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The Nurse Educators and Practitioners Journal (NEPJ) is a triannual publication of the Nurse Educators and Practitioners Guild, Inc. (NEPraGuild, Inc.), based in Baguio City. It strives to bridge the gap between nursing education and practice by publishing relevant studies and evidence-based practices and procedures. The journal covers a broad scope of the nursing field that include program and course development, teaching and learning approaches, educational and training needs assessment, simulation education, student evaluation, evidence based management, quality improvement, patient safety, interprofessional collaboration, role transformation, nursing administration, policy formulation, technological innovation, quantitative and qualitative research implementation and control, dignity safeguarding research, legal practice boundaries, nursing accountability, transcultural nursing, and health equity.

MISSION

To advance nursing excellence by fostering knowledge sharing, innovation, and policy influence, ultimately improving the quality of nursing education and patient care.

TARGET AUDIENCE

The primary target audience for the NEPJ includes educators (academe or in the clinical setting), clinical nurse specialists, advanced practice nurses, nursing students, researchers, healthcare administrators, and policymakers.

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Perfectly Imperfect Care in a Digital and Disrupted World: Human Experience, Competence, and Well-Being Across Nursing, Health, and Community Contexts

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EDITORIAL

Health care and nursing practice now operate within a landscape shaped by rapid digitalization, evolving educational models, shifting disease burdens, and deep human vulnerability. The studies brought together in this issue collectively examine how individuals, families, students, professionals, and communities experience health, care, learning, and well-being amid complexity, uncertainty, and imperfection.

At the family and community level, research on the impact of excessive online health searches demonstrates how digital information, while intended to empower, often heightens parental anxiety and emotional strain. Parents who rely heavily on online sources frequently encounter conflicting information that intensifies uncertainty rather than reassurance. In parallel, the concept analysis of wabi-sabi in nursing reframes imperfection, transience, and incompleteness as essential elements of caring practice. Together, these studies urge nurses to balance technological engagement with philosophical grounding by cultivating presence, discernment, and acceptance in therapeutic relationships.

Studies addressing occupational and population health further emphasize the embodied realities of care and work. The analysis of musculoskeletal disorders among traditional and modern jeepney drivers documents high prevalence and significant pain severity, particularly among drivers exposed to prolonged physical strain and poor ergonomic conditions. This work underscores the need for context-sensitive occupational health interventions and policy advocacy. Similarly, the mixed-methods study on the quality of life of cancer patients undergoing chemotherapy reveals how physical symptoms, emotional resilience, social support, and meaning-making interact throughout the illness experience. The mixed methods study findings on the Quality of Life of Older Persons reveal that the health-related quality of life of older persons is generally good, reflecting the positive impact of improved access and family support. These findings reinforce the principle that health outcomes arise from lived context rather than isolated clinical indicators.

Ethical complexity and emotional labor surface clearly in the study of nursing students' lived experiences with Do-Not-Resuscitate (DNR) orders. Students describe moral uncertainty, emotional distress, and the profound impact of early exposure to end-of-life decisions. These experiences align closely with findings from studies on teaching modalities during the COVID-19 pandemic, which document how nurse educators navigated abrupt pedagogical shifts, technological barriers, and increased emotional demands. Together, these studies highlight the importance of reflective, supportive, and values-based learning environments in nursing education.

Several studies in this collection focus explicitly on educational innovation and competency development. Research on the effect of Nurseplay demonstrates that experiential and game-based strategies actively strengthen students' critical thinking dispositions. Meanwhile, the assessment of cultural competence among nursing students in Baguio City shows varying levels of preparedness for culturally responsive care, emphasizing the need for intentional curricular integration. The comparative study of QSEN competencies further reveals notable gaps between student self-assessments and nurse educator evaluations, drawing attention to misalignments that may affect readiness for safe and effective practice.

From an institutional and systems perspective, the MPSU BSN graduate tracer study links educational preparation with employment trends and perceived curriculum relevance, offering evidence to guide program improvement. At the community level, the integrated care model for bedridden elderly in Thailand illustrates how local engagement, intersectoral collaboration, and culturally grounded strategies can strengthen long-term care delivery in aging populations.

