous learning and technical proficiency, yet weaker in legal and ethical knowledge. The relationship between practices and competencies was negligible (r = 0.0118), indicating that skills alone are insufficient to ensure practice integration without organizational and structural support.

Recommendations

Based on the findings, it is recommended to Implement mandatory CPD programs (minimum 10 units annually) on digital health tools, data security, and legal compliance. Conduct quarterly hands-on workshops on cybersecurity, electronic health records (EHR), and telehealth systems. Upgrade hospital digital infrastructure and ensure 24/7 IT assistance, reducing system downtime by at least 90%. Develop clear institutional policies aligned with Bahrain's health strategy and WHO digital health guidelines. Establish a Digital Health Governance Committee to monitor compliance with data privacy and ethical standards.

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Nurse Manager Support and Staff Nurses' Self-Esteem: The Role of Supportive Leadership in Nursing Practice

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Abstract
Aim This study examined the relationship between nurse manager support and the self-esteem of staff nurses. While international research has highlighted the role of supportive leadership in job satisfaction and retention, limited evidence exists on its direct influence on nurses' self-esteem, particularly in the Philippine context.
Methods A descriptive-correlational design was employed with 35 staff nurses as respondents. Data were collected using a standardized nurse manager support questionnaire and the Rosenberg Self-Esteem Scale (RSES). Descriptive statistics summarized demographic profiles, support ratings, and self-esteem levels, while Pearson's correlation tested the relationship between variables.
Results Respondents were mostly young, female, and had one to five years of work experience. Nurse manager support was consistently rated highly across all domains. Most nurses reported normal self-esteem (74.29%), while 22.86% demonstrated high self-esteem. A significant positive correlation emerged between nurse manager support and nurses' self-esteem ($r = .455$, $p = .006$).
Conclusion Supportive leadership behaviors—such as recognition, feedback, and respect—were positively associated with higher levels of self-esteem among staff nurses. Guided by Bandura's Self-Efficacy Theory and Bass and Avolio's Transformational Leadership Theory, the study emphasizes the value of sustaining supportive leadership practices and addressing self-esteem gaps through structured development programs.
Keywords: *Nurse manager support, nurses' self-esteem, self-efficacy, transformational leadership, Rosenberg Self-Esteem Scale*

INTRODUCTION

Lately, discussions around nurse leadership have taken a sharper turn toward understanding how the nuanced support of nurse managers translates into self-esteem and morale among staff. Globally, studies highlight the psychological benefits of effective leadership. For example, in China, perceived organizational support not only raised nurses' self-esteem but also enhanced their sense of professional benefit, with self-esteem acting as a partial mediator (Wang et al., 2022). Meanwhile, during the global upheaval of the COVID-19 pandemic, research in Qatar revealed that nurses demonstrated high levels of self-esteem, resilience, and self-compassion—qualities that were interrelated and appeared to buffer psychological distress (Joy et al., 2023).

At the same time, systematic reviews have underscored the critical role of nursing leadership in shaping performance and motivation. A recent meta-analysis classified key leadership behaviors—such as autonomy support, competence building, and relational connectedness—as essential predictors of nurse motivation and performance (Alsadaan et al., 2023). Another study discussed how relational leadership styles, safe work environments, and effective communication bolster nurse resilience (Sihvola et al., 2022). On the management front, the American Organization for Nursing Leadership's Fall 2024 report underscored how intentional, supportive interactions from nurse managers are central to retaining leadership and sustaining high-quality care in evolving healthcare systems (AONL & Laudio, 2024). In the Philippine context, while studies on nursing leadership are emerging, there is a notable gap in research focusing on the relationship between nurse manager support and nurse self-esteem. A study by Alibudbud (2023) addressed the issue of burnout among Filipino nurses, emphasizing the need for supportive leadership to mitigate stress and enhance retention. Similarly, research on teacher leadership in the Philippines has emphasized the importance of reflective and supportive leadership frameworks in sustaining motivation and performance, which can parallel the nursing context (Carvajal et al., 2023).

Still, there is a significant gap between these insights and the everyday experience of nurse self-esteem—especially when measured through validated tools like the Rosenberg Self-Esteem Scale (RSES). While the benefits of leadership are increasingly recognized, few studies have directly explored how specific managerial behaviors—such

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as finding meaning in work, nurturing autonomy, recognizing contributions, and treating nurses as respected team members—connect to self-esteem in clinical practice.

This gap is particularly urgent in the local context, where issues such as nurse turnover, morale, and burnout continue to surface. Evidence is surprisingly sparse in the Philippines, even though frontline dynamics of support, respect, and recognition arguably determine whether a nurse stays, thrives, or quietly fades under pressure. Since self-esteem is foundational to nurses' professional assurance, exploring its relationship with managerial support offers critical insight into retention and performance.

This study aims to fill that space. Focusing specifically on perceived nurse manager support across five targeted dimensions and linking them to the RSES, it seeks to identify which dimensions of managerial support are most strongly associated with staff nurses' self-esteem—in this case, among Filipino staff nurses. By also considering demographic factors like age, sex, and years of work experience, the study builds a textured map of how support and self-esteem interact across real-world contexts.

In doing so, it contributes to both theory and practice. On the academic side, it sharpens the concept of managerial support by tying it to a robust psychological measure of self-esteem. Practically, it offers grounded, actionable insights for leadership training, mentorship programs, and policy frameworks—all aiming to nurture nurses who feel valued, capable, and ready to lead care with self-esteem.

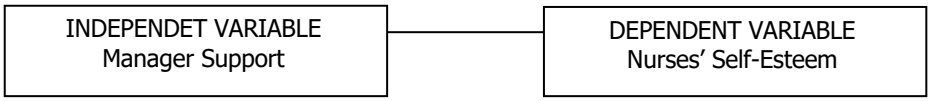

Figure 1. Conceptual Framework

The conceptual framework illustrates the relationship between nurse manager support (the independent variable) and nurses' self-esteem (the dependent variable). Nurse manager support is conceptualized across five key dimensions: providing meaning to work, supporting autonomy, recognizing work, overcoming obstacles, and respecting staff as team members. These dimensions are expected to influence nurses' self-esteem, as supported by both Bandura's Self-Efficacy Theory and Bass and Avolio's Transformational Leadership Theory.

Bandura's Self-Efficacy Theory (1977, 1997) posits that individuals' belief in their abilities is shaped by mastery experiences, vicarious learning, verbal persuasion, and emotional states. While the Rosenberg Self-Esteem Scale (RSES) measures global self-esteem rather than task-specific self-efficacy, self-esteem can be viewed as a broader indicator of professional assurance that conceptually overlaps with self-efficacy. In this study, self-esteem—measured through the RSES—is interpreted as an outcome shaped by supportive leadership behaviors, consistent with Bandura's view that verbal persuasion and environmental reinforcement strengthen individuals' beliefs in their worth and capabilities. Nurse manager support, expressed through recognition, feedback, autonomy, and respect, functions as a source of verbal persuasion and environmental reinforcement that elevates nurses' self-belief.

To complement this, the study also draws on Bass and Avolio's Transformational Leadership Theory (1985, 1994), which highlights how leaders inspire and empower followers through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These leadership behaviors parallel the empowering actions measured in the study, such as providing meaning to work and recognizing contributions. Taken together, these two theories explain both the psychological mechanism (self-efficacy) and the leadership approach (transformational leadership) that underpin the observed correlation between nurse manager support and nurses' self-esteem.

Statement of the Problem

Nursing leadership has been widely recognized as a critical factor in shaping staff morale, job satisfaction, and retention. Globally, research has highlighted that supportive managerial behaviors enhance nurses' psychological well-being and professional assurance. However, despite this growing body of international evidence, there remains limited empirical focus on the relationship between nurse manager support and the self-esteem of staff nurses in the Philippine context. This gap is concerning, as self-esteem is closely tied to nurses' confidence, resilience, and overall performance in healthcare delivery.

In the Philippines, issues of turnover, burnout, and workforce shortages persist, with nurse morale often cited as a contributing factor. While studies abroad have identified leadership practices—such as recognition, feedback, and respect—as key influences on self-esteem, evidence directly linking nurse manager support with

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nurses' self-esteem locally remains scarce. Without such data, healthcare institutions may lack evidence-based strategies to strengthen leadership practices that promote nurse well-being and retention.

This study therefore addressed the urgent need to investigate the relationship between nurse manager support and staff nurses' self-esteem. By examining both the dimensions of managerial support and the self-esteem levels of nurses, the study sought to provide insights into which leadership behaviors most strongly influence professional assurance. The findings aim to contribute to nursing leadership practice, professional development, and institutional policies that foster supportive work environments and elevate the self-esteem of Filipino staff nurses.

