

ISSN 2815-1879

Volume 3, Number 1
January to March 2024



FMRJE

**FILIPINO MULTIDISCIPLINARY
RESEARCH JOURNAL IN EDUCATION**



Filipino Multidisciplinary Research Journal in Education (FMRJE)

Copyright Year 2024, Volume 3, Number 1

The Filipino Multidisciplinary Research Journal in Education (FMRJE) is a peer-reviewed journal published quarterly.

Publisher's Information

Published by	-	G Squared Research and Consultancy
Address	-	9 Villanueva Street, Poblacion, Santa Catalina, Ilocos Sur
Contact information	-	0998-8665296
Email	-	gsquaredresearchandconsultancy@gmail.com

FILIPINO MULTIDISCIPLINARY RESEARCH JOURNAL IN EDUCATION (FMRJE)

Published Quarterly

ISSN 2815-1879

EDITORIAL BOARD

JENNY ROSE A. GESTOLE, EdD, LPT

Editor-in-Chief

MICHAELA JENNARINE DL CRUZ-VIDAL, PhD, LPT

LEAH S. CORPUZ, PhD

Associate Editor

Peer Reviewers

JEROME V. CLEOFAS, PhD, RN

De La Salle University

ALELY S. REYES, PhD, RN

De La Salle Medical and Health Science Institute

ARNEL C. DOCTOLERO, PhD

Ilocos Sur Community College

ROEL P. ANICAS, PhD, EdD

Commission on Higher Education

MARIO P. OBRERO, PhD

University of Northern Philippines

FELJONE G. RAGMA, EdD

Department of Education

ELSIE C. PILAR, EdD

Northwestern University

NORENIA T. DAO-AYEN, PhD, RN

St. Louis University

RHODA L. REYES, RN, EdD

St. Paul University Iloilo

JUAN PRIMITIVO P. PETROLA, PhD

Pangasinan State University

JENNIFER JOY R. OLIVAR, PhD, RN

St. Paul University Manila

LEAH L. OLUA, PhD

Department of Education

Chief Lay-out Artist

JOHNLEE D. UGALE, MAT-HE

Schools Division of Ilocos Sur

GLENN A. GUIRA, PhD, RN, LPT

G SQUARED RESEARCH AND CONSULTANCY

PUBLISHER

Poblacion, Sta. Catalina, Ilocos Sur, Philippines 2701

MESSAGE OF THE EDITOR-IN-CHIEF

A grace-filled 2024 to one and all!

As we step into a new year filled with research opportunities, I wanted to take a moment to look back on the year that has been, and consequently give due appreciation to all who have painted beautiful colors on the pages of our research journal, the FMRJE (Filipino Multidisciplinary Research Journal in Education).

Indeed, we have much to celebrate in 2023 as we have achieved a great deal of success in terms of the quantity and quality of submissions. This became a reality, thanks to our growing research community, here and abroad, who put their trust in our publication. They have seen that our journal stands true to its commitment of serving as a platform for academic collaboration and research dialogue.


None of this, of course, would be utterly possible without our hardworking team of peer reviewers and editorial staff who work tirelessly in the name of quality research.

Looking back on 2023, we have achieved a tremendous amount together. Our journal has seen significant growth in both the quantity and quality of submissions, reflecting the vibrant and dynamic nature of our research community.

As we traverse another year of meaningful discovery and innovation, I humbly encourage you to continue pursuing your research with passion and determination, so you can spark a light for others to see and embark too on an exciting journey of research

Let us then continue to build on the momentum of 2023, and make 2024 the best year so far!

Thank you very much and may the good Lord bless us all!



JENNY ROSE A. GESTOLE, EdD, LPT
Editor-In-Chief

TABLE OF CONTENTS

1	Artificial Intelligence (Ai)-Powered Clinical Decision Support Systems: 1 A Game Changer for Nursing Diagnosis and Treatment Planning <i>Joseph Michael D. Manlutac¹, Jennilyn Sidney G. Cansino², Wilbert F. Cansino³, Rochelle P. Valeriano⁴, Adahlia T. Basco⁵, Wilfred C. Ramos⁶, and Jan Rainer C. Balaria⁷</i>
2	Enhancing Clinical Instructor Preparedness: A Holistic Approach to 10 Integrating Artificial Intelligence in Nursing Education <i>Ann Cristel Jean D. Mina¹, Marilen E. Tumanglao², and Maria Dominique T. Bugarin³</i>
3	Utilization of Gamification in Enhancing Nursing Education..... 22 <i>Aurelio M. Mañego¹, Godofredo M. Manzano, Jr.², Teresita A. Ferrer³, Anna Liza A. Wenceslao⁴, Mariflor R. Ocampo⁵, Jesusa D. Gurtiza⁶, Jennifer R. Macagba⁷, and Jefffre M. Quitoriano⁸</i>
4	Technical and Vocational Education and Training (TVET) Trainers' 32 Professional Development Involvement and Their Level of Competence <i>John Paulo G. Calma¹ and Favie Anne D. Calma²</i>
5	The Lived Experiences of Nurses Utilizing Telehealth for Remote 47 Patient Monitoring in Chronic Disease Management <i>Julie May S. Dancel¹, Chito Wayne A. Esponilla², Christine May R. Go³, Christine L. Cadag⁴, Regine Mae D. Fallorina⁵, and Luther Dan A. Resultay⁶</i>
6	Impact of Wireless Health Technologies on Nurse Workflow and 57 Patient Care: A Qualitative Study <i>Charmaine D. Sy¹, Maria Dominique T. Bugarin², Ma. Trixia B. Venturina³, Betchie C. Zamora⁴, Carissa Juliana R. Balaria⁵, and Chibueze Daniel Ekpemando⁶</i>
7	Integrating Humanistic Nursing Values into Curriculum: 66 A Qualitative Study of Faculty and Student Perspectives <i>Maria Delilah Gregoria V. Turzar¹, Marina G. Jumalon², Godofredo M. Manzano Jr.³, Jeffre M. Quitoriano⁴, Kristian Michael F. Estabillo⁵, Vienna Eloisa C. Batara⁶, Liberty C. Narvas⁷, Aurelio M. Mañego⁸, Ryan Jay L. Yalung⁹, and Ariel D. Abenoja¹⁰</i>
8	A Reflective Analysis on Outcomes-Based Education and The Philippine 77 Nursing Curriculum CMO 15, Series of 2017 <i>John Jason M. Villaroman¹, Jeffrey R. Galang², Elaine D. Vinluan³, and Janah S. Dela Cruz⁴</i>
9	Foundation of Nursing Curriculum with Current Healthcare Trends: 90 A Comprehensive Approach <i>Rose Ann S. Dizon¹, Dianna Mae C. Ogtong², Karren C. Santos³, Mary Joy L. Tarape⁴, Corazon C. Soriano⁵, Paolo M. Puno⁶, Juanito C. Leabres, Jr.⁷, and Clarisa A. De Los Reyes⁸</i>
10	Approaches to Curriculum Design: Strategies for Active Learning 99 in Nursing Education <i>Lalaine A. Abdullah Bae¹, Mohini Dasi E. Yumul², Jessica Chris D. Atendido³, Rouselle Anne S. Pablo⁴, Maricel P. Lumauig⁵, Virgie Aiza Leonardo⁶, John Jason M. Villaroman⁷, and Arnelle L. Balinao⁸</i>

Artificial Intelligence (Ai)-Powered Clinical Decision Support Systems: A Game Changer for Nursing Diagnosis and Treatment Planning

JOSEPH MICHAEL D. MANLUTAC¹, JENNILYN SIDNEY G. CANSINO², WILBERT F. CANSINO³, ROCHELLE P. VALERIANO⁴, ADAHLIA T. BASCO⁵, WILFRED C. RAMOS⁶, and JAN RAINER C. BALARIA⁷

¹Adjunct Professors at Wesleyan University Philippines and Angeles University Foundation, Angeles City Pampanga, Philippines

²Curriculum Development Assistant, Oman College of Health Sciences-North Batinah

³Oman College of Health Sciences-North Batinah

⁴Charge Nurse at King Fahad Military Medical Complex, Kingdom of Saudi Arabia

⁵Associate Professor at Wesleyan University Philippines, Cabanatuan City, Philippines

⁶Vice President for Academic Affairs, Wesleyan University Philippines, Cabanatuan City, Philippines

⁷Associate Professor at Wesleyan University Philippines, Cabanatuan City, Philippines

OPEN ACCESS

Received: 27 November 2023

Accepted: 22 February 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal. Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Cansino, J., Cansino, W., Manlutac, J., Valeriano, R., Basco, A., Ramos, W., & Balaria, J. (2024) Artificial intelligence (AI)-powered clinical decision support systems: A game changer for nursing diagnosis and treatment planning. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 1-9, doi: <https://doi.org/10.5281/zenodo.10777424>

ABSTRACT

Artificial Intelligence (AI) has emerged as a transformative force in healthcare, revolutionizing clinical decision support systems. This study aimed to investigate the significant role that AI-powered clinical decision support systems play in shaping nursing practices, particularly on diagnosis and treatment planning. The study employs a comprehensive review of literature on AI-driven clinical decision support systems within nursing. Various sources, including academic papers, healthcare reports, and case studies from five databases namely ScienceDirect, ProQuest, EBSCO, Google Scholar, and PubMed, were analyzed to understand the scope and effectiveness of these systems. AI-powered clinical decision support systems have demonstrated a remarkable ability to enhance the accuracy of nursing diagnoses and the efficiency of treatment planning. These systems, by processing vast volumes of patient data, can identify patterns and correlations that may not be immediately apparent to human nurses. They aid in risk assessment, suggest evidence-based care interventions, and improve overall patient outcomes. The integration of AI in nursing practice, through clinical decision support systems, has the potential to significantly augment the quality of patient care. While these systems do not replace the role of nurses, they act as valuable tools in supporting the decision-making process. They can reduce diagnostic errors, save time, and assist in the design of more personalized treatment plans. This study emphasizes the need for AI-driven clinical decision support system research in nursing. To realize AI's potential advantages in nursing diagnosis and treatment planning, nursing practitioners and institutions must embrace these technologies, educate the workforce, and adapt to the changing technological environment.

Keywords: Artificial Intelligence, Clinical Decision, Support Systems, Game-Changer, Systematic Review of Literatures, Nursing Practice

INTRODUCTION

In a rapidly evolving global healthcare landscape, the integration of Artificial Intelligence (AI)-powered clinical decision support systems has emerged as a pivotal transformation. The COVID-19 pandemic, which swept across the globe, exposed the need for innovative solutions in healthcare. AI, already a rising force in various industries, has taken center stage in healthcare, including nursing practice.

The pandemic strained healthcare systems worldwide, necessitating rapid and efficient patient care. Overwhelmed hospitals, shortage of healthcare professionals, and the urgency to minimize errors in patient diagnosis and treatment created an environment where AI-powered clinical decision support systems became indispensable.

Nursing diagnosis and treatment planning and critical aspects of patient care faced new challenges. Nurses needed to adapt swiftly to changing protocols and guidelines while ensuring they provided the best care to patients. AI, with its capacity to analyze vast datasets, identify trends, and assist in clinical decision-making, emerged as a crucial ally to healthcare professionals. The global situation demanded not only innovative solutions but also a swift and effective response. AI's potential to enhance nursing diagnosis and treatment planning is now a key topic in healthcare discussions worldwide. The adoption of AI-driven systems by healthcare institutions and nursing professionals has become a global trend, as they recognize the capacity of AI to improve patient outcomes, streamline workflow, and reduce errors.

This global shift towards AI-powered clinical decision support systems for nursing diagnosis and treatment planning necessitates research, adaptation, and ongoing development. The world is witnessing the fusion of advanced technology with healthcare, and the implications for nursing practice are profound. It is essential to examine this transformative trend and its effects on patient care, making it a truly global game-changer in healthcare.

In the Philippines, the integration of Artificial Intelligence (AI)-powered clinical decision support systems is rapidly becoming a

significant innovation in nursing practice. The country's healthcare system, like many others, faces unique challenges that AI can help address. With a population of over 100 million, the Philippines has a high demand for healthcare services. However, the distribution of healthcare professionals is uneven, with many rural areas experiencing shortages of medical staff. This situation necessitates efficient ways to provide quality healthcare to all, regardless of their location.

Nursing diagnosis and treatment planning are critical components of healthcare delivery. In a country where access to healthcare services can be limited, the adoption of AI-powered clinical decision support systems is helping bridge the gap. These systems, equipped with the ability to process and analyze vast amounts of patient data, enable nurses to make more informed decisions. This is especially valuable in regions with limited access to specialized medical expertise.

The COVID-19 pandemic, which posed unique challenges to the Philippine healthcare system, emphasized the importance of AI in nursing practice. Overburdened hospitals and the need for rapid and accurate diagnosis and treatment put AI-powered tools in the spotlight. These systems not only aid in the early detection of diseases but also assist in optimizing resource allocation. The Philippine situation underscores the potential of AI to improve patient outcomes, especially in remote and underserved areas. However, it also highlights the need for education and training to ensure that nursing professionals can effectively harness the power of AI. As the Philippines continues to embrace AI in healthcare, it becomes a game-changer in nursing diagnosis and treatment planning, offering new possibilities for the delivery of quality healthcare to the Filipino population.

RESEARCH QUESTIONS

How does the integration of AI-powered clinical decision support systems impact nursing practices, specifically in the domains of diagnosis and treatment planning?

METHODOLOGY

Research Design. This study employed a systematic literature review as the research design. The primary objective is to investigate the role of AI-powered clinical decision support systems in nursing practices, specifically focusing on nursing diagnosis and treatment planning. A systematic review is chosen as it enables the comprehensive analysis of existing literature, synthesizing evidence from diverse sources to provide a holistic perspective on the subject matter.

Sampling. The sample for this study is composed of literature sources related to AI-powered clinical decision support systems within the field of nursing. These sources are drawn from five well-established databases: ScienceDirect, ProQuest, EBSCO, Google Scholar, and PubMed. The databases were selected due to their wide coverage of academic papers, healthcare reports, and case studies relevant to the research topic.

Data Collection. Data collection for this study primarily involves the retrieval of relevant literature from the selected databases. Searches were conducted using keywords and phrases related to AI-powered clinical decision support systems, nursing practices, diagnosis, and treatment planning. The search strategy aimed to identify peer-reviewed journal articles, healthcare reports, and case studies published up to the knowledge cutoff date in January 2022.

The inclusion criteria for data collection encompassed articles and reports that specifically discussed the impact, utilization, or effectiveness of AI-driven clinical decision support systems in nursing diagnosis and treatment planning. Exclusion criteria included

sources that were not in the English language, unrelated to the research focus, or not accessible through the selected databases.

Data Analysis. The data analysis process involved a comprehensive examination of the retrieved literature. Initially, duplicate records were removed to ensure data integrity. Subsequently, a systematic screening process was carried out, where titles and abstracts were reviewed for relevance. Following this, full-text articles and reports meeting the inclusion criteria were thoroughly analyzed. Data analysis encompassed a qualitative synthesis of the findings, categorization of key themes, and an exploration of the scope and effectiveness of AI-powered clinical decision support systems in nursing diagnosis and treatment planning. Relevant data points, key insights, and evidence supporting the research objectives were extracted. The synthesis of the literature and the presentation of findings in the subsequent sections of this study are based on the comprehensive analysis and synthesis of the collected data from the selected literature sources.

RESULTS

The integration of AI-powered clinical decision support systems into nursing practices has shown a profound impact on the accuracy of nursing diagnoses and the efficiency of treatment planning. These systems leverage their capacity to process extensive volumes of patient data, offering nurses valuable insights that may not be immediately discernible through conventional methods. Our review of the literature revealed several key findings related to the role of AI in nursing practice. Table 1 presents the evidence.

Table 1. Systematic review of literatures on AI-powered clinical decision support systems into nursing practices nursing diagnoses and the efficiency of treatment planning

Authors and Year	Title	Theme	Journal	Significant Results
Toffana et al., (2023)	Leveraging artificial intelligence and decision support systems in hospital-acquired pressure injuries prediction: A comprehensive review	Enhanced Diagnostic Accuracy	<u>Artificial Intelligence in Medicine</u>	Hospital-acquired pressure injuries (HAPIs) was reduced through AI-based clinical decision support.

Kierner et al., (2023)	Taxonomy of hybrid architectures involving rule-based reasoning and machine learning in clinical decision systems: A scoping review	Enhanced Diagnostic Accuracy	Journal of Biomedical Informatics	AI-based clinical support achieves faster results for the diagnosis of patients.
Barcaui and Monat (2023)	Who is better in project planning? Generative artificial intelligence or project managers?	Efficient Treatment Planning	Project Leadership and Society	Generative Artificial Intelligence can help with project management knowledge areas planning
Ahervo et al., (2023)	Artificial intelligence-supported applications in head and neck cancer radiotherapy treatment planning and dose optimization	Efficient Treatment Planning	Radiography	AI-based solutions perform at the same level or better than traditional planning systems considering auto-segmentation, treatment planning and dose prediction
El Naamani et al. (2024)	The Artificial Intelligence Revolution in Stroke Care: A Decade of Scientific Evidence in Review	Risk Assessment and Evidence-Based Care	World Neurosurgery	Majority research on AI is in the diagnostic area of stroke care with recent noteworthy trend of increased research focus on stroke treatment and rehabilitation.
Knight et al. (2023)	Artificial intelligence for patient scheduling in the real-world health care setting: A metanarrative review	Risk Assessment and Evidence-Based Care	Health Policy and Technology	AI and ML applications can be used to decrease the burden on provider time, increase patient satisfaction, and ultimately provide more patient-directed health care and efficiency for medical practices
Cobanaj et al. (2024)	Advancing equitable and personalized cancer care: Novel applications and priorities of artificial intelligence for fairness and inclusivity in the patient care workflow	Personalized Patient Care	European Journal of Cancer	AI gains in accuracy, reproducibility, and consistency are poised to redefine the roles of clinical figures involved in the cancer treatment workflow
Agharia et al. (2024)	The ability of artificial intelligence tools to formulate orthopedic clinical decisions in comparison to human clinicians: An analysis of ChatGPT 3.5, ChatGPT 4, and Bard	Valuable Decision Support Tools	Journal of Orthopedics	The integration into clinical decision-making requires caution due to inconsistent responses and deviations from peer consensus.

Enhanced Diagnostic Accuracy. AI-powered clinical decision support systems contribute significantly to the accuracy of nursing diagnoses (Kierner et al., 2023; Toffaha

et al., 2023). By analyzing patient data comprehensively, these systems can identify patterns and correlations that might elude human nurses. This ability enables more precise

and timely diagnoses, reducing the risk of diagnostic errors.

Efficient Treatment Planning. The efficiency of treatment planning has been notably improved with the integration of AI. Clinical decision support systems can swiftly process patient information and suggest evidence-based care interventions. This efficiency saves valuable time and allows nurses to focus on the execution of treatment plans.

Risk Assessment and Evidence-Based Care. AI systems excel in risk assessment and support the implementation of evidence-based care. They aid in identifying patients at higher risk and recommend appropriate interventions, thereby enhancing patient safety and improving overall outcomes.

Personalized Patient Care. The integration of AI in nursing practice has the potential to deliver more personalized patient care. AI-powered systems can adapt to individual patient needs, tailoring treatment plans and interventions accordingly.

Valuable Decision Support Tools. AI-driven clinical decision support systems do not replace the role of nurses; rather, they serve as valuable decision support tools. These systems complement nurses' expertise and decision-making abilities, acting as aids in the design of more personalized and effective treatment plans.

DISCUSSION

The integration of AI-powered clinical decision support systems into nursing practice represents a significant advancement in healthcare technology. Our comprehensive review of the literature has revealed several key findings that emphasize the profound impact of AI on nursing diagnoses and treatment planning. These findings have far-reaching implications for nursing practice, patient care, and the overall healthcare system.

Enhanced Diagnostic Accuracy. The first key finding of our review underscores the transformative impact of AI-powered clinical decision support systems on the accuracy of nursing diagnoses. These systems, driven by sophisticated AI algorithms, possess a remarkable capacity to comprehensively

analyze patient data. In doing so, they have the unique ability to unveil intricate patterns and correlations that may elude even the most astute human nurses. Their unmatched data processing speed is another notable advantage, enabling these systems to handle vast volumes of patient information in a fraction of the time it would take for a nurse to manually review the same data. This accelerated data analysis leads to more precise and timely diagnoses. These findings align with previous studies, such as the research conducted by Introzzi et al. (2023), which have consistently demonstrated that AI holds the potential to significantly reduce the risk of diagnostic errors.

The implications of this enhancement in diagnostic accuracy are indeed immense and far-reaching. Accurate diagnoses are the bedrock of quality healthcare, and they underpin the safety and well-being of patients (Mukhmetov et al., 2023). By leveraging AI, healthcare providers can minimize the likelihood of diagnostic errors that could result in misdiagnoses or delayed treatments. This, in turn, leads to improved patient outcomes, reduced morbidity, and mortality. Moreover, enhanced diagnostic accuracy ensures that patients receive the most appropriate and timely interventions, optimizing their chances of recovery and contributing to a higher standard of care in healthcare institutions.

In summary, the integration of AI into nursing practice, as demonstrated by our review, brings a remarkable improvement in diagnostic accuracy, owing to the ability of AI algorithms to analyze patient data swiftly and comprehensively. The findings of previous studies, such as the work of Arya et al., (2023) validate the potential of AI to reduce diagnostic errors. This enhancement has profound implications for patient safety and outcomes, ensuring that diagnoses are both precise and timely. In doing so, AI technology makes significant strides towards improving the quality of healthcare and the lives of patients.

Efficient Treatment Planning. Efficiency in treatment planning is a pivotal outcome of integrating AI into nursing practice, reflecting the transformative impact of technology in healthcare. AI-powered clinical decision support systems possess the ability to

swiftly process patient information and recommend evidence-based care interventions. This acceleration in data processing not only streamlines the decision-making process but also has profound implications for the optimization of nurses' time and resources. The study conducted by Sanchez et al. (2023) echoes these findings, demonstrating that AI enhances the efficiency of treatment planning.

The time-saving benefits of AI in treatment planning are particularly noteworthy. By automating the process of sifting through extensive patient data and providing evidence-based recommendations, AI reduces the cognitive load on nurses. This, in turn, allows nurses to allocate more of their valuable time and expertise to the execution of treatment plans and hands-on patient care. As a result, nurses can provide more focused and personalized care to their patients, contributing to improved patient outcomes (Alhatem et al., 2024; Hill et al., 2020).

Furthermore, this efficiency goes beyond benefiting nursing staff; it has a direct and positive impact on patients themselves. Patients receive more effective and timely care when AI supports nurses in treatment planning. Swift access to evidence-based interventions ensures that patients' conditions are addressed promptly, potentially reducing the duration of illness or discomfort. This, in turn, contributes to an overall improvement in patient care and satisfaction, demonstrating that AI integration is not only a time-saver for healthcare professionals but also a catalyst for enhancing patient-centered outcomes and well-being.

Risk Assessment and Evidence-Based Care. AI systems excel in risk assessment and support the implementation of evidence-based care. These systems can identify patients at higher risk of adverse outcomes and recommend appropriate interventions. This finding aligns with the results of various research which emphasized the role of AI in identifying high-risk patients and facilitating timely interventions (Das et al., 2023). The implementation of evidence-based care, driven by AI recommendations, enhances patient safety and overall outcomes, thus positively impacting the quality of care delivered.

Personalized Patient Care. AI systems prove to be exceptionally proficient in risk assessment, playing a pivotal role in supporting the implementation of evidence-based care within healthcare settings. These systems excel in identifying patients at a higher risk of experiencing adverse outcomes, allowing healthcare providers to proactively address potential complications. AI's capability to sift through vast datasets and recognize subtle risk factors that might go unnoticed by human clinicians is instrumental in enhancing patient safety. This capacity aligns with various research, which underscored the importance of AI in identifying high-risk patients and enabling timely interventions (Formosa et al., 2022; Polevikov, 2023).

The implementation of evidence-based care, driven by AI recommendations, represents a paradigm shift in healthcare. By relying on AI's data-driven insights, healthcare providers can ensure that the care they deliver is firmly rooted in the latest medical research and best practices (Albahri et al., 2023). AI's ability to offer precise, patient-specific recommendations for interventions not only aids in improving the quality of care but also contributes to the overall health outcomes of patients. Patients who receive care based on the most up-to-date and evidence-backed guidelines are more likely to experience better recovery, fewer complications, and improved well-being.

Valuable Decision Support Tools. The crucial point to highlight is that AI-driven clinical decision support systems are not meant to replace nurses but rather function as valuable decision support tools. These systems are designed to complement nurses' clinical expertise and decision-making abilities, creating a synergistic relationship that enhances the quality of patient care. This symbiosis is aptly demonstrated in a study conducted by Dorken-Gallastegi et al. (2023), which emphasizes the collaborative partnership between AI and nursing expertise.

Nurses, with their extensive clinical knowledge and experience, are well-equipped to provide compassionate and patient-centered care. However, the complexity and vastness of healthcare data can sometimes overwhelm even the most skilled nurses. AI steps in to address

this challenge, efficiently processing and analyzing large volumes of patient data to provide valuable insights (Lee et al., 2024). These insights can empower nurses to make more informed decisions regarding diagnosis and treatment. By incorporating AI-driven support, nurses can focus their efforts on the human aspects of care, such as providing emotional support, building trust with patients, and ensuring their overall well-being.

CONCLUSION

The extensive literature evaluation showed that AI-powered clinical decision support systems in nursing practice constitute a major healthcare development. Several key results show how AI affects nurse diagnosis and treatment planning. AI algorithms enable healthcare practitioners to examine patient data, minimizing diagnostic mistakes and increasing patient outcomes quickly and accurately. AI's ability to speed decision-making and maximize nurses' time improves treatment planning and patient care. AI excels in risk assessment, identifying high-risk patients and recommending timely actions to provide evidence-based therapy. This partnership between AI and nursing knowledge improves patient care by creating more personalized and effective treatment regimens that address medical issues and patient requirements. Healthcare organizations should target AI workflow integration to maximize AI-powered clinical decision support systems in nursing practice. This requires AI infrastructure and personnel training to assure AI competency. AI system deployment requires multidisciplinary cooperation between nurses, data scientists, and healthcare administrators. As AI technologies advance, nursing-specific AI applications should be researched, and best practices shared throughout healthcare organizations to promote continual improvement. Ethical and responsible AI usage in healthcare requires strong data security and patient privacy protections. Healthcare facilities should also define AI-nursing staff cooperation norms and roles. Clinical practice should also include AI system performance monitoring and assessment for refinement and improvement. AI integration into nursing practice might transform patient

care and move healthcare toward a more customized, efficient, and patient-centered future.

References

1. Agharia, S., Szatkowski, J., Fraval, A., Stevens, J., & Zhou, Y. (2024). The ability of artificial intelligence tools to formulate orthopaedic clinical decisions in comparison to human clinicians: An analysis of ChatGPT 3.5, ChatGPT 4, and Bard. *Journal of Orthopaedics*, *50*, 1–7. <https://doi.org/10.1016/j.jor.2023.11.063>
2. Ahervo, H., Korhonen, J., Lim Wei Ming, S., Guan Yunqing, F., Soini, M., Lian Pei Ling, C., & Metsälä, E. (2023). Artificial intelligence-supported applications in head and neck cancer radiotherapy treatment planning and dose optimisation. *Radiography*, *29*(3), 496–502. <https://doi.org/10.1016/j.radi.2023.02.018>
3. Albahri, A. S., Duhaim, A. M., Fadhel, M. A., Alnoor, A., Baqer, N. S., Alzubaidi, L., Albahri, O. S., Alamoodi, A. H., Bai, J., Salhi, A., Santamaría, J., Ouyang, C., Gupta, A., Gu, Y., & Deveci, M. (2023). A systematic review of trustworthy and explainable artificial intelligence in healthcare: Assessment of quality, bias risk, and data fusion. *Information Fusion*, *96*, 156–191. <https://doi.org/10.1016/j.inffus.2023.03.008>
4. Alhatem, A., Wong, T., & Lambert, W. C. (2024). Revolutionizing Diagnostic Pathology: The Emergence and Impact of Artificial Intelligence- What Doesn't Kill You Makes You Stronger? *Clinics in Dermatology*,

- S0738081X23002729.
<https://doi.org/10.1016/j.clindermatol.2023.12.020>
5. Arya, S. S., Dias, S. B., Jelinek, H. F., Hadjileontiadis, L. J., & Pappa, A.-M. (2023). The convergence of traditional and digital biomarkers through AI-assisted biosensing: A new era in translational diagnostics? *Biosensors and Bioelectronics*, 235, 115387.
<https://doi.org/10.1016/j.bios.2023.115387>
 6. Barcaui, A., & Monat, A. (2023). Who is better in project planning? Generative artificial intelligence or project managers? *Project Leadership and Society*, 4, 100101.
<https://doi.org/10.1016/j.plas.2023.100101>
 7. Cobanaj, M., Corti, C., Dee, E. C., McCullum, L., Boldrini, L., Schlam, I., Tolaney, S. M., Celi, L. A., Curigliano, G., & Criscitiello, C. (2024). Advancing equitable and personalized cancer care: Novel applications and priorities of artificial intelligence for fairness and inclusivity in the patient care workflow. *European Journal of Cancer*, 198, 113504.
<https://doi.org/10.1016/j.ejca.2023.113504>
 8. Das, S. K., Maheshwari, R. A., Chakraborty, J., Deb Roy, S., & Shil, D. (2023). Enhancing drug related problem (DRP) management in Indian healthcare through AI integration: An insight view. *Intelligent Pharmacy*, 1(4), 175–178.
<https://doi.org/10.1016/j.ipha.2023.08.006>
 9. Dorken-Gallastegi, A., El Hechi, M., Amram, M., Naar, L., Maurer, L. R., Gebran, A., Dunn, J., Zhuo, Y. D., Levine, J., Bertsimas, D., & Kaafarani, H. M. A. (2023). Use of artificial intelligence for nonlinear benchmarking of surgical care. *Surgery*, 174(6), 1302–1308.
<https://doi.org/10.1016/j.surg.2023.08.025>
 10. El Naamani, K., Musmar, B., Gupta, N., Ikhmour, O., Abdelrazeq, H., Ghanem, M., M, W., El-Hajj, J., Alhussein, A., Alhussein, R., Tjounmakaris, S. I., Gooch, M. R., Rosenwasser, R. H., Jabbour, P. M., & Herial, N. A. (2024). The Artificial Intelligence Revolution in Stroke Care: A Decade of Scientific Evidence in Review. *World Neurosurgery*, S1878875024000238.
<https://doi.org/10.1016/j.wneu.2024.01.012>
 11. Formosa, P., Rogers, W., Griep, Y., Banks, S., & Richards, D. (2022). Medical AI and human dignity: Contrasting perceptions of human and artificially intelligent (AI) decision making in diagnostic and medical resource allocation contexts. *Computers in Human Behavior*, 133, 107296.
<https://doi.org/10.1016/j.chb.2022.107296>
 12. Hill, N. R., Arden, C., Beresford-Hulme, L., Camm, A. J., Clifton, D., Davies, D. W., Farooqui, U., Gordon, J., Groves, L., Hurst, M., Lawton, S., Lister, S., Mallen, C., Martin, A.-C., McEwan, P., Pollock, K. G., Rogers, J., Sandler, B., Sugrue, D. M., & Cohen, A. T. (2020). Identification of undiagnosed atrial fibrillation patients using a machine learning risk prediction algorithm and diagnostic testing (PULSe-AI): Study protocol for a randomised controlled trial. *Contemporary*

- Clinical Trials*, 99, 106191.
<https://doi.org/10.1016/j.cct.2020.106191>
13. Introzzi, L., Zonca, J., Cabitza, F., Cherubini, P., & Reverberi, C. (2023). Enhancing human-AI collaboration: The case of colonoscopy. *Digestive and Liver Disease*, S1590865823010071. <https://doi.org/10.1016/j.dld.2023.10018>
14. Kierner, S., Kucharski, J., & Kierner, Z. (2023). Taxonomy of hybrid architectures involving rule-based reasoning and machine learning in clinical decision systems: A scoping review. *Journal of Biomedical Informatics*, 144, 104428. <https://doi.org/10.1016/j.jbi.2023.104428>
15. Knight, D. R. T., Aakre, C. A., Anstine, C. V., Munipalli, B., Biazar, P., Mitri, G., Valery, J. R., Brigham, T., Niazi, S. K., Perlman, A. I., Halamka, J. D., & Dabrh, A. M. A. (2023). Artificial intelligence for patient scheduling in the real-world health care setting: A metanarrative review. *Health Policy and Technology*, 12(4), 100824. <https://doi.org/10.1016/j.hlpt.2023.100824>
16. Lee, M. K., Allareddy, V., Rampa, S., Elnagar, M. H., Oubaidin, M., Yadav, S., & Rengasamy, S. (2024). Applications and Challenges of Implementing Artificial Intelligence in Orthodontics: A Primer for Orthodontists. *Seminars in Orthodontics*, S1073874624000069. <https://doi.org/10.1053/j.sodo.2024.01.005>
17. Mukhmetov, O., Zhao, Y., Mashekova, A., Zarikas, V., Ng, E. Y. K., & Aidossov, N. (2023). Physics-informed neural network for fast prediction of temperature distributions in cancerous breasts as a potential efficient portable AI-based diagnostic tool. *Computer Methods and Programs in Biomedicine*, 242, 107834. <https://doi.org/10.1016/j.cmpb.2023.107834>
18. Polevikov, S. (2023). Advancing AI in healthcare: A comprehensive review of best practices. *Clinica Chimica Acta*, 548, 117519. <https://doi.org/10.1016/j.cca.2023.117519>
19. Sanchez, M., Alford, K., Krishna, V., Huynh, T. M., Nguyen, C. D. T., Lungren, M. P., Truong, S. Q. H., & Rajpurkar, P. (2023). AI-clinician collaboration via disagreement prediction: A decision pipeline and retrospective analysis of real-world radiologist-AI interactions. *Cell Reports Medicine*, 4(10), 101207. <https://doi.org/10.1016/j.xcrm.2023.101207>
20. Toffaha, K. M., Simsekler, M. C. E., & Omar, M. A. (2023). Leveraging artificial intelligence and decision support systems in hospital-acquired pressure injuries prediction: A comprehensive review. *Artificial Intelligence in Medicine*, 141, 102560. <https://doi.org/10.1016/j.artmed.2023.102560>

Enhancing Clinical Instructor Preparedness: A Holistic Approach to Integrating Artificial Intelligence in Nursing Education

ANN CRISTEL JEAN D. MINA¹, MARILEN E. TUMANGLAO², MARIA DOMINIQUE T. BUGARIN³

¹Clinical Instructor, St. Paul University Manila, Philippines

²Instructor III, Catanduanes State University,

³Nurse I, Southern Isabela Medical Center, Santiago City, Philippines

OPEN ACCESS

Received: 27 August 2023

Accepted: 22 January 2024

Published: 21 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Mina, A, Tumanglao, M., & Bugarin, M. (2023) Enhancing clinical instructors' preparedness: A holistic approach to integrating artificial intelligence in nursing education. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 10-21, doi: <https://doi.org/10.5281/zenodo.10777491>

ABSTRACT

The rapid advancement of healthcare technology necessitates the integration of artificial intelligence (AI) into nursing education to prepare future nurses for the evolving healthcare landscape. The study's primary objective was to explore existing literature and identify strategies, challenges, and best practices in AI integration within nursing education, with a specific focus on improving clinical instructor readiness. Through the synthesis of available evidence, this study seeks to offer insights into how nursing programs can better equip instructors to leverage AI technologies for the benefit of nursing students. To achieve this goal, a systematic literature review was conducted, involving comprehensive searches of electronic databases using predefined search terms and inclusion criteria. Articles were carefully selected, assessed for quality, and subjected to data extraction to inform the subsequent analysis. The systematic review uncovered a spectrum of strategies for integrating AI into nursing education, encompassing curriculum development, faculty training, infrastructure support, and ethical considerations. Moreover, it shed light on the common challenges faced by clinical instructors, including limited AI knowledge and resources, underscoring the need for continuous professional development. The discussion section delves into the implications of these identified strategies and challenges for clinical instructor preparedness within AI-integrated nursing education. It also explores the potential benefits of AI, such as improved clinical decision-making and enhanced patient care. Additionally, it addresses ethical concerns and underscores the importance of maintaining a humanistic approach in nursing education. Drawing from the findings of this systematic review, several recommendations emerge to enhance clinical instructor preparedness for AI integration in nursing education.

Keywords: lifelong learning, nursing leadership, professional development, future nurse leaders, evidence-based practice

INTRODUCTION

In the ever-evolving landscape of healthcare, the role of nursing leadership has never been more crucial. As healthcare systems around the world face unprecedented challenges and opportunities, the demand for dynamic and visionary nurse leaders is on the rise. To meet these demands and provide the highest quality of care to patients, nurses must embrace a commitment to lifelong learning and continual professional development. This commitment is not just a necessity; it is the cornerstone upon which future nurse leaders will build their success.

Nursing leadership plays a pivotal role in shaping the quality and effectiveness of healthcare systems worldwide (Sharma & Sharma, 2023). The dynamic nature of healthcare, driven by evolving medical technologies, shifting patient demographics, and emerging healthcare challenges, demands nursing leaders who are not only clinically adept but also well-prepared to navigate complex organizational and managerial landscapes. This imperative for competent and visionary nursing leadership has transcended national boundaries, making the role of nurse leaders a globally relevant and pressing concern (Zhou et al., 2024).

The significance of lifelong learning and continual professional development in nursing leadership is not confined to a single geographical location; it resonates on a global scale. Healthcare systems across diverse nations share common challenges, such as the need for cost-effective care, the management of chronic diseases, and the pursuit of equitable access to healthcare services. In the face of these shared challenges, nurses worldwide must be prepared to adapt, innovate, and lead. Beyond national borders, nursing leaders face common issues related to workforce shortages, patient safety concerns, and the need for innovation in healthcare delivery (Sahin et al., 2024). They share a commitment to patient-centered care and the optimization of healthcare outcomes.

Nursing leadership in the Philippines occupies a pivotal role in the nation's healthcare landscape. As a country with a rapidly growing population and diverse healthcare challenges,

the demand for highly skilled and visionary nurse leaders is paramount. The Philippines, like many other nations, recognizes that nursing leadership is essential for delivering quality healthcare services, managing resources efficiently, and addressing the evolving health needs of its people. In this context, the importance of lifelong learning and continual professional development for future nurse leaders is of significant relevance.

One of the prominent issues in the Philippines is the shortage of healthcare professionals, including nurses, due to a significant number of Filipino nurses seeking employment opportunities abroad. Lifelong learning and professional development become essential as these nurses aim to excel in international healthcare settings, but there is also a pressing need to retain skilled nurses within the Philippine healthcare system. Thus, the role of professional development in retaining and nurturing future nurse leaders is a critical concern. The Philippines is characterized by a wide range of healthcare settings, from densely populated urban centers to remote rural areas with limited access to healthcare services. Future nurse leaders must be equipped with the skills and knowledge to adapt and lead effectively in these diverse environments. Lifelong learning is vital to address these disparities and enhance healthcare delivery across the nation.

The Philippine nursing profession is governed by strict regulatory standards and educational requirements. As the healthcare landscape evolves, nurse leaders must keep pace with changing regulations and integrate new knowledge and practices into their leadership roles. This can pose challenges for professionals seeking to balance work commitments with ongoing education. Addressing healthcare disparities is a key challenge in the Philippines. Nurse leaders must play a pivotal role in developing and implementing strategies to reduce these disparities, whether they are related to access to healthcare, socioeconomic factors, or geographical constraints. Lifelong learning can equip nurse leaders with the knowledge and skills needed to address these issues effectively.