Taken together, these studies advance a shared message: effective care and education do not emerge from flawless systems but from thoughtful engagement with human experience, contextual realities, and ethical complexity. The collective evidence calls for nursing practice and scholarship that remain technologically informed yet philosophically anchored, competency-driven yet compassion-centered, and system-aware yet deeply human.

This body of work ultimately reaffirms nursing's enduring role—to actively integrate science and humanity, structure and flexibility, and competence and care in a world that remains, by its very nature, perfectly imperfect.

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Perfectly Imperfect: A Concept Analysis of "Wabi-Sabi" in Nursing

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ABSTRACT

Introduction: This study explores *"Wabi-Sabi,"* a Japanese philosophical and aesthetic concept rooted in Zen Buddhism, which values beauty in imperfection, transience, and simplicity. The introduction highlights Wabi-Sabi's contrast with perfectionism, its unique approach to mindfulness, holistic care, humanistic care, and resilience, and its relevance in challenging the medicalization of aging.

Aim: To analyze Wabi-Sabi within Nursing, particularly how nurses can integrate and benefit from this philosophy to enhance well-being and patient care.

Methods: The methodology employed Rodgers' Evolutionary Concept Analysis. Data was collected from Google Scholar, EBSCO, Web of Science, PubMed, and Scopus, using keywords like *"Wabi," "Sabi,"* and *"Wabi-Sabi."* Inclusion criteria were English-language full-text articles and abstracts. The process involved identifying antecedents, attributes, and consequences of the concept, discerning related concepts, and developing model cases.

Results: The results identified eight related concepts (e.g., mindfulness, holistic care) and six core attributes, including nurses' acceptance of imperfection and appreciation of transience. Four antecedents (e.g., exposure to systemic "brokenness," desire for deeper connection) and five consequences (e.g., enhanced nurse well-being, improved patient care) were also found.

Conclusion: *"Wabi-Sabi"* offers a unique lens for nursing, promoting acceptance of imperfection and valuing the "brokenness" in human condition, healthcare systems, and professional knowledge. This approach fosters nurse resilience, self-acceptance, and improved interpersonal relationships, ultimately elevating person-centered care. Recommendations include integrating Wabi-Sabi into nursing education and practice, advocating for compassionate presence, humility, and valuing the imperfect journey of care.

Keywords: *Concept Analysis, Nursing, Wabi-Sabi*

I. Introduction

The philosophy of "Wabi-Sabi," originating in 15th- and 16th-century Japan, presents a profound aesthetic and worldview that champions beauty inherent in imperfection, transience, and simplicity. This philosophy emerged as a counterpoint to prevailing ideals of absolute perfection and elaborate design, drawing heavily from the tenets of Zen Buddhism. It actively promotes tranquility, balance, and a deep, empathetic connection to the natural world and its intrinsic cycles (Ungvarsky, 2025).

While often co-joined and used interchangeably, "Wabi" (侘) and "Sabi" (寂) are distinct yet complementary concepts that collectively form the essence of "Wabi-Sabi" (Avdulov, 2022). "Wabi" refers to an internal, subjective mode of living and perceiving, embodying a philosophical disposition (Roman, 2015). It cultivates an appreciation for qualities as they exist in their natural, unadorned, and raw state. Objects or experiences imbued with "Wabi" are often perceived as approachable, human, and genuinely welcoming. This aspect embodies a humble, modest, and unpretentious form of beauty that necessitates active engagement from the observer for its full discovery and appreciation (Avdulov, 2022).

Conversely, "Sabi" (寂) constitutes an aesthetic construct deeply rooted in the inherent characteristics and transformations of an object over time (Roman, 2015). A fundamental component of the "Sabi" aesthetic experience is a profound appreciation for age and the natural processes of aging. This involves valuing and highlighting natural changes in materials, such as the development of rust, patina, or the effects of wear and tear, rather than attempting to efface or conceal them (Avdulov, 2022). "Sabi" thus describes a distinct phase of beauty that emerges through an object's sustained use and enjoyment, underpinned by the conviction that time enhances, rather than diminishes, aesthetic value (Avdulov, 2022).