Research Objectives

This study aimed to determine the relationship between nurse manager support and the self-esteem of staff nurses. Specifically, it sought:

1. To determine the demographic profile of the respondents in terms of:
   1.1. Age
   1.2. Sex
   1.3. Years of work experience
2. To assess the level of nurse manager support as perceived by staff nurses in terms of the following dimensions:
   2.1. Providing meaning to work
   2.2. Supporting autonomy to build self-esteem
   2.3. Providing support to overcome obstacles at work
   2.4. Recognizing work
   2.5. Respecting staff as team members
3. To measure the level of nurses' self-esteem using the Rosenberg Self-Esteem Scale (RSES).
4. To determine whether there is a significant correlation between nurse manager support and nurses' self-esteem.

Research Questions

To achieve these objectives, the study sought to answer the following questions:

1. What is the demographic profile of the respondents in terms of:
   1.1. Age
   1.2. Sex
   1.3. Years of work experience?
2. How do staff nurses assess the level of nurse manager support in terms of the following dimensions:
   2.1. Providing meaning to work
   2.2. Supporting autonomy to build self-esteem
   2.3. Providing support to overcome obstacles at work
   2.4. Recognizing work
   2.5. Respecting staff as team members?
3. What is the level of nurses' self-esteem as measured by the Rosenberg Self-Esteem Scale (RSES)?
4. Is there a significant correlation between nurse manager support and nurses' self-esteem?

Hypothesis

The null hypothesis of this study, as tested at a significance level of $p < .05$, is: There is no significant relationship between nurse manager support and nurses' self-esteem.

METHODS

Research Design

This study employed a descriptive-correlational design, which is appropriate for examining the relationship between nurse manager support and nurses' self-esteem without manipulating variables. A correlational design enables researchers to quantify the degree and direction of association between variables as they naturally occur, rather than inferring causality (Creswell & Creswell, 2018). This approach aligns with the study's objectives of (a) describing the demographic profile of nurses, (b) assessing levels of nurse manager support and nurses' self-esteem, and (c) testing the statistical relationship between these two constructs. Unlike experimental designs that control conditions to establish cause-and-effect, the descriptive-correlational design is particularly useful in nursing and

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organizational research for identifying meaningful associations that can inform practice and policy (Polit & Beck, 2021). Such a design has also been recommended in similar educational and professional settings, as it allows researchers to capture natural dynamics within a workplace context (Amihan et al., 2023). Thus, the chosen design ensures methodological coherence with the research objectives and strengthens the ecological validity of findings in a real-world clinical setting.

Population and Sampling

The study was conducted in a Level 1 hospital in Bulacan, Philippines, which is strategically located and serves as a primary healthcare provider for the surrounding community. This level is considered basic secondary care in the Philippine healthcare system, which serves as an important access point for emergency and essential medical services, especially in local communities. It is the foundational hospital level before the more specialized Level 2 and Level 3 hospitals, which provide more advanced clinical services and intensive care. To maintain institutional confidentiality, the hospital's name is withheld, although its size and scope of services justify its selection as the study site. With an authorized 50-bed capacity expanded to accommodate over 100 beds, the hospital provides emergency, medical, surgical, pediatric, and obstetric services, creating a diverse clinical environment in which staff nurses work under varying pressures. This setting was deemed appropriate because it reflects the organizational dynamics where nurse manager support directly influences staff self-esteem in day-to-day practice.

The target population consisted of all registered staff nurses employed in this hospital. The sample size was 35 nurses, representing the total number of staff who met the eligibility criteria and consented to participate. Inclusion criteria were: (a) registered nurses with at least one year of clinical experience, (b) currently assigned to patient-facing areas such as the Emergency Room, wards, or Operating/Delivery Room, and (c) within the working age range of 21 to 59 years. Exclusion criteria included nurses on prolonged leave and those with diagnosed psychological conditions that might affect their responses, ensuring data reliability and protecting participants' well-being.

The study utilized total population sampling, a form of non-probability purposive sampling, wherein all eligible nurses within the study site were invited and included. This approach was chosen because of the small and accessible population, which made it feasible to capture the perspectives of all qualified participants. Total population sampling is particularly advantageous when dealing with specialized populations, as it reduces the risk of excluding relevant voices and enhances the depth of contextual understanding (Etikan et al., 2016). This technique also aligns with the correlational design of the study, as it allows for a comprehensive analysis of the relationship between nurse manager support and nurses' self-esteem within the entire clinical workforce of the hospital. Similar approaches have been used in recent Philippine educational and healthcare research to ensure inclusivity and richer contextual interpretation (Pangilinan, 2025).

Instruments

Two standardized instruments were adapted to measure the variables of interest: the Nurse Managers' Empowering Behavioral Scale for Staff Nurses (NMEB-SN) and the Rosenberg Self-Esteem Scale (RSES).

The NMEB-SN (short version), developed and validated by Sasaki et al. (2022), was used to assess nurse manager support. This 15-item instrument is structured across five subscales: (a) providing meaning to work, (b) supporting autonomy, (c) providing support to overcome obstacles at work, (d) recognizing work, and (e) respecting staff members. Each item is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating stronger perceptions of empowering and supportive managerial behaviors. The shortened NMEB-SN demonstrated strong psychometric properties in its validation study, with Cronbach's alpha exceeding 0.90 for internal consistency and an intraclass correlation coefficient (ICC) above 0.88 for test–retest reliability. Its construct and criterion-related validity were also confirmed, making it a reliable and efficient tool for capturing nurse manager support in clinical settings. Although the scale was reworded to enhance clarity and cultural relevance, it retained its original structure and underlying dimensions. No significant changes were made to the overall framework or intent of the instrument. This rewording aimed to improve comprehensibility for Filipino nurses, ensuring that the instrument resonated with local experiences and language. However, it is important to note that no formal pre-testing or local validation was conducted after the rewording process.

To measure nurses' self-esteem, the study employed the Rosenberg Self-Esteem Scale (RSES), originally developed by Rosenberg (1965). This widely used 10-item scale measures global self-esteem as an indicator of self-esteem and self-worth. Respondents rate each item on a 4-point Likert scale ranging from 0 (strongly disagree) to 3 (strongly agree), with total scores ranging from 0 to 30. Scores between 15 and 25 indicate normal self-esteem, scores below 15 suggest low self-esteem, and scores above 25 reflect high self-esteem (Buchanan, 2024). The RSES

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has been extensively validated across diverse populations, showing robust psychometric properties, with reported Cronbach's alpha values ranging from 0.77 to 0.88, supporting its reliability and construct validity in both clinical and non-clinical contexts. The Rosenberg Self-Esteem Scale (RSES) was adopted without modification, as it has been widely used in various cultural contexts and has demonstrated strong psychometric properties. Its continued adoption in Philippine studies further supports its appropriateness in cross-cultural applications.

Data Collection

Data collection commenced after obtaining approval from the university's Research Ethics Committee and permission from the hospital administration. Eligible staff nurses were approached, informed of the study's purpose and procedures, and asked to provide written informed consent, with assurance of voluntary participation and the right to withdraw at any time. The two standardized instruments—the Nurse Managers' Empowering Behavioral Scale for Staff Nurses (NMEB-SN) and the Rosenberg Self-Esteem Scale (RSES)—were administered in printed form during non-duty hours to avoid work disruption, with clear instructions provided. Data gathering spanned three weeks, during which the researcher facilitated distribution and collection while ensuring minimal influence on responses. Completed questionnaires were placed in sealed envelopes, coded to maintain anonymity, and stored securely in a locked container before being encoded in a password-protected digital file. All data were treated confidentially, and results were reported in aggregate form to protect participant identity. This process ensured systematic, ethical, and reliable data collection consistent with the study's objectives.

Data Analysis

The data were analyzed using both descriptive and inferential statistics to address the study objectives. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the demographic profile of respondents, their assessment of nurse manager support, and their level of self-esteem.

For inferential analysis, the Pearson Product-Moment Correlation Coefficient (r) was applied to determine the relationship between nurse manager support and nurses' self-esteem. Before selecting this test, the normality of the composite scores from both instruments (NMEB-SN and RSES) was examined using multiple approaches: the Shapiro–Wilk test showed non-significant results ($p > .05$), indicating no serious deviation from normality; skewness and kurtosis values fell within the acceptable range of −1 to +1; and inspection of Q–Q plots revealed points clustering closely along the diagonal line. Taken together, these findings supported the assumption of approximate normality, justifying the use of Pearson's r over non-parametric alternatives such as Spearman's rho (Pallant, 2020). Consistent with similar correlational studies in education and healthcare, such statistical rigor ensured valid inferences and reliable interpretation (Punzalan, Bontuyan, Sanchez, Pangilinan, & Sanchez, 2025).

All analyses were conducted using two-tailed tests at a significance level of $p < .05$. This statistical treatment ensured methodological coherence with the research design and objectives, allowing the study to establish the strength and direction of association between nurse manager support and nurses' self-esteem.