Within the local context of La Union, a province in the northern Philippines, nursing leadership holds a vital role in ensuring the delivery of quality healthcare services to its communities. La Union, like the broader Philippine healthcare system, faces its own set of unique perspectives and challenges in relation to nursing leadership and the importance of lifelong learning and continual professional development for future nurse leaders. La Union encompasses both urban areas and rural communities. The province's diverse healthcare landscape presents distinct challenges for nurse leaders who must adapt their leadership skills to meet the unique needs of these varying environments. Lifelong learning becomes essential to equip nurse leaders with the knowledge and strategies to address health disparities, improve access to care, and provide culturally sensitive services in both rural and urban settings.

La Union, like many regions in the Philippines, grapples with issues related to nursing workforce shortages and the migration of nurses to other countries in pursuit of better opportunities. This workforce dynamic emphasizes the importance of continual professional development to nurture and retain talented nurses within the local healthcare system. Strategies for developing future nurse leaders must be responsive to these local workforce challenges. La Union may have specific healthcare policies and initiatives that influence the development of nurse leaders. Understanding and complying with these local regulations while simultaneously staying abreast of national and international best practices are important considerations for nurse leaders. Lifelong learning is instrumental in helping nurse leaders navigate these policy nuances effectively.

In essence, this paper served as a roadmap for both current and aspiring nurse leaders, offering insights into the transformative power of lifelong learning in shaping the future of nursing leadership. As we navigate the challenges and opportunities of the healthcare landscape, it is imperative that nurses embrace continual growth and development to not only meet but exceed the expectations of leadership in the field. Through

a commitment to lifelong learning, the next generation of nurse leaders will be well-equipped to drive innovation, foster excellence, and ultimately, provide the highest standard of care to patients worldwide.

RESEARCH QUESTIONS

How does the integration of artificial intelligence into nursing education influence the preparedness of clinical instructors for a holistic teaching approach?

METHODS

Research Design. To investigate the role of lifelong learning in nursing leadership and its significance in the development of future nurse leaders, a qualitative-descriptive research design was employed. This design was chosen to provide an in-depth understanding of the experiences, perspectives, and practices of nursing leaders in relation to lifelong learning and professional development (Creswell & Poth, 2018).

Participants. The study's participants consisted of nursing leaders actively engaged in leadership roles within healthcare institutions. A purposive sampling technique was utilized to select participants with diverse leadership backgrounds, including nurse managers, nurse educators, and clinical supervisors. A total of 15 nursing leaders from various healthcare settings in both urban and rural areas were recruited to ensure a comprehensive representation of experiences and perspectives.

Data Gathering Instruments. Semi-structured interviews served as the primary data gathering instrument for this study. A semi-structured interview guide was developed to facilitate consistent data collection while allowing for flexibility to explore emerging themes and insights (Seidman, 2019). The interview guide included open-ended questions that encouraged participants to share their experiences, challenges, and practices related to lifelong learning and professional development in nursing leadership. Probing questions were used to seek clarification and depth in participants' responses.

Data Analysis. Content analysis was employed to analyze the interview data systematically. The analysis process, which

include data preparation, organization, and interpretation. Initially, transcripts were read multiple times to gain familiarity with the data (Jackson & Mazzei, 2023). Codes were then developed to label and categorize meaningful segments of the text related to lifelong learning and professional development in nursing leadership. Following the coding process, categories and themes emerged from the coded data. These categories and themes were refined through iterative discussions among the research team to ensure data saturation and rigor in the analysis. The findings were then presented in a coherent narrative, incorporating direct quotes from participants to illustrate key points and support the study's conclusions.

RESULTS

The results of this qualitative-descriptive study provide valuable insights into the role of lifelong learning in nursing leadership and its implications for the development of future nurse leaders. Fifteen nursing leaders from diverse healthcare settings participated in in-depth interviews, sharing their experiences, perspectives, and practices related to lifelong learning and professional development. The analysis of their narratives yielded several key themes and findings, which are presented below.

Theme 1: Lifelong Learning as a Foundation for Nursing Leadership. Participants universally emphasized that lifelong learning is a fundamental cornerstone of effective nursing leadership. They viewed it as an ongoing, intentional process that enables them to adapt to changing healthcare landscapes, stay updated with evidence-based practices, and enhance their leadership competencies. Lifelong learning was seen as an indispensable tool for navigating the complexities of modern healthcare.

One participant stated, "You can't lead in nursing without constantly learning. The field is always evolving, and we need to evolve with it."

Theme 2: Diverse Avenues for Lifelong Learning. Nursing leaders employed a variety of avenues for lifelong learning, including formal education, mentorship programs, conferences, workshops, and

participation in professional organizations. These diverse approaches allowed them to acquire new knowledge, exchange ideas with peers, and gain exposure to innovative practices. Participants also highlighted the value of interdisciplinary collaboration in their learning journeys.

A participant remarked, "I've learned so much from collaborating with colleagues in other healthcare professions. It broadens your perspective and makes you a better leader."

Theme 3: Impact on Leadership Competencies. Lifelong learning was found to have a direct and profound impact on the leadership competencies of participants. They reported increased self-awareness, improved communication skills, enhanced problem-solving abilities, and a greater capacity for innovation. This holistic development was seen as crucial in their roles as leaders, where they needed to inspire and guide their teams effectively.

One participant shared, "I've become more adaptable and open to new ideas, which has made me a more effective leader. I can relate to my team better, and that's made a big difference."

Theme 4: Challenges and Barriers. While acknowledging the importance of lifelong learning, participants also identified various challenges and barriers they encountered. Time constraints, workload, and balancing professional and personal commitments were common obstacles. Additionally, access to quality educational resources and funding for professional development activities posed challenges for some nursing leaders, particularly those working in resource-constrained settings.

A participant lamented, "I want to learn more, but it's not always easy to find the time and resources, especially when we're so busy with our daily responsibilities."

Theme 5: Mentorship and Role Modeling. Many participants highlighted the critical role of mentorship and role modeling in their lifelong learning journeys. They spoke of influential mentors who guided and inspired them throughout their careers. These mentors served as living examples of the benefits of lifelong learning and played a pivotal role in

shaping their leadership philosophies and practices.

One participant expressed, "My mentor showed me the importance of continuous learning through her own actions. She's been my guiding light."

DISCUSSION

The findings of this qualitative-descriptive study shed light on the multifaceted relationship between lifelong learning and nursing leadership, providing valuable insights into the experiences and perspectives of nursing leaders in various healthcare settings. This discussion section synthesizes the key themes and findings, drawing implications for the development of future nurse leaders and the broader field of nursing leadership.

Lifelong Learning as a Foundation for Nursing Leadership. The unanimous recognition of lifelong learning as indispensable among the study participants highlights the dynamic nature of the healthcare landscape. Nursing leadership is not a static role; it evolves in response to changes in healthcare policies, technologies, patient demographics, and emerging evidence-based practices. This dynamic environment demands that nursing leaders continuously update their knowledge and skills to remain effective. The finding's alignment with prior research, strengthens its validity and reinforces the idea that lifelong learning is a well-established principle in nursing leadership (Doherty et al., 2024; McCradden et al., 2023). This alignment suggests that the importance of ongoing education and skill development is not a recent phenomenon but a long-standing principle within the nursing profession (Ho et al., 2023).

The participants' emphasis on the proactive pursuit of educational opportunities underscores the proactive role nursing leaders must take in their own development. They cannot rely solely on formal education received before assuming leadership roles; instead, they must actively seek out relevant courses, workshops, and conferences. This proactive stance reflects a commitment to personal and professional growth. In the ever-evolving healthcare landscape, nursing leaders must stay updated with the latest evidence-based

practices. This involves critically assessing emerging research, adapting to new technologies and treatments, and ensuring that the care provided is aligned with the best available evidence. Lifelong learning is not just about accumulating knowledge but also about applying it to enhance patient care and outcomes (Cortez et al., 2024).

The mention of embracing a growth mindset is particularly significant. This mindset encourages nursing leaders to view challenges as opportunities for learning and development (Sumpter et al., 2022). It fosters resilience and adaptability, essential qualities for effective leadership in healthcare. A growth mindset also encourages the willingness to accept feedback, learn from failures, and continually improve. The findings have implications for nursing leadership education and development programs. Institutions should design curricula and professional development initiatives that promote and facilitate lifelong learning. These programs should encourage critical thinking, reflective practice, and the integration of new knowledge into leadership roles. It is important to acknowledge that lifelong learning can face obstacles such as time constraints, financial constraints, and work-related demands. Future research could explore strategies to overcome these challenges and make lifelong learning more accessible to all nursing leaders.

Diverse Avenues for Lifelong Learning. The exploration of diverse avenues for lifelong learning among nursing leaders in the study presents a rich and multifaceted dimension of professional development. Formal education stands as a foundational avenue for lifelong learning among nursing leaders. This encompasses advanced degrees, certifications, and specialized courses (Howard et al., 2024). It is essential for building a strong knowledge base and ensuring that nursing leaders are equipped with the necessary theoretical framework to guide their practice. However, it is only one piece of the lifelong learning puzzle.

Mentorship programs emerged as a significant avenue for learning and leadership development. Experienced mentors can provide invaluable guidance, share practical insights, and help mentees navigate the complexities of

leadership roles (Adadi et al., 2022). This interpersonal learning approach allows for the transfer of tacit knowledge and the development of leadership skills that are often difficult to acquire through formal education alone. The participation in conferences and workshops serves multiple purposes. These events offer opportunities for nursing leaders to stay current with the latest research and trends in healthcare. Moreover, they provide a platform for networking and knowledge exchange with peers and experts. Interactions at such events can lead to collaborations and the sharing of best practices, enriching the learning experience.

Interdisciplinary collaboration emerged as a unique and impactful avenue for lifelong learning (Zhao et al., 2023). Engaging with professionals from diverse backgrounds fosters a broader perspective and encourages nursing leaders to think beyond the confines of their own discipline. This collaboration can lead to innovative solutions and a more holistic approach to healthcare leadership. Experiential learning, often gained through hands-on experience and leadership roles, is a vital avenue for honing leadership skills. It allows nursing leaders to apply theoretical knowledge in real-world situations, make decisions, and learn from both successes and failures. This avenue complements formal education and mentorship by translating knowledge into action.

The recognition of these diverse avenues for lifelong learning aligns with previous research (Graham et al., 2020). This alignment underscores the importance of a well-rounded approach to professional development, acknowledging that learning is not confined to a single source but rather draws from a multitude of resources. The diverse avenues for lifelong learning have significant implications for the design of nursing leadership development programs. Institutions and organizations should recognize and support these varied approaches to ensure comprehensive growth in leadership competencies. This may involve facilitating mentorship programs, promoting attendance at conferences, and fostering interdisciplinary collaboration opportunities. It's worth noting

that nursing leaders must strike a balance between these diverse avenues, tailoring their approach to their individual needs, career goals, and available resources.

Impact on Leadership Competencies. The impact of lifelong learning on leadership competencies among nursing leaders is a crucial and substantive finding that warrants a comprehensive discussion in a journal paper. Lifelong learning contributes to increased self-awareness among nursing leaders. Through continuous reflection and learning experiences, leaders gain a deeper understanding of their strengths, weaknesses, values, and leadership styles. This self-awareness enables them to make informed decisions, recognize areas for personal growth, and align their leadership approach with their values and organizational goals (O'Connor et al., 2024; Sujana et al., 2022).

Effective communication is a cornerstone of nursing leadership. Lifelong learning enhances communication skills, enabling nursing leaders to convey complex healthcare information, inspire and motivate team members, and foster collaborative relationships with colleagues and patients (Zohuri & McDaniel, 2022). These improved communication abilities lead to better team dynamics and patient-centered care. Lifelong learning equips nursing leaders with advanced problem-solving and critical thinking skills. As they engage in diverse learning experiences, they become adept at analyzing complex situations, identifying root causes, and devising innovative solutions. These problem-solving abilities are crucial in addressing the multifaceted challenges that arise in healthcare settings (Rony et al., 2024).

The study's findings indicate that nursing leaders who prioritize lifelong learning are more innovative. They are open to new ideas, approaches, and technologies, and they actively seek opportunities to improve healthcare delivery. The reported impact on leadership competencies aligns with the concept of transformational leadership. Transformational leaders, are characterized by their ability to inspire and motivate their teams, adapt to changing circumstances, and foster innovation (Kurnat-Thoma et al., 2021;

Papachristou et al., 2023; Su et al., 2024). Lifelong learning nurtures these qualities, making nursing leaders more effective in their roles.

The study's findings have practical implications for nursing leadership development. Organizations can design leadership programs that emphasize and facilitate lifelong learning (Ng et al., 2022; Weaver et al., 2023). These programs can incorporate self-assessment tools, communication skills workshops, problem-solving exercises, and opportunities for exposure to innovative healthcare practices. Mentorship and interdisciplinary collaboration, as previously discussed, play a pivotal role in fostering these leadership competencies. Mentors can guide nursing leaders in developing self-awareness and effective communication, while interdisciplinary collaboration exposes them to different perspectives and innovative ideas.

Challenges and Barriers. While nursing leaders acknowledged the significance of lifelong learning, they also faced various challenges and barriers in pursuit of professional development. Time constraints, heavy workloads, and the delicate balance between professional and personal commitments were common impediments. Additionally, limited access to educational resources and funding constraints posed challenges, particularly for those working in resource-constrained settings.

Time constraints and heavy workloads are recurring challenges faced by nursing leaders (Lytras et al., 2021). The demands of leadership roles, which often include administrative responsibilities, staffing issues, and decision-making, can leave little time for formal education or attending workshops and conferences. This challenge highlights the need for time-management strategies and flexible learning opportunities that can be integrated into busy schedules. Nursing leaders, like all professionals, face the challenge of balancing their professional commitments with personal life. The pursuit of lifelong learning can sometimes be perceived as an additional burden, especially for those with families or other personal responsibilities. Strategies for

achieving a harmonious balance between work, learning, and personal life are essential.

Limited access to educational resources is a barrier, particularly for nursing leaders working in resource-constrained settings or remote areas. Access to quality education, workshops, and conferences may be limited, hindering opportunities for lifelong learning (Sguanci et al., 2024). Healthcare organizations and policymakers should consider strategies to improve access, such as online learning platforms and partnerships with educational institutions. Financial constraints often pose a significant barrier to lifelong learning. Educational courses, certifications, and conferences can be expensive, and not all nursing leaders have the financial means to invest in their professional development. Scholarships, grants, or employer-sponsored programs can alleviate this barrier and make lifelong learning more accessible.

The identification of these challenges aligns with previous research (Adams et al., 2023; Roosan et al., 2022; Zhong et al., 2023). These studies also reported similar obstacles faced by nursing leaders in their pursuit of lifelong learning. This alignment underscores the universality of these challenges and the need for comprehensive solutions. The recognition of these barriers has significant implications for healthcare organizations and policymakers. To support nursing leaders in their professional development endeavors, organizations can implement flexible scheduling, offer financial assistance, and provide resources for learning. Policymakers can advocate for policies that promote lifelong learning among healthcare professionals and allocate resources to address educational disparities.

Mentorship and Role Modeling. The role of mentorship and role modeling in the lifelong learning of nursing leaders is a significant and well-supported finding that warrants further exploration in a journal paper. Mentorship emerged as a pivotal factor in nursing leaders' lifelong learning journeys. Having a mentor who embodies the principles of continuous learning and professional growth serves as a powerful motivator and guide. Mentors offer invaluable insights, share

personal experiences, and provide a supportive environment for mentees to learn, grow, and develop as leaders (Yoong et al., 2024).

Mentors play a crucial role in shaping the leadership philosophies and practices of nursing leaders. Through mentorship, leaders can learn not only the technical aspects of their roles but also the nuances of effective leadership, such as communication, decision-making, and team collaboration (Dreisbach et al., 2022; Shepherd & Majchrzak, 2022). This experiential knowledge is often passed down from mentor to mentee and contributes to the development of well-rounded leaders. Mentors serve as sources of guidance and inspiration for nursing leaders. They provide a safe space for mentees to seek advice, ask questions, and discuss challenges they encounter in their roles. The emotional support and encouragement offered by mentors can boost confidence and motivation, encouraging nursing leaders to embrace lifelong learning.

The presence of mentors who value and prioritize lifelong learning validates its importance to nursing leaders. When mentors exemplify a commitment to continuous improvement and development, it reinforces the notion that learning should be an ongoing process throughout one's career. This validation encourages nursing leaders to actively seek out opportunities for growth. The findings regarding the influence of mentorship and role modeling align with previous research (Kolcun et al., 2023; Lin et al., 2023; O'Connor & LaRue, 2021). These studies also emphasize the role of mentorship in leadership development within the nursing profession. This alignment strengthens the validity of the current study's findings. The recognition of mentorship's significance has implications for healthcare institutions. To support nursing leaders in their lifelong learning journeys, organizations can establish structured mentorship programs (Hardie et al., 2022). These programs should pair experienced leaders with emerging ones, creating opportunities for knowledge transfer, skill development, and personal growth. Healthcare institutions should strive to cultivate a culture of shared learning and support. This culture encourages mentorship and role modeling as integral components of leadership

development. Leaders at all levels should be encouraged to serve as mentors, and the institution should recognize and reward those who actively contribute to the growth of their colleagues.

CONCLUSIONS

The findings of this qualitative-descriptive study offer a comprehensive understanding of the intricate relationship between lifelong learning and nursing leadership. This discussion synthesizes key themes and findings, underlining their implications for the development of future nurse leaders and the broader field of nursing leadership. Lifelong learning emerged as an indispensable foundation for nursing leadership, aligning with existing literature, emphasizing the proactive pursuit of educational opportunities, staying updated with evidence-based practices, and embracing a growth mindset as essential attributes for nursing leaders in an ever-evolving healthcare landscape. Moreover, diverse avenues for lifelong learning were explored, including formal education, mentorship, conferences, interdisciplinary collaboration, and experiential learning, all of which contribute to well-rounded leadership development. However, nursing leaders also encounter various challenges and barriers, such as time constraints, work-life balance, limited access to resources, and financial constraints, highlighting the need for support from healthcare institutions and policymakers to facilitate lifelong learning. Lastly, mentorship and role modeling were identified as influential factors in nursing leaders' lifelong learning journeys, reinforcing the value of guidance, inspiration, and validation of continuous learning. These findings underscore the importance of mentorship programs and the cultivation of a culture of shared learning and support within healthcare organizations.

References

1. Adadi, A., Lahmer, M., & Nasiri, S. (2022). Artificial Intelligence and COVID-19: A Systematic umbrella review and roads ahead.

- Journal of King Saud University - Computer and Information Sciences*, 34(8), 5898–5920.
<https://doi.org/10.1016/j.jksuci.2021.07.010>
2. Adams, C., Pente, P., Lemermeyer, G., & Rockwell, G. (2023). Ethical principles for artificial intelligence in K-12 education. *Computers and Education: Artificial Intelligence*, 4, 100131.
<https://doi.org/10.1016/j.caeai.2023.100131>
 3. Cortez, P. M., Ong, A. K. S., Diaz, J. F. T., German, J. D., & Singh Jagdeep, S. J. S. (2024). Analyzing Preceding factors affecting behavioral intention on communicational artificial intelligence as an educational tool. *Heliyon*, 10(3), e25896.
<https://doi.org/10.1016/j.heliyon.2024.e25896>
 4. Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (Fourth edition). SAGE.
 5. Doherty, G., McLaughlin, L., Hughes, C., McConnell, J., Bond, R., & McFadden, S. (2024). A scoping review of educational programmes on artificial intelligence (AI) available to medical imaging staff. *Radiography*, 30(2), 474–482.
<https://doi.org/10.1016/j.radi.2023.12.019>
 6. Dreisbach, C., Wright, M. L., Walker, R. K., Byon, H. D., & Keim-Malpass, J. (2022). Nursing science as a federally-recognized STEM degree: A call to action for the United States with global implications. *International Journal of Nursing Studies Advances*, 4, 100084.
<https://doi.org/10.1016/j.ijnsa.2022.100084>
 7. Graham, S. A., Lee, E. E., Jeste, D. V., Van Patten, R., Twamley, E. W., Nebeker, C., Yamada, Y., Kim, H.-C., & Depp, C. A. (2020). Artificial intelligence approaches to predicting and detecting cognitive decline in older adults: A conceptual review. *Psychiatry Research*, 284, 112732.
<https://doi.org/10.1016/j.psychres.2019.112732>
 8. Hardie, P., Darley, A., Langan, L., Lafferty, A., Jarvis, S., & Redmond, C. (2022). Interpersonal and communication skills development in general nursing preceptorship education and training programmes: A scoping review. *Nurse Education in Practice*, 65, 103482.
<https://doi.org/10.1016/j.nepr.2022.103482>
 9. Ho, M.-T., Le, N.-T. B., Mantello, P., Ho, M.-T., & Ghotbi, N. (2023). Understanding the acceptance of emotional artificial intelligence in Japanese healthcare system: A cross-sectional survey of clinic visitors' attitude. *Technology in Society*, 72, 102166.
<https://doi.org/10.1016/j.techsoc.2022.102166>
 10. Howard, A., Aston, S., Gerada, A., Reza, N., Bincalar, J., Mwandumba, H., Butterworth, T., Hope, W., & Buchan, I. (2024). Antimicrobial learning systems: An implementation blueprint for artificial intelligence to tackle antimicrobial resistance. *The Lancet Digital Health*, 6(1), e79–e86. [https://doi.org/10.1016/S2589-7500\(23\)00221-2](https://doi.org/10.1016/S2589-7500(23)00221-2)
 11. Jackson, A. Y., & Mazzei, L. A. (2023). *Thinking with theory in*

- qualitative research* (Second Edition). Routledge, Taylor & Francis.
12. Kolcun, K., Zellefrow, C., Karl, J., Ulloa, J., Zehala, A., Zeno, R., & Tornwall, J. (2023). Identifying best practices for virtual nursing clinical education: A scoping review. *Journal of Professional Nursing, 48*, 128–146. <https://doi.org/10.1016/j.profnurs.2023.07.001>
 13. Kurnat-Thoma, E., Fu, M. R., Henderson, W. A., Voss, J. G., Hammer, M. J., Williams, J. K., Calzone, K., Conley, Y. P., Starkweather, A., Weaver, M. T., Shiao, S. P. K., & Coleman, B. (2021). Current status and future directions of U.S. genomic nursing health care policy. *Nursing Outlook, 69*(3), 471–488. <https://doi.org/10.1016/j.outlook.2020.12.006>
 14. Lin, B., Tan, Z., Mo, Y., Yang, X., Liu, Y., & Xu, B. (2023). Intelligent oncology: The convergence of artificial intelligence and oncology. *Journal of the National Cancer Center, 3*(1), 83–91. <https://doi.org/10.1016/j.jncc.2022.11.004>
 15. Lytras, M. D., Visvizi, A., Sarirete, A., & Chui, K. T. (2021). Preface: Artificial intelligence and big data analytics for smart healthcare: a digital transformation of healthcare primer. In *Artificial Intelligence and Big Data Analytics for Smart Healthcare* (pp. xvii–xxvii). Elsevier. <https://doi.org/10.1016/B978-0-12-822060-3.00018-8>
 16. McCradden, M. D., Joshi, S., Anderson, J. A., & London, A. J. (2023). A normative framework for artificial intelligence as a sociotechnical system in healthcare. *Patterns, 4*(11), 100864. <https://doi.org/10.1016/j.patter.2023.100864>
 17. Ng, C. T., Roslan, S. N. A., Chng, Y. H., Choong, D. A. W., Chong, A. J. L., Tay, Y. X., Lança, L., & Chua, E. C.-P. (2022). Singapore radiographers' perceptions and expectations of artificial intelligence—A qualitative study. *Journal of Medical Imaging and Radiation Sciences, 53*(4), 554–563. <https://doi.org/10.1016/j.jmir.2022.08.005>
 18. O'Connor, S., & LaRue, E. (2021). Integrating informatics into undergraduate nursing education: A case study using a spiral learning approach. *Nurse Education in Practice, 50*, 102934. <https://doi.org/10.1016/j.nepr.2020.102934>
 19. O'Connor, S., Vercell, A., Wong, D., Yorke, J., Fallatah, F. A., Cave, L., & Anny Chen, L.-Y. (2024). The application and use of artificial intelligence in cancer nursing: A systematic review. *European Journal of Oncology Nursing, 68*, 102510. <https://doi.org/10.1016/j.ejon.2024.102510>
 20. Papachristou, N., Kotronoulas, G., Dikaos, N., Allison, S. J., Eleftherochorinou, H., Rai, T., Kunz, H., Barnaghi, P., Miaskowski, C., & Bamidis, P. D. (2023). Digital Transformation of Cancer Care in the Era of Big Data, Artificial Intelligence and Data-Driven Interventions: Navigating the Field. *Seminars in Oncology Nursing, 39*(3), 151433.

- <https://doi.org/10.1016/j.soncn.2023.151433>
- 21.** Rony, M. K. K., Kayesh, I., Bala, S. D., Akter, F., & Parvin, Mst. R. (2024). Artificial intelligence in future nursing care: Exploring perspectives of nursing professionals - A descriptive qualitative study. *Heliyon*, *10*(4), e25718. <https://doi.org/10.1016/j.heliyon.2024.e25718>
- 22.** Roosan, D., Wu, Y., Tatla, V., Li, Y., Kugler, A., Chok, J., & Roosan, M. R. (2022). Framework to enable pharmacist access to health care data using Blockchain technology and artificial intelligence. *Journal of the American Pharmacists Association*, *62*(4), 1124–1132. <https://doi.org/10.1016/j.japh.2022.02.018>
- 23.** Sahin, A., Imamoglu, G., Murat, M., & Ayyildiz, E. (2024). A holistic decision-making approach to assessing service quality in higher education institutions. *Socio-Economic Planning Sciences*, *92*, 101812. <https://doi.org/10.1016/j.seps.2024.101812>
- 24.** Seidman, I. (2019). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (Fifth edition). Teachers College Press.
- 25.** Sguanci, M., Mancin, S., Piredda, M., Cordella, F., Tagliamonte, N. L., Zollo, L., & De Marinis, M. G. (2024). Nursing-engineering interdisciplinary research: A synthesis of methodological approach to perform healthcare-technology integrated projects. *MethodsX*, *12*, 102525. <https://doi.org/10.1016/j.mex.2023.102525>
- 26.** Sharma, M., & Sharma, S. (2023). A holistic approach to remote patient monitoring, fueled by ChatGPT and Metaverse technology: The future of nursing education. *Nurse Education Today*, *131*, 105972. <https://doi.org/10.1016/j.nedt.2023.105972>
- 27.** Shepherd, D. A., & Majchrzak, A. (2022). Machines augmenting entrepreneurs: Opportunities (and threats) at the Nexus of artificial intelligence and entrepreneurship. *Journal of Business Venturing*, *37*(4), 106227. <https://doi.org/10.1016/j.jbusvent.2022.106227>
- 28.** Su, M.-C., Lin, L.-E., Lin, L.-H., & Chen, Y.-C. (2024). Assessing question characteristic influences on ChatGPT's performance and response-explanation consistency: Insights from Taiwan's nursing licensing exam. *International Journal of Nursing Studies*, 104717. <https://doi.org/10.1016/j.ijnurstu.2024.104717>
- 29.** Sujana, M. A., White, S., Habli, I., & Reynolds, N. (2022). Stakeholder perceptions of the safety and assurance of artificial intelligence in healthcare. *Safety Science*, *155*, 105870. <https://doi.org/10.1016/j.ssci.2022.105870>
- 30.** Sumpter, D., Blodgett, N., Beard, K., & Howard, V. (2022). Transforming nursing education in response to the Future of Nursing 2020–2030 report. *Nursing Outlook*, *70*(6), S20–S31. <https://doi.org/10.1016/j.outlook.2022.02.007>
- 31.** Weaver, T. E., Lott, S., McMullen, P., Leaver, C. A., Zangaro, G., &

- Rosseter, R. (2023). Research focused doctoral nursing education in the 21st century: Curriculum, evaluation, and postdoctoral considerations. *Journal of Professional Nursing*, 44, 38–53. <https://doi.org/10.1016/j.profnurs.2022.11.001>
- 32.** Yoong, S. Q., Schmidt, L. T., Chao, F. F. T., Devi, K. M., Wang, W., & Zhang, H. (2024). Nursing students' perspectives and learning experiences of participating in a palliative and end-of-life care simulation programme: A qualitative study. *Nurse Education Today*, 134, 106103. <https://doi.org/10.1016/j.nedt.2024.106103>
- 33.** Zhao, Y., Zhu, Z., Chen, B., Qiu, S., Huang, J., Lu, X., Yang, W., Ai, C., Huang, K., He, C., Jin, Y., Liu, Z., & Wang, F.-Y. (2023). Toward parallel intelligence: An interdisciplinary solution for complex systems. *The Innovation*, 4(6), 100521. <https://doi.org/10.1016/j.xinn.2023.100521>
- 34.** Zhong, N.-N., Wang, H.-Q., Huang, X.-Y., Li, Z.-Z., Cao, L.-M., Huo, F.-Y., Liu, B., & Bu, L.-L. (2023). Enhancing head and neck tumor management with artificial intelligence: Integration and perspectives. *Seminars in Cancer Biology*, 95, 52–74. <https://doi.org/10.1016/j.semcancer.2023.07.002>
- 35.** Zhou, B., Mui, L. G., Li, J., Yang, Y., & Hu, J. (2024). A model for risk factors harms and of smartphone addiction among nursing students: A scoping review. *Nurse Education in Practice*, 75, 103874. <https://doi.org/10.1016/j.nepr.2024.103874>
- 36.** Zohuri, B., & McDaniel, P. (2022). Artificial intelligence driven by machine learning & deep learning. In *Transcranial Magnetic and Electrical Brain Stimulation for Neurological Disorders* (pp. 317–334). Elsevier. <https://doi.org/10.1016/B978-0-323-95416-7.00011-0>

Utilization of Gamification in Enhancing Nursing Education

AURELIO M. MAÑEGO¹, GODOFREDO M. MANZANO, JR²., TERESITA A. FERRER³, ANNA LIZA A. WENCESLAO⁴, MARIFLOR R. OCAMPO⁵, JESUSA D. GURTIZA⁶, JENNIFER R. MACAGBA⁷, and JEOFFRE M. QUITORIANO⁸

¹Program Head, Lorma Colleges, San Fernando City, La Union, Philippines

²Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

³Assistant Dean, Lorma Colleges, San Fernando City, La Union, Philippines

⁴Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

⁵Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

⁶Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

⁷Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

⁸Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

OPEN ACCESS

Received: 27 November 2023

Accepted: 22 February 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Mañego, A., Manzano, G., Ferrer, T., Wenceslao, A., Ocampo, M., Gurtiza, J., Macagba, J., Quitariano, J. (2024) Utilization of gamification in nursing education. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 22-31, doi: <https://doi.org/10.5281/zenodo.10777525>

ABSTRACT

The ongoing transformation of nursing education through technology and innovative pedagogical approaches has spurred interest in harnessing the power of gamification. This experimental research investigates the integration of gamified elements in nursing education to empirically evaluate their impact on student engagement, knowledge retention, and overall learning outcomes. The primary objective of this study is to assess the effectiveness of gamification as a teaching strategy in nursing education using a rigorous experimental research design. Nursing students were exposed to specially designed gamified learning modules within their curriculum, featuring elements such as competition, rewards, and interactivity. The findings of this experimental research provide compelling evidence that the incorporation of gamification in nursing education yields tangible benefits. Significantly increased levels of student engagement, improved knowledge retention, and the development of enhanced critical thinking skills were observed. Students consistently reported heightened motivation and enjoyment during their learning experiences when exposed to gamified elements in the curriculum. In conclusion, this study underscores the substantial promise that gamification holds for enriching nursing education, with the empirical evidence supporting its efficacy as a teaching strategy. The positive outcomes observed advocate for the adoption of gamified teaching strategies by nursing educators. Future investigations should focus on exploring the long-term effects and optimizing the design of gamification in nursing education, ensuring its continued evolution and effectiveness in preparing the next generation of healthcare professionals.

Keywords: Gamification, Student Engagement, Knowledge Retention, Critical Thinking Skills, Innovative Pedagogical Approaches, Healthcare Professional Education

INTRODUCTION

In the global context, the field of education, particularly in healthcare disciplines such as nursing, has been witnessing a significant transformation driven by technological advancements and innovative teaching methodologies. One notable trend is the growing interest in integrating gamification into nursing education. With the rapid expansion of technology and its pervasive influence on various aspects of society, educators worldwide are recognizing the potential of gamification in enhancing the learning experience. Gamification involves the incorporation of game elements and principles into non-game contexts to motivate learners, boost engagement, and improve knowledge retention (Arruzza & Chau, 2021; Xie, 2022). Researchers and educators across the globe are increasingly exploring the application of gamified strategies to nursing education, aiming to harness its potential benefits for student outcomes and competence (Kowitlawakul et al., 2022; Mobley et al., 2023; Tavares, 2022).

In the Philippines, a nation renowned for its healthcare excellence and the substantial demand for nursing professionals both within its borders and on the global stage, the continuous evolution of nursing education holds immense significance. The country's commitment to maintaining high standards in healthcare services requires a corresponding commitment to producing well-trained and competent nursing graduates. In response to this imperative, Philippine nursing schools are at the forefront of educational innovation, actively embracing progressive pedagogical approaches, including the incorporation of gamification. This proactive approach aims to equip students with the knowledge and skills necessary to meet the dynamic and evolving demands of the healthcare sector.

Given the Philippines' pivotal role as a major supplier of nurses for the global healthcare workforce, the integration of effective teaching strategies like gamification can significantly contribute to further enhancing the quality of nursing education. A well-implemented gamified approach has the potential to not only engage and motivate

students but also cultivate critical thinking and problem-solving abilities, which are vital in the field of nursing. By aligning their nursing education programs with innovative approaches such as gamification, Philippine nursing schools can help produce graduates who are not only academically proficient but also well-prepared to excel in diverse healthcare settings. This, in turn, strengthens the reputation of Philippine nursing professionals on the global stage and underscores the country's commitment to providing high-quality healthcare services worldwide.

At Lorma Colleges, specifically within the College of Nursing, there exists a pressing need to align nursing education with the evolving global and national healthcare landscape. The integration of gamified elements into the curriculum is a step toward addressing this need. Lorma's College of Nursing recognizes that innovative pedagogical approaches, such as gamification, have the potential to not only engage students but also to equip them with the critical skills necessary for a successful nursing career. However, despite the global and national trends, there is a research gap at the local level concerning the specific impact of gamification on nursing education outcomes at Lorma Colleges.

The need for this study within Lorma Colleges, particularly within the College of Nursing, is rooted in a crucial research gap surrounding the effectiveness of gamification in nursing education. While global and national trends have indicated positive outcomes associated with the incorporation of gamified teaching strategies, the specific application and impact of gamification within the local context of Lorma's nursing education program remain largely unexplored. This gap is both a significant challenge and an opportunity for the institution.

The compelling reason behind conducting this study is to address the growing demand for innovation in nursing education at Lorma Colleges. In an era marked by rapid technological advancements and evolving healthcare practices, nursing programs must adapt to ensure the competence and preparedness of their graduates. Gamification,

with its potential to enhance student engagement, knowledge retention, and critical thinking skills, stands as a promising pedagogical approach that could align with the institution's goals and needs. However, without empirical evidence specific to Lorma Colleges, the decision-makers within the institution lack a clear understanding of how gamification can best be integrated and tailored to their unique educational environment. Therefore, this study aims to provide localized insights, enabling informed decisions that can shape the future of nursing education at Lorma Colleges and contribute to the institution's commitment to producing highly skilled and competent nursing professionals.

The purpose of this study is to bridge this research gap by conducting a comprehensive investigation into the integration of gamification within the College of Nursing at Lorma Colleges. This research aims to assess the impact of gamification on student engagement, knowledge retention, and overall learning outcomes. By conducting a rigorous empirical study, this research sought to provide evidence-based insights that will inform decision-making within the institution and contribute to the ongoing improvement of nursing education at Lorma Colleges. This research will also help in shaping the local discourse on innovative pedagogical approaches and their relevance in the Philippine nursing education landscape.

RESEARCH QUESTIONS

The study aimed to determine the effectiveness of gamification in enhancing the scores of third year BSN students at the College of Nursing of Lorma College for the school year 2023-2024. Specifically, the study sought answers to the following questions:

1. What is the mean engagement score of the third year BSN students at the College of Nursing of Lorma College before the use of gamification?
2. What is the mean engagement score of the third year BSN students at the College of Nursing of Lorma College after the use of gamification?

3. Is there a significant difference between the scores of the third year BSN students at the College of Nursing of Lorma College before and after the use of gamification?

METHODOLOGY

Research Design: This study employed a quasi-experimental research design. A quasi-experimental research design is a type of research design used in scientific studies, particularly in the field of social sciences and education, to investigate the impact or effectiveness of an intervention or treatment on a group of subjects (Creswell & Creswell, 2023). It is called "quasi" because it lacks some of the key characteristics of a true experimental design, such as random assignment of participants to groups (Thomas, 2022).

Sample: The sample for this study is composed of 40 third year BSN students at the College of Nursing at Lorma Colleges. They were chosen using random sampling.

Data Collection: To assess the effectiveness of gamification in enhancing the academic performance of third-year BSN students at the College of Nursing of Lorma College for the 2023-2024 school year, the data collection process involved a pre-test and post-test design. Initially, students' baseline knowledge and skills were measured using a standardized test developed in alignment with the nursing curriculum objectives. Following this, the students participated in a series of gamified learning modules designed to cover key nursing topics, incorporating elements such as point scoring, competition, and interactive challenges to engage and motivate learners. After the completion of these modules, a post-test identical in structure to the pre-test was administered to evaluate any improvements in scores. Additionally, student feedback on the gamification experience was collected through structured questionnaires to gather insights into their engagement levels and perceived value of gamification in their learning process.

Data Analysis: The data analysis for this study involved a comparative statistical examination of the mean engagement scores of third-year BSN students at the College of

Nursing of Lorma College, both before and after the implementation of gamification strategies within their curriculum. Initially, descriptive statistics were employed to calculate the mean engagement scores prior to the introduction of gamified learning. Subsequently, the same statistical method was applied to determine the mean scores following the gamification intervention. To address the third research question regarding the presence of a significant difference between the pre- and post-gamification scores, a paired sample t-test was conducted. This test was chosen for its effectiveness in comparing the means of two related groups to determine if the mean difference is statistically significant. Through this analytical approach, the study aimed to quantitatively evaluate the impact of

gamification on student engagement and academic performance, providing insights into its efficacy as an educational tool in nursing education.

RESULTS

The results of this experimental research provide substantial insights into the impact of gamification on nursing education. The study assessed the effectiveness of incorporating gamified elements into the curriculum, focusing on student engagement, knowledge retention, and overall learning outcomes. The experimental research design ensured a rigorous evaluation of these outcomes.

Table 1.

Mean Engagement Score of The Third Year BSN Students at The College of Nursing of Lorma College Before the Use of Gamification

Group	Mean Engagement Score	Standard Deviation
Before the Use of Gamification	67.20	8.50

Mean Engagement Score Before the Use of Gamification. Table 1 provides information about the mean engagement scores of third-year BSN (Bachelor of Science in Nursing) students at the College of Nursing of

Lorma College before the implementation of gamification in their curriculum. The mean engagement score for the third-year BSN students before the introduction of gamification is 67.20, with a standard deviation of 8.50.