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Therefore, "Wabi-Sabi" (侘び寂び) transcends mere observation of external imperfection ("Sabi"); it actively necessitates the cultivation of an internalized state of mind ("Wabi"). This internal disposition is characterized by humility, openness, and an active receptivity that enables the profound appreciation of these imperfections. The "journey" aspect of "Wabi" (Avdulov, 2022) signifies a deeper, continuous process of understanding and acceptance, which extends far beyond a superficial glance at an aged object. This philosophical depth positions "Wabi-Sabi" not as a passive aesthetic appreciation but as an active, internal cultivation of a particular mindset.

In the context of nursing, this philosophical depth holds significant implications. Merely recognizing flaws in a patient's condition or systemic deficiencies within healthcare environments ("Sabi") is insufficient to fully embody "Wabi-Sabi." Nurses must additionally develop an internal disposition ("Wabi") characterized by openness, humility, and active, nonjudgmental engagement with these inherent imperfections. This moves beyond superficial acceptance to a holistic philosophical stance that integrates both internal perception and external reality, thereby transforming apparent defects into sources of deeper connection, authentic compassion, and meaningful professional purpose.

The primary objective of this report is to undertake a comprehensive concept analysis of "Wabi-Sabi" specifically within the domain of Nursing Science. This analysis will particularly focus on elucidating how nurses can effectively integrate and benefit from this philosophy in their professional practice. Adhering to a structured analytical framework, this study systematically clarifies the meaning of "Wabi-Sabi," identifies its defining attributes, explores its antecedents and consequences, proposes a precise conceptual definition, and illustrates its practical manifestation through detailed case studies. To ensure academic rigor and an evidence-based approach, all discussions and interpretations presented herein are exclusively derived from high-impact peer-reviewed journals.[i]

The philosophical tenets of "Wabi-Sabi" offer a robust framework for addressing the pervasive culture of perfectionism frequently encountered in healthcare settings. "Wabi-Sabi" consistently portrays a philosophy that embraces and acknowledges imperfection and transience (Ungvarsky, 2025). This stands in stark contrast to the nursing context, which often imposes an expectation of flawless performance despite the inherent systemic challenges and complexities (Paradisi, 2018). This highlights a significant tension between prevailing healthcare ideals and the realistic nature of human and systemic fallibility.

The concept of "wholeheartedness," often presented as a vital antidote to professional exhaustion in nursing (Paradisi, 2018), finds a synergistic connection with "Wabi-Sabi." By actively promoting an appreciation for imperfection and the nuanced realities of practice, "Wabi-Sabi" explicitly cultivates this sense of wholehearted engagement. This intricate connection suggests that "Wabi-Sabi" is not merely an aesthetic principle but a powerful philosophical framework capable of actively mitigating the detrimental psychological and professional impacts arising from the unattainable ideal of perfection prevalent in healthcare. Its deliberate adoption could significantly enhance nurse well-being and foster more sustainable, compassionate, and ethically grounded nursing practices.

This perspective implies a potential paradigm shift in how healthcare systems define and pursue quality and performance. Instead of a purely deficit-based model solely focused on eliminating flaws, "Wabi-Sabi" could encourage the integration of an acceptance of inherent human and systemic limitations. Such integration could foster greater resilience, cultivate deeper compassion, and promote a more realistic and sustainable approach to care delivery. Ultimately, this would contribute to a healthier work environment for nurses and facilitate more authentic and empathetic patient interactions. Furthermore, embracing this perspective could lead to a more adaptive, less rigid, and more ethically grounded approach to knowledge creation, dissemination, and application within nursing. It encourages continuous learning, fosters critical inquiry, and promotes a humble acceptance that current "truths" and best practices are always subject to future revision, deeper understanding, and ongoing evolution.