Ethical Considerations

The study strictly adhered to ethical standards in conducting research involving human participants, such as the Declaration of Helsinki and the Philippine National Ethical Guidelines for Health and Health-Related Research (2017). Prior to data collection, approval was obtained from the University Research Ethics Committee, and permission was secured from the hospital administration. Participation was entirely voluntary, and all eligible nurses were informed about the study's objectives, procedures, potential risks, and benefits before signing a written informed consent form. Respondents were assured of their right to refuse or withdraw at any point without penalty or repercussions. Privacy and confidentiality were upheld by assigning code numbers instead of names, storing completed questionnaires in sealed envelopes, and securing data in password-protected files accessible only to the researcher. To ensure beneficence, the study posed minimal risk, limited to the time spent answering the questionnaires, while offering potential benefits such as contributing to improved leadership practices and workplace conditions. All findings were reported in aggregate form to prevent identification of individual participants or institutions. These safeguards ensured respect for autonomy, protection from harm, and compliance with ethical research standards.

RESULTS and DISCUSSION

This section presents the findings of the study on the relationship between nurse manager support and nurses' self-esteem. Data were obtained from 35 staff nurses employed in a Level 1 secondary hospital in Bulacan, Philippines, who met the inclusion criteria and consented to participate. The results are presented in line with the

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research questions, beginning with the demographic characteristics of the respondents, followed by their assessment of nurse manager support, their level of self-esteem, and the correlation between these two variables. Descriptive statistics were used to summarize demographic and scale responses, while inferential statistics tested the hypothesized relationship. Findings are discussed in relation to existing literature and the theoretical framework, highlighting implications for nursing leadership, professional self-esteem, and clinical practice.

Table 1
Demographic Profile of Respondents (N = 35)

Profile Variable	f	%
Age		
22–26 years old	13	37.14
27–31 years old	4	11.43
32–36 years old	7	20.00
37–41 years old	5	14.29
42–46 years old	4	11.43
47 and above	2	5.71
Total	35	100.00
Sex		
Male	8	22.86
Female	27	77.14
Total	35	100.00
Years of Work Experience		
Less than 1 year	1	2.86
1–5 years	31	88.57
6–10 years	1	2.86
11–15 years	1	2.86
16–20 years	1	2.86
Total	35	100.00

As reflected in Table 1, the demographic profile of the respondents shows that the majority of nurses were young, with 37.14% aged 22–26 years, followed by 20.00% aged 32–36 years, and 14.29% aged 37–41 years. A smaller proportion were 27–31 years old (11.43%), 42–46 years old (11.43%), and 47 years and above (5.71%). In terms of sex, most respondents were female (77.14%), while 22.86% were male, reflecting the predominance of women in the nursing workforce. With respect to years of work experience, an overwhelming majority (88.57%) had 1–5 years of experience, whereas only a few reported less than 1 year (2.86%), 6–10 years (2.86%), 11–15 years (2.86%), and 16–20 years (2.86%). Overall, the findings suggest that the respondents were predominantly young, early-career, female nurses, which may influence how they perceive and value support from nurse managers in developing self-esteem within clinical practice.

Table 2
Assessment of Nurse Manager Support as Perceived by Staff Nurses (N = 35)

Domain / Item	M	SD	Interpretation
Providing Meaning to Work			
My nurse manager explains things clearly and thoroughly.	4.51	0.51	Strongly Agree
My nurse manager asks me to perform work in a way that makes me act positively.	4.49	0.56	Strongly Agree
My nurse manager creates opportunities for me to reflect on the kind of nursing I should aim to achieve.	4.51	0.54	Strongly Agree
Subscale Mean	4.50	0.50	Strongly Agree
Supporting Autonomy to Build Self-Esteem			
My nurse manager reflects our suggestions in work.	4.46	0.56	Strongly Agree
My nurse manager works to gain understanding and cooperation from upper management.	4.49	0.55	Strongly Agree
My nurse manager leaves self-determination in my work up to me	4.29	0.54	Strongly Agree

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but takes final responsibility.			
Subscale Mean	4.41	0.51	Strongly Agree
Providing Support to Overcome Obstacles at Work			
My nurse manager shows me new perspectives so that my work will go well.	4.29	0.66	Strongly Agree
My nurse manager notices when I encounter trouble at work and provides opportunities to discuss.	4.37	0.57	Strongly Agree
My nurse manager supports my efforts to reflect upon issues in my work.	4.40	0.61	Strongly Agree
Subscale Mean	4.35	0.61	Strongly Agree
Recognizing Work			
My nurse manager tells me that I have matured in performing my daily work.	4.29	0.64	Strongly Agree
My nurse manager praises the results of my work.	4.23	0.70	Strongly Agree
My nurse manager utilizes the results of the work I have done.	4.29	0.68	Strongly Agree
Subscale Mean	4.27	0.67	Strongly Agree
Respecting Me as a Staff Member			
My nurse manager realizes when we are in difficult situations and shows empathy.	4.31	0.66	Strongly Agree
My nurse manager tells me that s/he understands my position.	4.40	0.62	Strongly Agree
My nurse manager listens to our opinions and reflects them in work.	4.46	0.64	Strongly Agree
Subscale Mean	4.39	0.64	Strongly Agree
Overall Mean	**4.38**	**0.59**	**Strongly Agree**

As shown in Table 2, the assessment of nurse manager support among staff nurses revealed consistently high mean scores across all domains, ranging from 4.27 to 4.51, all interpreted as "Strongly Agree." The overall mean (M = 4.38, SD = 0.59) demonstrates that staff nurses perceive nurse managers as consistently supportive in fostering meaning, autonomy, recognition, empathy, and guidance in overcoming workplace challenges.

These findings can be interpreted through Bandura's Self-Efficacy Theory (1977, 1997), which posits that individuals' self-esteem is shaped by mastery experiences, vicarious learning, verbal persuasion, and emotional states. Supportive behaviors such as recognition, feedback, and empathy function as forms of verbal persuasion and environmental reinforcement, strengthening nurses' belief in their professional abilities. At the same time, Bass and Avolio's Transformational Leadership Theory (1985, 1994) provides a complementary lens, emphasizing how leaders inspire followers through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These behaviors closely align with the subscales of this study, such as providing meaning to work, encouraging autonomy, and recognizing contributions. Together, these theories explain how supportive leadership behaviors translate into higher levels of nurse self-esteem.

The results are consistent with contemporary literature. Alsadaan et al. (2023) reported that leadership behaviors promoting autonomy and relational connectedness enhance staff performance and motivation. Similarly, Ali et al. (2021) found that supportive managerial actions are significantly related to nurses' autonomy, while Gottlieb (2021) emphasized that recognition and emotional validation create empowering conditions that bolster self-esteem. Salvador et al. (2025) indicated that collaborative and supportive conflict management behaviors enhanced morale, similar to how nurse manager support in this study—through recognition and respect—positively influences nurses' self-esteem.

A limitation, however, is the uniformly high ratings across all subscales, which may suggest social desirability bias or cultural tendencies toward positive reporting. While the findings strongly align with theoretical and empirical evidence, they should be interpreted with caution, and further studies could use mixed methods to validate the depth of these perceptions.

Table 3
Level of Nurses' self-esteem as measured by the Rosenberg Self-Esteem Scale (N = 35)

Self-Esteem Level (RSES Score Range)	f	%	Interpretation
0–15	1	2.86	Low self-esteem

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16–25	26	74.29	Normal self-esteem
26–30	8	22.86	High self-esteem
Total	35	100.00	

Note. f = frequency; % = percentage. RSES scoring: 0–15 = Low; 16–25 = Normal; 26–30 = High.

As indicated in Table 3, the majority of staff nurses (74.29%) scored within the "normal self-esteem" range, while a notable proportion (22.86%) demonstrated "high self-esteem." Only a one respondent (2.86%) fell within the "low self-esteem" range. This distribution suggests that most nurses perceive themselves as competent and capable in their roles, reflecting a generally healthy level of professional self-esteem.

These findings align with Bandura's Self-Efficacy Theory (1977, 1997), which emphasizes that individuals' self-esteem is reinforced through mastery experiences, vicarious learning, verbal persuasion, and the regulation of emotional states. Nurses' self-esteem, as captured by RSES, may reflect cumulative mastery from clinical practice, reinforced by supportive feedback and recognition from their managers. At the same time, Transformational Leadership Theory (Bass, 1985; Bass & Avolio, 1994) complements this interpretation by suggesting that inspirational motivation and individualized consideration from nurse managers can elevate nurses' belief in their professional capabilities, thus sustaining higher self-esteem levels.

Joy et al. (2023) found that nurses' self-esteem was strongly associated with resilience and self-compassion during the COVID-19 pandemic, highlighting self-esteem as a protective factor in stressful conditions. Similarly, Wang et al. (2022) reported that organizational support significantly enhanced nurses' self-esteem, which in turn improved their perceived professional benefits. These findings corroborate the present results, indicating that self-esteem among nurses is not only an individual trait but also shaped by workplace conditions and leadership support.