Table 2

Mean Engagement Score of The Third Year BSN Students at The College of Nursing of Lorma College After the Use of Gamification

Group	Mean Engagement Score	Standard Deviation
After the Use of Gamification	85.60	6.20

Mean Engagement Score After the Use of Gamification. Table 2 presents data on the mean engagement scores of third-year BSN (Bachelor of Science in Nursing) students at the College of Nursing of Lorma College after the implementation of gamification in their

curriculum. The mean engagement score for the third-year BSN students after the introduction of gamification is notably higher at 85.60, compared to the pre-gamification mean score of 67.20.

Table 3

Significant difference in the engagement scores of third year nursing students before and after the use of gamification

Groups	Mean	n	p-value	t-stat	Remark	Decision
--------	------	---	---------	--------	--------	----------

Before the Use of Gamification	67.20	30				
After the Use of Gamification	85.60	30	0.000000*	18.42	Significant	Reject Ho

Significant Difference in The Engagement Scores of Third Year Nursing Students Before and After the use of Gamification.

Table 3 provides statistical information regarding the comparison of engagement scores between third-year nursing students before and after the implementation of gamification in their curriculum. The mean engagement score represents the average level of engagement for each group. Before gamification, the mean engagement score was 67.20, indicating a moderate level of engagement. After the use of gamification, the mean engagement score increased significantly to 85.60.

DISCUSSION

Mean Engagement Score Before the Use of Gamification. Results reveal crucial insights into the baseline level of student engagement among third-year BSN students at the College of Nursing of Lorma College before the integration of gamification into their educational experience. The moderate level of student engagement in their coursework and learning activities. The implications of these findings are twofold. Firstly, they underscore the importance of assessing and understanding the initial state of student engagement before implementing educational interventions. In this case, the moderate baseline engagement score serves as a reference point against which the impact of gamification can be evaluated. In addition, the presence of variability in engagement levels suggests that there is room for improvement in enhancing student engagement within the program.

Supporting literature aligns with the notion that understanding baseline engagement is essential for effective pedagogical interventions. Studies emphasize the significance of assessing and addressing initial levels of student engagement to optimize educational outcomes (Anguas-Gracia et al.,

2021; Jang, 2022; San Martín-Rodríguez et al., 2020). Furthermore, research by various studies highlight the importance of creating an engaging learning environment to enhance student success (Anna et al., 2022; Lee, 2023; Moon & Kim, 2024). These studies collectively affirm the value of both baseline assessment and the implementation of strategies, such as gamification, to elevate student engagement in higher education settings.

Mean Engagement Score After the Use of Gamification. Results provides compelling evidence of the positive impact of gamification on student engagement among third-year BSN students at the College of Nursing of Lorma College. The substantial increase in the mean engagement score after the use of gamification, after implementation, signifies a significant improvement. This finding indicates that gamification has effectively enhanced student engagement in their coursework and learning activities.

The implications of these results are profound. Firstly, they underscore the potential of gamification as an impactful educational strategy in nursing education, aligning with the ongoing transformation of pedagogical approaches (Hutson, 2022; Kaynak et al., 2023). The substantial increase in engagement levels implies that students were more motivated, actively participated in their learning, and found the coursework more enjoyable after gamification was introduced. This, in turn, can lead to improved academic performance and a more positive learning experience. Secondly, the reduced variability in engagement scores suggests that gamification had a consistent positive effect across the student population, contributing to a more uniform and engaging learning environment (Haugen et al., 2023; Nasirzadeh & Fathian, 2020).

Supporting literature reinforces the idea that gamification can enhance student engagement and learning outcomes. Various studies highlight the motivational aspects of gamification, emphasizing its potential to increase engagement and improve learning experiences (Ferrer-Sargues et al., 2021; Han et al., 2021; Seymour et al., 2023). Additionally, studies emphasized the effectiveness of gamified elements in promoting active participation and critical thinking, which align with the findings of this study (Kuruca Ozdemir & Dinc, 2022; Sandrone & Carlson, 2021).

Significant Difference in The Engagement Scores of Third Year Nursing Students Before and After the Use of Gamification. Results present compelling statistical evidence of a significant difference in the engagement scores of third-year nursing students before and after the introduction of gamification into their curriculum. These results lead to the rejection of the null hypothesis (Ho), further emphasizing the substantial impact of gamification on student engagement.

The implications of these findings are profound. Firstly, they confirm that gamification is a potent educational strategy for enhancing student engagement. The substantial increase in the mean engagement score from a moderate level to a significantly higher score after its implementation suggests that students became more actively involved in their learning, demonstrating heightened motivation and enjoyment. This enhancement in engagement can lead to improved learning outcomes, including higher academic performance and better retention of knowledge. Secondly, the rejection of the null hypothesis underscores that gamification is not merely a superficial change but a transformational tool in nursing education. It has the potential to revolutionize pedagogical approaches and contribute to the creation of a more engaging and effective learning environment for nursing students (Holmes, 2024; Rosa-Castillo et al., 2023; Yang & Oh, 2022).

Supporting literature reinforces the idea that gamification can lead to significant improvements in student engagement and learning outcomes. Research emphasized the

motivational aspects of gamification, which align with the findings of this study (Joy et al., 2023; King et al., 2023; Villa et al., 2023). Additionally, studies emphasized the potential of gamified elements to foster deep engagement and critical thinking, which are crucial in nursing education (Chang et al., 2024; Gutiérrez-Puertas et al., 2021; Sánchez-Valdeón et al., 2024).

CONCLUSION

This study provides comprehensive insights into the impact of gamification on student engagement among third-year BSN students at the College of Nursing of Lorma College. Before the implementation of gamification, students exhibited a moderate level of engagement in their coursework. These findings underscore the importance of assessing baseline engagement levels, serving as a reference point for evaluating the effectiveness of educational interventions. Additionally, the presence of variability in engagement levels suggests opportunities for improvement within the program. However, after the introduction of gamification, a significant transformation occurred. The mean engagement score increased substantially, signifying a remarkable improvement in student engagement. This suggests that gamification is a powerful educational strategy, motivating students to actively participate in their learning, enjoy coursework, and ultimately enhance their academic performance. Furthermore, the consistent impact across the student population highlights the potential of gamification to create a more uniform and engaging learning environment. These results align with the literature, emphasizing the value of understanding baseline engagement, creating engaging learning environments, and utilizing gamified elements to boost student engagement and learning outcomes. Overall, this study contributes to the growing body of evidence supporting the effectiveness of gamification in nursing education and underscores its potential to revolutionize pedagogical approaches and enhance the overall educational experience for nursing students.

References

1. Anguas-Gracia, A., Subirón-Valera, A. B., Antón-Solanas, I., Rodríguez-Roca, B., Satústegui-Dordá, P. J., & Urcola-Pardo, F. (2021). An evaluation of undergraduate student nurses' gameful experience while playing an escape room game as part of a community health nursing course. *Nurse Education Today*, *103*, 104948. <https://doi.org/10.1016/j.nedt.2021.104948>
2. Anna, A., Wang, C.-J., Lai, W.-S., & Chen, H.-M. (2022). Developing and validating cardiovascular emergency gamification question cards. *Nurse Education Today*, *117*, 105482. <https://doi.org/10.1016/j.nedt.2022.105482>
3. Arruzza, E., & Chau, M. (2021). A scoping review of randomised controlled trials to assess the value of gamification in the higher education of health science students. *Journal of Medical Imaging and Radiation Sciences*, *52*(1), 137–146. <https://doi.org/10.1016/j.jmir.2020.10.003>
4. Browner, W. S., Newman, T. B., Cummings, S. R., Grady, D. G., Huang, A. J., Kanaya, A. M., & Pletcher, M. J. (2023). *Designing clinical research* (Fifth edition). Wolters Kluwer.
5. Chang, Y.-Y., Chao, L.-F., Chang, W., Lin, C.-M., Lee, Y.-H., Latimer, A., & Chung, M. L. (2024). Impact of an immersive virtual reality simulator education program on nursing students' intravenous injection administration: A mixed methods study. *Nurse Education Today*, *132*, 106002. <https://doi.org/10.1016/j.nedt.2023.106002>
6. Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (Sixth edition). SAGE.
7. Ferrer-Sargues, F. J., Kot Baixauli, P. E., Carmenate-Fernández, M., Rodríguez-Salvador, G., González Domínguez, J. Á., Martínez-Olmos, F. J., & Valtueña-Gimeno, N. (2021). Escape-cardio: Gamification in cardiovascular physiotherapy. An observational study. *Nurse Education Today*, *106*, 105062. <https://doi.org/10.1016/j.nedt.2021.105062>
8. Gutiérrez-Puertas, L., García-Viola, A., Márquez-Hernández, V. V., Garrido-Molina, J. M., Granados-Gámez, G., & Aguilera-Manrique, G. (2021). Guess it (SVUAL): An app designed to help nursing students acquire and retain knowledge about basic and advanced life support techniques. *Nurse Education in Practice*, *50*, 102961. <https://doi.org/10.1016/j.nepr.2020.102961>
9. Han, L., Cao, Q., Xie, T., Chen, X., Liu, Y., & Bai, J. (2021). Exploring the experience of nursing undergraduates in using gamification teaching mode based on the flow theory in nursing research: A qualitative study. *Nurse Education Today*, *107*, 105158. <https://doi.org/10.1016/j.nedt.2021.105158>
10. Haugen, T. L. K., Johnson, K., & Senetza, A. (2023). Learning for the Fun of It – The Use of

- Gamification in Educating Pediatric Perioperative Clinical Staff. *Journal of PeriAnesthesia Nursing*, 38(4), e1–e2.
<https://doi.org/10.1016/j.jopan.2023.06.042>
11. Holmes, K. (2024). The Future of Simulation-Based Learning in Acute Pediatric Nursing Education: A Conceptual Review. *Clinical Simulation in Nursing*, 87, 101491.
<https://doi.org/10.1016/j.ecns.2023.101491>
12. Hutson, E. (2022). Student Response Systems in Online Nursing Education. *Nursing Clinics of North America*, 57(4), 539–549.
<https://doi.org/10.1016/j.cnur.2022.06.004>
13. Jang, E. C. (2022). Addressing Challenges to the Development, Delivery, and Evaluation of Continuing Education for Nurses. *Nursing Clinics of North America*, 57(4), 513–523.
<https://doi.org/10.1016/j.cnur.2022.06.003>
14. Joy, S., Rumsey, K., Ford, M., & Dickenson, V. (2023). Gamification: Development, challenges, and implications for undergraduate nursing education. *Teaching and Learning in Nursing*, 18(3), 423–425.
<https://doi.org/10.1016/j.teln.2023.04.004>
15. Kaynak, S., Ergün, S., & Karadaş, A. (2023). The effect of crossword puzzle activity used in distance education on nursing students' problem-solving and clinical decision-making skills: A comparative study. *Nurse Education in Practice*, 69, 103618.
<https://doi.org/10.1016/j.nepr.2023.103618>
16. King, C. E., Kells, A., Trout, L., Yirinec, A., Zhou, S., & Zurca, A. D. (2023). Gamification educational intervention improves pediatric nurses' comfort and speed drawing up code-dose epinephrine. *Journal of Pediatric Nursing*, 71, 55–59.
<https://doi.org/10.1016/j.pedn.2023.03.013>
17. Kowitlawakul, Y., Tan, J. J. M., Suebnukarn, S., Nguyen, H. D., Poo, D. C. C., Chai, J., Wang, W., & Devi, K. (2022). Utilizing educational technology in enhancing undergraduate nursing students' engagement and motivation: A scoping review. *Journal of Professional Nursing*, 42, 262–275.
<https://doi.org/10.1016/j.profnurs.2022.07.015>
18. Kuruca Ozdemir, E., & Dinc, L. (2022). Game-based learning in undergraduate nursing education: A systematic review of mixed-method studies. *Nurse Education in Practice*, 62, 103375.
<https://doi.org/10.1016/j.nepr.2022.103375>
19. Lee, K.-W. (2023). Effectiveness of gamification and selection of appropriate teaching methods of creativity: Students' perspectives. *Heliyon*, 9(10), e20420.
<https://doi.org/10.1016/j.heliyon.2023.e20420>
20. Leedy, P. D., Ormrod, J. E., & Johnson, L. R. (2019). *Practical research: Planning and design* (Twelfth edition). Pearson.
21. Mobley, A., Chandora, A., & Woodard, S. (2023). The impact of gamification and potential of kaizen in radiology education. *Clinical Imaging*, 103, 109990.

- <https://doi.org/10.1016/j.clinimag.2023.109990>
22. Moon, S.-H., & Kim, S. O. (2024). Enhancing triage accuracy in emergency nurses: The impact of a game-based triage educational app. *International Emergency Nursing*, 72, 101398. <https://doi.org/10.1016/j.ienj.2023.101398>
23. Nasirzadeh, E., & Fathian, M. (2020). Investigating the effect of gamification elements on bank customers to personalize gamified systems. *International Journal of Human-Computer Studies*, 143, 102469. <https://doi.org/10.1016/j.ijhcs.2020.10246>
24. Rosa-Castillo, A., García-Pañella, O., Roselló-Novella, A., Maestre-Gonzalez, E., Pulpón-Segura, A., Icart-Isern, T., & Solà-Pola, M. (2023). The effectiveness of an Instagram-based educational game in a Bachelor of Nursing course: An experimental study. *Nurse Education in Practice*, 70, 103656. <https://doi.org/10.1016/j.nepr.2023.103656>
25. San Martín-Rodríguez, L., Escalada-Hernández, P., & Soto-Ruiz, N. (2020). A themed game to learn about nursing theories and models: A descriptive study. *Nurse Education in Practice*, 49, 102905. <https://doi.org/10.1016/j.nepr.2020.102905>
26. Sánchez-Valdeón, L., Casado-Verdejo, I., Barrionuevo, L., Fernández-Martínez, E., Liébana-Presa, C., Pereira, R., & Gomes, L. (2024). Implementation of serious games in nursing student education: A systematic review. *Teaching and Learning in Nursing*, 19(1), 60–67. <https://doi.org/10.1016/j.teln.2023.08.015>
27. Sandrone, S., & Carlson, C. (2021). Gamification and game-based education in neurology and neuroscience: Applications, challenges, and opportunities. *Brain Disorders*, 1, 100008. <https://doi.org/10.1016/j.dscb.2021.100008>
28. Seymour, A., Borggren, M., & Baker, R. (2023). Escape the Monotony: Gamification Enhances Nursing Education. *Journal of Emergency Nursing*, 49(6), 805–810. <https://doi.org/10.1016/j.jen.2023.06.004>
29. Tavares, N. (2022). The use and impact of game-based learning on the learning experience and knowledge retention of nursing undergraduate students: A systematic literature review. *Nurse Education Today*, 117, 105484. <https://doi.org/10.1016/j.nedt.2022.105484>
30. Thomas, G. (2022). *How to do your research project* (Fourth edition). Sage Publications.
31. Turabian, K. L., Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & FitzGerald, W. T. (2018). *A manual for writers of research papers, theses, and dissertations: Chicago Style for students and researchers* (9th edition). The University of Chicago Press.
32. Villa, G., Poliani, A., Rosa, D., Gnecci, S., Galli, E., & Manara, D. F. (2023). Gamification: A new approach to support nurses in patient empowerment education? *Nurse Education in Practice*, 70, 103672. <https://doi.org/10.1016/j.clinimag.2023.109990>

- <https://doi.org/10.1016/j.nepr.2023.103672>
33. Xie, H. (2022). A scoping review of gamification for mental health in children: Uncovering its key features and impact. *Archives of Psychiatric Nursing, 41*, 132–143. <https://doi.org/10.1016/j.apnu.2022.07.003>
34. Yang, S.-Y., & Oh, Y.-H. (2022). The effects of neonatal resuscitation gamification program using immersive virtual reality: A quasi-experimental study. *Nurse Education Today, 117*, 105464. <https://doi.org/10.1016/j.nedt.2022.105464>

Technical and Vocational Education and Training (TVET) Trainers' Professional Development Involvement and Their Level of Competence

JOHN PAULO G. CALMA², and FAVIE ANNE D. CALMA²

¹Professor, College of Nursing, Wesleyan University Philippines

²Administrative Officer IV, TESDA-Nueva Ecija, Cabanatuan City, Philippines

OPEN ACCESS

Received: 27 March 2023

Accepted: 22 August 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Calma, J. P., & Calma, F. (2024). Technical and vocational education training (TVET) trainers' professional development involvement and their level of competence. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 32-46, doi: <https://doi.org/10.5281/zenodo.10777556>

ABSTRACT

Technical vocational education and training has become an essential component of the global economy as it prepares individuals with specialized skills and knowledge to meet industry demands and to train future students. Despite this significance, many vocational schools face challenges when it comes to teacher professional and competency development. This study examined vocational teacher professional and competency development and global initiatives to improve it to enrich learners' vocational training experiences. In this concurrent triangulation approach was employed. The quantitative part used total enumeration sampling, while qualitative sampling used purposive sampling. A questionnaire survey and online in-depth interviews collected data. The narrative component was extracted, arranged, and examined using the Colaizzi approach, while the quantitative part was examined using descriptive statistics and inferential approaches. The total number of respondents who participated in this study was 103. This study revealed most of the respondents have no eligibility and are vocational graduates. Moreover, this study also found that respondent's professional development is attending seminars/webinars and only few want to continue their educational experience. Most of them are unmotivated to pursue the professional development and need support from the government. It is noted that achievement motivation improves teacher professional competency, and IT-based learning innovations can boost vocational education. Standardizing vocational teacher competencies ensures high-quality vocational education worldwide, especially in emerging nations. Further, themes that emerged include examining luddites in integrating technology, innovating teaching profession through technology and transcending beyond adversaries. The results provided a program for vocational teachers called Breakthrough.

Keywords: Professional development, Competency, Vocational technology, Mixed methods, Technical Vocational

INTRODUCTION

In a rapidly evolving global landscape marked by technological advancements and shifting economic paradigms, the role of Technical and Vocational Education and Training (TVET) trainers has never been more crucial. These educators serve as the linchpins in equipping the workforce with the skills and knowledge necessary to navigate the complexities of the modern job market. However, the effectiveness of TVET programs largely hinges on the competence and adaptability of their trainers. Across the world, there exists a growing recognition of the pivotal role professional development plays in enhancing the skills and expertise of TVET trainers. In response to the changing demands of industries and the ever-expanding array of technologies, educators must continually update their knowledge and pedagogical approaches to remain effective (Braunstein et al., 2022; Scherzinger & Brahm, 2023).

The global situation reveals a multifaceted landscape. On one hand, there is a pressing need for TVET trainers to engage in ongoing professional development to keep pace with the dynamic nature of vocational fields. This entails staying attuned to the latest industry trends, technological innovations, and pedagogical methods. Furthermore, the COVID-19 pandemic has accelerated the adoption of digital technologies in education, compelling trainers to adapt swiftly to remote teaching modalities. On the other hand, disparities in access to professional development opportunities persist across regions, hindering some trainers' ability to enhance their competence adequately. Bridging this gap in professional development involvement and competence levels among TVET trainers is a global imperative to ensure the workforce remains well-prepared for the challenges and opportunities of the 21st century.

Meanwhile, Technical and Vocational Education and Training (TVET) serves as a cornerstone in the creation of a skilled workforce, driving technological advancements, fostering industrial growth, and propelling economic development (Gebremeskel, 2023). However, the efficacy of

any TVET program hinges significantly on the caliber and expertise of its educators. Professional development emerges as a critical component for TVET trainers, enabling them to adapt to the ever-evolving technological landscape and enhance their knowledge and skills. In an era marked by rapid technological progress and dynamic industry demands, TVET trainers must continually update their expertise to effectively guide their students.

The role of educators, particularly TVET trainers, holds paramount importance in improving students' learning outcomes and addressing regional educational challenges. The COVID-19 pandemic has further underscored the significance of educators, affecting approximately 43 million teachers in the Asia-Pacific region. The sudden shift to remote teaching and concerns about personal well-being posed significant challenges. Nevertheless, it also sparked innovation and experimentation within the TVET sector, highlighting the potential for rapid reform and adaptation. This transition forced even the slowest adopters of technology to embrace digital solutions, fostering partnerships between TVET institutions, telecommunications companies, technology firms, governments, and parents to ensure continuity in education.

This study aimed at assessing the digital competency of TVET trainers in the Philippines and investigate potential influences on TVET programs. In Sweden, the vocational teaching profession has faced deregulation, leaving school administrators responsible for assessing teacher competence. This deregulation, coupled with a shortage of vocational instructors and varying qualifications, has raised concerns about the quality of vocational education and training (VET). Elevating the status of vocational educators could potentially improve the image and quality of VET, but the sources of teachers' competency—whether through formal education or on-the-job training—need further examination. This research delves into teaching competency, vocational expertise, workplace-related skills, and the role of teachers in building relationships with industry partners.

To enhance individuals' readiness for the modern workforce, TVET plays an indispensable role in imparting necessary skills. To ensure that TVET trainers deliver high-quality training, their engagement in professional development demands attention. However, a notable research gap exists concerning the relationship between TVET trainers' professional development involvement and their level of competence.

This study endeavors to fill this research gap, aiming to promote the effectiveness of TVET programs and provide trainers with the resources essential for their professional growth, ultimately benefiting both learners and the workforce. The findings can offer valuable insights into enhancing TVET trainers' competencies and engagement in professional development activities, thereby contributing to the improvement of TVET programs and graduates' employability.

In conclusion, addressing the research gap regarding TVET trainers' professional development involvement and competence levels is of paramount importance. This research seeks to bridge this gap and shed light on the critical role played by professional and competent vocational teachers in shaping students' academic achievements and overall school performance. By establishing standards for vocational teacher competencies and emphasizing their professional development, the vocational education in the global context, particularly in emerging economies is enhanced, and a workforce prepared for the demands of today's industries is ensured.

RESEARCH QUESTIONS

The study aimed to assess the Technical-Vocational Education and Training (TVET) Trainers' Professional Development Involvement and their level of competence. Specifically, this research answered the following quantitative questions:

1. What is the sociodemographic profile of the respondents in terms of age, sex, civil status, years of teaching experience, eligibility, course size, tenure status, sector, monthly net income/gross income, district, highest education attainment, earned national

certificates, and webinars/seminars attended?

2. How may the respondent level of competence be described in terms of communication and collaboration, digital professional development, digital resources' selection, digital resources' creation, data protection, teaching and learning, assessment, achievement and importance, class management, designing, research and reflection upon practice, communicative and listening skills, and innovative practice?
3. Is there a significant relationship between SDP and the level of competence of the respondents?
4. How do significant training centers assist trainers in their professional and competency development?

METHODS

Research Design. The researchers used a concurrent triangulation design to precisely identify correlations between key variables by combining qualitative and quantitative data. In this approach, both data types were collected simultaneously with different focuses, allowing for findings to be cross validated. In the quantitative part, a descriptive-correlational research design was employed to gather data and establish relationships between variables such as the socio-demographic profile, professional development, and the level of competence of TVET teacher's post-pandemic. This approach helped characterize the phenomenon and determine the presence and significance of relationships among the variables (Dang et al., 2021). Conversely, in the qualitative component, a descriptive qualitative design was used to summarize specific experiences of individuals or groups, offering a perspective on the research focus and questions (Leavy, 2023).

Participants. In the quantitative phase, the researcher conducted a total enumeration sampling, who met specific criteria related to professional development and level of competence. Out of a potential 100 respondents, data from 95 were collected. The selection of 95 individuals for this study aligns

with widely accepted guidelines, which recommend a sample size of 6 to 20 individuals as sufficient. Data collection concluded when data saturation occurred. Specific criteria were applied in selecting the respondents. For the quantitative part, respondents needed to be Holder Trainer's Methodology I and NTTTC, actively engaged in training TESDA programs, currently teaching TVET students, and residing in Nueva Ecija, in line with TESDA's estimated population of 100 active Trainers of TVET Programs in the region. For the qualitative component, a purposive sampling technique was used, with participants chosen based on their administrative roles in training centers, active involvement in TESDA programs, current TVET student training, a minimum of one year of experience as TVET administrators, and their willingness to participate in the study.

Data Gathering Instruments. The researchers designed and administered a comprehensive survey with three sections. The first section gathered socio-demographic data, including variables like age, gender, education, experience, eligibility, national certificates, course size, tenure, sector, income, district, education level, acquired certificates, webinars/seminars attended, and experience years. The second part of the questionnaire incorporated elements from DigCompEdu2.0 and the Digital Competence Scale for Vocational Education Trainers, assessing 22 digital competences across seven subscales, using a 4-point Likert scale. Additionally, a Swedish competence level questionnaire was included, piloted for reliability. The third section featured items tied to five components derived from factor analysis, forming five scales assessed for reliability using Cronbach's alpha. Permission to use these adapted questionnaires was obtained through email correspondence with the original authors. In the qualitative aspect, data were collected via semi-structured interviews, conducted online and

face-to-face in-depth one-on-one formats (Mertler, 2019).

Data Analysis. The collected data underwent a series of statistical analyses to unveil their significance. A frequency count was employed to categorize items based on a specific scheme, quantifying how many items fell into each category, thereby addressing the initial research objective. The questionnaire utilized a four-point rating scale, with each rating linked to a specific criterion ranked from highest to lowest. Furthermore, standard deviation was calculated to gauge deviations from the mean, addressing the second and third research objectives. To explore whether respondents with higher competence levels also exhibited significantly advanced professional development, Spearman's rho Product-Moment and Kendall's tau Correlation Coefficients were employed. To ensure data validity, the researcher employed the Statistical Package for the Social Sciences (SPSS). In the qualitative aspect, the Colaizzi method was employed to extract, organize, and delve into the narrative dataset, involving seven key steps: reading all interview contents, extracting significant statements, formulating meanings, organizing definitions into thematic clusters, integrating these clusters into a comprehensive description, establishing the fundamental structure of the identified phenomenon through a definitive statement, and revisiting interviewees for additional insights (Aurini et al., 2021; Grove & Gray, 2019; Saldaña, 2021).

RESULTS

Socio-Demographic Profile of Respondents. Table 1 presents a comprehensive overview of the socio-demographic profile of the 95 respondents in the study. The distribution of respondents is segmented into several key categories, allowing for a detailed analysis of the participant characteristics.

Table 1. Distribution of respondents according to sociodemographic profile (n=95)

Age	Frequency	Percent
18 to 29 years old	16	16.80
30 to 39 years old	36	37.90
40 to 49 years old	20	21.10
50 to 59 years old	17	17.90

60 years old and above	6	6.30
Sex	Frequency	Percent
Male	49	51.60
Female	46	48.40
Civil Status	Frequency	Percent
Single	45	47.40
Married	44	46.30
Widowed	5	5.30
Others	1	1.10
Years of Experience	Frequency	Percent
1 to 5 years	33	34.70
6 to 10 years	33	34.70
11 to 15 years	16	16.80
16 to 20 years	6	6.30
21 years and above	7	7.40
Eligibility	Frequency	Percent
None	58	61.10
LPT	16	16.8
Civil Service Eligibility	10	10.5
Others	7	7.4
RN	3	3.2
RM	1	1.1
Course Size	Frequency	Percent
21 to 30 students	67	70.50
31 to 40 students	8	8.40
41 to 50 students	8	8.40
51 students and above	8	8.40
11 to 20 students	4	4.20
Employment Status	Frequency	Percent
Contractual	53	55.80
Tenured/Permanent	40	42.10
Non-Tenured	2	2.10
Sector	Frequency	Percent
Hotel, tourism & catering Cluster B	30	31.60
Education Cluster C	23	24.20
Health services Cluster C	14	14.70
Construction Cluster A	7	7.40
Mechanical & electrical engineering Cluster A	5	5.30
Agriculture, Plantations, Other rural sectors Cluster C	4	4.20
Basic metal production Cluster A	3	3.20
Food, drink and tobacco Cluster B	3	3.20
Others Cluster C	2	2.10
Media, culture & graphical Cluster B	1	1.10
Public service Cluster B	1	1.10
Textiles, clothing, leather, footwear Cluster A	1	1.10
Transport (including civil aviation, railways, road transport) Cluster B	1	1.10
Monthly Net Income/Gross Income	Frequency	Percent
20,001 Php and above	35	36.80
10,001 Php to 15,000 Php	24	25.30
15,001 Php to 20,000 Php	21	22.10
5,001 Php to 10,000 Php	10	10.50
1,000 Php to 5,000 Php	5	5.30
District	Frequency	Percent
District 3	40	42.10
District 4	38	40.00

District 2	9	9.50
District 1	8	8.40
Highest Education attainment	Frequency	Percent
Vocational	58	61.10
High School Graduate	20	21.10
College Graduate	12	12.60
With master's degree Units	5	5.30
National Certificates	Frequency	
NC I	11	
NC II	81	
NC III	39	
NC IV	6	
Webinars/seminars	Frequency	
21st century Readiness/21st Century Skills	85	
Facilitate eLearning Sessions (FeLs)	42	
BSRS	25	
RCEP	3	
Others	13	
None	2	
Years Related Experiences	Frequency	Percent
4 to 5 years	31	32.60
10 years and above	31	32.60
2 to 3 years	20	21.10
6 to 7 years	11	11.60
8 to 9 years	2	2.10
Total	95	100.00

Most of the respondents fall within the age range of 30 to 39 years old (37.90%), followed by 40 to 49 years old (21.10%) and 50 to 59 years old (17.90%). The age group of 18 to 29 years old comprises 16.80% of the participants, while those aged 60 years and above make up 6.30% of the sample. The gender distribution is relatively balanced, with 51.60% of respondents being male and 48.40% female. A significant portion of the respondents are either single (47.40%) or married (46.30%), while a smaller percentage is widowed (5.30%), and a minimal percentage falls under the "Others" category (1.10%).

Moreover, the distribution of years of experience is quite evenly spread, with 34.70% of respondents having 1 to 5 years and another 34.70% having 6 to 10 years of experience. Smaller proportions have 11 to 15 years (16.80%), 16 to 20 years (6.30%), and 21 years and above (7.40%) of experience. Likewise, most of the respondents (61.10%) have no eligibility, while others possess qualifications such as LPT (16.8%), Civil Service Eligibility (10.5%), RN (3.2%), RM (1.1%), or other qualifications (7.4%). A significant number of

respondents (70.50%) are associated with course sizes ranging from 21 to 30 students.

However, most of the respondents are contractual (55.80%), while 42.10% are tenured or permanent, and a minimal 2.10% are non-tenured. The respondents, on the other hand, represent various sectors, with the highest representation in the Hotel, Tourism, and Catering Cluster B (31.60%), followed by Education Cluster C (24.20%) and Health Services Cluster C (14.70%). Other sectors include Construction Cluster A, Mechanical & Electrical Engineering Cluster A, Agriculture, Plantations, Other Rural Sectors Cluster C, Basic Metal Production Cluster A, Food, Drink, and Tobacco Cluster B, Others Cluster C, Media, Culture & Graphical Cluster B, Public Service Cluster B, Textiles, Clothing, Leather, Footwear Cluster A, and Transport Cluster B, each with smaller percentages.

The income distribution ranges from 1,000 Php to 20,001 Php and above, with 36.80% of respondents earning 20,001 Php and above, 25.30% earning 10,001 Php to 15,000 Php, 22.10% earning 15,001 Php to 20,000 Php, 10.50% earning 5,001 Php to 10,000 Php, and

5.30% earning 1,000 Php to 5,000 Php. In addition, respondents are distributed across various districts, with District 3 (42.10%) and District 4 (40.00%) having the highest representation, followed by District 2 (9.50%) and District 1 (8.40%). A significant proportion of respondents (61.10%) have vocational education as their highest attainment, while 21.10% are high school graduates, 12.60% are college graduates, and 5.30% have completed master's degree units.

Finally, respondents hold various National Certificates (NC), with NC II being the most common (81 respondents), followed by NC I (11 respondents), NC III (39 respondents), and NC IV (6 respondents). Whereas most of the respondents have participated in 21st Century Readiness/21st

Century Skills webinars/seminars (85 respondents), followed by Facilitate eLearning Sessions (FeLs) (42 respondents), BSRS (25 respondents), RCEP (3 respondents), and other seminars (13 respondents). Only a small percentage of respondents (2 respondents) have not attended any webinars/seminars. The distribution of years of related experience includes 4 to 5 years (32.60%), 10 years and above (32.60%), 2 to 3 years (21.10%), 6 to 7 years (11.60%), and 8 to 9 years (2.10%).

Level of Competence of Respondents of TVET Trainers. Table 2 presents a comprehensive assessment of the level of competence among TVET trainers, with mean scores and their corresponding interpretations provided for each variable.

Table 2. Level of Competence of Respondents of TVET Trainers

Variables	Mean	Interpretation
1. Communication and Collaboration	3.61	Strongly Agree
2. Digital Professional Development	3.53	Strongly Agree
3. Digital Resources Selection	3.54	Strongly Agree
4. Digital Resources Creation	3.54	Strongly Agree
5. Data Protection	3.64	Strongly Agree
6. Teaching and Learning	3.55	Strongly Agree
7. Assessment	3.53	Strongly Agree
8. Achievement and Importance	3.63	Strongly Agree
9. Classroom Management	3.56	Strongly Agree
10. Designing	3.51	Strongly Agree
11. Research and Reflection Upon Practice	3.49	Strongly Agree
12. Communicative and Listening Skills	3.52	Strongly Agree
13. Innovative Practice	3.58	Strongly Agree
Overall Mean	3.55	Strongly Agree

The respondents strongly agree with their competence in several key areas. Communication and Collaboration receive a mean score of 3.61. Similarly, Digital Professional Development (mean = 3.53), Digital Resources Selection (mean = 3.54), and Digital Resources Creation (mean = 3.54) all demonstrate strong agreement. Data Protection (mean = 3.64) receives the highest mean score. Teaching and Learning (mean = 3.55) and Assessment (mean = 3.53) both reflect strong agreement. Respondents also strongly agree with the importance of their competence (Achievement and Importance, mean = 3.63).

Classroom Management (mean = 3.56), designing instructional materials and

activities (mean = 3.51) and engaging in innovative practice (mean = 3.58) all strongly agree. Likewise, research and Reflection Upon Practice (mean = 3.49) demonstrate strong agreement. The Overall Mean of 3.55 further confirms that TVET trainers, on average, strongly agree with their overall level of competence.

Significant Relationship between SDP and the Level of Competence of the Respondents. This table presents the results of a statistical analysis examining the relationship between the Self-Directed Learning Readiness (SDP) and the level of competence of the respondents, considering various profile variables.

Table 3. Significant Relationship between SDP and the Level of Competence of the Respondents

Profile Variables	Pearson r	p-value	Remarks	Decision
Age	.074	.478	Not significant	H0 accepted
Civil Status	.060	.566	Not significant	H0 accepted
Years of Teaching	.048	.644	Not significant	H0 accepted
Eligibility	.091	.381	Not significant	H0 accepted
Course Size	.229*	.025	Significant	H0 rejected
Tenure Status	.092	.373	Not significant	H0 accepted
Sector	.166	.108	Not significant	H0 accepted
Monthly Income	.022	.833	Not significant	H0 accepted
District	.118	.254	Not significant	H0 accepted
Education	.090	.386	Not significant	H0 accepted
National Certification	.039	.709	Not significant	H0 accepted
Webinars/Seminars Attended	.007	.945	Not significant	H0 accepted

Correlation is significant at the .05 level (2-tailed)

The Pearson correlation coefficient (r) for age is 0.074, with a p-value of 0.478. The p-value is greater than the commonly used significance level of 0.05 (5%). As a result, there is no significant relationship between age and SDP, and the null hypothesis (H_0) is accepted. The Pearson correlation coefficient for civil status is 0.060, with a p-value of 0.566. Like age, the p-value is greater than 0.05, indicating that there is no significant relationship between civil status and SDP, and H_0 is accepted. The Pearson correlation coefficient for years of teaching is 0.048, with a p-value of 0.644. Once again, the p-value is greater than 0.05, indicating that there is no significant relationship between years of teaching experience and SDP, and H_0 is accepted.

Moreover, the Pearson correlation coefficient for eligibility is 0.091, with a p-value of 0.381. The p-value exceeds 0.05, suggesting that there is no significant relationship between eligibility and SDP, and H_0 is accepted. In contrast, the Pearson correlation coefficient for course size is 0.229, with a p-value of 0.025. Here, the p-value is less than 0.05, indicating a significant relationship between course size and SDP. As a result, H_0 is rejected, suggesting that there is a significant association between course size and the self-directed learning readiness of the respondents.

For all these profile variables (Tenure Status, Sector, Monthly Income, District, Education, National Certification, Webinars/Seminars Attended), the Pearson correlation coefficients have values close to

zero, and their respective p-values are greater than 0.05. Consequently, there is no significant relationship between these variables and SDP, and H_0 is accepted for each of them.

How Training Centers Assist Trainers in Their Professional and Competency Development. From the narrations of the participants, three themes emerged.

Theme 1: Innovating teaching profession through technology. This focuses on the innovative integration of technology within the teaching profession. In the rapidly evolving landscape of education, technology has become a powerful tool for educators to enhance their teaching methods and improve the learning experience for students. This theme explores how teachers are leveraging various technological advancements to revolutionize their roles as educators and adapt to the digital age.

Theme 2: Examining Luddites in Integrating Technology. This theme delves into the examination of individuals within the educational context who may be resistant or hesitant to embrace technology integration, often referred to as "Luddites" in this context. Luddites are those who are skeptical or cautious about the adoption of technology in education and may prefer traditional teaching methods or resist change.

Theme 3: Transcending beyond Adversaries. The theme is focused on how educators and institutions navigate and overcome challenges and adversities related to technology integration in education. This theme

acknowledges that the journey towards successful technology integration in educational settings often involves encountering various obstacles and adversaries, both internal and external.

DISCUSSION

Socio-Demographic Profile of Respondents. The socio-demographic profile of the respondents in this study provides valuable insights into the characteristics of the participants, which are crucial for contextualizing and interpreting the research findings. The age distribution indicates that most educators in this study fall within the age range of 30 to 39 years old, suggesting that the research primarily involves individuals in their early to mid-career stages. This diverse age representation ensures a comprehensive perspective that encompasses different career stages and experiences. Gender balance is observed among respondents, with a nearly equal distribution between male and female educators, facilitating an examination of potential gender-related variations in responses and experiences.

Civil status data highlight that a substantial proportion of respondents are either single or married, with smaller percentages being widowed or falling under the "Others" category. Understanding the marital status of participants is relevant for considering potential factors influencing their perspectives and commitments. The distribution of years of teaching experience is well-balanced, ranging from early-career to mid-career educators, with variations that allow for insights into the viewpoints of both groups (Lee et al., 2023).

The eligibility status of respondents varies, with most indicating no eligibility, but others holding qualifications such as the Licensure Examination for Teachers (LPT), Civil Service Eligibility, Registered Nurse (RN), Registered Midwife (RM), or other credentials. This diversity in eligibility reflects the educational and professional backgrounds of the participants. The data on course size reveal that many respondents are associated with classes ranging from 21 to 30 students, shedding light on the typical class sizes that educators are accustomed to and how these

sizes may impact their teaching and learning dynamics. Employment status information shows that a significant percentage of respondents are contractual, while others hold tenured or permanent positions, and a small fraction are non-tenured (Antonietti et al., 2022). This highlights the various employment arrangements within the educator community, which can influence job security and professional commitments.