II. Methods

A. Concept Analysis Method

This study employed Rodgers' Evolutionary Concept Analysis (ECA) approach to examine the abstract philosophical concept of "Wabi-Sabi" and integrate it into nursing science. As outlined by Rodgers (1989), the ECA method was specifically chosen to move beyond a vague ideal and achieve a comprehensive and practical understanding of the concept's principles, particularly its application and reception by nurses. The analytical process involved a structured set of steps to clarify the concept includes exploration (which systematically explored the contexts in which Wabi-Sabi is utilized, retrieving relevant information from diverse resources across multiple disciplines), definition (focused on objectively defining Wabi-Sabi's core features by identifying its key attributes, its antecedents, and its consequences), and application (aimed to discern concepts related to Wabi-Sabi and develop illustrative model cases to demonstrate the concept in practice).

Following this rigorous, systematic methodology, the ECA successfully clarified the concept's application within the specific nursing context. This analytical transformation converted Wabi-Sabi from a profound but vague philosophical notion into an unambiguous, practical framework. This clearly defined structure allows the concept to be effectively taught and measured as an integral component of compassionate nursing practice and theory development.

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B. Data Source

For data acquisition, an electronic literature review was conducted across Google Scholar, EBSCO, Web of Science, PubMed, and Scopus databases. The data gathering process involved a rigorous keyword search for "Wabi," "Sabi," and "Wabi-Sabi" in article titles and abstracts. Inclusion criteria were limited to full-text articles and abstracts published in English. Through a systematic evaluation of definitions and recurring themes in the retrieved literature, a comprehensive description of Wabi-Sabi in Nursing was formulated, leading to the identification of its relevant attributes, antecedents, consequences, a proposed definition, and specific model cases.

C. Ethical Considerations

Ethical review by an Institutional Ethics Review Board was not required for this research. The study exclusively involved the analysis of existing public documents and did not entail direct interaction with or data collection from living human participants. Consequently, ethical principles such as those articulated in the Declaration of Helsinki, which primarily govern research involving human subjects, were not directly applicable, rendering the study exempt from formal ethical oversight.

III. Results

The study analyzed the concept of "Wabi-Sabi" within nursing, categorizing findings into related concepts, attributes, antecedents, and consequences. Eight concepts were identified as closely related to Wabi-Sabi in nursing, sharing defining attributes: mindfulness, holistic care, humanistic care, resilience, acceptance of suffering/pain, perfectionism, and the medicalization of aging. Furthermore, six distinct attributes were identified as central to Wabi-Sabi in nursing: nurses' acceptance of inherent imperfection and flaws, appreciation of transience and impermanence, emphasis on simplicity and authenticity in care, finding beauty and meaning in brokenness, cultivation of wholeheartedness and compassion, and promotion of humility and openness. The study also delineated four antecedents that precede the manifestation of Wabi-Sabi: nurses' exposure to systemic "brokenness," recognition of human vulnerability and limits, a desire for deeper connection, and philosophical shifts within the nursing profession. Finally, five key consequences resulting from the application of Wabi-Sabi were identified: enhanced nurse well-being, improved interpersonal relationships for nurses, more compassionate patient care, fostered ethical decision-making and self-acceptance among nurses, and a more dynamic understanding of knowledge in nursing.

TABLE 1:
FINDINGS OF WABI-SABI CONCEPT ANALYSIS IN NURSING

Category	Identified Elements
Related Concepts	Mindfulness, holistic care, humanistic care, resilience, acceptance of suffering/pain, perfectionism, medicalization of aging
Attributes	Nurses' acceptance of inherent imperfection and flaws, appreciation of transience and impermanence, emphasis on simplicity and authenticity in care, finding beauty and meaning in brokenness, cultivation of wholeheartedness and compassion, promotion of humility and openness
Antecedents	Nurses' exposure to systemic "brokenness," recognition of human vulnerability and limits, desire for deeper connection, philosophical shifts in the nursing profession
Consequences	Enhanced nurse well-being, improved interpersonal relationships for nurses, more compassionate patient care, fostered ethical decision-making and self-acceptance among nurses, dynamic understanding of knowledge in nursing