A limitation to note is the clustering of scores within the "normal" range, which may obscure subtle variations in self-esteem levels among nurses. Moreover, self-report measures such as the RSES can be influenced by cultural norms or social desirability, potentially inflating self-esteem ratings. Nevertheless, the relatively high proportion of nurses reporting normal to high self-esteem provides encouraging evidence of a workforce that feels professionally assured, likely bolstered by both individual experiences and supportive leadership.

Table 4
Correlation Between Nurse Manager Support and Nurses' Self-Esteem (N = 35)

Variables	r	p-value (2-tailed)	Interpretation
Nurse Manager Support and Nurses' Self-esteem	.455***	.006	Significant positive correlation

Note. Correlation is significant at the 0.01 level (2-tailed). A positive coefficient indicates that higher nurse manager support is associated with higher self-esteem among nurses.

The results reveal a significant positive correlation between nurse manager support and nurses' self-esteem ($r = .455$, $p = .006$). This indicates that higher levels of perceived support from nurse managers are associated with greater self-esteem among staff nurses. The moderate strength of the relationship suggests that while nurse manager support is a meaningful predictor of self-esteem, other factors such as personal resilience, peer relationships, and organizational climate may also play a role.

These findings are well explained through Bandura's Self-Efficacy Theory (1977, 1997). Supportive managerial behaviors—such as recognition, constructive feedback, and emotional encouragement—serve as forms of verbal persuasion that strengthen nurses' self-belief. When leaders provide affirmation and opportunities to succeed, nurses are more likely to internalize a sense of competence, which enhances their professional self-esteem. Although self-esteem and self-efficacy are distinct constructs, they overlap in reflecting an individual's assurance in their professional role. In this study, self-esteem—measured by the Rosenberg Self-Esteem Scale—is treated as a broader outcome influenced by the same mechanisms that underpin self-efficacy, thereby justifying the application of Bandura's theory to interpret the results. At the same time, Transformational Leadership Theory (Bass, 1985; Bass & Avolio, 1994) complements this by describing how inspirational motivation and individualized consideration empower staff to view their work as meaningful and achievable, further reinforcing self-esteem.

Alsadaan et al. (2023) demonstrated that leadership behaviors fostering autonomy and relational support significantly improved staff motivation and performance. Wang et al. (2022) also reported that organizational support positively influenced nurses' self-esteem, which mediated professional growth. Similarly, Joy et al. (2023) found that

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self-esteem and resilience were interlinked in nurses during the COVID-19 pandemic, reinforcing the idea that supportive environments sustain self-esteem under pressure.

A limitation of this result lies in its correlational nature—it demonstrates association but not causation. While supportive nurse managers are linked with higher self-esteem, it cannot be ruled out that confident nurses may also elicit more support from their managers. Further longitudinal or experimental designs would be needed to confirm causality.

Overall, the significant correlation underscores the crucial role of nurse manager support in fostering a self-assured and empowered nursing workforce, consistent with both theoretical frameworks and recent empirical evidence.

Conclusions

This study examined the relationship between nurse manager support and the self-esteem of staff nurses. The demographic profile showed that most respondents were young, predominantly female, and had one to five years of work experience. Nurse manager support was consistently rated highly across all domains, with staff nurses strongly agreeing that their managers provided meaning to work, supported autonomy, offered guidance in overcoming obstacles, recognized contributions, and demonstrated respect. The level of self-esteem, as measured by the Rosenberg Self-Esteem Scale, was generally within the normal range, with a considerable proportion of nurses reporting high self-esteem. A significant positive correlation was established between nurse manager support and nurses' self-esteem, indicating that higher perceptions of managerial support are associated with stronger self-esteem among staff nurses.

Conceptually, while the Rosenberg Self-Esteem Scale measures global self-esteem rather than task-specific self-efficacy, both constructs overlap in reflecting an individual's assurance in professional roles. Thus, the findings are well-explained by Bandura's Self-Efficacy Theory, where recognition, feedback, and verbal persuasion strengthen belief in one's worth and capability. Complementing this, Bass and Avolio's Transformational Leadership Theory highlights how inspirational motivation, individualized consideration, and recognition empower staff nurses and reinforce their sense of self-worth. Taken together, these theories explain the observed link between supportive leadership and staff nurses' self-esteem.

Practically, the study underscores the importance of sustaining supportive leadership practices and embedding structured self-esteem–building strategies within nursing environments. By doing so, healthcare institutions can cultivate a workforce that is not only competent but also confident, resilient, and empowered to deliver high-quality patient care.

The major limitation of this study lies in its reliance on self-reported measures, which may be influenced by social desirability bias or cultural tendencies toward positive reporting. Moreover, the relatively small sample size (N = 35) drawn from a single Level 1 hospital in Bulacan restricts the statistical power of the correlation analysis and limits the external validity of the findings. The cultural context of Filipino nursing plays a significant role in interpreting the findings. Cultural values, such as filial piety, pakikisama, and hiya, deeply influence how Filipino nurses interact with their superiors and perceive their work environment. These cultural values may affect how nurses respond to questions related to self-esteem and perceived manager support, as they might avoid expressing negative feelings about their work or leaders due to the importance of maintaining harmony and respect in hierarchical relationships. As such, these cultural influences should be considered when generalizing the results, as they may not fully align with findings from more individualistic cultures. To strengthen generalizability, future research is encouraged to involve larger and more diverse samples across multiple healthcare institutions, including tertiary and regional hospitals. Multi-site, large-scale replication studies would provide a more robust basis for confirming the relationship between nurse manager support and nurses' self-esteem across varied clinical contexts.

In sum, the study highlights the interconnectedness of nurse manager support and staff self-esteem, offering evidence that supportive leadership not only enhances individual self-belief but also contributes to a more empowered and resilient nursing workforce.

Recommendations

Based on the findings of this study, several recommendations are proposed. First, healthcare institutions should sustain and strengthen supportive leadership practices by providing continuous training and development programs for nurse managers. Emphasis should be placed on transformational leadership behaviors such as individualized consideration, recognition, and inspirational motivation, which have been shown to reinforce nurses' self-esteem. Second, structured self-esteem-building initiatives for nurses may be integrated into professional development programs. These can include mentorship systems, reflective practice workshops, and skills

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enhancement activities designed to reinforce mastery experiences and verbal persuasion, in line with self-efficacy principles. Third, the development of practical guidelines and IEC materials may be considered to standardize supportive leadership practices across units and to provide nurses with accessible tools that promote self-esteem and resilience in clinical settings.

Finally, to address the study's limitations, future research should expand the scope by including larger and more diverse samples across multiple healthcare institutions, such as tertiary and regional hospitals, to enhance statistical power and generalizability. Multi-site studies will allow for comparison across different organizational contexts and provide a stronger evidence base for leadership training and policy development. In addition, the use of mixed methods—such as combining quantitative surveys with qualitative interviews or focus groups—is recommended to capture more nuanced perspectives and reduce potential biases associated with self-report instruments. By implementing these recommendations, future studies can provide deeper insights while institutions build on existing strengths, thereby fostering a more empowered, self-assured, and resilient nursing workforce.

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Unveiling Perceptions: A Qualitative Exploration of Nursing Research Expectations Among Incoming Third-Year Students

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Abstract
Aim: This study explored the perceptions and expectations of incoming third-year nursing students regarding nursing research prior to their formal course exposure, focusing on their initial understanding, emotional responses, and perceived relevance.
Methods: A qualitative descriptive design was employed, involving reflective writings from 45 purposively selected incoming third-year Bachelor of Science in Nursing students enrolled in a private university in Bulacan, Philippines, during Academic Year 2025–2026. Data were collected through a validated semi-structured reflective writing guide and analyzed using qualitative content analysis guided by Graneheim and Lundman's framework.
Results: Analysis yielded seven interrelated themes: (1) building research competence through skill development and application; (2) navigating emotional responses—ranging from curiosity and excitement to anxiety and self-doubt; (3) research as a catalyst for evidence-based nursing and patient care improvement; (4) innovation and technological integration in nursing; (5) influence of educators, mentors, and learning environments; (6) challenges in research—technical and resource-related; and (7) research as a pathway for lifelong learning and career growth. Students expressed strong interest in linking research skills to clinical practice, acknowledged its role in enhancing patient outcomes, and recognized the value of innovation, while also identifying gaps in statistical, writing, and presentation skills.
Conclusion: Incoming third-year nursing students view nursing research as both a professional necessity and a personal opportunity for growth, while recognizing anticipated challenges. These insights underscore the need for research curricula that integrate early skill-building, emotional readiness support, mentorship, and practical application to sustain engagement and promote evidence-based practice.
Keywords: *Nursing research, student perceptions, student expectations, evidence-based practice, qualitative descriptive study, nursing education*

INTRODUCTION

In recent years, the role of research in undergraduate nursing education has gained unprecedented attention, with educational institutions worldwide recognizing the need to nurture research-literate nurses capable of engaging in evidence-based practice (EBP) early in their careers. Nursing research is no longer viewed as an isolated academic requirement but as a foundational pillar of professional nursing competence. Curricular reforms have emphasized the integration of research concepts as early as the second or third year of study, aiming to develop both research skills and a positive disposition toward inquiry (Durmuş et al., 2025). These efforts reflect a broader shift in nursing education—one that prioritizes not only knowledge and skill acquisition but also the cultivation of interest, confidence, and engagement in research endeavors.