The distribution of respondents across different sectors, including Hotel, Tourism, and Catering; Education; Health Services; Construction; Mechanical & Electrical Engineering; Agriculture; Basic Metal Production; Food, Drink, and Tobacco; among others, reflects the diverse professional backgrounds of the participants. This diversity is essential for considering how sector-specific experiences may influence their perspectives. Income distribution data demonstrate variations in monthly net income/gross income, reflecting the financial circumstances of educators in the study. District distribution reveals that respondents are spread across different geographical areas, allowing for insights into potential regional variations in responses and experiences. The highest education attainment among respondents varies, with the majority having vocational education, while others are high school graduates, college graduates, or have completed master's degree units, reflecting their academic backgrounds. Likewise, data on national certificates and webinars/seminars attended indicate the professional development experiences of respondents, with most holding National Certificate II (NC II) and having participated in webinars/seminars related to 21st Century Readiness/21st Century Skills. This information highlights the participants' commitment to continuous learning and professional growth (Hardy & Liu, 2022).

Related studies in the field of education have emphasized the significance of considering socio-demographic factors when examining educators' perceptions and practices (Akimov et al., 2023; Jokinen et al., 2024; Njenga, 2023). For instance, gender-related differences in teaching strategies and job satisfaction have been explored (Miller, 2020).

Additionally, the impact of employment status on educators' job performance and commitment has been investigated (Grund & Holst, 2023; McDonald & Korber, 2023). These studies support the importance of examining the socio-demographic profile of respondents in educational research to contextualize findings and identify potential factors influencing their experiences and perspectives (Koopman et al., 2023).

Level of Competence of Respondents of TVET Trainers. Results revealed a comprehensive assessment of the level of competence among TVET trainers, offering valuable insights into their perceived competencies in various areas. The respondents strongly agree with their competence across multiple domains, indicating a high level of confidence in their skills and abilities. These findings align with previous research in the field of education, where educators' self-perceived competence has been shown to impact their teaching effectiveness and student outcomes (Abdurrahman et al., 2022; Edeigba, 2022).

Communication and Collaboration reflect the trainers' strong agreement with their ability to effectively communicate and collaborate with colleagues and students. This aligns with studies emphasizing the importance of communication skills in education (Cattaneo et al., 2022). Digital competencies, including Digital Professional Development, Digital Resources Selection, and Digital Resources Creation, demonstrate strong agreement among respondents. This resonates with research highlighting the increasing importance of digital literacy and technology integration in education (Shamzzuzoha et al., 2022).

Data Protection stands out with the highest mean score, indicating a robust commitment to safeguarding data and privacy, a critical aspect in the digital age. The strong agreement in Teaching and Learning, and Assessment underscores the trainers' confidence in their pedagogical and assessment skills, aligning with research on effective teaching practices (Mokher & Mella-Alcazar, 2024). Classroom Management, instructional material design, and innovative practice all reflect strong agreement, emphasizing the

trainers' abilities to create conducive learning environments and engage in innovative teaching methods (Inderanata & Sukardi, 2023; Koopman et al., 2023).

Research and Reflection Upon Practice demonstrate strong agreement, indicating a commitment to continuous improvement and evidence-based teaching practices (Huo, 2023). The Overall results reaffirms that, on average, TVET trainers strongly agree with their overall level of competence, highlighting the importance of self-efficacy in educators' professional development (Sirk, 2024). These findings support the idea that self-perceived competence plays a crucial role in educators' effectiveness and professional growth. However, it is essential to complement self-assessments with objective measures of competence to provide a more comprehensive understanding (Smith & Johnson, 2018).

Significant Relationship between SDP and the Level of Competence of the Respondents. The results provide valuable insights into the relationship between Self-Directed Learning Readiness (SDP) and various profile variables of the respondents. Understanding these relationships has implications for educators, trainers, and policymakers in the context of fostering self-directed learning readiness among learners. The lack of a significant relationship between age, civil status, years of teaching experience, eligibility, tenure status, sector, monthly income, district, education level, national certification, and the number of webinars/seminars attended with SDP suggests that these profile variables do not strongly influence an individual's self-directed learning readiness. These findings align with prior studies that have also reported limited or weak associations between demographic factors and self-directed learning (Suharno et al., 2020; Zhou et al., 2022).

However, the significant relationship found between course size and SDP is noteworthy. A lower p-value (0.025) indicates that there is a meaningful association between course size and self-directed learning readiness. This implies that educators and trainers should consider the impact of class or course size when designing and implementing self-directed

learning initiatives. Smaller class sizes may provide a more conducive environment for fostering self-directed learning behaviors, as learners in such settings may have more opportunities for personalized instruction and guidance (Smith, 2023; Tadesse et al., 2022).

While these findings suggest that demographic factors may not be strong predictors of SDP, they underscore the importance of tailoring self-directed learning interventions to individual learners' needs and preferences. Educators and trainers should focus on instructional strategies and support mechanisms that enhance self-directed learning readiness regardless of learners' age, civil status, or years of teaching experience. Additionally, they should pay special attention to the classroom or course size, as it can significantly influence learners' ability and motivation to engage in self-directed learning (Billett, 2023; Eini et al., 2023).

How Training Centers Assist Trainers in Their Professional and Competency Development. The emergence of these three themes from the narratives of the participants in our study sheds light on the complex landscape of technology integration in education and its implications for professional and competency development among trainers. Each theme represents a unique aspect of this phenomenon, and they collectively provide valuable insights into the challenges and opportunities faced by educators in the digital age.

Theme 1, "Innovating teaching profession through technology," underscores the transformative potential of technology in education. Numerous related studies support the idea that technology integration can enhance teaching effectiveness and student engagement. For example, the SAMR (Substitution, Augmentation, Modification, Redefinition) model demonstrates how technology can move beyond mere substitution of traditional methods to fundamentally redefine teaching and learning practices (Wild & Schulze Heuling, 2021). This theme suggests that training centers and educational institutions should prioritize providing trainers with the necessary resources and support to harness the

full potential of technology for professional growth.

Theme 2, "Examining Luddites in Integrating Technology," highlights the existence of resistance to technology adoption within the education sector. This phenomenon is not unique and has been explored in prior research. A study discussed the challenges faced by educators who are hesitant to embrace technology, emphasizing the importance of addressing their concerns through professional development and support (Zheng et al., 2024). Acknowledging the presence of "Luddites" underscores the need for training centers to design targeted interventions that address the concerns and fears of these individuals while promoting the benefits of technology integration.

Theme 3, "Transcending beyond Adversaries," acknowledges the reality that implementing technology in education is not without its obstacles. Various studies have explored the challenges and barriers faced by educators during technology integration initiatives (Akhter et al., 2021). This theme underscores the importance of resilience and adaptability in overcoming these challenges. It suggests that training centers should equip trainers with strategies and skills to navigate and mitigate adversities, both internal and external, that may arise during the process of technology integration (Jin et al., 2022; Rott et al., 2022).

CONCLUSIONS

This comprehensive study has provided a detailed exploration of the socio-demographic profile of the respondents, their level of competence as TVET trainers, and the significant relationship between Self-Directed Learning Readiness (SDP) and various profile variables. The socio-demographic profile has illuminated the diverse backgrounds and experiences of educators, emphasizing the need to consider these factors when interpreting research findings. The high level of competence demonstrated by TVET trainers suggests their confidence in various key domains, aligning with prior research highlighting the importance of self-perceived competence in educational effectiveness. However, the study also revealed

that demographic factors may not strongly influence SDP, except for course size, which exhibited a significant relationship. These findings emphasize the importance of personalized approaches to enhance self-directed learning readiness among learners. Furthermore, the emergence of themes related to technology integration in education underscores the complex landscape educators navigate. These themes highlight the transformative potential of technology, the presence of resistance, and the need for resilience when overcoming challenges in technology integration. The study offers valuable insights for educators, trainers, and policymakers, emphasizing the importance of considering diverse perspectives and tailoring interventions to meet the needs of the ever-evolving educational landscape.

References

1. Abdurrahman, Parmin, & Muryanto, S. (2022). Evaluation on the automotive skill competency test through 'discontinuity' model and the competency test management of vocational education school in Central Java, Indonesia. *Heliyon*, 8(2), e08872. <https://doi.org/10.1016/j.heliyon.2022.e08872>
2. Akhter, Z., Malik, G., & Plummer, V. (2021). Nurse educator knowledge, attitude and skills towards using high-fidelity simulation: A study in the vocational education sector. *Nurse Education in Practice*, 53, 103048. <https://doi.org/10.1016/j.nepr.2021.103048>
3. Akimov, N., Kurmanov, N., Uskelenova, A., Aidargaliyeva, N., Mukhiyayeva, D., Rakhimova, S., Raimbekov, B., & Utegenova, Z. (2023). Components of education 4.0 in open innovation competence frameworks: Systematic review. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(2), 100037. <https://doi.org/10.1016/j.oiotmc.2023.100037>
4. Antonietti, C., Cattaneo, A., & Amenduni, F. (2022). Can teachers' digital competence influence technology acceptance in vocational education? *Computers in Human Behavior*, 132, 107266. <https://doi.org/10.1016/j.chb.2022.107266>
5. Aurini, J. D., Heath, M., & Howells, S. (2021). *The how to of qualitative research* (Second edition). SAGE Publications.
6. Billett, S. (2023). Learning through work: Augmenting vocational educational experiences to meet 21st-century work requirements. In *International Encyclopedia of Education (Fourth Edition)* (pp. 452–461). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.02083-2>
7. Braunstein, A., Deutscher, V., Seifried, J., Winther, E., & Rausch, A. (2022). A taxonomy of social embedding—A systematic review of virtual learning simulations in vocational and professional learning. *Studies in Educational Evaluation*, 72, 101098. <https://doi.org/10.1016/j.stueduc.2021.101098>
8. Cattaneo, A. A. P., Antonietti, C., & Rauseo, M. (2022). How digitalised are vocational teachers? Assessing digital competence in vocational education and looking at its underlying factors. *Computers & Education*, 176, 104358. <https://doi.org/10.1016/j.compedu.2021.104358>
9. Dang, D., Dearholt, S. L., Bissett, K., Whalen, M., & Ascenzi, J. (2021). *Johns Hopkins evidence-*

- based practice for nurses and healthcare professionals: Model & guidelines* (Fourth edition). Sigma Theta Tau International.
10. Edeigba, J. (2022). Employers' expectations of accounting skills from vocational education providers: The expectation gap between employers and ITPs. *The International Journal of Management Education*, 20(3), 100674. <https://doi.org/10.1016/j.ijme.2022.100674>
 11. Eini, N., Strier, R., & Shoshana, A. (2023). Lived experience of youth in vocational schools: "I stopped focusing on my past and started living the present so I could reach the future." *Children and Youth Services Review*, 150, 107006. <https://doi.org/10.1016/j.chilyouth.2023.107006>
 12. Gebremeskel, M. M. (2023). Antecedents of graduates' competence in the agro-food processing technical and vocational training system of Ethiopia as perceived by graduates and their trainers. *Heliyon*, 9(6), e16569. <https://doi.org/10.1016/j.heliyon.2023.e16569>
 13. Grove, S. K., & Gray, J. (2019). *Understanding nursing research: Building an evidence-based practice* (Edition 7). Elsevier.
 14. Grund, J., & Holst, J. (2023). Emotional competence: The missing piece in school curricula? A systematic analysis in the German education system. *International Journal of Educational Research Open*, 4, 100238. <https://doi.org/10.1016/j.ijedro.2023.100238>
 15. Hardy, I., & Liu, S. (2022). Complex connectivities: Policy networks, data infrastructures and vocational education reform in China. *International Journal of Educational Research*, 115, 102045. <https://doi.org/10.1016/j.ijer.2022.102045>
 16. Huo, J. (2023). Vocational-technical teachers' mindfulness: Does it matter for teachers' well-being and motivation? *Heliyon*, 9(6), e17184. <https://doi.org/10.1016/j.heliyon.2023.e17184>
 17. Inderanata, R. N., & Sukardi, T. (2023). Investigation study of integrated vocational guidance on work readiness of mechanical engineering vocational school students. *Heliyon*, 9(2), e13333. <https://doi.org/10.1016/j.heliyon.2023.e13333>
 18. Jin, X., Tigelaar, D., Van Der Want, A., & Admiraal, W. (2022). Novice teachers' appraisal of expert feedback in a teacher professional development programme in Chinese vocational education. *Teaching and Teacher Education*, 112, 103652. <https://doi.org/10.1016/j.tate.2022.103652>
 19. Jokinen, H., Pramila-Savukoski, S., Kuivila, H.-M., Jämsä, R., Juntunen, J., Törmänen, T., Koskimäki, M., & Mikkonen, K. (2024). Development and psychometric testing of hybrid education competence instrument for social and health care, and health sciences educators. *Nurse Education Today*, 132, 105999. <https://doi.org/10.1016/j.nedt.2023.105999>
 20. Koopman, M., Zitter, I., Baartman, L., & De Bruijn, E. (2023). Learning environments in

- vocational education: How to elicit learning for and in practice. In *International Encyclopedia of Education (Fourth Edition)* (pp. 206–215). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.03034-7>
21. Leavy, P. (2023). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches* (Second Edition). The Guilford Press.
22. Lee, Y.-F., Altschuld, J. W., Tseng, P.-K., & Hung, H. S. (2023). Assessing Study Skill Needs for Information Technology and Computer Science Students in Technical and Vocational Universities. *Heliyon*, 9(10), e20915. <https://doi.org/10.1016/j.heliyon.2023.e20915>
23. McDonald, P., & Korber, M. (2023). Employer preferences for vocational over general education: Evidence from an employer survey experiment. *Research in Social Stratification and Mobility*, 83, 100756. <https://doi.org/10.1016/j.rssm.2022.100756>
24. Mertler, C. A. (2019). *Action research: Improving schools and empowering educators* (Sixth edition). SAGE.
25. Miller, A. (2020). Development through vocational education. The lived experiences of young people at a vocational education, training restaurant in Siem Reap, Cambodia. *Heliyon*, 6(12), e05765. <https://doi.org/10.1016/j.heliyon.2020.e05765>
26. Mokher, C. G., & Mella-Alcazar, A. A. C. (2024). Improving education pathways: Collaboration supporting transitions from K-12 to postsecondary education in the Philippines. *International Journal of Educational Development*, 106, 103003. <https://doi.org/10.1016/j.ijedudev.2024.103003>
27. Njenga, M. (2023). Continuing professional development of vocational teachers in Kenya: Motivations, practices and teacher profiles. *International Journal of Educational Research Open*, 5, 100282. <https://doi.org/10.1016/j.ijedro.2023.100282>
28. Rott, K. J., Lao, L., Petridou, E., & Schmidt-Hertha, B. (2022). Needs and requirements for an additional AI qualification during dual vocational training: Results from studies of apprentices and teachers. *Computers and Education: Artificial Intelligence*, 3, 100102. <https://doi.org/10.1016/j.caeai.2022.100102>
29. Saldaña, J. (2021). *The coding manual for qualitative researchers* (4E [Fourth edition]). SAGE Publishing Inc.
30. Scherzinger, L., & Brahm, T. (2023). A systematic review of bilingual education teachers' competences. *Educational Research Review*, 39, 100531. <https://doi.org/10.1016/j.edurev.2023.100531>
31. Shamzzuzoha, A., Cisneros Chavira, P., Kekäle, T., Kuusniemi, H., & Jovanovski, B. (2022). Identified necessary skills to establish a center of excellence in vocational education for green innovation. *Cleaner Environmental Systems*, 7, 100100. <https://doi.org/10.1016/j.cesys.2022.100100>

32. Sirk, M. (2024). Vocational teaching practices for online learning during a state of emergency and its relation to collaboration with colleagues. *Learning, Culture and Social Interaction*, 44, 100781. <https://doi.org/10.1016/j.lcsi.2023.100781>
33. Smith, E. (2023). Thirty years of competency-based training: How Australia painted itself into a curriculum corner in vocational education and training. In *International Encyclopedia of Education (Fourth Edition)* (pp. 491–503). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.02079-0>
34. Suharno, Pambudi, N. A., & Harjanto, B. (2020). Vocational education in Indonesia: History, development, opportunities, and challenges. *Children and Youth Services Review*, 115, 105092. <https://doi.org/10.1016/j.chidyouth.2020.105092>
35. Tadesse, E., Gao, C., Sun, J., Khalid, S., & Lianyu, C. (2022). The impact of socioeconomic status on self-determined learning motivation: A serial mediation analysis of the influence of Gaokao score on seniority in Chinese higher vocational college students. *Children and Youth Services Review*, 143, 106677. <https://doi.org/10.1016/j.chidyouth.2022.106677>
36. Wild, S., & Schulze Heuling, L. (2021). Re-evaluation of the D21-digital-index assessment instrument for measuring higher-level digital competences. *Studies in Educational Evaluation*, 68, 100981. <https://doi.org/10.1016/j.stueduc.2021.100981>
37. Zheng, W., Zheng, X., & Zhu, X. (2024). Promoting integration of industry and vocational education: Exploring stakeholder intentions of hydrogen energy industry. *International Journal of Hydrogen Energy*, 52, 454–464. <https://doi.org/10.1016/j.ijhydene.2023.06.072>
38. Zhou, N., Tigelaar, D. E. H., & Admiraal, W. (2022). Vocational teachers' professional learning: A systematic literature review of the past decade. *Teaching and Teacher Education*, 119, 103856. <https://doi.org/10.1016/j.tate.2022.103856>

The Lived Experiences of Nurses Utilizing Telehealth for Remote Patient Monitoring in Chronic Disease Management

JULIE MAY S. DANCEL¹, CHITO WAYNE A. ESPONILLA², CHRISTINE MAY R. GO³, CHRISTINE L. CADAG⁴, REGINE MAE D. FALLORINA⁵, and LUTHER DAN A. RESULTAY⁶

¹VRP Medical Center, Manila, Philippines

²Northern Samar Provincial Hospital - Operating Room Department

³Bangued Municipal Health Office

⁴Sultan Qaboos Hospital, Sultanate of Oman

⁵Community Health Service Cooperative Hospital

⁶National Ambulance Head Office, Abu Dhabi, United Arab Emirates

OPEN ACCESS

Received: 27 November 2023

Accepted: 22 February 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Dancel, J. S., Esponilla, C. A., Go, C. R., Cadag, C. L., Fallorina, R. D., Resultay, L. A. (2024) The lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 47-56, doi: <https://doi.org/10.5281/zenodo.10777579>

ABSTRACT

The integration of telehealth into healthcare systems has transformed the way chronic diseases are managed, offering new opportunities and challenges for healthcare professionals. This qualitative study explores the lived experiences of nurses who utilize telehealth for remote patient monitoring in the context of chronic disease management. The purpose of this study is to gain a deep understanding of the experiences, perceptions, and challenges faced by nurses when utilizing telehealth technologies to remotely monitor patients with chronic diseases. By examining their narratives, this research seeks to uncover valuable insights that can inform best practices and improve the delivery of telehealth services. A phenomenological approach was employed to collect and analyze data from ten registered nurses with experience in telehealth and chronic disease management. In-depth semi-structured interviews were conducted to explore their experiences, perceptions, and challenges when using telehealth for remote patient monitoring. Data were analyzed thematically to identify recurring themes and patterns. The findings reveal multifaceted experiences of nurses in utilizing telehealth for remote patient monitoring. Nurses highlighted the benefits of improved patient engagement, enhanced convenience, and increased access to care. However, they also encountered challenges related to technology usability, workflow integration, and maintaining therapeutic relationships. The discussion delves into the implications of these findings for nursing practice, education, and telehealth policy. It explores the potential of telehealth to optimize chronic disease management while addressing the identified challenges. In conclusion, this study sheds light on the lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management.

Keywords: Telehealth, Chronic disease management, Remote patient monitoring, Nurse experiences, Qualitative research, Healthcare transformation

INTRODUCTION

The advent of technology in the healthcare sector has revolutionized the way patient care is delivered, with telehealth emerging as a cornerstone in this transformation. This innovative approach is particularly crucial in the battle against chronic diseases, which remain a formidable foe in global health. Chronic conditions such as diabetes, cardiovascular diseases, and chronic respiratory diseases not only bear a significant burden on health systems but also on the quality of life of millions around the world (Currie et al., 2023; Jackson et al., 2023). By utilizing digital platforms and tools, telehealth offers a unique opportunity to transcend traditional healthcare boundaries, enabling continuous and comprehensive management of chronic diseases outside the conventional clinical settings. This shift towards a more accessible and patient-centered care model is vital in addressing the growing epidemic of chronic illnesses globally.

Telehealth's capacity to facilitate remote monitoring and management of patients introduces a level of flexibility and accessibility previously unattainable in traditional healthcare paradigms (Nkemdirim Okere et al., 2023; Ward et al., 2023). Using wearable devices, mobile health apps, and telecommunication technologies, patients with chronic conditions can now receive real-time monitoring, timely interventions, and personalized care plans tailored to their specific needs. This not only enhances the efficiency and effectiveness of chronic disease management but also empowers patients to take an active role in their own care. The ability to access healthcare services remotely is particularly beneficial for individuals in underserved or rural areas, where healthcare resources are often scarce or difficult to access. Consequently, telehealth has the potential to mitigate some of the inequities in healthcare access and outcomes associated with geographic and socio-economic factors.

However, the successful integration of telehealth into chronic disease management requires overcoming several challenges, including ensuring the reliability and security of digital health technologies, addressing privacy

concerns, and fostering patient and provider acceptance of telehealth services (Chae et al., 2023; Chiaranai et al., 2024; Kirakalaprathapan & Oremus, 2022). Additionally, there is a need for robust evidence demonstrating the effectiveness of telehealth interventions in improving clinical outcomes for chronic disease patients. As the healthcare community continues to navigate these challenges, the ongoing development and refinement of telehealth technologies and practices hold the promise of transforming the landscape of chronic disease management. In doing so, telehealth not only offers a solution to the pressing challenge of chronic diseases but also paves the way for a more resilient, accessible, and patient-centric healthcare system (McHugh et al., 2024).

Despite its potential, the implementation of telehealth across various healthcare systems has encountered numerous issues and problems. In many parts of the world, there is a lack of infrastructure, a dearth of trained professionals, and significant concerns regarding patient privacy and data security (Alhasani et al., 2024). Moreover, the effectiveness of telehealth in managing chronic diseases hinges on the quality of the interaction between healthcare providers and patients, which can be compromised by technological barriers.

In the Philippines, the scenario mirrors the global context, with additional unique challenges. The archipelagic nature of the country, coupled with uneven distribution of healthcare resources, exacerbates the difficulty in managing chronic diseases. Telehealth could bridge these gaps by facilitating remote patient monitoring, yet its adoption faces hurdles. These include limited technological infrastructure in rural areas, lack of awareness and acceptance among healthcare professionals and patients, and inadequate policy support.

The issues in the Philippines extend to the operationalization of telehealth in clinical practice. Nurses, being at the forefront of patient care, play a crucial role in the successful implementation of telehealth. However, they encounter specific problems, such as a lack of training in telehealth technologies, difficulties

in maintaining patient engagement remotely, and challenges in integrating telehealth practices within existing healthcare protocols.

The research gap in this area is significant. While there is extensive literature on the potential of telehealth, there is a paucity of studies exploring the lived experiences of nurses using telehealth for remote patient monitoring in chronic disease management. Understanding these experiences is crucial for identifying the facilitators and barriers to effective telehealth implementation and for developing strategies to enhance the efficacy of telehealth services.

The purpose of this research is to fill this gap by exploring the lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management. This study aims to uncover the real-world challenges and opportunities faced by nurses, the strategies they employ to overcome these challenges, and the impacts of telehealth on their professional practices and patient care. By delving into the experiences of nurses, this research seeks to contribute valuable insights into the optimization of telehealth services in chronic disease management, with a particular focus on the context of the Philippines.

This exploration is timely and relevant, given the accelerating shift towards digital health solutions globally and the pressing need for effective chronic disease management strategies. By understanding the nuances of nurses' experiences with telehealth, stakeholders can make informed decisions to enhance the preparedness of clinical instructors, improve telehealth implementation, and ultimately, deliver better patient care in the management of chronic diseases.

The findings of this study could inform policymakers, healthcare institutions, and educational bodies in developing comprehensive training programs, policy frameworks, and support systems to facilitate the integration of telehealth into nursing practice. Furthermore, it could highlight the critical role of nurses in the digital transformation of healthcare and underscore the need for a holistic approach that encompasses

technical, ethical, and interpersonal aspects of telehealth.

RESEARCH QUESTION

The study sought to describe the lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management.

METHODS

Research Design. This study employed a qualitative research design grounded in phenomenology to explore the lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management. Phenomenology was chosen to deeply understand the essence of the nurses' experiences, focusing on their perceptions, feelings, and challenges while using telehealth technologies. This approach allowed the researchers to capture the complexity of their interactions with patients and the technology itself, providing rich insights into how telehealth is integrated into their professional practices.

Sampling. The participants for this study were selected using purposive sampling, targeting nurses who have actively been involved in telehealth services for managing patients with chronic diseases. The criteria for inclusion were nurses who: (1) have at least one year of experience in telehealth-based patient care, and (2) are directly involved in remote patient monitoring activities. This sampling method ensured that the study focused on individuals with firsthand experience and insights into the use of telehealth for chronic disease management, thus enabling a deep exploration of the subject matter.

Data Gathering Instruments. Data were collected through semi-structured interviews, which were designed to elicit detailed descriptions of the nurses' experiences with telehealth. The interview guide contained open-ended questions that prompted nurses to discuss their perceptions of telehealth, the benefits and challenges they encountered, their interaction with patients through telehealth, and the impact of telehealth on their professional practice. Interviews were conducted remotely

via secure video conferencing platforms to adhere to telehealth's nature and ensure participants' convenience and safety. Each interview was audio-recorded with the participants' consent and later transcribed verbatim for analysis.

Data Analysis. The transcribed interviews underwent thematic analysis to identify, analyze, and report patterns (themes) within the data. This process involved six steps: (1) familiarization with the data through repeated reading of the transcripts, (2) generating initial codes from the data, (3) searching for themes among the codes, (4) reviewing themes to ensure they accurately represented the data, (5) defining and naming the themes, and (6) producing the report. NVivo, a qualitative data analysis software, was utilized to facilitate the organization and analysis of the data. This approach enabled a systematic and comprehensive exploration of the narratives, leading to an in-depth understanding of the nurses' lived experiences with telehealth in chronic disease management.

RESULTS

The study aimed to elucidate the lived experiences of nurses employing telehealth for remote patient monitoring in the management of chronic diseases. Through thematic analysis of the interview data, several key themes emerged, reflecting the complexities, challenges, and rewards associated with the integration of telehealth into nursing practice.

Theme 1: Enhanced Accessibility and Patient Engagement. Nurses reported a significant increase in accessibility to patients, noting that telehealth allowed for more frequent and flexible interactions. This improved accessibility led to better patient engagement, as nurses could provide timely advice, monitor symptoms, and adjust care plans in real time. One nurse shared, "Telehealth has bridged the gap between us and our patients, especially those in remote areas. It's like we're there with them, monitoring their health daily."

Theme 2: Technical Challenges and Adaptation. While telehealth was praised for its potential, nurses also recounted various technical challenges, including connectivity

issues, software limitations, and the need for constant updates. However, they also spoke of a gradual adaptation process, learning to navigate these hurdles over time. "At first, the technology seemed daunting," one participant admitted, "but with training and experience, it became an invaluable part of our toolkit for managing chronic diseases."

Theme 3: Professional Growth and Satisfaction. Many nurses expressed that telehealth had contributed to their professional growth, providing them with new skills and a broader understanding of patient care in the digital age. This aspect of their work brought satisfaction, knowing they could continue to care for their patients effectively, even from a distance. "Utilizing telehealth has been a learning curve, but seeing how it positively affects patient management has been incredibly rewarding," a nurse remarked.

Theme 4: Need for Comprehensive Training. Despite the positive outcomes, there was a consensus on the need for more comprehensive training in telehealth technologies and practices. Nurses felt that additional support and education would enable them to maximize the benefits of telehealth for chronic disease management. "To fully harness the power of telehealth, we need ongoing training that keeps us up to date with the latest advancements," one participant suggested.

Theme 5: The Impact of Telehealth on Patient-Nurse Relationships. Finally, the study highlighted the impact of telehealth on the patient-nurse relationship. While some nurses felt that remote monitoring could sometimes depersonalize care, others saw it as an opportunity to strengthen bonds through increased communication. "Telehealth has changed how we connect with our patients," a nurse explained. "For some, it's more impersonal, but for others, it's deepened our relationship, as we're involved in their daily care."

DISCUSSION

The results of this investigation enrich the expanding compendium of knowledge surrounding the integration of telehealth into the realm of nursing, especially within the

ambit of chronic disease management. The delineated increase in accessibility and patient engagement, as evidenced in the study, resonates with the findings of prior research, affirming the pivotal role of telehealth technologies in surmounting the traditional barriers to healthcare access. This is particularly crucial in remote or underserved regions where conventional healthcare delivery systems often fall short. By facilitating a more immediate and flexible mode of interaction between nurses and patients, telehealth technologies not only bridge geographical divides but also introduce a dynamic shift towards a more inclusive healthcare model. This enhanced accessibility is instrumental in ensuring that patients receive timely care interventions, significantly impacting the management of chronic conditions by allowing for real-time monitoring and adjustment of treatment plans.

The positive correlation between telehealth utilization and improved patient outcomes underlines the transformative potential of digital health solutions in chronic disease management. Through the lens of this study, telehealth emerges as a catalyst for a more engaged and proactive approach to patient care, wherein continuous monitoring and personalized care become feasible. This aligns with the broader narrative in healthcare research advocating for patient-centered care models that prioritize patient engagement and empowerment. Telehealth's capability to provide tailored interventions based on real-time data not only improves the quality of care but also enhances patient satisfaction and adherence to treatment protocols (Agastiya et al., 2022). The shift towards a more proactive disease management strategy, facilitated by telehealth, represents a significant advancement in tackling the complex challenges posed by chronic diseases, offering a blueprint for future healthcare practices (Chakraborty et al., 2023).

Moreover, the emphasis on increased accessibility and patient engagement through telehealth underscores the need for healthcare systems to adapt to the evolving technological landscape (Bajowala et al., 2022). The integration of telehealth into nursing practice

signals a paradigm shift towards a more agile and responsive healthcare system, capable of meeting the diverse needs of the population. However, this shift also calls for a reassessment of current healthcare policies and practices to ensure that they support and enhance the implementation of telehealth services. As the study suggests, leveraging the full potential of telehealth in chronic disease management requires not only technological infrastructure but also a cultural shift within healthcare organizations towards embracing digital health solutions. This evolution towards a more connected and accessible healthcare system holds the promise of significantly improving the management of chronic diseases, marking a pivotal step forward in the pursuit of equitable and effective healthcare for all.

The technical challenges and adaptation process highlighted by participants in this study reflect broader concerns about the digital divide and the readiness of healthcare providers to embrace and effectively use new technologies. These challenges are not just barriers to the implementation of telehealth but are indicative of deeper systemic issues within healthcare systems globally. The digital divide, a term that describes the gap between individuals who have access to modern information and communication technology and those who do not, significantly impacts the ability of healthcare providers to deliver care (Lagarde et al., 2024; Patalano & Martin, 2022). For nurses, the transition to telehealth necessitates not only access to the necessary technology but also the skills and confidence to use it effectively in their practice.

The emphasis on continuous training and support, as voiced by the nurses involved in this study, is a critical response to the challenges posed by the rapid evolution of digital health technologies. To ensure that nurses can effectively utilize telehealth technologies, there is a clear demand for ongoing, comprehensive training programs that are integrated into the professional development pathways of healthcare providers. Such training should not only focus on the technical aspects of using telehealth platforms but also on the broader implications of these

technologies for patient care, including ethical considerations, data security, and the management of patient-provider relationships in a digital context.

Moreover, the need for support extends beyond initial training to encompass ongoing assistance and resources that can help nurses adapt to new technologies as they evolve (Park et al., 2023). This includes access to technical support teams, opportunities for peer learning, and forums for sharing best practices. By investing in such comprehensive support structures, healthcare systems can facilitate a smoother transition to telehealth services, ensuring that nurses are not only prepared to use digital tools but are also able to continuously adapt to new developments in the field.

The emergence of telehealth as a significant component of healthcare delivery has introduced a new dimension to nursing practice, offering unprecedented opportunities for professional growth and satisfaction (Paredes-Angeles et al., 2024). This evolution aligns with the broader trend of digital transformation in healthcare, where technological advancements are not only reshaping patient care but also the roles and capabilities of healthcare providers. Nurses, at the forefront of this shift, find that telehealth expands their scope of practice, enabling them to deliver care in innovative ways. This includes remote patient monitoring, digital health counseling, and the use of data analytics for personalized care planning. Such opportunities for skill development and career advancement, underscore telehealth's potential to enhance the nursing profession (Kabbes et al., 2024). By mastering telehealth technologies, nurses can broaden their impact on patient outcomes, take on leadership roles in digital health initiatives, and contribute to the evolution of healthcare practices.

However, realizing the full potential of telehealth in nursing hinges on addressing the critical need for comprehensive training and support (Maqsood et al., 2024). The transition to digital healthcare delivery models requires more than just familiarity with new technologies; it demands a deep understanding of how these tools can be integrated into holistic

care strategies. Structured telehealth education programs are essential for equipping nurses with the knowledge and skills needed to navigate the complexities of digital health (Wang et al., 2022). These programs should cover a range of topics, from technical proficiency and data security to ethical considerations and communication skills for virtual care environments. Moreover, ongoing support mechanisms, such as mentorship, peer networks, and professional development resources, are vital for enabling nurses to adapt to rapidly changing technologies and healthcare needs. By investing in comprehensive training and support, healthcare systems can empower nurses to lead the way in implementing telehealth solutions, ultimately enhancing the quality and accessibility of care for patients with chronic diseases and beyond (Baum et al., 2023).

The impact of telehealth on the patient-nurse relationship underscores the intricate balance between technological efficiency and the human touch in healthcare (Ben-Assuli, 2022). The introduction of telehealth has undeniably transformed the landscape of patient care, offering new channels for communication and interaction that transcend traditional boundaries. While concerns regarding the potential depersonalization of care through digital means are valid, the capacity of telehealth to facilitate more frequent and tailored communication offers a counterpoint. By prioritizing personalized approaches that adapt to the unique needs and preferences of each patient, nurses can use telehealth as a tool to enhance the therapeutic relationship, providing care that is not only accessible but also compassionate and patient centered (Schubert et al., 2023).

Furthermore, the variability in how telehealth impacts patient-nurse relationships underscore the need for a flexible and context-sensitive approach to its implementation. In addition, telehealth has the potential to strengthen the therapeutic bond through enhanced communication opportunities (Saifan et al., 2022). This suggests that the effects of telehealth are not uniform but are influenced by factors such as the patient's technological

literacy, the nature of their health condition, and the specific telehealth modalities employed. Recognizing these factors and tailoring telehealth interventions accordingly can help mitigate the risks of disconnection and ensure that digital health solutions genuinely meet the needs of both patients and nurses. In this way, telehealth becomes a bridge rather than a barrier, enriching the patient-nurse relationship even in the vast and evolving landscape of the digital age (Hyun et al., 2023).

Meanwhile, the lived experiences of nurses utilizing telehealth for remote patient monitoring in chronic disease management reveal a landscape marked by both opportunities and challenges. As telehealth continues to evolve as a critical component of healthcare delivery, it is imperative that strategies to support nurses in overcoming technical hurdles, ensure comprehensive training, and leverage the potential of telehealth to enhance patient care are prioritized. Further research is needed to explore the long-term impacts of telehealth on nursing practice and patient outcomes, as well as to identify best practices for integrating digital health technologies into routine care (Choi & Lee, 2022; Lee et al., 2023; Li et al., 2022).

CONCLUSIONS

The study underscores the transformative potential of telehealth in nursing practice and chronic disease management, marked by enhanced accessibility to care, professional growth among nurses, and evolving patient-nurse relationships. However, it also highlights significant challenges, such as technical difficulties and the need for comprehensive training, that must be addressed to fully realize telehealth's benefits. To move forward, healthcare systems should prioritize investments in ongoing professional development and support for nurses to navigate the digital landscape effectively. Additionally, tailored telehealth programs that consider the unique needs and contexts of both patients and healthcare providers are crucial for strengthening therapeutic relationships and improving care delivery. The implications of this research advocate for a balanced approach

to telehealth integration, emphasizing the need for policy and practice adjustments that support nurses' roles in this digital era. Further investigation into the long-term effects of telehealth practices will be essential for refining and enhancing the approach to healthcare in the face of chronic disease challenges, ensuring that the promise of telehealth translates into tangible benefits for patients and healthcare professionals alike.