IV. Discussion

The Japanese philosophical concept of Wabi-Sabi, deeply rooted in Zen Buddhism, provides a profound framework for appreciating beauty within imperfection, impermanence, and incompleteness. Its influence extends beyond mere aesthetics, offering valuable insights across various domains of human experience, particularly within the healthcare sector. Unlike socio-cognitive mindfulness, which primarily targets stress reduction, Wabi-Sabi cultivates a more profound level of mindfulness by fostering an open, nonjudgmental observation and acceptance of phenomena "as they are" (Martinez, 2019; Lee & Park, 2024).

This philosophy significantly enriches the practice of holistic care. Beyond addressing patients" comprehensive needs, Wabi-Sabi cultivates an aesthetic and ethical appreciation for the inherent vulnerabilities and transience of the human condition. This moves beyond merely restoring balance to valuing "brokenness" as an authentic aspect of reality (Jasemi et al., 2017). Similarly, Wabi-Sabi deepens humanistic care by promoting the discovery of profound meaning in patients' unique life experiences, encompassing aspects such as aging and perceived flaws that humanistic care might otherwise endeavor to overcome

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or mitigate (Roman, 2015; Taghinezhad et al., 2022; Yang & Jin, 2025).

By embracing imperfections and fostering "wholeheartedness" amidst adversity, Wabi-Sabi directly contributes to enhanced resilience. It transforms resilience from a mere coping mechanism into a profound means of discovering beauty and fostering growth within challenging circumstances. This perspective extends beyond a passive acceptance of suffering or pain to the active discovery of an aesthetic and deeper meaning in hardship, thereby cultivating self-acceptance in altered states of being (Paradisi, 2018; Chen et al., 2025; Ungvarsky, 2025).

Crucially, Wabi-Sabi stands in direct philosophical opposition to the pervasive culture of perfectionism. It offers a counter-narrative that champions authenticity and reduces psychological stress by valuing inherent flaws and imperfections (Roman, 2015; Brietta, 2023; Lu et al., 2024). Finally, Wabi-Sabi provides a vital philosophical counterpoint to the increasing medicalization of aging. It advocates for the profound appreciation of natural aging processes and wear as inherently beautiful and meaningful, rather than exclusively perceiving them as pathologies to be combated or reversed (Jecker, 2020; Brietta, 2023; Ungvarsky, 2025).

Wabi-Sabi offers a unique epistemological and aesthetic lens through which to engage with the world, fostering an acceptance of inherent imperfection and flaws by discerning profound beauty in wear, asymmetry, and the natural manifestations of aging, applicable to both inanimate objects and the human condition itself, thereby diverging from the pursuit of unattainable ideals of perfection (Kashish Goel, 2024). This philosophical stance cultivates an appreciation for transience and impermanence, acknowledging the ceaseless flux of all phenomena, including health trajectories and the evolution of knowledge, which in turn fosters humility and intellectual openness (Ungvarsky, 2025). Furthermore, Wabi-Sabi champions simplicity and authenticity in the provision of care, advocating for genuine, human-centered interactions as a preferred modality over overly complex or technologically saturated approaches (Goel, 2024). It unearths beauty and meaning within "brokenness," utilizing metaphors such as Kintsugi to illustrate how perceived flaws can be transmuted into cherished attributes, thereby encouraging self-acceptance and facilitating the repair of fractured relationships (Paradisi, 2018). This philosophy additionally promotes the cultivation of wholeheartedness and compassion directed towards patients, colleagues, and oneself, functioning as a vital antidote to professional exhaustion by embracing the imperfect realities intrinsic to healthcare practice (Paradisi, 2018). Moreover, Wabi-Sabi encourages the cultivation of humility and openness in professional knowledge acquisition and practical application, serving as a reminder to nurses of the dynamic and evolving nature of their discipline. This fosters an ethical approach that embraces authenticity and compassionate presence within inherently imperfect systems, rather than succumbing to paralysis by their limitations (Martinez, 2019).