Parallel to this global movement is an emerging focus on students' perceptions and expectations of research before formal instruction begins. Contemporary literature highlights that how students feel about research before they even open a textbook can significantly influence their motivation, engagement, and learning outcomes throughout the course. Studies indicate that early misconceptions—such as the belief that research is irrelevant to clinical practice or overly challenging—may hinder active participation and foster enduring negative attitudes (Karimi Mirzanezam et al., 2024). Conversely, when students begin with even a modest appreciation of research's role in improving patient care, they tend to demonstrate greater openness and sustained interest. These trends underscore

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the importance of examining nursing students' initial perspectives to better design educational approaches that foster not just competence but also research enthusiasm and professional curiosity from the outset.

Despite the increasing body of research investigating nursing students' perceptions of clinical environments, simulation-based learning, and active learning strategies during or after instruction (e.g., Koldestam et al., 2025; Al Malki et al., 2023), scholarship remains surprisingly limited regarding students' perceptions and expectations of nursing research prior to formal course engagement. Most of the existing literature centers on experiences during instruction or post-course reflections, rather than the pre-instructional mindset that students bring into their first research class. While recent studies explore perceptions of active learning (Kalu et al., 2023) and flipped classrooms (Dongmei Zhang et al., 2025), the foundational phase—when students hold beliefs or emotions about research before instruction begins—remains largely unexamined. This represents a critical omission because initial perceptions can profoundly influence motivation, engagement, and learning trajectories in rigorous subjects such as nursing research.

Moreover, within the Philippine context, research has yet to fully investigate incoming third-year nursing students' pre-course perceptions of research learning, particularly at private universities in Bulacan offering BS Nursing programs. While there is literature on clinical learning environments (Zhang et al., 2022) and instructional experiences in simulation and pedagogy (Al Malki et al., 2023; Kalu et al., 2023), the pre-instructional attitudes toward nursing research at this pivotal transitional point remain unexplored. Because the third year often marks the introduction of formal research coursework amidst clinical demands and theoretical complexity, understanding students' initial perceptions at this juncture is essential. This study addresses that gap by examining the research expectations, emotional dispositions, and conceptual understandings of students before they begin their Nursing Research course, thus providing insights that can inform more responsive and effective pedagogical design.

Statement of the Problem

Nursing research is a critical component of professional formation, equipping future nurses with the skills to engage in evidence-based practice and contribute to the advancement of healthcare. However, students often enter the research course with limited preparation, preconceived notions, and emotional responses that may hinder or enhance their engagement. For many, this transition from theoretical nursing concepts to research inquiry is accompanied by anxiety, self-doubt, or uncertainty about its relevance to clinical practice. While several studies have examined the outcomes of nursing research courses, limited attention has been given to the perceptions and expectations of students before they are formally introduced to research as a subject. Understanding these initial views is essential in shaping research pedagogy, designing responsive curricula, and providing mentorship that fosters early engagement. In the Philippine context, where nursing education continues to adapt to global standards and technological advancements, there is an urgent need to examine how incoming third-year students perceive and anticipate their research journey. This study seeks to address this gap by exploring the perceptions and expectations of nursing students toward research prior to formal academic exposure.

Research Objectives

General Objective

- To explore and describe the perceptions and expectations of incoming third-year nursing students toward nursing research prior to their formal academic engagement with the subject.

Specific Objectives

1. To identify students' initial understanding of nursing research as they enter the course.
2. To examine students' emotional responses toward nursing research, including curiosity, excitement, anxiety, and self-doubt.
3. To determine students' perceived relevance of nursing research to clinical practice, professional growth, and lifelong learning.
4. To describe the challenges and skill gaps students anticipate encountering in research, such as statistical knowledge, writing, and presentation.
5. To explore the influence of mentors, educators, and learning environments on students' perceptions and expectations of research.

Research Questions

1. What are the initial perceptions and understanding of incoming third-year nursing students toward nursing research?

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2. How do incoming third-year nursing students describe their emotional responses toward nursing research?
3. How do students perceive the relevance of nursing research to evidence-based practice, patient care, and career development?
4. What challenges and skill gaps do students anticipate in relation to nursing research?
5. How do educators, mentors, and learning environments influence students' perceptions and expectations of nursing research?

METHODS

Research Design

This study employed a qualitative descriptive design, which is appropriate for understanding the natural language, experiences, and perceptions of participants without imposing a pre-existing theoretical framework. This approach is particularly suited for nursing education research when the goal is to explore perceptions in a clear, minimally interpretive manner (Bradshaw et al., 2021). Similar descriptive qualitative methods have been used in other educational studies to capture authentic perspectives of students and teachers (Abenojar et al., 2025; Bontuyan, 2025). The design allowed the researcher to gain in-depth insights into how incoming third-year nursing students perceive nursing research before formal instruction.

Reflective writing was used as the primary data collection method, as it encourages self-expression and metacognitive engagement with the topic. This aligns well with the goals of qualitative descriptive studies, which aim to provide rich, straightforward accounts of participants' views in their own words. The data were analyzed using the qualitative content analysis framework of Graneheim and Lundman (2004), which emphasizes identifying meaning units, condensing them into codes, and clustering codes into categories that form overarching themes. This framework guided the analysis by ensuring a systematic, transparent process that preserved participants' perspectives while capturing patterns across the data.

Population and Sampling

The study population consisted of incoming third-year Bachelor of Science in Nursing students enrolled in the Nursing Research 1 course at a private university in Bulacan during the first semester of Academic Year 2025–2026. Forty-five (45) participants were selected through purposive sampling, as the study specifically sought to capture the perceptions of students who had no prior formal exposure to nursing research coursework. Purposive sampling was deemed appropriate since it is often employed to ensure that participants possess the most relevant experiences aligned with the study's objectives (Pangilinan, 2025).

The inclusion criteria were:

- Enrollment in the third-year level;
- No previous formal instruction in nursing research;
- Willingness to voluntarily participate in the study.

Participation was open to all qualified students regardless of sex or academic performance, and no incentives were provided to avoid undue influence.

Instruments

Data were collected through a semi-structured reflective writing guide, also referred to as an Interview Guide Questionnaire (IGQ). This researcher-developed instrument consisted of open-ended prompts designed to explore participants' prior understanding of nursing research, expectations for the course, emotional dispositions, perceived relevance to professional practice, and influencing factors shaping their current perceptions.

The IGQ underwent expert validation by two faculty members with extensive qualitative research experience and was pilot-tested with a small group of nursing students to ensure clarity, relevance, and appropriateness of prompts. This process of expert review and pilot testing reflects standard practices in instrument development, ensuring both reliability and validity in qualitative inquiry (Carvajal et al., 2025).

The final IGQ consisted of 11 open-ended items, encouraging participants to reflect deeply on both the cognitive (knowledge, awareness, expectations) and affective (attitudes, emotions, confidence) dimensions of their pre-course perceptions.

Data Collection

Data were gathered during the first two weeks of the semester, before any lectures or instructional activities related to nursing research were delivered. After securing ethical approval and obtaining informed consent, students

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were invited to complete the reflection either digitally via a secure Google Form or by submitting handwritten essays placed in sealed envelopes. Each participant was instructed to respond to the prompts with honesty and depth. They were assured that their responses would remain anonymous and would not affect their academic performance or course standing in any way.

Students' reflective writings were reviewed line by line, with significant phrases or sentences related to their perceptions identified as meaning units. These meaning units were then condensed, coded, and grouped into categories, which were further abstracted into themes following Graneheim and Lundman's (2004) structured approach. Data collection continued until saturation was reached, meaning no new themes or insights emerged from the students' reflections.

Data Analysis

The reflective texts were analyzed using qualitative content analysis, following the framework of Graneheim and Lundman (2004). This framework was well-suited to the study because it provides a clear, systematic approach for capturing both the manifest content of students' reflections and the latent meanings underlying their perceptions.

The process ensured trustworthiness in exploring pre-course expectations and involved five steps:

1. Familiarization – Reading all reflections multiple times to understand the overall content.
2. Meaning Unit Identification – Extracting significant statements related to perceptions and expectations.
3. Condensation and Coding – Reducing meaning units while preserving essential content, then applying descriptive codes.
4. Category Formation – Grouping similar codes into categories.
5. Theme Generation – Developing broader themes that reflect patterns across participant responses.

To ensure rigor, the researcher maintained a reflexive journal, conducted peer debriefing with a co-coder, and documented all coding decisions as part of an audit trail. Such strategies have been emphasized as essential for ensuring credibility and transparency in qualitative educational research (Amihan & Sanchez, 2023).