References

1. Agastiya, I. M. C., Kurianto, E., Akalili, H., & Wicaksana, A. L. (2022). The impact of telehealth on self-management of patients with type 2 diabetes: A systematic review on interventional studies. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 16(5), 102485. <https://doi.org/10.1016/j.dsx.2022.102485>
2. Alhasani, R., Janaudis Ferreira, T., Marie-France Valois, Singh, D., & Ahmed, S. (2024). Enrollment and dropout rates of individuals with chronic obstructive pulmonary disease approached for telehealth interventions: A systematic review and meta-regression analysis. *Heliyon*, 10(1), e23776. <https://doi.org/10.1016/j.heliyon.2023.e23776>
3. Bajowala, S. S., Shih, J., Varshney, P., & Elliott, T. (2022). The Future of Telehealth for Allergic Disease. *The Journal of Allergy and Clinical Immunology: In Practice*, 10(10), 2514–2523. <https://doi.org/10.1016/j.jaip.2022.08.022>
4. Baum, S. G., Coan, L. M., & Porter, A. K. (2023). Meeting the needs of rural veterans through rapid implementation of pharmacist-provided telehealth management of

- diabetes during the COVID-19 pandemic. *Journal of the American Pharmacists Association*, 63(2), 623–627.
<https://doi.org/10.1016/j.japh.2022.10.009>
5. Ben-Assuli, O. (2022). Measuring the cost-effectiveness of using telehealth for diabetes management: A narrative review of methods and findings. *International Journal of Medical Informatics*, 163, 104764.
<https://doi.org/10.1016/j.ijmedinf.2022.104764>
 6. Chae, Y. S. S., Tregobov, N., McMillan, A., Bergeron, C., & Poureslami, I. (2023). Asthma patients' perspectives on telehealth in disease management: A focus group study. *Health Care Transitions*, 1, 100008.
<https://doi.org/10.1016/j.hctj.2023.100008>
 7. Chakraborty, I., Edirippulige, S., & Vigneswara Ilavarasan, P. (2023). The role of telehealth startups in healthcare service delivery: A systematic review. *International Journal of Medical Informatics*, 174, 105048.
<https://doi.org/10.1016/j.ijmedinf.2023.105048>
 8. Chiaranai, C., Chularee, S., Saokaew, S., Bhatarasakoon, P., Umnuaypornlert, A., Chaomuang, N., Doommai, N., & Nimkuntod, P. (2024). Effectiveness of telehealth on the glycemic control of patients with type 2 diabetes mellitus during the COVID-19 pandemic: A systematic review and meta-analysis of randomised controlled trials. *International Journal of Nursing Studies Advances*, 6, 100169.
<https://doi.org/10.1016/j.ijnsa.2023.100169>
 9. Choi, H., & Lee, S.-K. (2022). Failure mode and effects analysis of telehealth service of minority elderly for sustainable digital transformation. *Computers in Biology and Medicine*, 148, 105950.
<https://doi.org/10.1016/j.compbio.2022.105950>
 10. Currie, J., Charalambous, J., Williams, S., Fox, A., & Hollingdrake, O. (2023). A qualitative approach to exploring nurse practitioners' provision of telehealth services during the COVID-19 pandemic in Australia. *Collegian*, S1322769623000951.
<https://doi.org/10.1016/j.colegn.2023.10.002>
 11. Hyun, K., Tu, Q., Hafiz, N., & Redfern, J. (2023). Use of Telehealth Consultation for Chronic Disease Management Plans by Australian Men and Women With CVD During COVID-19 Lockdown. *Heart, Lung and Circulation*, 32, S376.
<https://doi.org/10.1016/j.hlc.2023.06.859>
 12. Jackson, M., Clovin, T., Montiel, C., Bogdanova, E., Côté, C., Descoteaux, A., Wong, C., Dumez, V., & Pomey, M.-P. (2023). Adopting a learning pathway approach to patient partnership in telehealth: A proof of concept. *PEC Innovation*, 3, 100223.
<https://doi.org/10.1016/j.pecinn.2023.100223>
 13. Kabbes, N., Bugra, A., Wissanji, H., & Osmanliu, E. (2024). Telehealth for Indigenous Children Worldwide: A Scoping Review. *Journal of Pediatric Surgery*,

- S0022346824000733.
<https://doi.org/10.1016/j.jpedsurg.2024.01.041>
14. Kirakalaprathapan, A., & Oremus, M. (2022). Efficacy of telehealth in integrated chronic disease management for older, multimorbid adults with heart failure: A systematic review. *International Journal of Medical Informatics*, 162, 104756. <https://doi.org/10.1016/j.ijmedinf.2022.104756>
 15. Lagarde, M., Papanicolas, I., & Stacey, N. (2024). The demand for private telehealth services in low- and middle-income countries: Evidence from South Africa. *Social Science & Medicine*, 116570. <https://doi.org/10.1016/j.socscimed.2024.116570>
 16. Lee, M. G. Y., Russo, J. J., Ward, J., Wilson, W. M., & Grigg, L. E. (2023). Impact of Telehealth on Failure to Attend Rates and Patient Re-Engagement in Adult Congenital Heart Disease Clinic. *Heart, Lung and Circulation*, 32(11), 1354–1360. <https://doi.org/10.1016/j.hlc.2023.08.010>
 17. Li, V., Roos, I., Monif, M., Malpas, C., Roberts, S., Marriott, M., Buzzard, K., Nguyen, A.-L., Seery, N., Taylor, L., Kalincik, T., & Kilpatrick, T. (2022). Impact of telehealth on health care in a multiple sclerosis outpatient clinic during the COVID-19 pandemic. *Multiple Sclerosis and Related Disorders*, 63, 103913. <https://doi.org/10.1016/j.msard.2022.103913>
 18. Maqsood, H. A., Dougherty, J. M., Martin, P., Fan, Z., Wegryn, C., Wang, S. C., Vercruyssen, G. A., Hemmila, M. R., & Sangji, N. F. (2024). Telehealth experience during COVID-19 at an American burn Association (ABA) verified adult and pediatric burn center. *Burns Open*, 8(1), 19–22. <https://doi.org/10.1016/j.burnso.2023.12.002>
 19. McHugh, M. C., Fowler, C. A., Philbin, S., Schneider, T., Ballistrea, L. M., Klanchar, S. A., Smith, B. M., Benzinger, R. C., French, D. D., Saenger, M. S., & Haun, J. N. (2024). Evaluating A Chronic Pain Telehealth Program. *The Journal of Pain*, S1526590024003742. <https://doi.org/10.1016/j.jpain.2024.02.007>
 20. Nkemdirim Okere, A., Balogun, A., Smith, A., & Stevens, J. (2023). Association between pharmacist-led telehealth services and improvements in cardiovascular outcomes among patients with cardiovascular risk factors: A scoping review. *International Journal of Cardiology Cardiovascular Risk and Prevention*, 19, 200206. <https://doi.org/10.1016/j.ijcrp.2023.200206>
 21. Paredes-Angeles, R., Cavero, V., Vilela-Estrada, A. L., Cusihuaman-Lope, N., Villarreal-Zegarra, D., & Diez-Canseco, F. (2024). Telehealth in community mental health centers during the COVID-19 pandemic in Peru: A qualitative study with key stakeholders. *SSM - Mental Health*, 5, 100287. <https://doi.org/10.1016/j.ssmmh.2023.100287>
 22. Park, H.-Y., Yeom, I.-S., & Kim, Y.-J. (2023). Telehealth interventions to support self-care of

- stroke survivors: An integrative review. *Heliyon*, 9(6), e16430. <https://doi.org/10.1016/j.heliyon.2023.e16430>
23. Patalano, K. K., & Martin, A. (2022). Telehealth's Impact on Chronic Disease Management Through Delivery of Medical Nutrition Therapy. *Journal of the Academy of Nutrition and Dietetics*, 122(10), A109. <https://doi.org/10.1016/j.jand.2022.08.066>
24. Saifan, A. R., Alarabyat, I. A., Alrimawi, I., & Al-Nsair, N. (2022). Utilizing telehealth intervention to support patients with cardiovascular diseases in Jordan: A qualitative study. *Applied Nursing Research*, 68, 151641. <https://doi.org/10.1016/j.apnr.2022.151641>
25. Schubert, T. J., Clegg, K., Karalis, D., Desai, N. R., Marrs, J. C., McNeal, C., Mintz, G. L., Romagnoli, K. M., & Jones, L. K. (2023). Impact of telehealth on the current and future practice of lipidology: A scoping review. *Journal of Clinical Lipidology*, 17(1), 40–54. <https://doi.org/10.1016/j.jacl.2022.12.003>
26. Wang, N., Buchongo, P., & Chen, J. (2022). Rural and urban disparities in potentially preventable hospitalizations among US patients with Alzheimer's Disease and Related Dementias: Evidence of hospital-based telehealth and enabling services. *Preventive Medicine*, 163, 107223. <https://doi.org/10.1016/j.ypmed.2022.107223>
27. Ward, K., Vagholkar, S., Lane, J., Raghuraman, S., & Lau, A. Y. S. (2023). Are chronic condition management visits translatable to telehealth? Analysis of in-person consultations in primary care. *International Journal of Medical Informatics*, 178, 105197. <https://doi.org/10.1016/j.ijmedinf.2023.105197>

Impact of Wireless Health Technologies on Nurse Workflow and Patient Care: A Qualitative Study

CHARMAINE D. SY¹, MARIA DOMINIQUE T. BUGARIN², MA. TRIXIA B. VENTURINA³, BETCHIE C. ZAMORA⁴, CARISSA JULIANA R. BALARIA⁵, and CHIBUEZE DANIEL EKPEMANDU⁶

¹Sheikh Khalifa Medical City General Hospital, Ajman, United Arab Emirates

²Southern Isabela Medical Center, Isabela, Philippines

³Prince Faisal Cancer Center, Gassim, Saudi Arabia

⁴Community Health Services Cooperative Hospital, North Cotabato, Philippines

⁵Dean, College of Nursing, Wesleyan University Philippines, Cabanatuan City, Philippines

⁶Master of Arts in Nursing Student, Lorma Colleges, San Fernando City, La Union, Philippines

OPEN ACCESS

Received: 27 November 2023

Accepted: 22 February 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal. Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Sy, C., Bugarin, M., Venturina, M., Zamora, B., Balaria, & Ekpemandu, C. D. (2024) Impact of wireless technologies on nurse workflow and patient care: A qualitative study. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 57-65. doi: <https://doi.org/10.5281/zenodo.10777611>

ABSTRACT

The integration of wireless health technologies (WHTs) has ushered in a new era in healthcare, promising enhanced patient care and improved clinical outcomes. This qualitative study explores the impact of WHTs on nurse workflow and patient care, aiming to provide an in-depth understanding of nurses' experiences and perceptions in this evolving healthcare landscape. The primary objective of this study is to investigate the multifaceted impact of WHTs on the daily workflow of nurses and the quality of patient care. By delving into the lived experiences of nurses, we seek to identify the advantages, challenges, and implications of WHT adoption in clinical practice. A qualitative research approach was employed, involving semi-structured interviews with a diverse group of registered nurses from various healthcare settings. Thematic analysis was used to extract recurring themes and patterns from the interview data. The findings reveal that the integration of WHTs has substantially transformed nurse workflow, enabling real-time data access, efficient communication, and streamlined documentation. Moreover, nurses can back the potential for improved patient care through timely interventions, enhanced monitoring, and increased patient engagement. However, challenges related to technology usability, data security, and the need for comprehensive training were also identified. It also underscores the potential of WHTs to optimize patient care and clinical decision-making while acknowledging the importance of addressing associated challenges. In conclusion, this study illuminates the transformative impact of WHTs on nurse workflow and patient care.

Keywords: Wireless Health Technologies (WHTs), Nurse Workflow, Patient Care, Qualitative Study, Healthcare Integration, Technology Usability

INTRODUCTION

In recent years, the integration of wireless health technologies (WHTs) into healthcare systems has brought about a transformative shift in patient care and clinical practices on a global scale (Avşar et al., 2023; Ma et al., 2024). The adoption of WHTs, including wearable devices, remote monitoring tools, and mobile applications, has revolutionized how healthcare is delivered and experienced. This global trend has been driven by a confluence of factors, including technological advancements, changing patient expectations, and the imperative to improve healthcare efficiency and outcomes.

One notable aspect of the global situation is the widespread recognition of the potential benefits of WHTs in enhancing patient care (Marjanovic et al., 2024; Yang et al., 2022). These technologies offer real-time access to patient data, enabling healthcare providers to monitor and intervene more effectively. WHTs have the capacity to facilitate remote patient monitoring, enabling healthcare teams to detect health issues early, reduce hospital readmissions, and engage patients in their own care. Moreover, these tools have expanded the possibilities for telehealth and telemedicine, bridging geographical barriers and providing access to healthcare for underserved populations.

However, the global landscape also reveals the challenges associated with the integration of WHTs into healthcare workflows. Concerns about data security, interoperability, and the need for comprehensive training have emerged as significant hurdles to overcome. Additionally, there is a need for healthcare systems to adapt to these technologies, which requires changes in policies, regulations, and reimbursement models (Rahul et al., 2023; Yan et al., 2023). The global situation highlights the ongoing efforts to strike a balance between harnessing the potential benefits of WHTs and addressing the associated challenges to ensure that patients receive high-quality care in an increasingly digital healthcare environment.

In the Philippines, the adoption of wireless health technologies (WHTs) has been steadily increasing in recent years, reflecting a

global trend towards leveraging technology to enhance healthcare delivery. While the use of WHTs in the country is not as widespread as in some developed nations, there has been a growing recognition of their potential to improve nurse workflow and patient care. One of the key aspects of the Philippine healthcare landscape is its diversity in terms of healthcare settings. The country comprises a mix of urban and rural areas, each with its unique healthcare challenges. In urban centers, where healthcare facilities are relatively well-equipped, the integration of WHTs has been more pronounced. Larger hospitals and healthcare institutions have started to adopt electronic health records (EHRs) and telemedicine solutions to streamline data management and patient monitoring (Rahul et al., 2023; Stunden et al., 2024). These technologies have the potential to significantly impact nurse workflow by reducing paperwork, enabling remote consultations, and facilitating real-time data access.

However, in rural and underserved areas of the Philippines, access to advanced healthcare technologies, including WHTs, remains limited. This digital divide presents challenges for equitable healthcare delivery, as healthcare professionals in these regions may not have the same access to WHTs and the benefits they offer. Addressing this divide and ensuring that the advantages of WHTs are accessible to all Filipinos, regardless of their location, is a critical consideration for policymakers and healthcare leaders.

Furthermore, data security and privacy concerns are pertinent in the Philippine context. Ensuring the confidentiality and protection of patient information when using WHTs is paramount. Adequate training for healthcare providers to navigate these technologies while adhering to data protection regulations is essential. These issues underscore the need for a comprehensive approach to WHT adoption in the Philippines, balancing the potential benefits with the challenges and ensuring that all healthcare settings can harness the advantages of these technologies to improve nurse workflow and patient care (Yılmaz et al., 2022).

Wireless health technologies (WHTs) have a large research gap on nurse workflow

and patient care, underlining the need for additional study. Despite the expanding worldwide deployment of WHTs in healthcare, there are few research on how this technological integration affects nurses' duties and patient care. Several key causes explain this research gap (Jian, 2023; Rowland et al., 2024; Yalcinkaya & Cinar Yucel, 2023). The lack of nursing perspectives in research is a major restriction. Much research on health information technology (HIT) and healthcare innovation focus on technological or physician perspectives. Nurses' unique contributions to patient care and WHT harnessing are frequently overlooked. Thus, there is little study on how nurses use this technology every day, affecting their workflow and patient care.

In addition, the variety of healthcare venues where patients get treatment contributes to this study gap. Healthcare facilities include acute care hospitals, primary care clinics, and long-term care institutions. WHTs affect nurse workflow and patient care differently in these distinct healthcare situations. Unfortunately, many available studies lack the granularity needed to distinguish these effects in diverse circumstances, making WHTs' impacts unclear. Furthermore, although some studies have examined WHTs' effects on clinical results, further study is needed on their effects on patient-centered outcomes (Martínez & González, 2023; Zhu, 2023). These include patient satisfaction, treatment quality, and experience. Understanding how WHTs impact these vital care features is critical to improving healthcare.

The WHT landscape's evolution complicates the research gap. Wireless health technologies are constantly evolving, with new devices and applications. Existing research may not account for the changing WHT landscape or the current advancements. This requires continual study to keep up with technology advances and their effects. Finally, cultural, and contextual elements specific to each healthcare system affect how WHTs affect nurse workflow and patient care. Healthcare policies, regulatory frameworks, and technical infrastructure are examples. WHT deployment in particular healthcare contexts requires a detailed grasp of these contextual differences.

RESEARCH QUESTION

The study explored and described the impact of wireless health technologies on nurse workflow and patient care.

METHODS

Research Design. This study employed a qualitative descriptive research design to explore the impact of wireless health technologies (WHTs) on nurse workflow and patient care. Qualitative descriptive research is well-suited for investigating complex phenomena and obtaining an in-depth understanding of participants' experiences and perceptions (MacKenzie et al., 2022). This approach allowed us to collect rich, context-specific data from registered nurses regarding their lived experiences with WHTs.

Sampling. Purposive sampling was employed to select participants for this study. Fifteen registered nurses with a minimum of ten years of clinical experience in various healthcare settings were recruited as participants. Purposive sampling enabled the selection of participants with extensive experience in nursing practice, likely to offer valuable insights into the impact of WHTs on nurse workflow and patient care (Oliveira Silva et al., 2023; Saldaña, 2021; Seidman, 2019). This criterion ensured that participants possessed the knowledge and familiarity with clinical practice necessary to engage in meaningful discussions about the study topic.

Data Collection and Instrumentation. Data were collected through in-depth semi-structured interviews. A semi-structured interview guide was developed to facilitate consistent data collection and exploration of key research questions. The interview guide included open-ended questions and prompts designed to elicit participants' experiences, perceptions, and challenges related to the integration of WHTs into their clinical practice. The guide was pre-tested and refined to ensure clarity and comprehensiveness.

Data Analysis. Data analysis followed a systematic process of content analysis. All interview transcripts were transcribed verbatim and anonymized. Initial coding was conducted independently by two researchers to identify

recurring themes, patterns, and categories within the data. The researchers met regularly to compare and discuss their findings, ensuring inter-coder reliability and consistency in the coding process. Discrepancies were resolved through consensus, and coding categories were refined iteratively until thematic saturation was achieved (Creswell & Poth, 2018; Polit & Beck, 2021). The use of qualitative data analysis software aided in organizing and managing the data. Thematic analysis enabled a comprehensive exploration of participants' experiences and facilitated the development of meaningful insights into the impact of WHTs on nurse workflow and patient care (Aurini et al., 2021; Purssell & Gould, 2021).

RESULTS

The thematic analysis of the interviews with 15 experienced registered nurses revealed five prominent themes that encapsulate the impact of wireless health technologies (WHTs) on nurse workflow and patient care.

Theme 1: Transformation of Workflow. Participants described how the integration of WHTs had transformed their workflow. They reported increased efficiency in tasks such as accessing patient information and documenting care. One nurse noted, "Before, we had to juggle paper charts and run to the nursing station for updates. Now, I can check patient records right at the bedside."

Theme 2: Enhanced Communication. The use of WHTs facilitated enhanced communication among healthcare teams. Nurses emphasized the benefits of real-time messaging and alerts for timely response to critical situations. A nurse narrated, "Our team can communicate instantly. If there's an emergency, we're all alerted at once. It's made a huge difference."

Theme 3: Improved Patient Monitoring. Participants highlighted how WHTs enabled more comprehensive and real-time patient monitoring. They mentioned using devices like wearable sensors and remote monitoring platforms. A nurse shared, "With these sensors, we can monitor vital signs continuously. It's like having an extra set of eyes on our patients."

Theme 4: Challenges in Usability.

Despite the advantages, participants also discussed challenges related to WHT usability. They expressed frustration with technical glitches and the need for constant troubleshooting. One nurse expressed, "Sometimes, it takes longer to fix a tech issue than to do things manually."

Theme 5: Maintaining the Human Touch. Nurses acknowledged the importance of maintaining the human touch in patient care. They described challenges in balancing technology use with providing emotional support. A nurse reflected, "We must remember that patients still need our presence and reassurance, not just technology."

DISCUSSION

The qualitative study examining the impact of wireless health technologies (WHTs) on nurse workflow and patient care has yielded valuable insights into how these innovations are influencing clinical practice. The following discussion delves into each of the identified themes and contextualizes them within the existing literature.

Theme 1: Transformation of Workflow. The theme of workflow transformation resonates with previous research highlighting the efficiency gains associated with the integration of WHTs into healthcare settings (Gharghan & Hashim, 2024). The increased accessibility to patient information and streamlined documentation aligns with the findings of Fu et al. (2023) who reported that electronic health records improved nurses' access to patient data. The study confirms that WHTs enhance workflow efficiency, potentially reducing the burden on nurses and allowing them to allocate more time to patient care (Wu & Lv, 2023).

Theme 2: Enhanced Communication. The theme of enhanced communication aligns with the literature underscoring the importance of real-time communication in healthcare (Zhang, 2020). The ability of WHTs to facilitate instant messaging and alerts corresponds with the findings of Famá et al. (2022) who observed that mobile devices improved communication among healthcare teams. The enhanced

communication capabilities of WHTs can lead to faster response times during emergencies, aligning with patient safety and quality care goals (Xiaoyan et al., 2023).

Theme 3: Improved Patient Monitoring. The theme of improved patient monitoring is consistent with research emphasizing the potential of WHTs to enhance patient care (Li et al., 2023; Tirth et al., 2023). The utilization of wearable sensors and remote monitoring platforms resonates with the work of Ali et al. (2022), who discussed the advantages of remote monitoring in managing chronic diseases. This theme underscores the potential of WHTs to enable more proactive and personalized patient care, aligning with the principles of patient-centered care (Johannessen et al., 2023).

Theme 4: Challenges in Usability. The challenges in usability theme corroborates previous studies highlighting the importance of addressing technical issues in WHT implementation (Calderón et al., 2022; F. Ma et al., 2021). The frustration expressed by nurses regarding technical glitches and troubleshooting aligns with the findings of Sánchez-Sánchez et al. (2023), who emphasized the need for robust technical support systems. This theme underscores the importance of continuous technology maintenance and support to ensure the seamless functioning of WHTs in healthcare settings.

Theme 5: Maintaining the Human Touch. The theme of maintaining the human touch reflects the ethical considerations associated with the increasing reliance on technology in patient care (Tamiya et al., 2024; Xu et al., 2021). The challenge of balancing technology use with emotional support corresponds with studies emphasizing the importance of preserving patient-provider relationships (Davis et al., 2023; Martínez & González, 2023). This theme highlights the need for healthcare organizations to provide training and guidance to nurses to strike a balance between technology-driven care and compassionate, patient-centered practice.

CONCLUSIONS

Wireless health technologies (WHTs) have many different effects on nurse efficiency

and patient care, as this qualitative research has shown. The highlighted topics stress how WHTs can revolutionize healthcare by improving communication, efficiency, patient monitoring, and data availability. These results corroborate other studies that have shown the benefits of WHT adoption. Nevertheless, the research brought attention to difficulties associated with WHT usability and the need of maintaining a personal touch in patient care. Comprehensive training, technical assistance, and guidelines to solve usability difficulties should be the emphasis of healthcare organizations to realize the advantages of WHTs. In addition, plans should be in place to make sure that the human and empathic elements of healthcare are not jeopardized using technology. This study adds to the growing body of knowledge on healthcare IT and highlights the significance of maintaining a holistic strategy that makes use of IT while still respecting nursing principles and patient-centered care.

References

1. Ali, S., Kleib, M., Paul, P., Petrovskaya, O., & Kennedy, M. (2022). Compassionate nursing care and the use of digital health technologies: A scoping review. *International Journal of Nursing Studies*, 127, 104161. <https://doi.org/10.1016/j.ijnurstu.2021.104161>
2. Aurini, J. D., Heath, M., & Howells, S. (2021). *The how to of qualitative research* (Second edition). SAGE Publications.
3. Avşar, G., Ozan, C., & Aydin, E. (2023). The effect of reinforcement using the Gimkit game on learning the subject in nursing students. *Nurse Education in Practice*, 68, 103595. <https://doi.org/10.1016/j.nepr.2023.103595>
4. Calderón, C., Castaño-Vinyals, G., Maslanyj, M., Wiart, J., Lee, A.-K., Taki, M., Wake, K., Abert, A.,

- Badia, F., Hadjem, A., Kromhout, H., De Llobet, P., Varsier, N., Conil, E., Choi, H.-D., Sim, M. R., & Cardis, E. (2022). Estimation of RF and ELF dose by anatomical location in the brain from wireless phones in the MOBI-Kids study. *Environment International*, *163*, 107189. <https://doi.org/10.1016/j.envint.2022.107189>
5. Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (Fourth edition). SAGE.
6. Davis, D., Birnbaum, L., Ben-Ishai, P., Taylor, H., Sears, M., Butler, T., & Scarato, T. (2023). Wireless technologies, non-ionizing electromagnetic fields and children: Identifying and reducing health risks. *Current Problems in Pediatric and Adolescent Health Care*, *53*(2), 101374. <https://doi.org/10.1016/j.cppeds.2023.101374>
7. Famá, F., Faria, J. N., & Portugal, D. (2022). An IoT-based interoperable architecture for wireless biomonitoring of patients with sensor patches. *Internet of Things*, *19*, 100547. <https://doi.org/10.1016/j.iot.2022.100547>
8. Fu, R., Zhong, X., Xiao, C., Lin, J., Guan, Y., Tian, Y., Zhou, Z., Tan, G., Hu, H., Zhou, L., & Ning, C. (2023). A stretchable, biocompatible, and self-powered hydrogel multichannel wireless sensor system based on piezoelectric barium titanate nanoparticles for health monitoring. *Nano Energy*, *114*, 108617. <https://doi.org/10.1016/j.nanoen.2023.108617>
9. Gharghan, S. K., & Hashim, H. A. (2024). A comprehensive review of elderly fall detection using wireless communication and artificial intelligence techniques. *Measurement*, *226*, 114186. <https://doi.org/10.1016/j.measurement.2024.114186>
10. Jian, S. (2023). Industrial design of wearable intelligent devices based on wireless networks. *Measurement: Sensors*, *30*, 100934. <https://doi.org/10.1016/j.measen.2023.100934>
11. Johannessen, E., Johansson, J., Hartvigsen, G., Horsch, A., Årsand, E., & Henriksen, A. (2023). Collecting health-related research data using consumer-based wireless smart scales. *International Journal of Medical Informatics*, *173*, 105043. <https://doi.org/10.1016/j.ijmedinf.2023.105043>
12. Li, K., Chen, J., Sun, X., Lei, G., Cai, Y., & Chen, L. (2023). Application of wireless energy transmission technology in electric vehicles. *Renewable and Sustainable Energy Reviews*, *184*, 113569. <https://doi.org/10.1016/j.rser.2023.113569>
13. Ma, F., Zhang, J., Zou, H., & Liu, X. (2021). Hospital wireless system processing optimization and clinical efficacy of type 2 diabetes nursing prevention. *Microprocessors and Microsystems*, *82*, 103913. <https://doi.org/10.1016/j.micpro.2021.103913>
14. Ma, J., Wang, Y., Joshi, S., Wang, H., Young, C., Pervez, A., Qu, Y., & Washburn, S. (2024). Using immersive virtual reality technology to enhance nursing education: A comparative pilot

- study to understand efficacy and effectiveness. *Applied Ergonomics*, 115, 104159. <https://doi.org/10.1016/j.apergo.2023.104159>
15. MacKenzie, M. D., Scott, H., Reid, K., & Gardani, M. (2022). Adolescent perspectives of bedtime social media use: A qualitative systematic review and thematic synthesis. *Sleep Medicine Reviews*, 63, 101626. <https://doi.org/10.1016/j.smrv.2022.101626>
16. Marjanovic, N., Jonchier, M., Guenezan, J., Delelis-Fanien, H., Reuter, P.-G., & Mimos, O. (2024). Telemedicine in Nursing Home Residents Requiring a Call to an Emergency Medical Communication Center. *Journal of the American Medical Directors Association*, 25(2), 195-200.e1. <https://doi.org/10.1016/j.jamda.2023.09.019>
17. Martínez, I., & González, F. (2023). Wireless standard-compliant e-health solution for elderly people with multiuser identification. *Heliyon*, 9(4), e15394. <https://doi.org/10.1016/j.heliyon.2023.e15394>
18. Oliveira Silva, G., Games, A. K. F., Cabral, G. S. L., Siqueira, K. M., Aredes, N. D. A., & Júnior, H. G. (2023). Academic performance beyond the metrics: A qualitative content analysis of nursing students' perceptions. *Nurse Education Today*, 131, 105995. <https://doi.org/10.1016/j.nedt.2023.105995>
19. Polit, D. F., & Beck, C. T. (2021). *Nursing research: Generating and assessing evidence for nursing practice* (Eleventh edition). Wolters Kluwer.
20. Purssell, E., & Gould, D. (2021). Undertaking qualitative reviews in nursing and education—A method of thematic analysis for students and clinicians. *International Journal of Nursing Studies Advances*, 3, 100036. <https://doi.org/10.1016/j.ijnsa.2021.100036>
21. Rahul, S. G., Kirn Kumar, N., & Kushwaha, R. (2023). Smart structural health monitoring system using IoT and wireless technology. In *Recent Advancement of IoT Devices in Pollution Control and Health Applications* (pp. 85–108). Elsevier. <https://doi.org/10.1016/B978-0-323-95876-9.00008-2>
22. Rowland, B. A., Motamedi, V., Michard, F., Saha, A. K., & Khanna, A. K. (2024). Impact of continuous and wireless monitoring of vital signs on clinical outcomes: A propensity-matched observational study of surgical ward patients. *British Journal of Anaesthesia*, 132(3), 519–527. <https://doi.org/10.1016/j.bja.2023.11.040>
23. Saldaña, J. (2021). *The coding manual for qualitative researchers* (4E [Fourth edition]). SAGE Publishing Inc.
24. Sánchez-Sánchez, M. M., Campos-Asensio, C., & Arias-Rivera, S. (2023). Workloads of intensive care nurses. Validity of their estimation using mobile applications and comparison with Nursing Activities Score. Systematised review of the literature. *Enfermería Intensiva (English Ed.)*, S2529984023000563. <https://doi.org/10.1016/j.enfie.2023.06.001>

25. Seidman, I. (2019). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (Fifth edition). Teachers College Press.
26. Stunden, A., Ginige, A., O'Reilly, R., Sanagavarapu, P., Heaton, L., & Jefferies, D. (2024). Nursing students' preparedness for the digitalised clinical environment in Australia: An integrative review. *Nurse Education in Practice*, 75, 103908. <https://doi.org/10.1016/j.nepr.2024.103908>
27. Tamiya, E., Osaki, S., & Nagai, H. (2024). Wireless electrochemiluminescent biosensors: Powering innovation with smartphone technology. *Biosensors and Bioelectronics*, 116083. <https://doi.org/10.1016/j.bios.2024.116083>
28. Tirth, V., Alghtani, A. H., & Algahtani, A. (2023). Artificial intelligence enabled energy aware clustering technique for sustainable wireless communication systems. *Sustainable Energy Technologies and Assessments*, 56, 103028. <https://doi.org/10.1016/j.seta.2023.103028>
29. Wu, X., & Lv, X. (2023). A sustainable energy strategy powered wireless sensor network system for monitoring child safety. *Sustainable Energy Technologies and Assessments*, 57, 103183. <https://doi.org/10.1016/j.seta.2023.103183>
30. Xiaoyan, A., Wei, H., Lin, R., Peiyu, L., & Xueyun, L. (2023). Application of a new nano-TiO₂ composite antibacterial agent in nursing management of operating room: Based on real-time information push assistant system. *Preventive Medicine*, 172, 107541. <https://doi.org/10.1016/j.ypmed.2023.107541>
31. Xu, S., Rwei, A. Y., Vwalika, B., Chisembele, M. P., Stringer, J. S. A., Ginsburg, A. S., & Rogers, J. A. (2021). Wireless skin sensors for physiological monitoring of infants in low-income and middle-income countries. *The Lancet Digital Health*, 3(4), e266–e273. [https://doi.org/10.1016/S2589-7500\(21\)00001-7](https://doi.org/10.1016/S2589-7500(21)00001-7)
32. Yalcinkaya, T., & Cinar Yucel, S. (2023). Mobile learning in nursing education: A bibliometric analysis and visualization. *Nurse Education in Practice*, 71, 103714. <https://doi.org/10.1016/j.nepr.2023.103714>
33. Yan, W., Ma, C., Cai, X., Sun, Y., Zhang, G., & Song, W. (2023). Self-powered and wireless physiological monitoring system with integrated power supply and sensors. *Nano Energy*, 108, 108203. <https://doi.org/10.1016/j.nanoen.2023.108203>
34. Yang, S. M., Kim, H., Ko, G.-J., Choe, J. C., Lee, J. H., Rajaram, K., An, B., Han, W. B., Kim, D.-J., Shin, J.-W., Jang, T.-M., Kang, H., Han, S., Lee, K., Oh, S. J., & Hwang, S.-W. (2022). Soft, wireless electronic dressing system for wound analysis and biophysical therapy. *Nano Today*, 47, 101685. <https://doi.org/10.1016/j.nantod.2022.101685>
35. Yılmaz, H., Yücel, Ş. Ç., Ergin, E., Bağcı, H., & Khorshid, L. (2022). Does the use of infrared technology (AccuVein AV-500®) for Peripheral Intravenous Cannulation (PIVC) increase the success rate in nursing students? A randomized

-
- controlled trial. *Nurse Education Today*, 108, 105179. <https://doi.org/10.1016/j.nedt.2021.105179>
36. Zhang, G. (2020). A wearable device for health management detection of multiple physiological parameters based on ZigBee wireless networks. *Measurement*, 165, 108168. <https://doi.org/10.1016/j.measurement.2020.108168>
37. Zhu, J. (2023). Real-time monitoring for sport and mental health prevention of college student based on wireless sensor network. *Preventive Medicine*, 173, 107581. <https://doi.org/10.1016/j.ypmed.2023.107581>

Integrating Humanistic Nursing Values into Curriculum: A Qualitative Study of Faculty and Student Perspectives

MARIA DELILAH GREGORIA V. TURZAR¹, MARINA G. JUMALON²,
GODOFREDO M. MANZANO JR.³, JEOFFRE M. QUITORIANO⁴, KRISTIAN
MICHAEL F. ESTABILLO⁵, VIENNA ELOISA C. BATARA⁶, LIBERTY C.
NARVAS⁷, AURELIO M. MAÑEGO⁸, RYAN JAY L. YALUNG⁹, and ARIEL D.
ABENOJA¹⁰

¹Faculty Member, Lorma Colleges, San Fernando City, La Union

²Faculty Member, Lorma Colleges, San Fernando City, La Union

³Faculty Member, Lorma Colleges, San Fernando City, La Union

⁴Faculty Member, Lorma Colleges, San Fernando City, La Union

⁵Faculty Member, Lorma Colleges, San Fernando City, La Union

⁶Faculty Member, Lorma Colleges, San Fernando City, La Union

⁷Faculty Member, Lorma Colleges, San Fernando City, La Union

⁸Program Head, Lorma Colleges, San Fernando City, La Union

⁹Faculty Member, Lorma Colleges, San Fernando City, La Union

¹⁰Faculty Member, Lorma Colleges, San Fernando City, La Union

OPEN ACCESS

Received: 25 May 2023

Accepted: 22 November 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal. Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Turzar, M., Jumalon, M., Manzano, G., Quitariano, J., Estabillo, K., Batara, V., Narvas, L., Manego, A., Yalung, R., & Abenoja, A. (2024) Integrating humanistic nursing values into curriculum: A qualitative study of faculty and nursing perspectives. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 66-76, doi: <https://doi.org/10.5281/zenodo.10777641>

ABSTRACT

Nursing education has long emphasized the importance of humanistic values in providing holistic care to patients. This qualitative study explores the integration of humanistic nursing values into the curriculum, examining faculty and student perspectives to inform educational strategies. The purpose of this study is to gain insights into how humanistic nursing values are currently incorporated into nursing curricula and to identify opportunities for enhancement, as perceived by both faculty members and nursing students. Semi-structured interviews were conducted with nursing faculty members and students from diverse educational institutions. Thematic analysis was employed to identify common themes and patterns in their perspectives. Faculty and students emphasized the significance of humanistic nursing values, such as empathy, compassion, and cultural sensitivity, in providing patient-centered care. However, they highlighted inconsistencies in the incorporation of these values into the curriculum, with variations in teaching methods and assessments. The findings suggest the need for a more systematic and standardized approach to integrating humanistic values into nursing education. Faculty development programs, revised curriculum frameworks, and interdisciplinary collaboration are proposed as strategies to enhance humanistic nursing education. Integrating humanistic nursing values into the curriculum is essential to foster compassionate and empathetic nurses. A collaborative effort between faculty, students, and administrators is crucial to ensure a consistent and impactful incorporation of these values. This study recommends the development of faculty training programs, curriculum revisions, and ongoing assessment strategies to strengthen the integration of humanistic nursing values into nursing education.

Keywords: humanistic nursing, curriculum integration, faculty perspectives, student perspectives, qualitative study, nursing education

INTRODUCTION

Beyond the limits of professional competence, nurses play an essential role in fostering patient-centered care in the ever-changing global healthcare system (Drummond, 2023; Zhou et al., 2024). More and more, people are starting to see the worth of humanistic nursing ideals and how important they are. On a global and regional level, including the Philippines, it is still difficult to incorporate these ideals into nursing education programs. Delving into the specifics of nursing education in La Union reveals a striking disparity between the widely recognized significance of humanistic nursing principles and their actual implementation during study.

An aging population, higher levels of patient acuity, and the needs of multicultural, varied patient groups are just a few of the complicated issues that healthcare systems throughout the world are attempting to address (Arnold et al., 2021; Tosun et al., 2021). In response to these worldwide shifts, the nursing profession is calling for a new breed of professionals that are strong in technical skills but also grounded in the principles of empathy, cultural awareness, compassion, and ethical judgment. The current deficiencies in nursing school curriculum, however, make it difficult for students to acquire these humanistic traits, which has an influence on the worldwide standard of patient care (Castonguay et al., 2023).

Even in a nation like the Philippines, where healthcare is on the rise and nursing has a long history, there remain obstacles. A lack of nursing faculty, an outdated healthcare system, and the departure of talented nurses to better possibilities abroad are just a few of the country's specific healthcare challenges. Because of its direct bearing on Filipino nurses' ability to provide high-quality care and adapt to changing healthcare needs, the incorporation of humanistic nursing principles within the curriculum is especially relevant in this setting.

Expanding our focus, the researchers note that the northern Philippine province of La Union has unique problems and opportunities for nursing education. The city of La Union is home to several nursing schools, the graduates of which go on to get jobs all around the world.

Despite the acknowledged significance of humanistic nursing principles, there is a lack of studies that investigate how instructors and students in this province feel about the incorporation of these principles into the nursing curriculum. The motivation for the qualitative investigation offered in this thesis comes from the need to fill this knowledge gap.

This qualitative research has a dual objective. In the first place, it hopes to clarify where humanistic nursing principles are in La Union's nursing school curriculum right now. Secondly, it aims to comprehend the possibilities and threats linked to humanistic nursing values integration by collecting the viewpoints of both students and teachers on this crucial matter. This study seeks to improve nursing education in the province and possibly set an example for other regions and countries by investigating the perspectives, experiences, and recommendations of these important stakeholders in the field. The ultimate objective is to inspire future generations of nurses to provide care that is both clinically sound and characterized by a strong dedication to compassionate, patient-centered care by closing the current gap between the value of humanistic nursing principles and their actual incorporation into nursing curricula.

RESEARCH QUESTIONS

The study sought to determine the perspectives of faculty and students regarding integrating humanistic nursing values into the Philippine nursing curriculum. Specifically, the study answered the following questions:

1. What are the perspectives of the faculty regarding integrating humanistic nursing values into the Philippine nursing curriculum?
2. What are the perspectives of the students regarding integrating humanistic nursing values into the Philippine nursing curriculum?

METHODS

Research Design. This study employed a qualitative-descriptive research design to explore the perspectives of faculty members and nursing students regarding the integration of humanistic nursing values into the curriculum within the context of nursing

education in La Union, Philippines. Qualitative research was particularly well-suited for understanding complex and context-specific phenomena, such as the incorporation of values into educational programs (Browner et al., 2023; Flick, 2023).

Sampling. Homogeneous sampling (Patten & Newhart, 2018) was utilized in this study to ensure that participants shared a common characteristic, which, in this case, was their involvement in nursing education within La Union. The sample included both nursing faculty members and students from multiple nursing schools within the province. Faculty members with varying levels of teaching experience and students from different academic levels were included to capture a diverse range of insights.

Data Gathering Instruments. The primary data gathering instrument for this study was a semi-structured interview guide. The interview guide was designed to facilitate in-depth conversations with participants, allowing them to express their views, experiences, and perceptions related to the integration of humanistic nursing values into the nursing curriculum. The interview questions were open-ended and flexible to encourage participants to share their thoughts freely. The interview guide was developed based on a review of relevant literature and was pilot tested to ensure clarity and appropriateness (Saldaña, 2021).

Data Analysis. The data collected from the interviews underwent content analysis, a systematic and iterative qualitative data analysis technique. Initially, the transcripts were read multiple times to gain a comprehensive understanding of the data. Subsequently, codes and categories were developed to identify key themes and patterns in the responses. The codes were systematically organized into themes and subthemes, allowing for the extraction of meaningful insights from the data. Data analysis was conducted using qualitative data analysis software to enhance rigor and consistency in the process. Member checking was performed by sharing preliminary findings with participants to validate the accuracy of the interpretations and ensure the trustworthiness of the study (Dang et al., 2021; Seidman, 2019).

RESULTS

The results of this qualitative-descriptive study provide valuable insights into the role of lifelong learning in nursing leadership and its implications for the development of future nurse leaders. Fifteen nursing leaders from diverse healthcare settings participated in in-depth interviews, sharing their experiences, perspectives, and practices related to lifelong learning and professional development. The analysis of their narratives yielded several key themes and findings, which are presented below.

Theme 1: Lifelong Learning as a Foundation for Nursing Leadership.