The increasing relevance and adoption of Wabi-Sabi within nursing are underpinned by several critical factors. Firstly, nurses" persistent exposure to systemic "brokenness" and resource limitations within healthcare environments, frequently characterized by insufficient resources and chronic staff shortages, necessitates the identification of alternative coping mechanisms and robust meaning-making frameworks (Jasemi et al., 2017). Secondly, the routine recognition of human vulnerability, the pervasive nature of suffering, and the inherent limits of control in nursing practice, where professionals consistently confront illness, uncertainty, and the inevitability of human suffering, underscores the imperative for philosophical approaches that authentically embrace these realities (Chen et al., 2025). Thirdly, there has been an emergent desire for deeper, genuinely person-centered connections that transcend mere technical proficiency. This shift is partially spurred by the detrimental impacts of maladaptive perfectionism and is aligned with a broader philosophical reorientation in nursing towards holistic and humanistic care models (Yang & Jin, 2025). Lastly, these overarching philosophical shifts towards holistic and humanistic care paradigms provide a fertile intellectual and practical ground for the integration of Wabi-Sabi, as the nursing profession increasingly transcends a purely disease-focused orientation to one that profoundly values the whole person and acknowledges the inherent imperfections of both the human experience and the healthcare system itself (Jasemi et al., 2017).

Embracing the principles of Wabi-Sabi offers substantial benefits for nursing professionals and the quality of patient care, commencing with a demonstrable enhancement of nurse well-being and a reduction in professional exhaustion and burnout. This is achieved by cultivating self-acceptance and fostering a more profound appreciation for the inherent realities of their demanding profession (Paradisi, 2018). Furthermore, this philosophy facilitates the development of improved therapeutic relationships and strengthens team cohesion, as it encourages the acceptance of perceived "brokenness" in others and promotes the use of empathetic responses to address and mend interpersonal fractures (Yang & Jin, 2025).

Consequently, nurses are empowered to deliver more compassionate, individualized, and adaptable patient care. This approach prioritizes authenticity and acknowledges the inherently evolving and dynamic nature of medical knowledge and patient needs (Goel, 2024). Wabi-Sabi additionally contributes to fostering ethical decision-making and promoting self-acceptance among nurses, enabling them to navigate complex ethical dilemmas with greater humility and inner wisdom (Roman, 2015). Finally, it cultivates a dynamic and continuously evolving understanding of nursing knowledge, thereby encouraging an ongoing process of learning and discovery rather than an adherence to absolute or static truths. This ultimately strengthens professional identity and resilience by enabling nurses

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to find profound meaning in the imperfect yet continuous journey of care (Martinez, 2019).

A. *Proposed Definition*

Wabi-Sabi in Nursing is a philosophical and aesthetic orientation, embraced by nurses, characterized by the acceptance and profound appreciation of inherent imperfection, transience, and incompleteness within the human condition, dynamic healthcare systems, and evolving professional knowledge. It manifests as a nurse's humble, wholehearted, and deeply compassionate engagement with "brokenness", be it physical frailty, emotional vulnerability, systemic limitations, or epistemological uncertainty. This approach seeks to uncover authentic beauty, profound meaning, and inherent grace in flaws, natural aging processes, and the inevitable ebb and flow of life and healing. By fostering nurses' resilience, self-acceptance, and enriched interpersonal relationships, Wabi-Sabi ultimately elevates the quality of person-centered care through valuing the unique, evolving, and often imperfect journey of health, illness, and recovery.

B. *Model Case: An Illustrative Scenario of Wabi-Sabi in Nursing Practice*

In a palliative care unit, Nurse Anya applies Wabi-Sabi principles while caring for Mr. Chen, an 85-year-old with advanced heart failure. Despite the medical team's initial inclination towards aggressive interventions, Mr. Chen prioritizes peace and dignity. Anya acknowledges life's impermanence and the body's natural decline, shifting her focus from "fixing" to compassionate "being with" him. She appreciates the beauty in his aged hands and his quiet acceptance, maintaining a simple, naturally lit room. When Mr. Chen expresses regret over his decline, Anya helps him find grace in his limitations by focusing on memories and present tranquility. She facilitates open communication with his family, guiding them to accept life's transience and find peace in his authentic final chapter, embodying the "kintsugi" metaphor through compassionate presence.