Ethical Considerations

This study was conducted with strict adherence to ethical standards to protect the rights, dignity, and confidentiality of all participants. Participants were informed about the purpose and nature of the study, their voluntary participation, and their right to withdraw at any time without consequences. Informed consent was obtained from each participant before participation, and they were assured that their identities would remain confidential throughout the research process.

Pseudonyms were used in all documentation to protect participant anonymity. Responses were collected in secure, private settings to ensure participant comfort, and all data files were stored securely with access limited to the research team. Ethical reflexivity was also practiced to ensure that participants' voices were faithfully represented and that researcher bias did not influence interpretations. These measures fostered a respectful and trustworthy research environment consistent with ethical norms in qualitative nursing research.

RESULTS and DISCUSSION

The findings of this study provide insight into the initial perceptions, expectations, and emotional dispositions of incoming third-year nursing students toward nursing research before formal academic exposure to the subject. Data were derived from reflective writings analyzed through qualitative content analysis, allowing themes to emerge from participants' own words and lived perspectives. A total of 45 incoming third-year Bachelor of Science in Nursing students from a private university in Bulacan participated in the study. All participants met the inclusion criteria of having no prior formal instruction in nursing research.

Table 1. Themes, Subthemes, and Representative Participant Quotes

Example Participant Quotes	Categories Integrated	Subtheme	Description	Theme

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P1 (Q4) – "Learn and develop research knowledge and skills that will help in my future career."P5 (Q6) – "Confident in writing from past experience, especially in creating literature reviews."P17 (Q10) – "Prepared to apply what I learn directly to patient care."P22 (Q4) – "I want to be able to do research properly and apply it to my nursing duties."	Research Skill & Knowledge Acquisition (Q4), Strength in Writing/Presentation/Reading (Q6)	**1.1 Acquisition of Core Research Skills**	Focuses on the development of essential research competencies such as writing, literature review, data analysis, statistics, and presentation skills during the course.	**Building Research Competence Through Skill Development and Application**
P31 (Q10) – "3rd year is the right time to build research foundation through experience."P40 (Q11) – "Research guides nursing actions in the real world."P7 (Q4) – "Helps improve nursing practice immediately."P36 (Q10) – "I can now connect theory and research to what I do in the clinical area."	Clinical & Academic Preparedness (Q10), Research as Essential to Nursing Practice (Q11)	**1.2 Application to Nursing Practice**	Links acquired research skills to near-term application in nursing care, such as improving clinical decision-making and patient outcomes.	
P32 (Q5) – "Curious about applying research to patient care."P33 (Q5) – "Excited to explore research topics I'm passionate about."P36 (Q11) – "Research makes me eager to contribute to nursing knowledge."P19 (Q5) – "I look forward to discovering new knowledge that could improve healthcare."	Excitement and Curiosity (Q5), Research as Personal and Professional Growth (Q11)	**2.1 Excitement and Curiosity**	Positive anticipation and eagerness to learn, driven by interest in contributing to nursing and healthcare.	**Navigating Emotional Responses to Nursing Research**
P4 (Q5) – "I'm nervous about the defense skills needed, but I'm also excited to search and answer research questions."P15 (Q5) – "Anxious about statistics and public speaking."P28 (Q5) – "Afraid of failing but still willing to try."P9 (Q5) – "Worried about the complexity of the tasks ahead."	Nervousness and Anxiety (Q5)	**2.2 Anxiety and Self-Doubt**	Reflects apprehension toward nursing research due to perceived technical demands, time pressures, or performance anxiety.	
P18 (Q5) – "Overwhelmed; hopes to enjoy course like past favorite capstone."P26 (Q5) – "Nervous at first but becoming more open-minded."P45 (Q11) – "'Keri ko to'; self-belief to face unfamiliar challenges with positivity."P8 (Q5) – "From hesitant to willing — I think I can do this now."	Mixed Feelings (Q5)	**2.3 Mixed or Transitional Emotions**	Captures coexisting or evolving emotions about research, from initial fear to optimism.	
P3 (Q7) – "Improves patient care, enables evidence-based decisions."P35 (Q7) – "Guides safe and effective interventions."P41 (Q11) – "Directs best care."P27 (Q7) – "Research keeps our practice safe and updated."	Evidence-Based Practice & Patient Care (Q7)	**3.1 Enhancing Care Quality and Safety**	Emphasizes research as the foundation for safe, effective, and updated nursing care.	**Research as a Catalyst for Evidence-Based Nursing and Patient Care Improvement**
P16 (Q8) – "Research updates practices, e.g., no longer aspirating during IM injection."P30 (Q8) – "Helps refine nursing procedures."P26 (Q11) – "Provides guidance for improving care protocols."P22 (Q8) – "Keeps our methods aligned with the latest standards."	Patient Safety & Risk Reduction (Q8), Research as Essential to Nursing Practice (Q11)	**3.2 Ensuring Clinical Relevance through Updated Practices**	Highlights the role of research in keeping nursing practices current and clinically relevant.	
P1 (Q8) – "Vein finder helps IV insertion and reduces complications."P20 (Q8) – "NextGen app… simplifies NCPs and drug studies."P38 (Q11) – "Innovation, technology, advancement…"P36 (Q8) – "Technology can reduce workload and prevent errors."	Technological Innovations (Q8)	**4.1 Development and Adoption of New Tools and Processes**	Describes research-driven creation or integration of technology to improve nursing efficiency.	**Innovation and Technological Integration in Nursing**

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P6 (Q7) – "Innovation improves patient care quality."P24 (Q11) – "Research leads to modernization in nursing practice."P9 (Q7) – "Advancement in treatments from research findings."P18 (Q11) – "Innovations inspire better nursing approaches."	Innovation & Knowledge Advancement (Q7), Research as Innovation and Progress (Q11)	**4.2 Advancing Nursing Knowledge through Innovation**	Innovation as a driver for modernizing nursing practice and advancing knowledge.	
P4 (Q9) – "Influenced by clinical instructors as role models who fact-check nursing information."P43 (Q9) – "Inspired by our prof despite not liking research initially."P8 (Q9) – "Encouraged by seniors to value research."P22 (Q9) – "Our professors show us how research connects to patient care."	Influence of Educators (Q9), Role Models and Inspiration (Q9)	**5.1 Educator and Role Model Impact**	Impact of instructors and mentors in shaping positive perceptions toward research.	**Influence of Educators, Mentors, and Learning Environments**
P3 (Q9) – "Peers inspired me to see research as fun."P35 (Q9) – "Classmates motivated me to take research seriously."P21 (Q9) – "Media showed real applications of nursing research."P17 (Q9) – "Friends shared stories of how research improved patient outcomes."	Influence of Peers & Seniors (Q9), Media and Social Media Influence (Q9)	**5.2 Peer and Social Influence**	Influence from classmates, seniors, and social media on research perceptions.	
P3 (Q6) – "Unsure about statistics, data analysis, and interpreting results."P17 (Q6) – "Weak in presentation skills."P29 (Q6) – "Not confident in writing."P12 (Q6) – "Math and statistics make me anxious."	Weakness in Statistics/Writing/Presentation (Q6)	**6.1 Skills and Knowledge Gaps**	Gaps in technical abilities such as statistical analysis, writing, and public speaking.	**Challenges in Research – Technical and Resource-Related**
P15 (Q10) – "No; still starting to grasp research basics."P28 (Q10) – "Limited exposure to actual research."P1 (Q11) – "Hard (requires understanding, skills, experience); Costly (needs money)."P37 (Q10) – "We have not yet applied much research in clinical duties."	Partial or Limited Readiness (Q10), Research as a Challenging Endeavor (Q11)	**6.2 Resource and Contextual Limitations**	Barriers arising from limited exposure, financial constraints, and time demands.	
P29 (Q4) – "Gain experience as preparation for graduate studies."P12 (Q7) – "Expands nursing career scope; important for higher positions."P33 (Q11) – "Improves professional opportunities."P20 (Q7) – "Helps me plan for my specialization in the future."	Professional Growth & Career Preparation (Q4), Career & Professional Growth (Q7)	**7.1 Academic Advancement and Specialization**	Research as a means for pursuing higher education, specialization, and leadership roles.	**Research as a Pathway for Lifelong Learning and Career Growth**
P13 (Q11) – "Broad… Purposeful (improves healthcare)."P21 (Q11) – "Keeps nurses updated in their field."P25 (Q7) – "Essential for continuous development."P8 (Q7) – "We should never stop learning because healthcare changes."	Continuous Improvement & Adaptation (Q7), Continuous Learning & Adaptation (Q11)	**7.2 Ongoing Professional Development**	Commitment to continuous learning and adaptability in professional practice.	

Note. Quotes are drawn from participants' written reflections and interview responses. Codes and categories were derived using the qualitative content analysis framework of Graneheim and Lundman (2004).