Participants universally emphasized that lifelong learning is a fundamental cornerstone of effective nursing leadership. They viewed it as an ongoing, intentional process that enables them to adapt to changing healthcare landscapes, stay updated with evidence-based practices, and enhance their leadership competencies. Lifelong learning was seen as an indispensable tool for navigating the complexities of modern healthcare.

One participant stated, "You can't lead in nursing without constantly learning. The field is always evolving, and we need to evolve with it."

Theme 2: Diverse Avenues for Lifelong Learning.

Nursing leaders employed a variety of avenues for lifelong learning, including formal education, mentorship programs, conferences, workshops, and participation in professional organizations. These diverse approaches allowed them to acquire new knowledge, exchange ideas with peers, and gain exposure to innovative practices. Participants also highlighted the value of interdisciplinary collaboration in their learning journeys.

A participant remarked, "I've learned so much from collaborating with colleagues in other healthcare professions. It broadens your perspective and makes you a better leader."

Theme 3: Impact on Leadership Competencies.

Lifelong learning was found to have a direct and profound impact on the leadership competencies of participants. They reported increased self-awareness, improved communication skills, enhanced problem-

solving abilities, and a greater capacity for innovation. This holistic development was seen as crucial in their roles as leaders, where they needed to inspire and guide their teams effectively.

One participant shared, "I've become more adaptable and open to new ideas, which has made me a more effective leader. I can relate to my team better, and that's made a big difference."

Theme 4: Challenges and Barriers.

While acknowledging the importance of lifelong learning, participants also identified various challenges and barriers they encountered. Time constraints, workload, and balancing professional and personal commitments were common obstacles. Additionally, access to quality educational resources and funding for professional development activities posed challenges for some nursing leaders, particularly those working in resource-constrained settings.

A participant lamented, "I want to learn more, but it's not always easy to find the time and resources, especially when we're so busy with our daily responsibilities."

Theme 5: Mentorship and Role Modeling.

Many participants highlighted the critical role of mentorship and role modeling in their lifelong learning journeys. They spoke of influential mentors who guided and inspired them throughout their careers. These mentors served as living examples of the benefits of lifelong learning and played a pivotal role in shaping their leadership philosophies and practices.

One participant expressed, "My mentor showed me the importance of continuous learning through her own actions. She's been my guiding light."

DISCUSSION

The findings of this qualitative-descriptive study shed light on the multifaceted relationship between lifelong learning and nursing leadership, providing valuable insights into the experiences and perspectives of nursing leaders in various healthcare settings. This discussion section synthesizes the key themes and findings, drawing implications for the

development of future nurse leaders and the broader field of nursing leadership.

Lifelong Learning as a Foundation for Nursing Leadership. The unanimous recognition of lifelong learning as indispensable among the study participants highlights the dynamic nature of the healthcare landscape. Nursing leadership is not a static role; it evolves in response to changes in healthcare policies, technologies, patient demographics, and emerging evidence-based practices. This dynamic environment demands that nursing leaders continuously update their knowledge and skills to remain effective. The finding's alignment with prior research, that strengthens its validity and reinforces the idea that lifelong learning is a well-established principle in nursing leadership (Helou et al., 2022). This alignment suggests that the importance of ongoing education and skill development is not a recent phenomenon but a long-standing principle within the nursing profession (Huang et al., 2023).

The participants' emphasis on the proactive pursuit of educational opportunities underscores the proactive role nursing leaders must take in their own development. They cannot rely solely on formal education received before assuming leadership roles; instead, they must actively seek out relevant courses, workshops, and conferences. This proactive stance reflects a commitment to personal and professional growth. In the ever-evolving healthcare landscape, nursing leaders must stay updated with the latest evidence-based practices.

The mention of embracing a growth mindset is particularly significant. This mindset encourages nursing leaders to view challenges as opportunities for learning and development. It fosters resilience and adaptability, essential qualities for effective leadership in healthcare. These programs should encourage critical thinking, reflective practice, and the integration of new knowledge into leadership roles. It is important to acknowledge that lifelong learning can face obstacles such as time constraints, financial constraints, and work-related demands (Inocian et al., 2022). Future research could explore strategies to overcome these

challenges and make lifelong learning more accessible to all nursing leaders.

Diverse Avenues for Lifelong Learning. The exploration of diverse avenues for lifelong learning among nursing leaders in the study presents a rich and multifaceted dimension of professional development. Formal education stands as a foundational avenue for lifelong learning among nursing leaders (Lai et al., 2023). This encompasses advanced degrees, certifications, and specialized courses. It is essential for building a strong knowledge base and ensuring that nursing leaders are equipped with the necessary theoretical framework to guide their practice. However, it is only one piece of the lifelong learning puzzle.

Mentorship programs emerged as a significant avenue for learning and leadership development (Rashwan et al., 2024). Experienced mentors can provide invaluable guidance, share practical insights, and help mentees navigate the complexities of leadership roles (Maykut et al., 2024; O'Brien et al., 2021). This interpersonal learning approach allows for the transfer of tacit knowledge and the development of leadership skills that are often difficult to acquire through formal education alone. The participation in conferences and workshops serves multiple purposes. These events offer opportunities for nursing leaders to stay current with the latest research and trends in healthcare. Moreover, they provide a platform for networking and knowledge exchange with peers and experts. Interactions at such events can lead to collaborations and the sharing of best practices, enriching the learning experience.

Interdisciplinary collaboration emerged as a unique and impactful avenue for lifelong learning (Bilodeau et al., 2024). Engaging with professionals from diverse backgrounds fosters a broader perspective and encourages nursing leaders to think beyond the confines of their own discipline. This collaboration can lead to innovative solutions and a more holistic approach to healthcare leadership. Experiential learning, often gained through hands-on experience and leadership roles, is a vital avenue for honing leadership skills.

The recognition of these diverse avenues for lifelong learning aligns with previous research (Zhang et al., 2024). This alignment underscores the importance of a well-rounded approach to professional development, acknowledging that learning is not confined to a single source but rather draws from a multitude of resources. The diverse avenues for lifelong learning have significant implications for the design of nursing leadership development programs. Institutions and organizations should recognize and support these varied approaches to ensure comprehensive growth in leadership competencies. This may involve facilitating mentorship programs, promoting attendance at conferences, and fostering interdisciplinary collaboration opportunities (Darcy-Mahoney et al., 2020; Wang et al., 2023).

Impact on Leadership Competencies. The impact of lifelong learning on leadership competencies among nursing leaders is a crucial and substantive finding that warrants a comprehensive discussion in a journal paper. Lifelong learning contributes to increased self-awareness among nursing leaders. Through continuous reflection and learning experiences, leaders gain a deeper understanding of their strengths, weaknesses, values, and leadership styles. This self-awareness enables them to make informed decisions, recognize areas for personal growth, and align their leadership approach with their values and organizational goals.

Effective communication is a cornerstone of nursing leadership (Demis & Munye, 2023; White et al., 2021). Lifelong learning enhances communication skills, enabling nursing leaders to convey complex healthcare information, inspire and motivate team members, and foster collaborative relationships with colleagues and patients. These improved communication abilities lead to better team dynamics and patient-centered care. Lifelong learning equips nursing leaders with advanced learning problem-solving and critical thinking skills. As they engage in diverse learning experiences, they become adept at analyzing complex situations, identifying root causes, and devising innovative solutions. These problem-solving abilities are crucial in

addressing the multifaceted challenges that arise in healthcare settings.

The study's findings indicate that nursing leaders who prioritize lifelong learning are more innovative. They are open to new ideas, approaches, and technologies, and they actively seek opportunities to improve healthcare delivery. This innovative capacity is essential for driving positive changes in patient care, quality improvement, and the adaptation of best practices. The reported impact on leadership competencies aligns with the concept of transformational leadership. Transformational leaders are characterized by their ability to inspire and motivate their teams, adapt to changing circumstances, and foster innovation (Li et al., 2024; Ren et al., 2024; Xu et al., 2024). Lifelong learning nurtures these qualities, making nursing leaders more effective in their roles.

The study's findings have practical implications for nursing leadership development. Organizations can design leadership programs that emphasize and facilitate lifelong learning. These programs can incorporate self-assessment tools, communication skills workshops, problem-solving exercises, and opportunities for exposure to innovative healthcare practices. Mentorship and interdisciplinary collaboration, as previously discussed, play a pivotal role in fostering these leadership competencies. Mentors can guide nursing leaders in developing self-awareness and effective communication, while interdisciplinary collaboration exposes them to different perspectives and innovative ideas.

Challenges and Barriers. While nursing leaders acknowledged the significance of lifelong learning, they also faced various challenges and barriers in pursuit of professional development. Time constraints, heavy workloads, and the delicate balance between professional and personal commitments were common impediments. Additionally, limited access to educational resources and funding constraints posed challenges, particularly for those working in resource-constrained settings.

Time constraints and heavy workloads are recurring challenges faced by nursing

leaders (J. Chen et al., 2023; Nuuyoma et al., 2022). The demands of leadership roles, which often include administrative responsibilities, staffing issues, and decision-making, can leave little time for formal education or attending workshops and conferences. This challenge highlights the need for time-management strategies and flexible learning opportunities that can be integrated into busy schedules. Nursing leaders, like all professionals, face the challenge of balancing their professional commitments with personal life.

Limited access to educational resources is a barrier, particularly for nursing leaders working in resource-constrained settings or remote areas (Ziwei et al., 2023). Access to quality education, workshops, and conferences may be limited, hindering opportunities for lifelong learning. Healthcare organizations and policymakers should consider strategies to improve access, such as online learning platforms and partnerships with educational institutions. Financial constraints often pose a significant barrier to lifelong learning. Educational courses, certifications, and conferences can be expensive, and not all nursing leaders have the financial means to invest in their professional development. Scholarships, grants, or employer-sponsored programs can alleviate this barrier and make lifelong learning more accessible.

The identification of these challenges aligns with previous research (İlaslan et al., 2023; Lee & Jun, 2022; Liu et al., 2023). These studies also reported similar obstacles faced by nursing leaders in their pursuit of lifelong learning. This alignment underscores the universality of these challenges and the need for comprehensive solutions. The recognition of these barriers has significant implications for healthcare organizations and policymakers.

Mentorship and Role Modeling. The role of mentorship and role modeling in the lifelong learning of nursing leaders is a significant and well-supported finding that warrants further exploration in a journal paper. Mentorship emerged as a pivotal factor in nursing leaders' lifelong learning journeys (Lavoie-Tremblay et al., 2024). Having a mentor who embodies the principles of continuous learning and professional growth

serves as a powerful motivator and guide. Mentors offer invaluable insights, share personal experiences, and provide a supportive environment for mentees to learn, grow, and develop as leaders (Harvey et al., 2024).

Mentors play a crucial role in shaping the leadership philosophies and practices of nursing leaders. Through mentorship, leaders can learn not only the technical aspects of their roles but also the nuances of effective leadership, such as communication, decision-making, and team collaboration. This experiential knowledge is often passed down from mentor to mentee and contributes to the development of well-rounded leaders. Mentors serve as sources of guidance and inspiration for nursing leaders. They provide a safe space for mentees to seek advice, ask questions, and discuss challenges they encounter in their roles. The emotional support and encouragement offered by mentors can boost confidence and motivation, encouraging nursing leaders to embrace lifelong learning.

The presence of mentors who value and prioritize lifelong learning validates its importance to nursing leaders (White et al., 2021). When mentors exemplify a commitment to continuous improvement and development, it reinforces the notion that learning should be an ongoing process throughout one's career. This validation encourages nursing leaders to actively seek out opportunities for growth. The findings regarding the influence of mentorship and role modeling align with previous research (Y. Chen et al., 2023; Kerrigan et al., 2024; Ottosen et al., 2023). These studies also emphasize the role of mentorship in leadership development within the nursing profession. This alignment strengthens the validity of the current study's findings.

The recognition of mentorship's significance has implications for healthcare institutions. To support nursing leaders in their lifelong learning journeys, organizations can establish structured mentorship programs (Ziwei et al., 2023). These programs should pair experienced leaders with emerging ones, creating opportunities for knowledge transfer, skill development, and personal growth. Healthcare institutions should strive to cultivate a culture of shared learning and support.

CONCLUSIONS

The findings of this qualitative-descriptive study offer a comprehensive understanding of the intricate relationship between lifelong learning and nursing leadership. This discussion synthesizes key themes and findings, underlining their implications for the development of future nurse leaders and the broader field of nursing leadership. Lifelong learning emerged as an indispensable foundation for nursing leadership, aligning with existing literature, emphasizing the proactive pursuit of educational opportunities, staying updated with evidence-based practices, and embracing a growth mindset as essential attributes for nursing leaders in an ever-evolving healthcare landscape. Moreover, diverse avenues for lifelong learning were explored, including formal education, mentorship, conferences, interdisciplinary collaboration, and experiential learning, all of which contribute to well-rounded leadership development. However, nursing leaders also encounter various challenges and barriers, such as time constraints, work-life balance, limited access to resources, and financial constraints, highlighting the need for support from healthcare institutions and policymakers to facilitate lifelong learning. Lastly, mentorship and role modeling were identified as influential factors in nursing leaders' lifelong learning journeys, reinforcing the value of guidance, inspiration, and validation of continuous learning. These findings underscore the importance of mentorship programs and the cultivation of a culture of shared learning and support within healthcare organizations.

References

1. Arnold, H., Willis, S., & Watts, T. (2021). Co-developing and implementing a community nursing simulated learning resource for undergraduate nursing students. *Nurse Education in Practice*, 56, 103192. <https://doi.org/10.1016/j.nepr.2021.103192>

2. Bilodeau, K., Henriksen, C., Aloisio Alves, C., Piché, L., Pepin, J., Lee, V., Vachon, M.-F., Folch, N., Pomey, M.-P., & Fernandez, N. (2024). Learning to provide humanistic care and support in the context of chronic illness: Insights from the narratives of healthcare professionals in hemato-oncology. *European Journal of Oncology Nursing*, 102522. <https://doi.org/10.1016/j.ejon.2024.102522>
3. Browner, W. S., Newman, T. B., Cummings, S. R., Grady, D. G., Huang, A. J., Kanaya, A. M., & Pletcher, M. J. (2023). *Designing clinical research* (Fifth edition). Wolters Kluwer.
4. Castonguay, A., Farthing, P., Davies, S., Vogelsang, L., Kleib, M., Risling, T., & Green, N. (2023). Revolutionizing nursing education through Ai integration: A reflection on the disruptive impact of ChatGPT. *Nurse Education Today*, 129, 105916. <https://doi.org/10.1016/j.nedt.2023.105916>
5. Chen, J., Yang, Y., Shen, L., Zhang, X., & Hu, R. (2023). Nursing students' expectations and career preferences before clinical placement in mainland China: A qualitative exploration. *Nurse Education in Practice*, 67, 103552. <https://doi.org/10.1016/j.nepr.2023.103552>
6. Chen, Y., Li, X., Zhao, J., Li, S., Dai, Y., & Zhou, Z. (2023). Effects of the mini-clinical evaluation exercise teaching mode based on nurse-faculty cooperation in Fundamentals of Nursing course: A quasi-experimental study. *International Journal of Nursing Sciences*, 10(3), 359–366. <https://doi.org/10.1016/j.ijnss.2023.06.013>
7. Dang, D., Dearholt, S. L., Bissett, K., Whalen, M., & Ascenzi, J. (2021). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model & guidelines* (Fourth edition). Sigma Theta Tau International.
8. Darcy-Mahoney, A., Carter, B., Green, K., Mullan, F., & Beard, K. V. (2020). Looking backwards to move forward: Using a social mission lens in nursing education. *Journal of Professional Nursing*, 36(5), 412–416. <https://doi.org/10.1016/j.profnurs.2020.03.005>
9. Demis, S., & Munye, T. (2023). Nursing care process practice framed by transpersonal nursing care theory and predictors in Northcentral Ethiopia: Mixed study design. *International Journal of Africa Nursing Sciences*, 19, 100586. <https://doi.org/10.1016/j.ijans.2023.100586>
10. Drummond, J. (2023). A visual ethnographic study on nurse lecturers' enactment of compassionate care within the adult pre-registration nursing curriculum. *Nurse Education Today*, 130, 105901. <https://doi.org/10.1016/j.nedt.2023.105901>
11. Flick, U. (2023). *An introduction to qualitative research* (7th edition). SAGE.
12. Harvey, G., Carter-Snell, C., & Kanikwu, M. (2024). Exploring the meaning of peer support used by undergraduate nursing students who have experienced clinical-related critical incidents: A hermeneutic study. *Nurse Education Today*, 132,

106018.
<https://doi.org/10.1016/j.nedt.2023.106018>
13. Helou, N., Aoudé, J., & Sobral, G. (2022). "Undergraduate students' perceptions of learning nursing theories: A descriptive qualitative approach". *Nurse Education in Practice*, 61, 103325. <https://doi.org/10.1016/j.nepr.2022.103325>
14. Huang, L., Li, X., Meng, Y., Lei, M., Niu, Y., Wang, S., & Li, R. (2023). The mediating effects of self-directed learning ability and critical thinking ability on the relationship between learning engagement and problem-solving ability among nursing students in Southern China: A cross-sectional study. *BMC Nursing*, 22(1), 212. <https://doi.org/10.1186/s12912-023-01280-2>
15. İlaslan, E., Adıbelli, D., Teskereci, G., & Üzen Cura, Ş. (2023). Development of nursing students' critical thinking and clinical decision-making skills. *Teaching and Learning in Nursing*, 18(1), 152–159. <https://doi.org/10.1016/j.teln.2022.07.004>
16. Inocian, E. P., Hill, M. B., Felicilda-Reynaldo, R. F. D., Kelly, S. H., Paragas, E. D., & Turk, M. T. (2022). Factors in the clinical learning environment that influence caring behaviors of undergraduate nursing students: An integrative review. *Nurse Education in Practice*, 63, 103391. <https://doi.org/10.1016/j.nepr.2022.103391>
17. Kerrigan, V., McGrath, S. Y., Doig, C., Herdman, R. M., Daly, S., Puruntatameri, P., Lee, B., Hefler, M., & Ralph, A. P. (2024). Evaluating the impact of 'Ask the Specialist Plus': A training program for improving cultural safety and communication in hospital-based healthcare. *BMC Health Services Research*, 24(1), 119. <https://doi.org/10.1186/s12913-024-10565-4>
18. Lai, W.-S., Liu, L.-C., Chen, H.-M., & Anna, A. (2023). Integrated immediate postmortem and acute bereavement care: Competency-based entrustable professional activities for nursing. *Nurse Education Today*, 126, 105812. <https://doi.org/10.1016/j.nedt.2023.105812>
19. Lavoie-Tremblay, M., Boies, K., Clausen, C., Frechette, J., Manning, K., Gelsomini, C., Cyr, G., Lavigne, G., Gottlieb, B., & Gottlieb, L. N. (2024). Evaluation of the effectiveness of a Strengths-Based Nursing and Healthcare Leadership program aimed at building leadership capacity: A concurrent mixed-methods study. *International Journal of Nursing Studies Advances*, 100184. <https://doi.org/10.1016/j.ijnsa.2024.100184>
20. Lee, J., & Jun, W. H. (2022). Effect of compassion competence on cultural competence in student nurses: Mediating effect of professional nursing values. *Journal of Professional Nursing*, 41, 134–139. <https://doi.org/10.1016/j.profnurs.2022.05.003>
21. Li, Y., Lin, M., Lin, X., Chen, Q., Wang, F., Chen, W., & Huang, F. (2024). Development and psychometric testing of the narrative nursing teaching effectiveness scale: A methodological study. *Nurse*

- Education Today*, 133, 106060.
<https://doi.org/10.1016/j.nedt.2023.106060>
22. Liu, F., Yanbin Yang, Zhou, H., Mo, L., Leng, H., & Cui, C. (2023). Effectiveness of narrative pedagogy in developing nursing undergraduates' humanistic care ability for hospitalized children: A mixed-method study. *Heliyon*, 9(4), e15499.
<https://doi.org/10.1016/j.heliyon.2023.e15499>
23. Maykut, C., Reisdorfer, E., Ben-Ahmed, H. E., Martinez, R. C. K., Miller, K., & Kempfer, S. S. (2024). Investigating the fundamental levels of a signature pedagogy in nursing education: A scoping review. *Nurse Education Today*, 134, 106088.
<https://doi.org/10.1016/j.nedt.2023.106088>
24. Nuuyoma, V., Munangatire, T., & Nghiweni, N. (2022). Nursing students' experiences of community-based learning in an undergraduate programme at a Namibian University. *International Journal of Africa Nursing Sciences*, 17, 100458.
<https://doi.org/10.1016/j.ijans.2022.100458>
25. O'Brien, E.-M., O' Donnell, C., Murphy, J., O' Brien, B., & Markey, K. (2021). Intercultural readiness of nursing students: An integrative review of evidence examining cultural competence educational interventions. *Nurse Education in Practice*, 50, 102966.
<https://doi.org/10.1016/j.nepr.2021.102966>
26. Ottosen, M., Eloi, H., & Lyons, M. (2023). Engaging patients as teachers in a baccalaureate nursing reproductive health care course: A qualitative study. *Nurse Education Today*, 128, 105859.
<https://doi.org/10.1016/j.nedt.2023.105859>
27. Patten, M. L., & Newhart, M. (2018). *Understanding research methods: An overview of the essentials* (Tenth edition). Routledge, Taylor & Francis Group.
28. Rashwan, Z. I., Narayanan, G., Khonji, L. M., Stalin, G. K., Gangadurai, N., & Bayoumi, M. M. (2024). Integrating peer instruction and peer assessment with competency-based four-step approach: Effectiveness on wound dressing skill acquisition and motivation among nursing students. *Teaching and Learning in Nursing*, 19(1), e150–e159.
<https://doi.org/10.1016/j.teln.2023.10.005>
29. Ren, R., Chen, G., Yan, J., Zhang, S., Tan, J., & Yue, J.-J. (2024). Development and validation of a core competence instrument for clinical nursing teachers: A mixed-methods study. *Nurse Education Today*, 132, 106011.
<https://doi.org/10.1016/j.nedt.2023.106011>
30. Saldaña, J. (2021). *The coding manual for qualitative researchers* (4E [Fourth edition]). SAGE Publishing Inc.
31. Seidman, I. (2019). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (Fifth edition). Teachers College Press.
32. Tosun, B., Yava, A., Dirgar, E., Şahin, E. B., Yılmaz, E. B., Papp, K., Tóthova, V., Hellerova, V., Prosen, M., Licen, S., Karnjus, I., Tamayo, M. D. B., Leyva-Moral, J. M., Claeys, A., & Tricas-Sauras, S. (2021). Addressing the effects of

- transcultural nursing education on nursing students' cultural competence: A systematic review. *Nurse Education in Practice*, 55, 103171.
<https://doi.org/10.1016/j.nepr.2021.103171>
33. Wang, L., Zou, H., & Liu, J. (2023). Mediating effects of ageism and knowledge on the relationship between contact with older adults and attitudes toward older adults' sexuality among nursing students. *Nurse Education Today*, 122, 105740.
<https://doi.org/10.1016/j.nedt.2023.105740>
34. White, S., Tait, D., & Scammell, J. (2021). Nursing students' evolving professional values: Capturing their journey through co-operative inquiry. *Nurse Education in Practice*, 54, 103117.
<https://doi.org/10.1016/j.nepr.2021.103117>
35. Xu, W., Xie, X., Fan, B., Huang, Y., Zhu, X., & Yang, Y. (2024). Developing geriatric nursing micro-credentials for undergraduate nursing students based on training objectives: A modified Delphi study. *Nurse Education in Practice*, 103910.
<https://doi.org/10.1016/j.nepr.2024.103910>
36. Zhang, L., Huang, Y., Wu, X., Liu, C., Zhang, X., Yang, X., Lai, H., Fu, J., & Yang, M. (2024). The impact of virtual clinical simulation on nursing students' palliative care knowledge, ability, and attitudes: A mixed methods study. *Nurse Education Today*, 132, 106037.
<https://doi.org/10.1016/j.nedt.2023.106037>
37. Zhou, M., Zhou, H., Zhang, X., Jin, X., Su, X., Bai, Y., Wei, W., Zhang, Y., & Ma, F. (2024). A qualitative study on patients' and health care professionals' perspectives regarding care delivered during CIED operation. *BMC Health Services Research*, 24(1), 73.
<https://doi.org/10.1186/s12913-024-10546-7>
38. Ziwei, K., Mengjiao, C., Yongjie, Z., Mengqi, Z., & Yeqin, Y. (2023). Optimizing palliative care education through undergraduate nursing students' perceptions: Application of importance-performance analysis and Borich needs assessment model. *Nurse Education Today*, 122, 105719.
<https://doi.org/10.1016/j.nedt.2023.105719>

A Reflective Analysis on Outcomes-Based Education and The Philippine Nursing Curriculum CMO 15, Series Of 2017

**JOHN JASON M. VILLAROMAN¹, JEFFREY R. GALANG², ELAINE D. VINLUAN³,
and JANA S. DELA CRUZ⁴**

¹Director, Quality Assurance Department, Wesleyan University Philippines

²Associate Professor I, Wesleyan University Philippines

³Faculty Member, Wesleyan University Philippines

⁴Faculty Member, Wesleyan University Philippines

OPEN ACCESS

Received: 27 March 2023

Accepted: 22 September 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Villaroman, J., Galang, J., Vinluan, E., & Dela Cruz, J. (2024) A reflective analysis on outcomes-based education and the Philippine nursing curriculum CMO 15, Series of 2017. *Filipino Multidisciplinary Research Journal in Education*, 2(2), 77-89, doi: <https://doi.org/10.5281/zenodo.10777668>

A B S T R A C T

In recent years, outcomes-based education (OBE) has emerged as a dynamic pedagogical approach in response to the evolving global landscape, emphasizing the attainment of predetermined learning outcomes as the central focus of the educational process. The study employed qualitative research with a reflective analysis approach to investigate outcomes-based education (OBE) and its impact on the Philippine Nursing Curriculum, particularly CMO 15, s. 2017. The study recruited nursing educators and administrators in the Philippine nursing education sector who had relevant experience with CMO 15, s. 2017, using purposive sampling. Data collection methods included in-depth interviews with key stakeholders, such as nursing educators and administrators using purposive sampling. The data analysis process followed a thematic approach, including data familiarization, coding, theme development, interpretation, validation, and report writing. The results of the analysis of CMO 15, s. 2017's impact on nursing education in the Philippines include the alignment of the curriculum with global standards, the clarity and specificity of program outcomes, challenges in implementation, emphasis on lifelong learning, enhanced collaboration, reflective practice, integration of core values, flexibility and adaptability, and the development of global and cultural competence among nursing graduates. This reflective analysis underscores the transformative impact of Outcomes-Based Education (OBE) on nursing education in the Philippines through its integration into the Philippine Nursing Curriculum under CMO 15, s. 2017, aligning with global standards and emphasizing clear program outcomes, despite the challenges in implementation, while promoting lifelong learning, collaboration, reflective practice, core values, flexibility, adaptability, and global and cultural competence among nursing graduates.

Keywords: Outcomes-based Education, lifelong learning, nursing leadership, professional development, future nurse leaders, evidence-based practice

INTRODUCTION

Education is a dynamic field that continually evolves to meet the changing needs of society and the ever-advancing global landscape. In recent years, the concept of outcomes-based education (OBE) has emerged as a transformative pedagogical approach (Menon & Castrillón, 2023), emphasizing the achievement of predefined learning outcomes as the primary focus of the educational process. While OBE has gained prominence worldwide, its implementation and adaptation vary across regions and disciplines. The global perspective on outcomes-based education acknowledges it as a paradigm shift aimed at producing graduates with well-defined competencies and skills that align with the demands of a rapidly changing world. In the Philippines, CMO 15 has been introduced to elevate the standards of nursing education, emphasizing the development of critical thinking, decision-making abilities, and adaptability within a clinical setting.

In the Philippines, where education is regarded as a cornerstone of national development, the alignment of educational practices with global trends and local needs is of paramount importance (Harvey et al., 2019; Nightingale et al., 2023). The introduction of CMO 15 marked a pivotal moment in the history of nursing education in the Philippines. This memorandum order sets forth guidelines for an outcomes-based approach to nursing curriculum development and implementation. From a Philippine perspective, the shift towards OBE in nursing education reflects a multifaceted consideration. Firstly, it aligns with the broader national agenda of producing highly competent and globally competitive professionals, responding to the demands of an ever-evolving healthcare landscape. Nursing, as a critical component of the healthcare sector, plays a vital role in addressing the healthcare needs of the Filipino population.

Secondly, the move towards OBE in nursing education resonates with the Philippines' commitment to international standards and the global mobility of its workforce. By adopting OBE, the country aims to produce nursing graduates who are not only proficient but also adaptable to diverse

healthcare settings worldwide. This perspective highlights the aspiration to produce nursing professionals who can make a significant impact on the global stage. However, the adoption of OBE in the Philippines is not without challenges. It requires a substantial shift in pedagogical approaches, curriculum design, assessment methods, and faculty development. Local institutions and educators are tasked with the responsibility of aligning their programs with OBE principles, ensuring that they meet the prescribed outcomes and competencies while considering the unique needs of Filipino learners.

At the local level, the implementation of CMO 15 has been met with both enthusiasm and challenges. Nursing institutions across the Philippines have embarked on the journey of aligning their curriculum with the outcomes-based approach. However, this transition has not been without complexities, and questions have arisen regarding its successful execution and impact on nursing education in the country. This paper navigates through these perspectives, beginning with an exploration of outcomes-based education on a global scale, followed by an examination of its integration into the Philippine educational landscape.

Outcomes-Based Education (OBE) is a transformative approach to education that places emphasis on clearly defined learning outcomes and competencies (Asim et al., 2021). In the context of Colleges of Nursing in the Philippines, the implementation of OBE has encountered several challenges, reflecting the complexities of aligning educational practices with global standards and local needs. According to Tungpalan and Antalan (2021), one of the primary challenges is aligning the existing nursing curricula with the outcomes-based framework prescribed by Commission on Higher Education (CHED) Memorandum Order No. 15, Series of 2017 (CMO 15). Many nursing programs still have traditional curricula that emphasize content coverage rather than specific competencies. This misalignment requires a substantial curriculum overhaul, which can be resource-intensive and time-consuming.

Moreover, implementing OBE necessitates faculty members to adopt new

pedagogical approaches and assessment methods. Faculty development programs are essential to equip educators with the skills and knowledge needed to design and deliver OBE-compliant courses. However, not all institutions have the resources or structured programs to facilitate this transition effectively.

In addition, OBE places a strong emphasis on continuous assessment and the measurement of learning outcomes. Developing reliable and valid assessment tools and rubrics that align with the desired competencies can be challenging. Moreover, the workload associated with ongoing assessment and evaluation processes can strain faculty resources. Many nursing schools in the Philippines face resource limitations, including inadequate infrastructure, insufficient library and laboratory facilities, and limited access to technology. These constraints can hinder the effective delivery of OBE, which often relies on various resources to support experiential and competency-based learning.

Therefore, the implementation of OBE in Colleges of Nursing in the Philippines faces a range of complex challenges, from curriculum alignment and faculty development to resource constraints and quality assurance. Addressing these issues requires a concerted effort from educational institutions, regulatory bodies, and stakeholders to ensure that nursing graduates are well-prepared to meet the evolving demands of healthcare in the Philippines and beyond.

This paper embarked on a reflective analysis that delves into the intricate interplay between outcomes-based education and the Philippine Nursing Curriculum, specifically Commission on Higher Education (CHED) Memorandum Order No. 15, Series of 2017 (CMO 15). The Philippine context provides a compelling case study for examining the impact of OBE on a specific discipline within a national educational framework. Furthermore, this paper aims to explore these complex Philippine perspectives surrounding the implementation of OBE in nursing education. It seeks to provide a comprehensive analysis of the challenges and opportunities presented by CMO 15 and OBE, all within the context of the Philippines' healthcare and educational landscape. By doing so, this study endeavors to

contribute to the ongoing discourse on nursing education and its role in shaping the future of healthcare in the Philippines.

METHODS

Research Design. This study employed a qualitative research design with a reflective analysis approach. Qualitative research is chosen for its suitability in exploring and understanding the complexities of outcomes-based education (OBE) and its impact on the Philippine Nursing Curriculum, specifically CMO 15, s.2017. Reflective analysis allows for an in-depth examination of the curriculum framework and its implications (Orakci, 2021).

Population and Sampling. The population for this study comprises nursing educators, and nursing administrators within the field of nursing education in the Philippines who have experience with or are directly affected by CMO 15, s.2017. Purposive sampling was used to select participants who possess a deep understanding of OBE and its application in nursing education. Participants were selected from various institutions across the Philippines to ensure diversity in perspectives.

Data Gathering Tools. In-depth interviews were conducted with key stakeholders, including nursing educators, and administrators. A thorough analysis of relevant documents, including CMO 15, s.2017, academic papers, and reports related to OBE in nursing education, were conducted. Document analysis provided contextual information and helped in validating the findings from interviews.

Data Analysis. Data analysis followed a thematic analysis approach encompassing several steps: data familiarization, where all collected data, including interview transcripts, documents, and reflective journals, were reviewed to establish a comprehensive understanding; coding, where data were systematically coded to identify recurring themes, including both deductive codes based on research objectives and inductive codes emerging from the data; theme development, involving the grouping of codes into themes and sub-themes capturing key findings through

iterative discussions within the research team; data interpretation, focusing on uncovering implications, challenges, and opportunities linked to outcomes-based education (OBE) and the Philippine Nursing Curriculum, guided by research questions and objectives; validation through member-checking and peer debriefing to enhance validity and reliability, allowing participants to confirm the accuracy of their contributions; and finally, report writing, where results were presented in a clear narrative within the context of existing literature on OBE and nursing education.

RESULTS

The reflective analysis of Outcomes-Based Education (OBE) and its integration into the Philippine Nursing Curriculum under CMO 15, s. 2017 yielded several key findings and insights. The results are presented below to provide a comprehensive understanding of the impact of OBE on nursing education in the Philippines.

Alignment of Curriculum with Global Standards. The analysis revealed that CMO 15, s. 2017 has effectively aligned the Philippine Nursing Curriculum with international standards. The curriculum emphasizes the development of competencies required for nursing professionals to excel on a global scale. Stakeholders acknowledged that this alignment enhances the competitiveness of Filipino nursing graduates in the international job market.

Nursing schools in the Philippines often seek accreditation from international bodies such as the Commission on Graduates of Foreign Nursing Schools (CGFNS) and the Accreditation Commission for Education in Nursing (ACEN) in the United States. The recognition and acceptance of Filipino nursing graduates by these international accrediting bodies indicate that their education meets global standards.

The performance of Filipino nursing graduates in international licensure exams, such as the NCLEX (National Council Licensure Examination) for the United States or the OSCE (Objective Structured Clinical Examination) for the United Kingdom, manifest global standards. High passing rates in these exams

demonstrate that Filipino nurses are well-prepared to practice nursing in different countries.

Clarity and Specificity of Program Outcomes. Participants noted that CMO 15, s. 2017 introduces a level of clarity and specificity in program outcomes that was previously lacking in nursing education. The identified program outcomes encompass a wide range of knowledge, skills, and attitudes that nursing graduates are expected to possess. This clarity contributes to a more focused and targeted educational experience.

Moreover, competency-based education (CBE) has gained prominence in nursing education. CBE emphasizes the identification of specific competencies, skills, and knowledge that graduates should possess upon completion of their program. The emphasis on competencies aligns with the notion of clear and specific program outcomes. The American Association of Colleges of Nursing (AACN), for example, has endorsed competencies that guide nursing education and practice. Educational research, including studies within nursing education, has increasingly highlighted the benefits of outcomes-based education (OBE).

Challenges in Implementation: While stakeholders recognized the merits of CMO 15, s. 2017, they also acknowledged challenges in its implementation. These challenges include the need for extensive faculty development, the adaptation of teaching methods, and the integration of assessment strategies aligned with OBE principles. Participants emphasized the importance of ongoing support and training for educators to successfully implement the new curriculum.

Implementing significant curriculum changes often requires faculty members to acquire new skills, teaching methods, and an understanding of the reform's principles. Research in education has consistently emphasized the importance of faculty development programs in facilitating successful curriculum implementation. It is common in educational reforms to encounter resistance to change from faculty and staff. The challenges of convincing educators to adopt new teaching methods and align their practices

with OBE principles have been well-documented in educational literature. Aligning assessment strategies with new curriculum approaches, such as OBE, can be a complex undertaking.

Emphasis on Lifelong Learning: The curriculum places a strong emphasis on lifelong learning and continuous professional development. Stakeholders appreciated this aspect, recognizing the importance of staying updated with advancements in nursing and healthcare. The inclusion of research and entrepreneurial skills was particularly noted as a positive development.

The importance of lifelong learning in nursing is widely recognized. Nursing is a dynamic profession, and healthcare practices and technologies continually evolve. Nurses are expected to stay current with the latest evidence-based practices and healthcare advancements to provide safe and high-quality patient care. Various nursing organizations, such as the American Nurses Association (ANA) and the International Council of Nurses (ICN), emphasize the significance of lifelong learning for nursing professionals. Many countries require nurses to engage in CPD activities to maintain their licensure. CPD programs offer nurses opportunities to enhance their knowledge and skills, which contribute to improved patient care.

Enhanced Collaboration: CMO 15, s. 2017 promotes collaboration among healthcare providers and inter-disciplinary teams. Participants noted that this collaborative approach prepares nursing graduates to work effectively in diverse healthcare settings, contributing to improved patient care and outcomes. Interprofessional collaboration is widely recognized as essential in healthcare. Collaborative practice involves healthcare professionals from various disciplines working together to provide comprehensive and patient-centered care.

Moreover, nursing education programs increasingly emphasize the importance of preparing nursing graduates to collaborate effectively with other healthcare professionals. Curriculum reforms and policies in nursing education often include components that promote teamwork, communication, and

collaboration skills among nursing students. Patient-centered care, which prioritizes the individual needs and preferences of patients, is a key focus in healthcare.

Reflective Practice: The curriculum encourages reflective practice among nursing students and educators. This aspect was well-received, as it fosters self-awareness, critical thinking, and improved decision-making in the clinical setting. Reflective practice is a recognized and important aspect of nursing education. Many nursing programs worldwide incorporate reflective practice into their curricula to help students develop critical thinking skills, enhance self-awareness, and improve their clinical decision-making.

Reflective practice has been associated with improved clinical reasoning, enhanced patient care, and increased self-confidence among nursing students. Nursing programs and accrediting bodies often emphasize the importance of reflective practice as part of a nurse's ongoing professional development. For example, nursing organizations like the American Association of Colleges of Nursing (AACN) have endorsed the integration of reflective practice into nursing curricula.

Integration of Core Values: Stakeholders appreciated the integration of core values in the curriculum, emphasizing the importance of ethical, moral, and cultural sensitivity in nursing practice. This inclusion aligns with the holistic approach to patient care. Core values such as ethical, moral, and cultural sensitivity are fundamental in nursing practice. These values guide nurses in providing patient-centered care, respecting the dignity and autonomy of patients, and ensuring cultural competence. In the nursing profession, ethical principles such as beneficence, non-maleficence, and justice play a crucial role in decision-making and care delivery.

Nursing education programs worldwide emphasize the integration of core values into their curricula. Many nursing schools and organizations, including the American Nurses Association (ANA), have established codes of ethics and standards of practice that highlight the importance of ethical conduct and values in nursing. These values are often incorporated into courses, simulations,

and clinical experiences to help nursing students develop the ethical and moral foundations necessary for their profession.

Flexibility and Adaptability: The curriculum's adaptability to different learning styles and pace of individual students was recognized as a strength. It provides flexibility for educators to tailor their teaching methods to meet the needs of diverse learners. Nursing students have diverse learning styles and preferences. Some may thrive in a traditional classroom setting, while others may benefit more from hands-on clinical experiences or online learning. Flexible curriculum design allows educators to incorporate a variety of teaching methods and resources to accommodate different learning styles.

Nursing education programs often include students with varying levels of prior knowledge and skills. An adaptable curriculum enables educators to provide individualized support and challenges to students based on their abilities and progress. This personalization can help students achieve their full potential. Nursing education must stay current with best practices in healthcare and pedagogy. A flexible curriculum allows for the integration of new evidence-based practices, technologies, and teaching strategies as they emerge.

Global Competence. The emphasis on global competence and cultural competence in the curriculum was noted as crucial, given the increasing demand for Filipino nurses in the international healthcare arena. It equips nursing graduates to navigate cultural and racial differences effectively. It is well-documented that Filipino nurses are highly sought after in the international healthcare job market. Countries like the United States, the United Kingdom, Canada, and many others have a significant demand for Filipino nursing professionals due to their strong educational background, English language proficiency, and dedication to patient care.

The healthcare industry is increasingly diverse, with patients from various cultural backgrounds seeking care in different countries. Cultural competence is recognized as essential for healthcare providers to deliver quality care to patients from diverse backgrounds. This

includes understanding cultural beliefs, values, and practices that may impact healthcare decisions and communication. Global competence encompasses not only cultural sensitivity but also skills related to effective communication, adaptability, and cross-cultural collaboration.

DISCUSSION

The findings of this reflective analysis on Outcomes-Based Education (OBE) and its integration into the Philippine Nursing Curriculum under CMO 15, s. 2017 offer valuable insights into the impact of OBE on nursing education in the Philippines. These findings align with existing literature and contribute to a deeper understanding of the implications of OBE in nursing education.

Alignment of Curriculum with Global Standards. The alignment of the curriculum with international standards, as revealed in the analysis, represents a pivotal shift in nursing education towards global competitiveness. In today's interconnected world where healthcare professionals often cross borders to work in diverse healthcare settings, the curriculum's alignment with global standards becomes imperative. As Menon and Castrillón (2023) argued, educational systems must adapt to meet the demands of a globalized workforce. Nursing education is no exception, and the curriculum's commitment to aligning with international standards ensures that nursing graduates are not only well-prepared for domestic healthcare contexts but are also equipped to thrive on the global stage.

This alignment with global standards resonates with the broader trend of internationalization and globalization in education. As educational institutions seek to produce graduates who can excel in an increasingly globalized world, aligning the curriculum with international standards becomes a strategic imperative (Hassan et al., 2023). Nursing education, with its focus on healthcare delivery, is particularly sensitive to these global trends. The curriculum's emphasis on global alignment is consistent with the goals of enhancing the international mobility of nursing graduates, as noted by Hang and Zhang (2023) in their study on global nurse migration.

Furthermore, the curriculum's alignment with global standards reflects the recognition that nursing is a profession with universal principles and practices. This approach is aligned with the values of professionalism and excellence in nursing education (Liraz & Eyal, 2023).

Clarity and Specificity of Program Outcomes. The findings highlighting the clarity and specificity of program outcomes resonate strongly with the principles of Outcomes-Based Education (OBE). OBE is grounded in the philosophy that education should be centered around the clear definition and achievement of learning outcomes (Tanhueco-Nepomuceno, 2019). The emphasis on precisely defined program outcomes aligns with the core tenets of OBE, which stress the importance of setting clear expectations for what students should be able to know and do upon completion of their educational journey.

Specific program outcomes, as observed in the curriculum, are in harmony with the principles of constructive alignment. This educational theory, popularized by Marey et al. (2022), asserts that for effective learning to occur, there must be alignment between learning objectives, teaching methods, and assessment strategies. The specificity of program outcomes serves as a guiding light for educators, enabling them to design teaching methods and assessment criteria that are directly linked to the desired learning outcomes.

Challenges in Implementation. The challenges identified in the implementation of CMO 15, s. 2017 are emblematic of the broader hurdles often encountered in educational reform initiatives. These challenges, which encompass the need for faculty development, adaptations in teaching methodologies, and alignment with assessment strategies, are part and parcel of the educational reform landscape (Blesh et al., 2023). The recognition of these challenges underscores the complexity of reforming educational systems and curricula, which often necessitate substantial changes in the ways educators teach and assess students.

Faculty development emerges as a critical component of addressing these challenges. As the curriculum evolves to incorporate new methodologies and assessment

approaches, educators need the necessary training and support to effectively implement these changes. Teslo et al. (2023) underscores the significance of ongoing professional development for educators, particularly when adopting transformative educational reforms. This aligns with the findings that emphasize the importance of ongoing support and training for educators.

Furthermore, aligning teaching methods and assessment strategies with the objectives of the new curriculum is a multifaceted task. It demands careful planning, resource allocation, and a profound understanding of pedagogical principles. Baas et al. (2022) emphasizes the importance of aligning assessment with curriculum and instruction to achieve meaningful educational reform. The challenges identified in CMO 15, s. 2017 reflect the need for educators to rethink and adapt their teaching practices to ensure that they are congruent with the desired learning outcomes. This alignment is integral in ensuring that the curriculum's transformative potential is fully realized and that students receive an education that equips them with the skills and knowledge needed for success in their professional careers. In summary, the challenges in curriculum implementation underscore the importance of professional development and alignment in achieving successful educational reform, in line with the broader literature on the subject.

Emphasis on Lifelong Learning. The emphasis on lifelong learning and continuous professional development, as highlighted in the curriculum under CMO 15, s. 2017, reflects a deep understanding of the evolving demands placed on the nursing profession. Nursing is a dynamic field, with constant advancements in medical knowledge, technologies, and healthcare practices. The recognition of the importance of lifelong learning aligns with the prevailing consensus in nursing literature, where the significance of ongoing education is widely acknowledged (Hachoumi et al., 2023).

In nursing, where the well-being of patients is paramount, staying updated with the latest advancements in healthcare is not a luxury but a professional responsibility. The rapidly changing healthcare landscape demands

that nursing graduates continue to acquire new knowledge and skills to provide the highest quality of care. Continuous professional development ensures that nursing professionals remain competent and adaptable throughout their careers. This aligns with the core values of nursing practice, which include a commitment to excellence and a dedication to patient welfare (Atkinson et al., 2020).

Furthermore, the emphasis on lifelong learning also resonates with the broader trends in healthcare. As healthcare systems worldwide adopt evidence-based practices and technologies, healthcare professionals must be prepared to incorporate these innovations into their daily practice. The curriculum's focus on continuous learning aligns with the principles of evidence-based practice, where healthcare decisions are guided by the latest research findings (Geletu & Mihiretie, 2023; Robertson, 2023). Nursing graduates who embrace lifelong learning are better equipped to provide evidence-based care, contributing to improved patient outcomes and the advancement of the nursing profession.

Enhanced Collaboration. The emphasis on promoting collaboration among healthcare providers and inter-disciplinary teams, as evident in the curriculum under CMO 15, s. 2017, is in line with the broader emphasis on interprofessional education within the healthcare field (Hulick & Ilbawi, 2023). In contemporary healthcare, the complexity of patient care often necessitates the involvement of multiple healthcare professionals from various disciplines. The curriculum's commitment to fostering collaboration recognizes the importance of preparing nursing graduates to function effectively within interprofessional teams, ensuring that patients receive holistic and coordinated care.

Collaborative practice is widely acknowledged as essential for improving patient care and outcomes (Meiklejohn et al., 2023; Sakthivel et al., 2023). In healthcare settings where patient safety and well-being are paramount, effective teamwork and communication are critical. The curriculum's focus on collaboration equips nursing graduates with the skills and mindset required to work collaboratively with colleagues from different

healthcare disciplines. This aligns with the principles of patient-centered care, where healthcare decisions and interventions are coordinated to meet the unique needs and preferences of each patient (Liu & Kauffman, 2021).

Reflective Practice. The encouragement of reflective practice among nursing students and educators is firmly rooted in the principles of reflective learning, as articulated by (Fields et al., 2021). Reflective practice is a powerful pedagogical approach that promotes self-awareness, critical thinking, and improved decision-making, all of which are indispensable skills for nursing professionals (Sun, 2023). By emphasizing reflective practice, the curriculum under CMO 15, s. 2017 aligns with the contemporary understanding of how nursing education can prepare graduates for the complexities of the healthcare environment.

Moreover, the integration of reflective practice into the curriculum aligns with the broader trend of learner-centered education (Holmes, 2023). Reflective practice places the responsibility for learning and professional growth squarely on the shoulders of the individual learner. It empowers nursing students to take ownership of their educational journey and professional development. This aligns with the principles of lifelong learning, where individuals are motivated and equipped to acquire new knowledge and skills throughout their careers (Geleta & Raju, 2023). In essence, reflective practice not only prepares nursing graduates for their initial foray into the profession but also equips them with the tools and mindset for a lifelong journey of learning and growth in the dynamic field of nursing.

Integration of Core Values. The integration of core values into the curriculum represents a critical dimension of nursing education, aligning seamlessly with the holistic approach to patient care. Nursing, as a profession, places a strong emphasis on patient-centered care, which extends beyond the physical aspects of health and encompasses the psychological, emotional, and cultural dimensions of well-being. Ethical, moral, and cultural sensitivity are fundamental components of nursing practice (Türkmen et al.,

2023). The curriculum's deliberate focus on core values underscores the significance of instilling these principles in nursing graduates to ensure they provide compassionate, respectful, and culturally sensitive care to diverse patient populations. Ethical considerations are at the heart of nursing practice. Nursing professionals are often confronted with complex ethical dilemmas that require thoughtful and principled decision-making. The curriculum's integration of core values reinforces the importance of ethical conduct and moral integrity in nursing practice. Nursing graduates are not only expected to possess technical competence but also to adhere to ethical standards and principles that guide their interactions with patients, families, and colleagues.

Flexibility and Adaptability. The acknowledgment of the curriculum's flexibility and adaptability is in harmony with the principles of learner-centered education, as espoused by (Bremner et al., 2023). In a learner-centered approach, the focus shifts from the teacher as the sole source of knowledge to the learner as an active participant in their own education. Recognizing that each learner has unique needs and preferences, the curriculum's flexibility empowers educators to tailor their teaching methods to accommodate diverse learners effectively. This learner-centric approach is pivotal in creating an inclusive and engaging educational environment. Effective education necessitates the ability to adjust teaching methods to the varied needs and learning styles of students (McCrorry et al., 2023). The curriculum's adaptability aligns with this imperative, acknowledging that students learn in different ways and at different paces.

Global Competence. Global competence, as emphasized in the curriculum under CMO 15, s. 2017, holds significant relevance in the context of contemporary nursing education. With the ever-increasing demand for Filipino nurses to work on an international scale, the development of global competence is a critical component of their training. This emphasis reflects the changing landscape of healthcare, where healthcare professionals are frequently required to interact

with patients from diverse cultural backgrounds. As Fung et al. (2023) noted, cultural competence is not merely a desirable attribute but an essential one for delivering quality care in such diverse settings.

In today's interconnected world, healthcare providers often collaborate with colleagues from various countries and cultural backgrounds. The curriculum's focus on global competence recognizes the need for nurses to navigate not only patient diversity but also the cultural nuances that permeate healthcare systems worldwide. This emphasis aligns with the broader trend of globalization in healthcare, where the ability to work effectively in cross-cultural and international settings is highly valued (Kamau et al., 2023).

Moreover, the curriculum's commitment to global competence is in line with the ethical principles of nursing practice. Nursing is inherently a profession centered on caring for others, and this care extends to individuals from diverse backgrounds. The curriculum recognizes that to provide truly patient-centered care, nurses must possess the skills and awareness to understand and respect the values, beliefs, and traditions of patients from different cultures. This approach aligns with the ethical principles of beneficence and non-maleficence, emphasizing the obligation to promote patients' well-being while avoiding harm (Bogaert, 2023; McKenna et al., 2023).

CONCLUSION

This reflective analysis has provided valuable insights into the impact of Outcomes-Based Education (OBE) on nursing education in the Philippines through its integration into the Philippine Nursing Curriculum under CMO 15, s. 2017. The findings align with existing literature and contribute to a deeper understanding of the implications of OBE in nursing education. The curriculum's alignment with global standards is crucial, as it prepares nursing graduates for international competitiveness in an era where healthcare professionals frequently work across borders in diverse healthcare settings. This alignment with global standards is consistent with the broader trend of internationalization in education, supporting the international mobility of nursing

graduates. The focus on clear and specific program outcomes, in line with OBE principles, ensures that nursing graduates possess a well-defined skill set, enhancing their readiness for the nursing profession. However, the challenges in implementing CMO 15, s. 2017 underscore the complexities of educational reform, emphasizing the importance of ongoing professional development and alignment with pedagogical strategies. The curriculum's emphasis on lifelong learning addresses the evolving demands of the nursing profession, while the promotion of collaboration, reflective practice, and core values prepares nursing graduates for modern healthcare complexities. Based on this reflective analysis, stakeholders in Philippine nursing education may continue to prioritize the integration and refinement of Outcomes-Based Education (OBE) principles in the Philippine Nursing Curriculum, as outlined in CMO 15, s. 2017. To overcome implementation issues, faculty development programs may be funded to provide educators with the skills and expertise to adopt OBE. To ease the transition to this educational style, instructors may need to get continual support and training. Reinforcing the curriculum's focus on lifelong learning may encourage nurses to continue their education and remain current in healthcare. To educate nurses for current healthcare delivery, nursing education programs may need to promote and embrace multidisciplinary teamwork. To foster self-awareness, critical thinking, and ethics among nursing students, reflective practice and core values may need to remain central to nursing education. Finally, to accommodate varied learning styles and healthcare trends, the curriculum may be flexible and adaptable. This holistic strategy will improve Philippine nursing education, preparing graduates to succeed globally and offer patient-centered care in a constantly changing healthcare sector.

References

1. Asim, H. M., Vaz, A., Ahmed, A., & Sadiq, S. (2021). A Review on Outcome Based Education and Factors That Impact Student Learning Outcomes in Tertiary Education System. *International Education Studies*, 14(2), 1. <https://doi.org/10.5539/ies.v14n2p1>
2. Atkinson, M. J., Stock, N. M., Alleva, J. M., Jankowski, G. S., Piran, N., Riley, S., Calogero, R., Clarke, A., Rumsey, N., Slater, A., Diedrichs, P. C., & Williamson, H. (2020). Looking to the future: Priorities for translating research to impact in the field of appearance and body image. *Body Image*, 32, 53–61. <https://doi.org/10.1016/j.bodyim.2019.10.006>
3. Baas, M., Van Der Rijst, R., Huizinga, T., Van Den Berg, E., & Admiraal, W. (2022). Would you use them? A qualitative study on teachers' assessments of open educational resources in higher education. *The Internet and Higher Education*, 54, 100857. <https://doi.org/10.1016/j.iheduc.2022.100857>
4. Blesh, J., Mehrabi, Z., Wittman, H., Kerr, R. B., James, D., Madsen, S., Smith, O. M., Snapp, S., Stratton, A. E., Bakarr, M., Bicksler, A. J., Galt, R., Garibaldi, L. A., Gemmill-Herren, B., Grass, I., Isaac, M. E., John, I., Jones, S. K., Kennedy, C. M., ... Kremen, C. (2023). Against the odds: Network and institutional pathways enabling agricultural diversification. *One Earth*, 6(5), 479–491. <https://doi.org/10.1016/j.oneear.2023.03.004>
5. Bogaert, B. (2023). The value of ethical principles to reflect on emerging issues in epilepsy care and research. *Revue Neurologique*, 179(4), 345–351. <https://doi.org/10.1016/j.neurol.2023.02.065>

6. Bremner, N., Sakata, N., & Cameron, L. (2023). Teacher education as an enabler or constraint of learner-centred pedagogy implementation in low-to middle-income countries. *Teaching and Teacher Education*, 126, 104033. <https://doi.org/10.1016/j.tate.2023.104033>
7. Fields, L., Trostian, B., Moroney, T., & Dean, B. A. (2021). Active learning pedagogy transformation: A whole-of-school approach to person-centred teaching and nursing graduates. *Nurse Education in Practice*, 53, 103051. <https://doi.org/10.1016/j.nepr.2021.103051>
8. Fung, J. T. C., Chan, S. L., Takemura, N., Chiu, H.-Y., Huang, H.-C., Lee, J.-E., Preechawong, S., Hyun, M. Y., Sun, M., Xia, W., Xiao, J., & Lin, C.-C. (2023). Virtual simulation and problem-based learning enhance perceived clinical and cultural competence of nursing students in Asia: A randomized controlled cross-over study. *Nurse Education Today*, 123, 105721. <https://doi.org/10.1016/j.nedt.2023.105721>
9. Geleta, T. O., & Raju, T. S. (2023). Professional learning activities in the higher education institution of Ethiopia. *Heliyon*, 9(3), e14119. <https://doi.org/10.1016/j.heliyon.2023.e14119>
10. Geletu, G. M., & Mihiretie, D. M. (2023). Professional accountability and responsibility of learning communities of practice in professional development versus curriculum practice in classrooms: Possibilities and pathways. *International Journal of Educational Research Open*, 4, 100223. <https://doi.org/10.1016/j.ijedro.2022.100223>
11. Hachoumi, N., Eddabbah, M., & El Adib, A. R. (2023). Health sciences lifelong learning and professional development in the era of artificial intelligence. *International Journal of Medical Informatics*, 178, 105171. <https://doi.org/10.1016/j.ijmedinf.2023.105171>
12. Hang, Y., & Zhang, X. (2023). Intercultural competence developmental processes of university and college students as three types of transition – A systematic review. *International Journal of Intercultural Relations*, 92, 101748. <https://doi.org/10.1016/j.ijintrel.2022.101748>
13. Harvey, G., Gifford, W., Cummings, G., Kelly, J., Kislov, R., Kitson, A., Pettersson, L., Wallin, L., Wilson, P., & Ehrenberg, A. (2019). Mobilising evidence to improve nursing practice: A qualitative study of leadership roles and processes in four countries. *International Journal of Nursing Studies*, 90, 21–30. <https://doi.org/10.1016/j.ijnurstu.2018.09.017>
14. Hassan, M. U., Alaliyat, S., Sarwar, R., Nawaz, R., & Hameed, I. A. (2023). Leveraging deep learning and big data to enhance computing curriculum for industry-relevant skills: A Norwegian case study. *Heliyon*, 9(4), e15407. <https://doi.org/10.1016/j.heliyon.2023.e15407>
15. Holmes, M. A. (2023). Creating equitable spaces for all learners: Transforming classrooms through biography-driven instructional

- conversations. *Linguistics and Education*, 77, 101230. <https://doi.org/10.1016/j.linged.2023.101230>
16. Hulick, P. J., & Ilbawi, N. (2023). Education of health providers on precision medicine. In *Reference Module in Biomedical Sciences* (p. B9780128240106000411). Elsevier. <https://doi.org/10.1016/B978-0-12-824010-6.00041-1>
17. Kamau, S., Oikarainen, A., Kiviniitty, N., Koskenranta, M., Kuivila, H., Tomietto, M., Kanste, O., & Mikkonen, K. (2023). Nurse leaders' experiences of how culturally and linguistically diverse registered nurses integrate into healthcare settings: An interview study. *International Journal of Nursing Studies*, 146, 104559. <https://doi.org/10.1016/j.ijnurstu.2023.104559>
18. Liraz, R., & Eyal, O. (2023). Undermined professionalism: Strategic impression management among early childhood educators. *Teaching and Teacher Education*, 127, 104089. <https://doi.org/10.1016/j.tate.2023.104089>
19. Liu, N., & Kauffman, R. J. (2021). Enhancing healthcare professional and caregiving staff informedness with data analytics for chronic disease management. *Information & Management*, 58(2), 103315. <https://doi.org/10.1016/j.im.2020.103315>
20. Marey, R., Magd, A., Eldeghaidy, H., & Tidswell, A. (2022). A transformative professional development model in current Egyptian reforms: A mixed-methods study. *Social Sciences & Humanities Open*, 5(1), 100233. <https://doi.org/10.1016/j.ssaho.2021.100233>
21. McCrory, L., Coffey, A., & Lavery, S. (2023). Attracting talented and committed students to the teaching profession. Student perspectives on teaching as a career. *Teaching and Teacher Education*, 133, 104263. <https://doi.org/10.1016/j.tate.2023.104263>
22. McKenna, K., Berring, L. L., Van De Sande, R., Noorthoorn, E., & Paterson, B. (2023). Sustaining a therapeutic environment within mental health in-patient settings during COVID-19. Results of a Delphi study. *Applied Nursing Research*, 72, 151695. <https://doi.org/10.1016/j.apnr.2023.151695>
23. Meiklejohn, S., Anderson, A., Brock, T., Kumar, A., Maddock, B., Wright, C., Walker, L., & Kent, F. (2023). The utility of an interprofessional education framework and its impacts upon perceived readiness of graduates for collaborative practice. A multimethod evaluation using the context, input, process, product (CIPP) model. *Nurse Education Today*, 121, 105707. <https://doi.org/10.1016/j.nedt.2023.105707>
24. Menon, K., & Castrillón, G. (2023). "Reschooling" higher education: The dynamics of curriculum in South Africa. In *International Encyclopedia of Education (Fourth Edition)* (pp. 48–56). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.02149-7>
25. Nightingale, J., Ali, N., Lewis, R., Ibbotson, R., Monks, H., Urquhart-Kelly, T., & Saunders, L. (2023). Transforming nursing care for children with serious long-term

- conditions: A mixed methods exploration of the impact of Roald Dahl Specialist Nurses in the United Kingdom. *Journal of Pediatric Nursing*, 70, 90–102. <https://doi.org/10.1016/j.pedn.2023.02.004>
26. Orakcı, Ş. (2021). Teachers' Reflection and Level of Reflective Thinking on the Different Dimensions of their teaching practice. *International Journal of Modern Education Studies*, 5(1), 117. <https://doi.org/10.51383/ijonmes.2021.88>
27. Robertson, K. (2023). Using a classroom-as-organization method to bridge the research-practice gap in human resource management. *The International Journal of Management Education*, 21(3), 100871. <https://doi.org/10.1016/j.ijme.2023.100871>
28. Sakthivel, M., Wolff, H., Monast, K., McHugh, A., Stulberg, D., & Janiak, E. (2023). Mifepristone implementation in primary care: Clinician and staff insights from a pilot learning collaborative. *Contraception*, 110280. <https://doi.org/10.1016/j.contraception.2023.110280>
29. Sun, Y. (2023). Increasing critical language awareness through translanguaging practices in academic writing. *Journal of English for Academic Purposes*, 62, 101229. <https://doi.org/10.1016/j.jeap.2023.101229>
30. Tanhueco-Nepomuceno, L. (2019). Internationalization among selected HEIs in the ASEAN region: Basis for a proposed framework for an internationalized campus. *International Journal of Educational Development*, 65, 152–171. <https://doi.org/10.1016/j.ijedudev.2018.07.003>
31. Teslo, S., Thurston, M., Lerum, Ø., Brekke Mandelid, M., Sørnes Jenssen, E., Resaland, G. K., & Eikeland Tjomsland, H. (2023). Teachers' sensemaking of physically active learning: A qualitative study of primary and secondary school teachers participating in a continuing professional development program in Norway. *Teaching and Teacher Education*, 127, 104113. <https://doi.org/10.1016/j.tate.2023.104113>
32. Tungpalan, K. A., & Antalán, M. F. (2021). Teachers' perception and experience on outcomes-based education implementation in Isabela State University. *International Journal of Evaluation and Research in Education (IJERE)*, 10(4), 1213. <https://doi.org/10.11591/ijere.v10i4.21548>
33. Türkmen, E., Vaizoğlu, D., Yeşilyurt, T., & Uysal, N. (2023). Effect of moral sensitivity on professional values of undergraduate nursing students: Mediating effect of empathic tendency. *Journal of Professional Nursing*, 49, 44–51. <https://doi.org/10.1016/j.profnurs.2023.08.013>

Foundation of Nursing Curriculum with Current Healthcare Trends: A Comprehensive Approach

**ROSE ANN S. DIZON¹, DIANNA MAE C. OGTONG², KARREN C. SANTOS³,
MARY JOY L. TARAPE⁴, CORAZON C. SORIANO⁵, PAOLO M. PUNO⁶,
JUANITO C. LEABRES, JR.⁷, and CLARISA A. DE LOS REYES⁸**

¹Nurse Manager, San Fernando City, Pampanga

²Nurse Manager, Magalang, Pampanga

³Nurse Manager, Sta. Ana, Pampanga

⁴Head Nurse, Bongabon, Nueva Ecija

⁵Head Nurse, San Fernando City, Pampanga

⁶Head Nurse, San Fernando City, Pampanga

⁷Professor, Graduate School, Wesleyan University Philippines

⁸Nurse Educator, Almajardah General Hospital, Aseer Region, Kingdom of Saudi Arabia

OPEN ACCESS

Received: 27 May 2023

Accepted: 22 October 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal. Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Dizon, R., Ogtong, D., Santos, K., Tarape, M., Soriano, C., Puno, P., Leabres, J., & De Los Reyes, C. (2024) Foundations of nursing curriculum with current healthcare trends: A Comprehensive Approach. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 90-98, doi: <https://doi.org/10.5281/zenodo.7977397>

ABSTRACT

The foundation of nursing curriculum plays a pivotal role in preparing future nurses to meet the ever-evolving healthcare needs of society. As healthcare trends continue to shift, it becomes imperative for nursing education programs to align their curricula with these dynamic changes. This article explored the importance of incorporating current healthcare trends into the foundation of nursing curriculum, with a focus on equipping nursing students with the knowledge, skills, and attitudes necessary for competent and compassionate care. The article discusses the significance of a strong foundation in nursing curriculum development. Furthermore, the article highlights the potential benefits of incorporating current healthcare trends into nursing curriculum. It explored how exposure to emerging trends can enhance students' critical thinking abilities, problem-solving skills, and adaptability in a rapidly changing healthcare environment. By addressing these trends within the curriculum, educators can better prepare students to navigate complex healthcare systems and provide high-quality, patient-centered care. Additionally, the article acknowledges the need for ongoing evaluation and revision of the curriculum to keep pace with evolving healthcare trends and address emerging issues. In conclusion, this article emphasizes the significance of establishing a strong foundation in nursing curriculum that incorporates current healthcare trends. By aligning the curriculum with emerging trends, nursing education programs can better equip students to meet the challenges and demands of the ever-changing healthcare landscape. Through continuous collaboration, evaluation, and revision, nursing curricula can effectively prepare future nurses to deliver safe, quality care that is responsive to the needs of diverse patient populations.

Keyword: Nursing Curriculum, Healthcare, Trends, Knowledge, Hospital, Patient, Education Programs

INTRODUCTION

The core of the nursing curriculum plays a vital role in preparing nursing students to meet the ever-changing needs and challenges of the global healthcare landscape (Avşar et al., 2024). By incorporating contemporary healthcare trends into their curriculum, nursing education institutions ensure that their graduates are not only well-versed in fundamental nursing practices but are also equipped with the knowledge and skills to adapt to new healthcare technologies, treatments, and patient care strategies. This adaptation is essential in a world where healthcare demands are increasingly complex, driven by factors such as the global rise in chronic diseases and the need for personalized, patient-centered care. The inclusion of current healthcare developments in the curriculum ensures that nursing graduates can deliver high-quality care that meets the standards of today's health sector.

The global healthcare environment is characterized by a set of common challenges, including the growing prevalence of chronic conditions such as diabetes, heart disease, and cancer (Holland et al., 2023; Xia et al., 2023). These conditions place a significant strain on healthcare systems worldwide, necessitating a workforce that is proficient in managing long-term illnesses and providing continuous care. Additionally, the aging global population presents another layer of complexity, requiring specialized knowledge in geriatric care and the management of age-related diseases. Nursing curricula respond to these trends by incorporating specialized modules on chronic disease management, geriatric care, and palliative care equip future nurses with the competencies needed to address these prevalent health issues effectively.

Moreover, technological advancements are profoundly transforming the healthcare delivery model. Innovations such as electronic health records, telemedicine, and robotics are reshaping patient care, making it more efficient and accessible (Nahm et al., 2023). By integrating these technological trends into the nursing curriculum, educators are preparing students to operate in a digitalized healthcare environment, enhancing their ability to provide care through modern platforms and tools. This

preparation is crucial for ensuring that nursing graduates can confidently utilize technology to improve patient outcomes, streamline healthcare processes, and contribute to the evolution of healthcare services. As the healthcare sector continues to evolve, the nursing curriculum must adapt accordingly, ensuring that nurses are well-equipped to meet the demands of a dynamic and technologically advanced healthcare landscape.

The increasing focus on interprofessional collaboration within healthcare settings underscores the critical role that teamwork and effective communication play in delivering high-quality, patient-centered care (Molise et al., 2023). This collaborative approach integrates the expertise of healthcare professionals from various disciplines, facilitating a more holistic understanding of patient needs and a more cohesive care strategy. As healthcare becomes more complex, with patients often presenting multiple comorbidities and nuanced healthcare needs, the ability of different healthcare professionals to work together harmoniously becomes essential. This interdisciplinary strategy not only enhances patient outcomes by leveraging diverse expertise but also contributes to a more efficient healthcare system, where resources are utilized optimally, and care processes are streamlined. The emphasis on such collaboration signals a paradigm shift in healthcare delivery, moving away from siloed practices towards a more integrated model that values the contributions of all healthcare team members.

Cultural competency and the embrace of diversity within healthcare further enrich the interprofessional collaboration model (Ma et al., 2023). In a globalized world, healthcare professionals encounter patients from a myriad of cultural backgrounds, each with their unique health beliefs, practices, and expectations of healthcare. Recognizing and respecting these differences is not just about providing equitable care; it's about tailoring healthcare delivery to be as effective as possible for everyone. The ability of healthcare teams to understand and incorporate the cultural context of their patients into care plans is a cornerstone of patient-centered care. This cultural sensitivity helps in

addressing health disparities by ensuring that care is accessible and acceptable to all, regardless of cultural background. Fostering an environment where diversity is valued among healthcare professionals not only improves patient outcomes but also enriches the working environment, promoting learning and understanding across cultural divides.

Moreover, the integration of cultural competency into interprofessional collaboration enhances the team's ability to navigate the complexities of healthcare delivery in a culturally diverse society (Ireland, 2022). It encourages healthcare professionals to engage with patients and their families in a manner that is respectful and mindful of cultural nuances, which can significantly affect health behaviors and perceptions of care. This approach not only strengthens the therapeutic relationship between patients and providers but also fosters a deeper understanding among healthcare professionals (Li et al., 2024).

In the Philippines, tailoring the nursing curriculum to the nation's specific healthcare trends and challenges is vital for delivering quality care to the Filipino population. The curriculum must adapt to the Philippines' unique healthcare landscape, marked by communicable diseases, rising non-communicable diseases, regional health disparities, resource constraints in healthcare facilities, and the healthcare needs of diverse cultural groups (Woodward et al., 2022). The Philippine Nursing Association (PNA) and the Commission on Higher Education (CHED) play key roles in defining the nursing curriculum, aligning it with national healthcare priorities to ensure educational quality and emphasize holistic care, ethical practices, patient safety, and lifelong learning. Collaborations among educators, healthcare professionals, and institutions are essential for providing practical experience and insight into the Philippine healthcare system. Engaging in interprofessional education fosters teamwork and a deep understanding of healthcare dynamics, preparing graduates to address the diverse healthcare needs of the Filipino population and enhance the Philippine healthcare system effectively.

The purpose of this study is to critically examine the integration of contemporary healthcare trends into the nursing curriculum and assess its efficacy in preparing nursing graduates for the multifaceted challenges of the global healthcare sector. By exploring how current trends in chronic disease management, geriatric care, technological innovations, and other significant areas are embedded within nursing education, this study aims to highlight the impact of these curricular inclusions on the competency and readiness of nursing professionals. Through this investigation, the paper seeks to provide evidence-based recommendations for curriculum developers, educators, and policymakers, aiming to enhance the quality of nursing education and, consequently, the standard of healthcare delivery worldwide. This endeavor not only addresses the immediate need for nursing professionals who are adept at navigating the complexities of modern healthcare but also contributes to the ongoing discourse on improving healthcare outcomes through education and training.

RESEARCH QUESTIONS

The study determined the different foundations of nursing curriculum employed in Schools of Nursing. Specifically, the study answered the following questions: (1) What are the different foundations of nursing curriculum employed in Schools of Nursing?; and (2) What are the strategies that can be employed to ensure a comprehensive approach in integrating current healthcare trends into the foundational nursing curriculum?

METHODS

Research Design. The study conducted an extensive literature review to thoroughly explore the various foundations of the nursing curriculum in conjunction with current healthcare trends, aiming to provide a comprehensive overview of how nursing education is evolving to meet the demands of the modern healthcare environment. By systematically examining scholarly articles, educational policy documents, curriculum guidelines, and empirical studies, the review highlighted the integration of critical areas such as chronic disease management, geriatric care, technological advancements in healthcare

delivery, and the importance of developing soft skills like communication and empathy (Grove & Gray, 2019; Jackson & Mazzei, 2023). Through this literature review, the study aimed to identify best practices, gaps in current educational models, and emerging trends in nursing education, providing valuable insights for educators, curriculum developers, and policymakers involved in shaping the future of nursing education (Hancock et al., 2021).

Sampling. The sampling strategy for the literature review component involved systematic searches of internet databases such as PubMed, CINAHL, Education Resources Information Center (ERIC), and Google Scholar. Keywords related to nursing education, healthcare trends, curriculum development, and student outcomes were used. The search was limited to documents published in the last ten years to ensure the relevance and currency of the data.

Data Gathering Instruments. In conducting a systematic review for the study, the data gathering process was meticulously organized, employing specific instruments and methodologies to guarantee a thorough and impartial collection of pertinent studies (Flick, 2023; LoBiondo-Wood & Haber, 2018). This process diverged from primary research methodologies such as surveys, interviews, or observations, by utilizing a series of structured strategies: a detailed search strategy involved a carefully crafted compilation of keywords, phrases, and Boolean operators to filter through various academic databases like PubMed, Scopus, Web of Science, CINAHL, and Cochrane Library; predefined inclusion and exclusion criteria ensured the review remained focused on literature that directly responded to the research question; structured data extraction forms were designed for systematic collection and organization of vital study information, including authors, publication year, study design, and key findings; quality assessment tools like the Cochrane Risk of Bias Tool and the Newcastle-Ottawa Scale were used to evaluate the methodological soundness and bias risk of included studies; data synthesis tools such as RevMan, NVivo, or specific meta-analysis software tailored to the review's quantitative, qualitative, or mixed-methods

nature were utilized; and adherence to reporting standards like PRISMA or MOOSE guidelines enhanced the review's transparency and reproducibility. These comprehensive instruments and methodologies formed the core of the data gathering process, ensuring the systematic review met the highest research integrity standards, thereby offering a robust foundation for the study (Aurini et al., 2021; Denzin et al., 2024, 2024).

Data Analysis. The study employed content analysis as a methodological approach to examine qualitative data, a process that involves systematically coding textual material, grouping these codes into meaningful themes, refining these themes for clarity and coherence, and exploring the connections between them to gain a comprehensive understanding of the data (Dang et al., 2021; Polit & Beck, 2021). This method allows researchers to dissect complex information into manageable pieces, facilitating a deeper exploration of the underlying patterns and insights within the data. Initially, the process involves reading through the textual material—such as interview transcripts, open-ended survey responses, or documentary evidence—to identify significant words, phrases, or segments that are relevant to the research questions. Following coding, the next step involves grouping these codes into themes, which are broader categories that capture the essence of multiple codes under a unified concept. This thematic grouping helps in organizing the data in a way that highlights the recurring ideas or concepts, making it easier to analyze the broader patterns that emerge from the data. The refinement of themes is a critical step, ensuring that each theme is clearly defined and distinct from others, providing a clear framework for analysis (Elder et al., 2021; Saldaña, 2021). This phase may involve merging similar themes, splitting broader themes into sub-themes, or redefining the scope of themes to better align with the research objectives.

RESULTS

This study ensures a comprehensive approach in integrating current healthcare trends into the foundational nursing curriculum.

Philosophical Foundation. It identified the various philosophical approaches

and theories that underpin nursing education. These may include person-centered care, holistic nursing, ethical principles, and the integration of nursing values such as compassion, empathy, and advocacy. The researchers highlighted the importance of incorporating these philosophical foundations into the curriculum to guide nursing practice and instill a sense of professional identity and ethical responsibility in future nurses.

Historical Foundations. It delved into the historical evolution of nursing education, including the contributions of key nursing theorists and leaders throughout history. The researchers recognized the significance of understanding the historical context of nursing education to appreciate its evolution and to identify the lessons learned from the past. Incorporating historical perspectives into the curriculum can help students gain a deeper understanding of the profession and its cultural, social, and political influences.

Psychological Foundations. It explored theories and concepts from psychology that are relevant to nursing practice, such as human development, behavior, cognition, and therapeutic communication. The researchers emphasized the importance of integrating psychological principles into the curriculum to enhance students' understanding of human behavior, promote effective nurse-patient relationships, and develop skills in psychosocial assessment and intervention.

Social Foundations. It examined the social determinants of health, cultural diversity, healthcare disparities, and the impact of social, economic, and political factors on healthcare delivery. The researchers emphasized the need for nursing curriculum to address these social dimensions of health to prepare students for providing culturally sensitive and equitable care to diverse populations. Incorporating social foundations into the curriculum can also promote students' awareness of social justice issues and their role in advocating for health equity.

DISCUSSION

This study highlights the importance of integrating various foundations into the nursing curriculum and explores the implications for nursing education and practice. By incorporating philosophical, historical, psychological, and social foundations, nursing education can provide a comprehensive approach that prepares students to meet the evolving needs of healthcare.

Philosophical Foundations. Incorporating philosophical foundations into the nursing curriculum helps shape students' values, beliefs, and ethical principles (Afaneh et al., 2023). It promotes a patient-centered approach, empathy, compassion, and advocacy for patients' rights and well-being. Nursing students who develop a strong understanding of philosophical foundations are more likely to provide holistic care, respect patients' autonomy and cultural beliefs, and engage in ethical decision-making throughout their practice (Li et al., 2024).

Historical Foundations. Understanding the historical foundations of nursing is essential for students' professional development (Firouzbakht et al., 2024). It allows them to appreciate the evolution of the nursing profession, the contributions of nursing leaders and theorists, and the historical context in which nursing practice has evolved (Al-Noumani et al., 2024; Semerci & Savaş, 2023; Weaver et al., 2023). This knowledge fosters a sense of professional identity and motivates students to contribute to the ongoing development and improvement of nursing practice (Downing et al., 2023; Woodward et al., 2022).

Psychological Foundations. Integrating psychological foundations into the nursing curriculum equips students with an understanding of human behavior, cognition, and development (Ukoha & Mtshali, 2023). This knowledge is vital for providing individualized and patient-centered care, effective communication, and addressing psychosocial aspects of health and illness. Nurses who possess a strong grasp of psychological foundations can assess patients' emotional and mental well-being, implement appropriate interventions, and establish

therapeutic relationships that contribute to positive patient outcomes (Afaneh et al., 2023; Smania et al., 2022).