Table 1 revealed the seven interrelated themes captured incoming third-year nursing students' perceptions of nursing research before formal course exposure. Students viewed building research competence as essential, emphasizing skills in writing, literature review, data analysis, and presentation, with direct application to clinical decision-making. Emotional responses ranged from curiosity and excitement to anxiety and self-doubt, often evolving toward optimism. They recognized research as a catalyst for evidence-based care, ensuring safe, effective, and

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current nursing practice, and as a driver of innovation and technological integration that modernizes workflows and expands knowledge. Educators, peers, and media emerged as influential in shaping positive attitudes, while challenges included skill gaps, limited exposure, and resource constraints. Finally, students saw research as a pathway to lifelong learning and career growth, enabling academic advancement, specialization, and adaptability. Together, these insights highlight the need for instruction that strengthens technical competence while fostering emotional readiness.

Theme 1: Building Research Competence Through Skill Development and Application

For incoming third-year nursing students, the anticipation of their first formal nursing research course was framed by a mix of aspiration and pragmatic foresight. Even before lecture exposure, participants envisioned research as both an academic skill set to be mastered and a professional asset to be applied in clinical contexts. This theme captures that forward-looking mindset, showing how students linked research competence to their academic growth, future careers, and immediate readiness for practice.

Subtheme 1.1: Acquisition of Core Research Skills

Several participants identified specific competencies they expected to develop, particularly those involving academic writing, literature review, and research methodology. P1 expressed the goal to "learn and develop research knowledge and skills that will help in my future career," while P5 noted being "confident in writing from past experience, especially in creating literature reviews." Both statements highlight an awareness that strong writing and analytical skills are fundamental to navigating research processes.

The literature corroborates this expectation. Mitchell et al. (2023) found that writing self-efficacy in higher education strongly predicts not only academic performance but also persistence in research-related tasks. When students enter a course with prior writing experience, as P5 described, they may possess a motivational advantage that facilitates deeper engagement. This is significant given that research engagement in nursing relies heavily on the ability to synthesize literature and communicate findings effectively (Bradshaw et al., 2021).

Subtheme 1.2: Clinical and Academic Preparedness

Beyond academic skill-building, participants described a desire to directly connect research knowledge to patient care. P17 stated feeling "prepared to apply what I learn directly to patient care," while P22 explained, "I want to be able to do research properly and apply it to my nursing duties." Such statements suggest that even prior to formal instruction, students perceived research not as an abstract academic exercise but as an applied practice with tangible clinical benefits.

Empirical studies support this perception. Moloney et al. (2022) reported that when research instruction is linked to clinical simulation, students demonstrate higher confidence in translating evidence into patient care decisions. Likewise, Durmuş et al. (2025) emphasized that nurses with positive attitudes toward evidence-based practice consistently deliver higher-quality care. The readiness expressed by P17 and P22 reflects a mindset aligned with these findings, wherein research is understood as an active contributor to clinical effectiveness rather than a purely academic requirement.

Taken together, the statements in Theme 1 reveal that prior to any classroom exposure, students already framed nursing research as a dual pathway: first, to acquire rigorous academic competencies such as scholarly writing and literature synthesis, and second, to integrate those competencies into clinical decision-making. Their perspectives align with a growing body of literature stressing the importance of early engagement with research as a way to build not only competence but also confidence in applying evidence to real-world care settings.

Theme 2: Navigating Emotional Responses to Nursing Research

Before any lecture exposure, incoming third-year students described a rich emotional landscape around nursing research—enthusiasm and curiosity on one side, anxiety and self-doubt on the other, with many moving between the two. These pre-instruction perceptions matter because they can shape how students engage once formal teaching begins.

Subtheme 2.1: Excitement and Curiosity

Students voiced genuine eagerness to learn and contribute. P32 was "curious about applying research to patient care," P33 was "excited to explore research topics I'm passionate about," P36 said "research makes me eager to contribute to nursing knowledge," and P19 looked forward to "discovering new knowledge that could improve healthcare." This forward-leaning outlook echoes studies showing that when nursing learners perceive clear personal and professional relevance, intrinsic motivation and engagement rise. For example, qualitative work in the International Journal of Nursing Sciences found that students are motivated when they can see how learning connects to clinical competence and future practice, and when educators foster supportive environments that enable

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self-directed exploration (Nakayoshi et al., 2020). These dynamics are also strengthened when teachers provide autonomy support—an approach associated with higher intrinsic motivation and better learning outcomes among nursing students (Almarwani et al., 2024). Together, these findings corroborate the participants' anticipatory excitement as a productive starting point for research learning.

Subtheme 2.2: Anxiety and Self-Doubt

Alongside excitement, many anticipated hurdles. P4 admitted, "I'm nervous about the defense skills needed, but I'm also excited to search and answer research questions." P15 was "anxious about statistics and public speaking." P28 was "afraid of failing but still willing to try," and P9 was "worried about the complexity of the tasks ahead." Such apprehensions are common in nursing education: a recent meta-analysis estimated mild-to-moderate anxiety levels are prevalent among nursing students, with upper-year learners often reporting more stress than lower-year peers (Vo et al., 2023). Anxiety is especially salient around communication-intensive tasks; a national survey of undergraduate nursing students found that public speaking and classroom communication were the highest-anxiety contexts, and that communication apprehension was negatively associated with communication self-efficacy (Schulenberg et al., 2024). These data align closely with P15's concerns about statistics talks and defense presentations, suggesting that targeted support for communication and data-analysis confidence should be built into early research teaching.

Subtheme 2.3: Mixed or Transitional Emotions

Several participants described shifting emotions—even before formal instruction began. P18 felt "overwhelmed; hopes to enjoy course like past favorite capstone." P26 was "nervous at first but becoming more open-minded." P45 affirmed, "'Keri ko to'; self-belief to face unfamiliar challenges with positivity," and P8 reflected, "From hesitant to willing — I think I can do this now." This movement from hesitation toward tentative confidence matches evidence that supportive learning climates and clear relevance can nudge students from controlled or anxious engagement toward more autonomous, resilient participation (Nakayoshi et al., 2020; Almarwani et al., 2024). Practically, that means early course design should normalize uncertainty, scaffold small wins (e.g., guided literature searches, low-stakes presentations), and explicitly connect research tasks to patient care—leveraging students' initial curiosity while buffering predictable anxieties.

Theme 3: Research as a Catalyst for Evidence-Based Nursing and Patient Care Improvement

Even before lecture exposure, participants already framed research as the basis of safe, effective, and up-to-date nursing. Their comments tied evidence directly to day-to-day decisions and to replacing outdated procedures with current best practices, indicating a pre-instructional readiness to use research for patient benefit.

Subtheme 3.1: Enhancing Care Quality and Safety

Participants linked research engagement with better clinical judgment and safer care: "Improves patient care, enables evidence-based decisions" (P3); "guides safe and effective interventions" (P35); "directs best care" (P41); and "keeps our practice safe and updated" (P27). These pre-course views are consistent with empirical work showing that stronger evidence-based practice (EBP) competence is associated with better safety climate and care processes. For example, a cross-sectional study of hospital nurses found that targeted EBP training under the Best Practice Spotlight Organization program was associated with higher EBP competence and a more supportive practice environment—conditions that underpin safer, more consistent care (Fernández-Castro et al., 2023). Large U.S. survey data further show substantial EBP competency gaps among practicing nurses, with authors warning that such deficits threaten quality and safety—underscoring why students' early, evidence-oriented mindset matters (Melnyk et al., 2018). Together, the participants' statements and the literature converge on the same message: when nurses can access, appraise, and apply evidence, the likelihood of safe, reliable care improves.

Subtheme 3.2: Ensuring Clinical Relevance through Updated Practices

Students also recognized research as the engine for updating procedures: "Research updates practices, e.g., no longer aspirating during IM injection" (P16); "helps refine nursing procedures" (P30); "provides guidance for improving care protocols" (P26); and "keeps our methods aligned with the latest standards" (P22). Scholarly reviews likewise note that aspiration before intramuscular vaccination had not been recommended even prior to the pandemic because evidence of benefit was lacking (Rzymski & Fal, 2022).

Across both subthemes, incoming students already conceptualize research as both compass and corrective: it orients everyday care toward the best available evidence and replaces legacy routines with validated approaches. This alignment between learner expectations and the external evidence base is a strong platform for the course to build EBP skills that translate directly into quality and safety at the bedside.

Theme 4: Innovation and Technological Integration in Nursing

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Even before formal exposure to nursing research lectures, students articulated a vision of research as an active engine for healthcare innovation. They did not limit this to abstract knowledge production; rather, they framed research as a source of practical solutions—from bedside devices to systemic modernization—that can directly improve patient outcomes, optimize workflows, and reduce clinical errors.