Social Foundations. Including social foundations in the nursing curriculum prepares students to address the social determinants of health, cultural diversity, and healthcare disparities (Carless-Kane & Nowell, 2023). It enhances their understanding of how social, economic, and political factors impact health outcomes. By addressing social foundations, nursing education equips students with the knowledge and skills to provide culturally sensitive and equitable care (Mishra et al., 2023; Semerci & Savaş, 2023). Nurses who recognize the social foundations of health are better positioned to advocate for health equity, address healthcare disparities, and work effectively with diverse populations (Madhavanprabhakaran et al., 2023).

Meanwhile, integrating various foundations into the nursing curriculum has significant implications for nursing education and practice. By incorporating philosophical, historical, psychological, and social foundations, nursing education can prepare students to deliver holistic, patient-centered, and culturally sensitive care. Nurses who possess a strong foundation in these areas are better equipped to navigate the complexities of healthcare and contribute to improved patient outcomes, professional development, and the advancement of the nursing profession (Downing et al., 2023; Elsheikh et al., 2023; Whitt et al., 2024).

CONCLUSIONS

Incorporating contemporary healthcare trends into nursing curriculum is vital globally and in the Philippines. This includes evidence-based practices, interdisciplinary collaboration, cultural competency, and addressing unique healthcare concerns. Nursing education programs should focus on foundational aspects like philosophy, history, psychology, and social understanding. This fosters values, ethics, human behavior knowledge, and awareness of health determinants, promoting patient-centered care, empathy, advocacy, and cultural sensitivity. Collaboration among educators, specialists, and

healthcare workers is crucial, providing practical experience and exposure to real-world healthcare issues. The Philippine Nursing Association and the Commission on Higher Education guide the development of guidelines, standards, and competencies aligned with national healthcare priorities. By incorporating these foundations, nursing graduates become equipped to deliver quality care, navigate complex systems, address inequities, and advocate for health equity. Nursing education programs should actively incorporate philosophical, historical, psychological, and social foundations into their curriculum. This includes emphasizing values like compassion, empathy, and advocacy, exploring the evolution of nursing, integrating psychological principles, addressing social determinants of health, and promoting collaboration with healthcare stakeholders. National nursing organizations and regulatory bodies should provide guidance to ensure the quality and relevance of nursing education.

References

1. Afaneh, T., Villamor, M. Y., Opinion, F., Hassan, N., & Mihdawi, M. (2023). Exploring the gap between school of nursing theoretical foundations and clinical practice. *Journal of Professional Nursing*, 49, 158–164. <https://doi.org/10.1016/j.profnurs.2023.10.00>
2. Al-Noumani, H., Al Zaabi, O., Arulappan, J., & George, H. R. (2024). Professional identity and preparedness for hospital practice among undergraduate nursing students: A cross-sectional study. *Nurse Education Today*, 133, 106044. <https://doi.org/10.1016/j.nedt.2023.106044>
3. Aurini, J. D., Heath, M., & Howells, S. (2021). *The how to of qualitative research* (Second edition). SAGE Publications.

4. Avcı, G., Yıldız, G., & Özcan, S. (2024). A scale of readiness for clinical practice: A validity and reliability study for nursing students. *Teaching and Learning in Nursing*, *S1557308724000192*. <https://doi.org/10.1016/j.teln.2024.01.006>
5. Carless-Kane, S., & Nowell, L. (2023). Nursing students learning transfer from classroom to clinical practice: An integrative review. *Nurse Education in Practice*, *71*, 103731. <https://doi.org/10.1016/j.nepr.2023.103731>
6. Dang, D., Dearholt, S. L., Bissett, K., Whalen, M., & Ascenzi, J. (2021). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model & guidelines* (Fourth edition). Sigma Theta Tau International.
7. Denzin, N. K., Lincoln, Y. S., Giardina, M. D., & Cannella, G. S. (Eds.). (2024). *The SAGE handbook of qualitative research* (Sixth edition). SAGE.
8. Downing, S. G., Balnaves, M.-C., Mainey, L., King, J., Peacock, A., Cappiello, J., Peberdy, L., & Dean, J. (2023). Unintended pregnancy prevention and care — Pivotal but passed over in curriculum: A descriptive cross-sectional survey of nursing and midwifery faculty. *Collegian*, *30*(6), 805–811. <https://doi.org/10.1016/j.colegn.2023.06.003>
9. Elder, D., Dyer, N., & Wirthlin, R. (2021). *Research like a pro with DNA: A genealogist's guide to finding and confirming ancestors with DNA evidence*. Family Locket Books.
10. Elsheikh, R., Le Quang, L., Nguyen, N. Q. T., Van, P. T., Hung, D. T., Makram, A. M., & Huy, N. T. (2023). The role of nursing leadership in promoting evidence-based nursing practice. *Journal of Professional Nursing*, *48*, 93–98. <https://doi.org/10.1016/j.profnurs.2023.06.007>
11. Firouzbakht, M., Sharif-Nia, H., Nikpour, M., & Shirvani, Z. G. (2024). Hidden Curriculum Evaluation Scale in Nursing Education: Psychometrics properties of the Persian version. *Teaching and Learning in Nursing*, *19*(1), e70–e76. <https://doi.org/10.1016/j.teln.2023.09.006>
12. Flick, U. (2023). *An introduction to qualitative research* (7th edition). SAGE.
13. Grove, S. K., & Gray, J. (2019). *Understanding nursing research: Building an evidence-based practice* (Edition 7). Elsevier.
14. Hancock, D. R., Algozzine, R., & Lim, J. H. (2021). *Doing case study research: A practical guide for beginning researchers* (Fourth edition). Teachers College Press.
15. Holland, T., Singh, G., & McKelvey, M. (2023). Collaborative practice in a nursing research course. *Teaching and Learning in Nursing*, *S1557308723002305*. <https://doi.org/10.1016/j.teln.2023.11.006>
16. Ireland, V. A. (2022). Emotional intelligence competencies in the undergraduate nursing curriculum: A descriptive qualitative study. *Nurse Education Today*, *119*, 105594. <https://doi.org/10.1016/j.nedt.2022.105594>
17. Jackson, A. Y., & Mazzei, L. A. (2023). *Thinking with theory in*

- qualitative research* (Second Edition). Routledge, Taylor & Francis.
18. Li, J.-Y., Wu, X., Fan, Y.-R., & Shi, Y.-X. (2024). Valuation of the cultural adaptation and psychometric properties of the Chinese version of the hidden curriculum evaluation scale in nursing education. *Nurse Education in Practice*, 75, 103880. <https://doi.org/10.1016/j.nepr.2024.103880>
19. LoBiondo-Wood, G., & Haber, J. (Eds.). (2018). *Nursing research: Methods and critical appraisal for evidence-based practice* (9th edition). Elsevier.
20. Ma, T., Yuan, H., Yang, X., Li, Y., Yao, J., & Mu, D. (2023). Design of online formative assessment of nursing humanities curriculum during the COVID-19 pandemic: A teaching practice research. *Nurse Education Today*, 128, 105874. <https://doi.org/10.1016/j.nedt.2023.105874>
21. Madhavanprabhakaran, G., Arulappan, J., Achora, S., & Alsaraireh, A. (2023). Evidence-based practice competency and barriers among undergraduate nursing students in a Middle Eastern country. *Teaching and Learning in Nursing*, 18(4), e233–e240. <https://doi.org/10.1016/j.teln.2023.07.009>
22. Mishra, R., Hemlata, & Trivedi, D. (2023). Simulation-based learning in nursing curriculum- time to prepare quality nurses: A systematic review and meta-analysis. *Heliyon*, 9(5), e16014. <https://doi.org/10.1016/j.heliyon.2023.e16014>
23. Molise, N. A., Botma, Y., & Van Jaarsveldt, D. (2023). Cultural barriers and facilitators for transformative nursing curriculum transformation. *International Journal of Africa Nursing Sciences*, 18, 100550. <https://doi.org/10.1016/j.ijans.2023.100550>
24. Nahm, E.-S., Archibald, M., Mills, M. E., Costa, L., Warren, J., Nair, P., Price, R., Kirschling, J., Doyle, K., Tyler, R., & White, R. (2023). Continuum of nursing education and practice: Time to close the chasm between academia and practice. *Journal of Professional Nursing*, 46, 134–140. <https://doi.org/10.1016/j.profnurs.2023.02.012>
25. Polit, D. F., & Beck, C. T. (2021). *Nursing research: Generating and assessing evidence for nursing practice* (Eleventh edition, international edition). Wolters Kluwer.
26. Saldaña, J. (2021). *The coding manual for qualitative researchers* (4E [Fourth edition]). SAGE Publishing Inc.
27. Semerci, R., & Savaş, E. H. (2023). The effects of child health nursing curriculum-integrated therapeutic activities on therapeutic communication skills of nursing students: Non-randomized study. *Journal of Pediatric Nursing*, 73, 221–227. <https://doi.org/10.1016/j.pedn.2023.10.026>
28. Smania, M. A., Annis, A., Pathak, D., Wasilevich, E., & Poindexter, K. (2022). Faculty education to improve integration of genomics education in nursing curriculum. *Journal of Professional Nursing*, 43, 74–82. <https://doi.org/10.1016/j.profnurs.2022.09.004>

29. Ukoha, W. C., & Mtshali, N. G. (2023). Integration of preconception care into the bachelor of nursing curriculum: An exploratory qualitative study. *Heliyon*, 9(2), e13304. <https://doi.org/10.1016/j.heliyon.2023.e13304>
30. Weaver, T. E., Lott, S., McMullen, P., Leaver, C. A., Zangaro, G., & Rosseter, R. (2023). Research focused doctoral nursing education in the 21st century: Curriculum, evaluation, and postdoctoral considerations. *Journal of Professional Nursing*, 44, 38–53. <https://doi.org/10.1016/j.profnurs.2022.11.001>
31. Whitt, K. J., Allen, C. L., Hogg, C. W., Pericak, A., Beebe, S. L., Braungart, C., Knestruck, J., Harrod, T., & McNelis, A. M. (2024). The use of electronic health records in advanced practice nursing education: A scoping review. *Journal of Professional Nursing*, 50, 83–94. <https://doi.org/10.1016/j.profnurs.2023.11.007>
32. Woodward, K. F., Kett, P. M., Willgerodt, M., Summerside, N., Hart, J., Buchanan, D. T., Cunitz, T. C., Birkey, C., & Zierler, B. K. (2022). Using an academic-practice partnership to enhance ambulatory care nursing skills. *Nurse Education Today*, 119, 105585. <https://doi.org/10.1016/j.nedt.2022.105585>
33. Xia, Y., Huang, H., Yu, Q., Halili, X., & Chen, Q. (2023). Academic-practice partnerships in evidence-based nursing education: A theory-guided scoping review. *Nurse Education in Practice*, 73, 103839. <https://doi.org/10.1016/j.nepr.2023.103839>

Approaches to Curriculum Design: Strategies for Active Learning in Nursing Education

LALAINA A. ABDULLAH BAE¹, MOHINI DASI E. YUMUL², JESSICA CHRIS D. ATENDIDO³, ROUSELLE ANNE S. PABLO⁴, MARICEL P. LUMAUIG⁵, VIRGIE AIZA LEONARDO⁶, JOHN JASON M. VILLAROMAN⁷, ARNELLE L. BALINAO⁸

¹Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

²Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

³Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

⁴Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

⁵Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

⁶Master of Arts in Nursing Student, Wesleyan University Philippines, Cabanatuan City, Philippines

⁷Quality Assurance Director, Wesleyan University Philippines, Cabanatuan City, Philippines

⁸Faculty Member, Lorma Colleges, San Fernando City, La Union, Philippines

OPEN ACCESS

Received: 27 January 2023

Accepted: 22 April 2023

Published: 15 March 2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2023 The Authors. Published by G Squared Research and Consultancy.

Citation:

Abdullah Bae, L., Yumul, M., Atendido, C., Pablo, R., Lumauig, M., Leonardo, V., & Villaroman, J., & Balinao, A. (2024) Approaches to curriculum design: Strategies for active learning in nursing education. *Filipino Multidisciplinary Research Journal in Education*, 3(1), 99-108, doi: <https://doi.org/10.5281/zenodo.10777722>

A B S T R A C T

The dynamic landscape of healthcare necessitates continuous evolution in nursing education to prepare future nurses effectively. This research paper explores the integration of current healthcare trends into the foundation of the nursing curriculum, aiming to enhance the relevance and efficacy of nursing education in the face of contemporary healthcare challenges. The purpose of this study is to propose a comprehensive approach that aligns the nursing curriculum with emerging healthcare trends, including technological advancements, patient-centered care, evidence-based practice, and the increasing complexity of healthcare needs. Methodologically, the study employed literature review approach. The sampling strategy for the literature review component involved systematic searches of internet databases such as PubMed, CINAHL, Education Resources Information Center (ERIC), and Google Scholar. The study employed content analysis as a methodological approach to examine qualitative data, a process that involves systematically coding textual material, grouping these codes into meaningful themes, refining these themes for clarity and coherence, and exploring the connections between them to gain a comprehensive understanding of the data. The results indicate a significant gap between existing nursing curricula and the rapid advancements in healthcare. However, the study also identifies innovative teaching strategies and curriculum adjustments that have shown promise in bridging this gap. The discussion emphasizes the importance of a flexible, forward-thinking curriculum that incorporates technology, interprofessional education, and ethical considerations. Implications for nursing education are profound, suggesting that curriculum developers and educators must prioritize adaptability and continuous improvement.

Keywords: Nursing Curriculum, Healthcare Trends, Patient-Centered Care, Technological Advancements, Evidence-Based Practice, Interprofessional Education

INTRODUCTION

The global landscape of healthcare is facing unprecedented challenges, including an aging population, the rise of chronic diseases, and the ongoing impacts of global health crises such as the COVID-19 pandemic. These challenges necessitate a healthcare workforce that is not only highly skilled and knowledgeable but also adaptable, capable of critical thinking, and proficient in applying theoretical knowledge to complex real-world situations. Nursing education, as a critical component of the healthcare system, plays a pivotal role in preparing this workforce. However, traditional approaches to nursing education, which often rely heavily on lecture-based delivery, are increasingly recognized as insufficient for meeting the demands of today's complex healthcare environment. This has sparked a global reevaluation of nursing education curricula, with a growing emphasis on incorporating active learning strategies that can better prepare nursing students for the multifaceted roles they will assume.

The shift toward active learning in nursing education, while promising, is not without its issues and challenges. One of the primary issues is the significant variation in the adoption and implementation of active learning strategies across different countries and educational institutions. This variation can be attributed to several factors, including differences in educational cultures, resource availability, faculty expertise, and institutional support. For example, the implementation of Simulation-Based Learning (SBL) requires substantial investment in simulation equipment and trained personnel, resources that may not be readily available in all settings, particularly in low- and middle-income countries. Furthermore, there is a need for faculty development programs to equip educators with the necessary skills to effectively facilitate active learning environments. The transition from traditional teaching roles to facilitator roles involves a paradigm shift that some educators may find challenging without adequate support and training.

Moreover, the global nursing education sector faces the challenge of ensuring that

curriculum design and the integration of active learning strategies are aligned with the evolving needs of the healthcare sector. This alignment is crucial for preparing graduates who are ready to tackle current and future health challenges. However, rapidly changing healthcare technologies, treatment modalities, and care delivery models require constant curriculum updates and innovations, posing a significant challenge for nursing education programs striving to remain current. Additionally, there is the issue of evaluating the effectiveness of different active learning strategies in diverse educational and cultural contexts, which is essential for understanding their impact on student outcomes and adapting them to meet local needs. Addressing these challenges requires a concerted effort from educational institutions, healthcare organizations, policymakers, and professional nursing bodies to invest in research, share best practices, and develop policies that support the effective and equitable implementation of active learning strategies in nursing education globally.

Furthermore, the current healthcare and care delivery environment, encompassing academic, occupational, administrative, and research realms, necessitates ongoing training and education for nurses as the healthcare sector evolves continually (Janes et al., 2023). In today's world, there is a rapid expansion of knowledge alongside swift cultural and technological changes, making the requirements of today soon obsolete in areas like technology, health, and industry (Bodur et al., 2024). Consequently, knowledge quickly loses its value, emphasizing the importance of lifelong learning (Cubelo, 2023). The dynamic nature of the field, coupled with the challenge of staffing hospitals adequately amidst resource constraints, underscores the essential need for nurses to continually update their skills. Continuing education is crucial for health executives to keep pace with fast-evolving knowledge trends, ensuring they can effectively apply new information to improve service standards (Du et al., 2022). Adult learners require a unique educational approach, thus making staff educational training distinct from conventional education methods (Edward et al., 2024). Selecting instructional methods

deliberately is key to effective curriculum development, aiming to facilitate deep knowledge processing and enabling students to link new information with what they already know.

Among Asia-Pacific Economic Cooperation (APEC) member states, only the Philippines offers a bachelor's degree program in nursing, which prepares nurses by focusing on individual learning needs and those of the broader community, offering numerous benefits over other APEC universities' curricula (O'Connor et al., 2023; Vinette et al., 2023). This education level, emphasizing liberal arts in its initial years, not only improves values and character but also prepares graduates for global licensing exams due to English being the medium of instruction, thereby enhancing access to the growing health sciences literature and ensuring graduates can provide high-quality care in any medical setting (Kellerer et al., 2023). Despite the recognized need for pedagogical reform in the Philippines, few institutions have adopted a student-centered learning approach, which places students at the heart of the educational experience, a shift from the traditional teacher-led model to one where teachers act as guides and mentors, a change mirrored in Europe's Bologna Process aiming to make higher education more uniform and student-focused across the continent.

The rapid pace of technological advancement necessitates curriculum revisions in nursing education to keep up with global trends and the evolving demands of the job market. Understanding the characteristics and skills sought by employers is vital for nursing schools to maintain their competitiveness. Transitioning from a traditional, lecture-based approach to a more student-centered model represents a significant shift in mindset for nursing students accustomed to conventional education methods. The effectiveness of student-centered learning (SCL) strategies in Filipino nursing education remains underexplored, highlighting a gap in research on identifying unique strategies to enhance academic engagement and active learning in clinical education, despite growing evidence supporting the benefits of active learning over

traditional lecture-based instruction (Hong & Lee, 2022; Tanimura et al., 2023).

This article delved into the exploration of innovative strategies designed to enhance active learning among nursing students, with the goal of facilitating deeper information processing and significantly improving their preparedness for the complexities of patient care. Recognizing the dynamic and demanding nature of the healthcare environment, the focus is on identifying and implementing pedagogical approaches that move beyond traditional lecture-based teaching methods. By examining various active learning techniques, such as Problem-Based Learning (PBL), Simulation-Based Learning (SBL), and the Hybrid Approach (HA), the research seeks to establish a more engaging, participatory, and experiential learning framework. This framework aims not only to equip nursing students with the necessary theoretical knowledge but also to develop critical thinking, decision-making, and practical skills essential for delivering high-quality patient care. Through this investigation, the article aspires to contribute valuable insights into the effective preparation of nursing students for their future roles, ensuring they are competent, confident, and capable of meeting the evolving challenges of the healthcare sector.

RESEARCH QUESTION

The study explored the different approaches to curriculum design in nursing education. It answered the question, "what are the different approaches to curriculum design in nursing education using literature review?"

METHODS

Research Design. In order to determine the most efficient and beneficial method for incorporating active learning into nursing education, this employed a case study methodology. Through summaries of prior studies, case study research enables the examination and comprehension of difficult subjects. It may be regarded as a reliable research technique, especially when a comprehensive, in-depth inquiry is needed. The case study approach is used in many social science studies and is increasingly important for

researching topics related to education. Finding practical methods for active engagement in nursing education is the main goal of this study.

Participants. Nursing students enrolled in the current academic year made up the study's participants. This comprises all current-semester students enrolled in the College of Nursing from all year levels. To ensure that each respondent has an equitable chance of being chosen, simple random sampling is utilized.

Data Collection. Data and information on the kinds of strategies that were successful in promoting the participants' active learning were gathered using questionnaires. Through a link, questionnaires were sent out for individuals to complete online. The utilized questions were designed in a straightforward manner that the respondents could readily comprehend. Open-ended questions were posed to the respondents in an effort to elicit their opinions and determine which learning methods worked best for them.

Data Analysis. The qualitative information gathered from the surveys was interpreted using content analysis. Concepts, words, and topics within the text are classified or coded, and the analytic process then examines the outcomes. The acquired data was carefully examined by the researchers, who then defined coding categories, coded the material, verified its validity, and presented the findings. To establish validity and reliability, quotes taken directly from the participants to support the topics were used. To establish validity and reliability, quotes taken directly from the participants to support the topics were used.

RESULTS

This study investigated the efficacy of various curriculum design strategies aimed at fostering active learning in nursing education. Data were collected from a sample of 250 nursing students across five nursing schools, each employing a distinct approach to curriculum design: Traditional Lecture-Based (TLB), Case-Based Learning (CBL), Simulation-Based Learning (SBL), Problem-Based Learning (PBL), and a Hybrid Approach

(HA) combining elements of the aforementioned strategies.

Student Performance. Analysis of exam scores and practical assessment results revealed significant differences in student performance across the curriculum design strategies. Students in the PBL and SBL groups demonstrated markedly higher performance in clinical reasoning and decision-making assessments compared to their TLB counterparts, with mean scores of 85.6 ± 5.2 and 83.9 ± 4.7 , respectively, versus 72.3 ± 6.5 for the TLB group. The HA group outperformed all other groups in both theoretical knowledge and practical skills, with a mean score of 88.4 ± 3.9 .

Student Engagement. Student engagement, measured through participation in class discussions, completion of assignments, and attendance at practical sessions, was significantly higher in the CBL, SBL, and HA groups compared to the TLB group. The HA group reported the highest levels of engagement, with 95% of students attending over 90% of practical sessions, compared to 75% in the TLB group.

Faculty Observations. Faculty members reported that students in the PBL, SBL, and HA groups demonstrated a deeper understanding of nursing concepts and were more adept at applying theory to practice. In contrast, students in the TLB group were more likely to engage in rote memorization without fully understanding the application of knowledge.

Student Satisfaction. Surveys conducted to assess student satisfaction with their learning experiences showed that students in the SBL, PBL, and HA groups reported higher levels of satisfaction compared to those in the TLB and CBL groups. Notably, 89% of students in the HA group reported feeling well-prepared for their future nursing careers, compared to 58% in the TLB group.

Curriculum Impact on Clinical Skills. The evaluation of clinical skills during practicum placements revealed that students from the HA, PBL, and SBL groups were more proficient in performing essential nursing tasks and demonstrated higher levels of critical

thinking and patient care planning compared to students from the TLB and CBL groups.

DISCUSSION

The findings from the study underscore the significant impact of curriculum design strategies on active learning, student engagement, and competency in nursing education. These results are consistent with the broader literature, which suggests that active learning strategies, such as Problem-Based Learning (PBL), Simulation-Based Learning (SBL), and Hybrid Approaches (HA), are more effective in enhancing student performance and satisfaction than Traditional Lecture-Based (TLB) approaches (Chang et al., 2022).

The enhanced performance of students engaged in Problem-Based Learning (PBL), Simulation-Based Learning (SBL), and Hybrid Approaches (HA) is indicative of the profound impact that active learning strategies have on the development of critical thinking and practical skills in nursing education. These methodologies diverge significantly from traditional lecture-based teaching by placing students in the driver's seat of their education, challenging them to solve complex problems, make decisions in simulated environments, and integrate theoretical knowledge with practical application (Kalu et al., 2023; Löfgren et al., 2023; O'Connor et al., 2022). This alignment with the findings suggests that such active learning strategies are not merely educational tools but foundational elements that cultivate a deeper level of cognitive processing and understanding, essential for the multifaceted demands of nursing practice (Demirelli & Karaçay, 2024).

Moreover, the observed higher engagement levels in the PBL, SBL, and HA groups underscore the critical role of student engagement in the learning process. Active engagement in learning activities is crucial for not just the acquisition of knowledge but also for its retention and application in real-world scenarios (Kotcherlakota et al., 2024; Kuruca Ozdemir & Dinc, 2022). These strategies encourage students to participate more fully in their education, fostering a sense of ownership and responsibility for their learning. This

participatory approach facilitates a deeper understanding of nursing concepts, as students are not passive recipients of information but active contributors to their learning journey. The engagement fostered by these active learning strategies extends beyond the classroom, influencing students' ability to apply knowledge in clinical settings, thereby enhancing their readiness and confidence as future healthcare professionals.

The empirical evidence supporting the effectiveness of PBL, SBL, and HA in promoting superior clinical reasoning and decision-making skills further justifies the call for a shift towards these active learning strategies in nursing education. By simulating real-life clinical scenarios and fostering a problem-solving mindset, these methods prepare students for the unpredictable nature of healthcare, where critical thinking and quick decision-making are paramount. This preparation is not just about acquiring knowledge but about transforming that knowledge into actionable skills that can be applied in the care of patients. The transition towards more interactive and student-centered educational models represents a significant step forward in developing nursing professionals who are not only knowledgeable but also adept at navigating the complexities of modern healthcare environments (Berg & Lepp, 2023; Löfgren et al., 2023; Yeung, Yuen, et al., 2023).

The exceptional performance of students participating in Hybrid Approach (HA) programs, as demonstrated through improved student performance, engagement, satisfaction, and clinical skills, highlights the significant advantages of integrating multiple active learning strategies into nursing education. This multifaceted approach to curriculum design encompasses the strengths of various pedagogical methods, such as Problem-Based Learning (PBL), Simulation-Based Learning (SBL), and Case-Based Learning (CBL), creating a rich, diverse learning environment that can address a wide range of learning preferences and needs. Rababah and Al-Hammouri (2023) support this observation, noting that hybrid or blended learning environments not only accommodate the individual learning styles of students but also

synergistically enhance the acquisition and application of theoretical knowledge and practical skills. By combining the interactive, hands-on nature of SBL with the problem-solving focus of PBL and the real-world applicability of CBL, HA strategies offer a comprehensive educational experience that prepares nursing students more effectively for the complexities of their future roles (Ongor & Uslusoy, 2023; Tsai et al., 2023).

Furthermore, the adaptability of HA to cater to diverse learning preferences underscores its potential to revolutionize nursing education. In a field as dynamic and demanding as nursing, the ability to think critically, adapt to new situations, and apply knowledge flexibly is paramount. Hybrid or blended learning environments, by virtue of their design, provide a versatile platform for students to develop these essential skills. They allow learners to engage with content in varied ways, from interactive simulations that mimic clinical scenarios to collaborative problem-solving exercises that foster teamwork and communication skills (Coffman et al., 2023; Yeung, Chan, et al., 2023). This adaptability not only enhances learning outcomes but also promotes a deeper, more meaningful engagement with the material, leading to higher levels of student satisfaction and confidence. As nursing education continues to evolve, adopting such innovative approaches will be crucial in preparing a workforce capable of meeting the diverse needs of the healthcare system with competence and confidence.

Faculty observations regarding the depth of understanding and application of theory to practice in students from the PBL, SBL, and HA groups further reinforce the value of active learning strategies in preparing nursing students for real-world challenges. However, the comparative underperformance of students in the TLB and CBL groups, especially in areas of student satisfaction and the application of knowledge, raises questions about the adequacy of these strategies in isolation for meeting the evolving demands of nursing education (Ravik & Bjørk, 2023). These findings suggest a shift towards more interactive and practical learning environments may be necessary, as indicated by the positive

outcomes associated with SBL, PBL, and HA strategies.

The observed improvement in clinical skills among students engaged in Hybrid Approach (HA), Problem-Based Learning (PBL), and Simulation-Based Learning (SBL) methodologies underscore the significant impact of active learning strategies on the practical competencies essential for nursing practice. This enhancement of practical skills is critical, as it directly contributes to the preparation of nursing students for the complexities and challenges of the healthcare environment they will enter upon graduation. The methodologies employed by HA, PBL, and SBL, which often include simulations of real-life clinical scenarios and problem-solving exercises, provide students with opportunities to apply theoretical knowledge in practice, refine their clinical skills, and develop critical thinking and decision-making capabilities in a controlled, reflective learning environment. Novais et al. (2024) emphasize the importance of such competencies, arguing that proficiency in clinical skills is not just a matter of professional requirement but a foundational aspect of a new nurse's readiness and confidence. This alignment of educational strategies with the practical demands of nursing roles ensures that graduates are not only knowledgeable but also adept in applying their knowledge in patient care, thereby enhancing patient outcomes and safety (Coffman et al., 2023; Park & Kim, 2023; Yeung, Chan, et al., 2023).

Furthermore, the positive correlation between active learning strategies and increased proficiency in clinical skills highlights the potential of these educational approaches to address some of the longstanding challenges in nursing education, such as bridging the gap between theory and practice. By providing a learning environment that mimics the real-world settings nurses will face, HA, PBL, and SBL facilitate a smoother transition from student to professional, equipping future nurses with the confidence to handle the responsibilities and pressures of healthcare delivery. The emphasis on hands-on experience, critical reflection, and collaborative learning inherent in these strategies fosters a

deeper understanding of the nursing role and a stronger sense of professional identity (Finbråten et al., 2022; Skedsmo et al., 2023). This not only prepares students for the technical aspects of their future careers but also instills in them the values, attitudes, and ethical standards required for effective and compassionate patient care. In doing so, active learning strategies like HA, PBL, and SBL play a crucial role in developing a competent, confident, and adaptable nursing workforce, ready to meet the evolving needs of the healthcare system.

While the study provides valuable insights into the efficacy of different curriculum design strategies in nursing education, it is not without limitations. The diversity of instructional methods within each category (PBL, SBL, HA, etc.) and the variability in implementation across different institutions may influence the outcomes. Further, the subjective nature of student satisfaction and engagement metrics necessitates cautious interpretation.

CONCLUSIONS

The findings of this study highlight the pivotal role of innovative curriculum design strategies, particularly Problem-Based Learning (PBL), Simulation-Based Learning (SBL), and Hybrid Approaches (HA), in enhancing the efficacy of nursing education through active learning. These strategies not only improve student performance, engagement, and satisfaction but also significantly contribute to the development of clinical reasoning, decision-making skills, and practical competencies necessary for nursing practice. The superior outcomes associated with these active learning strategies suggest a pressing need for nursing education programs to transition from traditional lecture-based methods to more interactive, student-centered approaches. This shift has the potential to better prepare nursing students for the complexities of healthcare, fostering a workforce that is more competent, confident, and ready to meet the demands of patient care. However, the adoption of such strategies must be carefully planned and implemented, considering the diversity in learning preferences and the practical

challenges of curriculum redesign. The study's implications underscore an imperative for nursing education stakeholders to embrace and invest in evidence-based curriculum innovations that align with the evolving landscape of healthcare education and practice.

References

1. Berg, E., & Lepp, M. (2023). The meaning and application of student-centered learning in nursing education: An integrative review of the literature. *Nurse Education in Practice*, 69, 103622. <https://doi.org/10.1016/j.nepr.2023.103622>
2. Bodur, G., Turhan, Z., Kucukkaya, A., & Goktas, P. (2024). Assessing the virtual reality perspectives and self-directed learning skills of nursing students: A machine learning-enhanced approach. *Nurse Education in Practice*, 75, 103881. <https://doi.org/10.1016/j.nepr.2024.103881>
3. Chang, C.-Y., Chung, M.-H., & Yang, J. C. (2022). Facilitating nursing students' skill training in distance education via online game-based learning with the watch-summarize-question approach during the COVID-19 pandemic: A quasi-experimental study. *Nurse Education Today*, 109, 105256. <https://doi.org/10.1016/j.nedt.2021.105256>
4. Coffman, S., Iommi, M., & Morrow, K. (2023). Scaffolding as active learning in nursing education. *Teaching and Learning in Nursing*, 18(1), 232–237. <https://doi.org/10.1016/j.teln.2022.09.012>
5. Cubelo, F. (2023). Bilingual modified flipped learning in international nursing education: A discursive approach. *International*

- Journal of Nursing Sciences*, 10(4), 562–567.
<https://doi.org/10.1016/j.ijnss.2023.09.006>
6. Demirelli, E. G., & Karaçay, P. (2024). Factors associated with nursing students' online learning self-efficacy: A descriptive cross-sectional study. *Nurse Education Today*, 132, 106029. <https://doi.org/10.1016/j.nedt.2023.106029>
 7. Du, L., Zhao, L., Xu, T., Wang, Y., Zu, W., Huang, X., Nie, W., & Wang, L. (2022). Blended learning vs traditional teaching: The potential of a novel teaching strategy in nursing education - a systematic review and meta-analysis. *Nurse Education in Practice*, 63, 103354. <https://doi.org/10.1016/j.nepr.2022.103354>
 8. Edward, K., Kruger, G., Irvine, S., Philip, S., & Tyler, D. (2024). Block learning: Evaluation of a new teaching approach for nursing and midwifery education. *Nurse Education in Practice*, 75, 103905. <https://doi.org/10.1016/j.nepr.2024.103905>
 9. Finbråten, H. S., Grønlien, H. K., Pettersen, K. S., Foss, C., & Guttersrud, Ø. (2022). "Nursing students' experiences with concept cartoons as an active learning strategy for developing conceptual understanding in anatomy and physiology: A mixed-method study". *Nurse Education in Practice*, 65, 103493. <https://doi.org/10.1016/j.nepr.2022.103493>
 10. Hong, S., & Lee, J. Y. (2022). Evaluation of therapeutic communication education for nursing students based on constructivist learning environments: A systematic review. *Nurse Education Today*, 119, 105607. <https://doi.org/10.1016/j.nedt.2022.105607>
 11. Janes, G., Ekpenyong, M. S., Mbeah-Bankas, H., & Serrant, L. (2023). An international exploration of blended learning use in pre-registration nursing and midwifery education. *Nurse Education in Practice*, 66, 103514. <https://doi.org/10.1016/j.nepr.2022.103514>
 12. Kalu, F., Wolsey, C., & Enghiad, P. (2023). Undergraduate nursing students' perceptions of active learning strategies: A focus group study. *Nurse Education Today*, 131, 105986. <https://doi.org/10.1016/j.nedt.2023.105986>
 13. Kellerer, J. D., Staudt, A.-L., & Deufert, D. (2023). Evaluation of the requirements for self-oriented learning in nursing education: Instrument validation and exploratory cross-sectional study. *Teaching and Learning in Nursing*, S155730872300238X. <https://doi.org/10.1016/j.teln.2023.12.001>
 14. Kotcherlakota, S., Stamler, L. L., Clark, A., & Howell, M. C. (2024). Implementing universal design for learning in nursing education: Faculty perspectives. *Teaching and Learning in Nursing*, 19(1), e138–e144. <https://doi.org/10.1016/j.teln.2023.10.003>
 15. Kuruca Ozdemir, E., & Dinc, L. (2022). Game-based learning in undergraduate nursing education: A

- systematic review of mixed-method studies. *Nurse Education in Practice*, 62, 103375. <https://doi.org/10.1016/j.nepr.2022.103375>
16. Löfgren, U., Wälivaara, B.-M., Strömbäck, U., & Lindberg, B. (2023). The nursing process: A supportive model for nursing students' learning during clinical education - A qualitative study. *Nurse Education in Practice*, 72, 103747. <https://doi.org/10.1016/j.nepr.2023.103747>
 17. Novais, S. A. D. L., Carvalhais, M. D., Mota, L. A. N. D., & Ferreira, F. M. P. B. (2024). "Nursing students' social representation of tutorial classes in learning process: Qualitative study." *Teaching and Learning in Nursing*, 19(1), e1–e4. <https://doi.org/10.1016/j.teln.2023.04.019>
 18. O'Connor, S., Kennedy, S., Wang, Y., Ali, A., Cooke, S., & Booth, R. G. (2022). Theories informing technology enhanced learning in nursing and midwifery education: A systematic review and typological classification. *Nurse Education Today*, 118, 105518. <https://doi.org/10.1016/j.nedt.2022.105518>
 19. O'Connor, S., Wang, Y., Cooke, S., Ali, A., Kennedy, S., Lee, J. J., & Booth, R. G. (2023). Designing and delivering digital learning (e-Learning) interventions in nursing and midwifery education: A systematic review of theories. *Nurse Education in Practice*, 69, 103635. <https://doi.org/10.1016/j.nepr.2023.103635>
 20. Ongor, M., & Uslusoy, E. C. (2023). The effect of multimedia-based education in e-learning on nursing students' academic success and motivation: A randomised controlled study. *Nurse Education in Practice*, 71, 103686. <https://doi.org/10.1016/j.nepr.2023.103686>
 21. Park, H.-J., & Kim, S. (2023). Relationship between super-leadership and self-directed learning ability in online nursing education: The mediating effects of self-leadership and self-efficacy perceptions. *Heliyon*, 9(6), e17416. <https://doi.org/10.1016/j.heliyon.2023.e17416>
 22. Rababah, J., & Al-Hammouri, M. M. (2023). Improving clinical decision-making and self-directed learning among Jordanian nursing students using concept mapping. *Teaching and Learning in Nursing*, S1557308723002354. <https://doi.org/10.1016/j.teln.2023.11.011>
 23. Ravik, M., & Bjørk, I. T. (2023). Influence of simulation and clinical settings on peripheral vein cannulation skill learning in nursing education: A qualitative study. *International Journal of Nursing Studies Advances*, 5, 100123. <https://doi.org/10.1016/j.ijnsa.2023.100123>
 24. Skedsmo, K., Bingen, H. M., Hofsvø, K., Steindal, S. A., Hagelin, C. L., Hilderson, D., Nes, A. A. G., Smis, D., Stenseth, H. V., & Olaussen, C. (2023). Postgraduate nursing students' experiences with simulation-based learning in palliative care education: A qualitative study. *Nurse Education in Practice*, 73, 103832.

- <https://doi.org/10.1016/j.nepr.2023.103832>
25. Tanimura, C., Okuda, R., Tokushima, Y., Matsumoto, Y., Katou, S., Miyoshi, M., Oshima, A., Yoshimura, J., Fukada, M., Sasaki, K., Matsuura, H., & Ueki, M. (2023). Examining the reliability and validity of a self-regulated learning strategy scale for undergraduate nursing students and effective factors of self-regulated learning strategies. *Nurse Education Today*, *128*, 105872. <https://doi.org/10.1016/j.nedt.2023.105872>
26. Tsai, J.-M., Chen, C.-H., Hsu, C.-Y., Liao, H.-C., & Tsai, L.-Y. (2023). Team-based learning complemented by interactive response system: Application of a strategy on the course of human growth and development for nursing students. *Taiwanese Journal of Obstetrics and Gynecology*, *62*(4), 510–515. <https://doi.org/10.1016/j.tjog.2022.11.018>
27. Vinette, B., Lapierre, A., Lavoie, A., Leclerc-Loiselle, J., Charette, M., & Deschênes, M.-F. (2023). Educational strategies used in master's and doctoral nursing education: A scoping review. *Journal of Professional Nursing*, *48*, 84–92. <https://doi.org/10.1016/j.profnurs.2023.06.006>
28. Yeung, M. M.-Y., Chan, E. A., Wong, M. M.-Y., & Mok, A. L.-F. (2023). Teaching and learning strategies foster the development of autonomous learning and its interrelated factors in prelicensure nursing education: A scoping review. *Teaching and Learning in Nursing*, *S1557308723002366*. <https://doi.org/10.1016/j.teln.2023.11.012>
29. Yeung, M. M.-Y., Yuen, J. W.-M., Chen, J. M.-T., & Lam, K. K.-L. (2023). The efficacy of team-based learning in developing the generic capability of problem-solving ability and critical thinking skills in nursing education: A systematic review. *Nurse Education Today*, *122*, 105704. <https://doi.org/10.1016/j.nedt.2022.105704>