Subtheme 4.1: Development and Adoption of New Tools and Processes

Participants highlighted tangible technologies they believed could emerge from or be improved through research. P1 shared, "Vein finder helps IV insertion and reduces complications," associating innovation with procedural safety and success rates. P20 mentioned the "NextGen app… [which] simplifies NCPs and drug studies," seeing technology as a means to streamline care planning and pharmacology review. P36 emphasized that "technology can reduce workload and prevent errors," while P38 encapsulated this vision with "innovation, technology, advancement…," suggesting a broad embrace of progress. Research supports these expectations. Meta-analyses indicate near-infrared (NIR) vein visualization can reduce procedure time and number of attempts in pediatric cannulation, improving patient comfort (Ng et al., 2024), though effectiveness varies with patient age and vascular difficulty (Yalçınlı et al., 2022). On the informatics side, mobile nursing documentation platforms have been shown to significantly reduce time spent on charting and improve data accuracy (Ehrler et al., 2021), while secure smartphone systems improve intra-team communication and response times (Wu et al., 2010). These findings reinforce participants' belief that well-designed tools, grounded in research, can meaningfully enhance efficiency and safety—but also point to the need for careful evaluation before widespread adoption.

Subtheme 4.2: Advancing Nursing Knowledge through Innovation

Students also described innovation as a pathway for ongoing improvement in nursing practice. P6 stated, "Innovation improves patient care quality," while P24 observed, "Research leads to modernization in nursing practice." P9 identified "advancement in treatments from research findings," and P18 reflected that "innovations inspire better nursing approaches." These statements reflect an intuitive understanding that research is iterative—constantly informing new interventions, refining protocols, and integrating technology into care. Literature affirms that a strong organizational culture of innovation accelerates evidence uptake and practice transformation. O'Hara et al. (2022) highlight that academic–practice partnerships and leadership engagement are essential for sustaining innovation. Rylee and Cavanagh (2023) similarly found that nurse-led innovations, when supported by institutional structures, can improve both care quality and staff satisfaction. Decision-support systems are one example: systematic reviews show they can translate complex research evidence into actionable, patient-specific recommendations, improving decision quality when properly integrated into workflows (Sutton et al., 2020).

Students' pre-course perspectives reveal a readiness to connect research directly with tangible clinical innovations, both in tools and in practice models. Their expectations align with a growing body of evidence that, when guided by rigorous evaluation and thoughtful implementation, research-driven technologies and innovations can improve efficiency, reduce errors, and enhance patient care. This positions them well for a research curriculum that emphasizes not only how to conduct studies, but also how to translate findings into everyday practice.

Theme 5: Influence of Educators, Mentors, and Learning Environments

Before formal instruction, students identified the people and contexts that shaped their initial views on research. These included faculty role models, clinical mentors, peer networks, and even media portrayals—factors that made research feel relevant, approachable, and integral to nursing.

Subtheme 5.1: Educator and Role Model Impact

Several participants credited their educators and mentors with inspiring them to value research. P4 shared being "influenced by clinical instructors as role models who fact-check nursing information," P43 described being "inspired by my professor despite not liking research initially," P8 said they were "encouraged by seniors to value research," and P22 observed that "our professors show us how research connects to patient care." These accounts echo findings that visible role modeling and mentorship significantly boost students' research skills, confidence, and engagement. For example, Melnyk et al. (2021) found that strong evidence-based practice (EBP) culture and mentorship predict higher EBP implementation, job satisfaction, and retention.

Subtheme 5.2: Peer and Social Influence

Peers and social connections also played a motivational role. P3 said "peers inspired me to see research as fun," P35 explained "classmates motivated me to take research seriously," P21 noted "media showed real applications of nursing research," and P17 recounted that "friends shared stories of how research improved patient outcomes." Peer learning environments, as Stone et al. (2013) showed, can increase competence, reduce anxiety, and normalize engagement with challenging content. Likewise, media exposure to nursing research—as highlighted

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in integrative reviews (Ross & Burrell, 2019)—can enhance perceived relevance and inspire students to connect research with real-world patient care.

Students' openness to research is shaped long before formal coursework, influenced by educator role modeling, peer support, and media narratives. This suggests that integrating structured mentorship, peer collaboration, and authentic research storytelling into curricula could further embed a positive research culture.

Theme 6: Challenges in Research – Technical and Resource-Related

Even before entering their nursing research course, participants identified barriers they anticipated in engaging with research. These concerns spanned technical skills, prior exposure, and contextual limitations that could shape their readiness and performance.

Subtheme 6.1: Skills and Knowledge Gaps

Several students expected difficulty in mastering core research skills. P3 shared being "unsure about statistics, data analysis, and interpreting results," P17 admitted "weak in presentation skills," P29 felt "not confident in writing," and P12 explained that "math and statistics make me anxious." These anxieties align with findings that statistical apprehension is common among nursing students, often linked to lower research self-efficacy (Onwuegbuzie & Wilson, 2003; Papanastasiou & Zembylas, 2008). Research also shows that targeted, scaffolded instruction in statistics and academic writing can reduce anxiety while improving performance (Ryan, 2016).

Subtheme 6.2: Resource and Contextual Limitations

Others anticipated structural barriers. P15 admitted, "still starting to grasp research basics," P28 noted "limited exposure to actual research," P1 remarked that research is "hard (requires understanding, skills, experience); costly (needs money)," and P37 observed, "we have not yet applied much research in clinical duties." These reflect broader patterns in nursing education: limited experiential opportunities (Florin et al., 2012) and systemic barriers such as workload, cost, and lack of mentorship (Kajermo et al., 2010). Without early, practical exposure to real-world research and institutional support to address costs and time demands, students may struggle to bridge theory to practice.

These insights suggest the need for curricula that directly address both skill development and systemic barriers—integrating early, low-stakes research experiences with targeted training in statistics, writing, and presentation, alongside resource-conscious program design.

Theme 7: Research as a Pathway for Lifelong Learning and Career Growth

Incoming third-year nursing students—interviewed before any formal research lectures—already framed research as a springboard for further study and a durable professional habit. Their comments showed two intertwined strands: research as a ticket to advanced roles and specialization, and research as a mindset that keeps practice current across a career.

7.1 Academic Advancement and Specialization

Students consistently linked early research engagement to future degrees and focused careers. P29 (Q4) shared, "Gain experience as preparation for graduate studies," while P12 (Q7) emphasized that research "expands nursing career scope; important for higher positions." P33 (Q11) added that research "improves professional opportunities," and P20 (Q7) saw it as a way that "helps me plan for my specialization in the future." Read together, these pre-instruction statements portray research not as a hurdle but a ladder, echoing evidence that structured undergraduate research exposure strengthens the pipeline toward advanced study and leadership trajectories in nursing (Smith et al., 2016). In parallel, global standards argue that baccalaureate programs should cultivate scholarly competencies precisely because lifelong scholarship underpins role advancement and system-level contribution (Baker et al., 2021).

7.2 Ongoing Professional Development

Students also described research as a habit that sustains safe, up-to-date care. P13 (Q11) called research "Broad… Purposeful (improves healthcare)," P21 (Q11) noted it "keeps nurses updated in their field," P25 (Q7) labeled it "essential for continuous development," and P8 (Q7) reminded, "We should never stop learning because healthcare changes." These expectations align with studies showing that positive attitudes and capability beliefs toward research during training predict intentions to integrate evidence later in practice (Labrague et al., 2020), and that undergraduates are generally favorable toward research use but need curricular and clinical supports to sustain it beyond graduation (Ryan, 2016). Together, the students' voices and the literature converge on a practical takeaway: pre-lecture messaging that frames research as purposeful and career-enabling—paired with scaffolded opportunities to practice EBP tasks—can seed durable professional growth behaviors (Baker et al., 2021; Labrague et al., 2020; Ryan, 2016).

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Conclusions

This study revealed that incoming third-year nursing students, even before formal research instruction, already hold nuanced perceptions of nursing research that blend enthusiasm, curiosity, and professional ambition with apprehension and skill-related concerns. They view research as both an academic competency—encompassing writing, literature review, and data analysis—and a vital tool for enhancing patient care, driving innovation, and ensuring evidence-based practice. Influences from educators, peers, and prior learning experiences shape these early attitudes, while anticipated challenges center on statistics, writing, and resource limitations. Recognizing research as a pathway to lifelong learning, career advancement, and continuous professional development, students demonstrate a readiness that can be nurtured through targeted instruction. These insights underscore the importance of designing nursing research curricula that not only develop technical proficiency but also address emotional readiness, mentorship, and practical application, ensuring that early perceptions translate into sustained engagement and evidence-informed practice.

Recommendations

In light of the findings, it is recommended that nursing programs implement structured orientation modules on research at the start of the third year to bridge the gap between students' pre-course perceptions and course demands. These modules should include interactive workshops on research writing, literature review, and basic statistical concepts to address identified skill gaps. Faculty should integrate case-based learning that explicitly connects research outputs to real patient care improvements, thereby reinforcing relevance and application. Establishing a peer mentoring system—where senior students share practical strategies for managing research tasks—can help reduce anxiety and build confidence. Additionally, creating accessible "research resource hubs" within the college, offering statistical software tutorials, sample proposals, and funding guidance, can alleviate resource-related barriers. Finally, recognizing students' early curiosity and professional aspirations, programs should provide opportunities for them to present preliminary research ideas in low-stakes settings, fostering a safe environment for feedback and progressive skill development.

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