C. *Related Case: A Scenario with Partial Wabi-Sabi Elements*

Nurse Ben, a highly efficient and meticulous practitioner on a medical-surgical floor, provides excellent technical care to Ms. Lee, 70, recovering from abdominal surgery. He ensures precise medication administration, meticulous wound care, and clear communication, reflecting strong holistic and humanistic elements. However, Ben's primary focus remains on achieving a "perfect" recovery, frequently urging Ms. Lee to "get back to normal" and recommending creams for her surgical scar. While empathetic to her distress, he struggles to embrace the "imperfection" of her healing as a natural part of her unique human experience, missing opportunities to appreciate the aesthetic and philosophical dimensions of her "brokenness" and transience. His well-intentioned pursuit of a flawless outcome limits his ability to fully engage with the beauty inherent in her altered state and the healing journey itself.

D. *Contrary Case: A Scenario Lacking Wabi-Sabi Elements*

Nurse Chloe, in a high-pressure emergency department, prioritizes rapid intervention for Mr. Davis, a 60-year-old homeless man with a severe, neglected chronic leg wound. She focuses on quickly cleaning, medicating, and discharging him according to protocol, viewing the wound solely as a pathological issue requiring immediate technical "fix." Chloe displays frustration at the "messiness" and Mr. Davis's perceived lack of self-care, missing opportunities to acknowledge his resilience or the wound as part of his life journey. Her communication is curt and directive, driven by efficiency and strict policies, leaving no room for compassionate engagement. The cluttered environment reflects this focus on immediate intervention over a calm healing space. Chloe's approach demonstrates an absence of acceptance for imperfection or appreciation for the transience of his condition, failing to recognize potential meaning or grace within his "brokenness," resulting in a transactional rather than therapeutic interaction.

E. *Scope and Limitation*

This study's scope is strictly limited to a comprehensive concept analysis of "Wabi-Sabi" which is a philosophical orientation valuing imperfection, transience, and simplicity, specifically within the domain of Nursing. Employing Rodgers" Evolutionary Concept Analysis (ECA) method, the research systematically clarifies the concept by identifying its attributes, antecedents, and consequences, and proposing a definition for professional application. Data were exclusively sourced from an electronic literature review of high-impact, English-language peer-reviewed journals across five major academic databases. The primary goal is to theoretically integrate Wabi-Sabi to enhance nurse well-being and compassionate patient care.

As a concept analysis, the study is purely theoretical and non-empirical. It does not involve primary data collection from human participants or clinical settings, restricting conclusions to interpretations of existing literature. The findings, therefore, do not validate the practical efficacy or measurability of Wabi-Sabi principles in clinical practice. Furthermore, this concept analysis excluded non-English and grey literature may limit the breadth of philosophical interpretations and cross-cultural applicability within global nursing contexts.

V. Conclusion

The concept analysis reveals that Wabi-Sabi challenges the dominant culture of perfectionism in healthcare by emphasizing the beauty inherent in imperfection, transience, and simplicity. When adopted by nurses, this philosophical and aesthetic approach is defined by a profound understanding and acceptance of the inherent imperfection and incompleteness within the human condition, the evolving healthcare system, and professional knowledge. This perspective enables a nurse's selfless, sincere, and intensely compassionate

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engagement with "brokenness." By deeply valuing the distinct, changing, and often flawed journey of health, illness, and recovery, Wabi-Sabi ultimately enhances person-centered care by fostering nurses' resilience, self-acceptance, and improved interpersonal relationships. Ultimately, integrating Wabi-Sabi offers a "graceful" approach to patient outcomes that prioritizes dignity and flexibility over the pursuit of unattainable, flawless restoration.

VI. Recommendation

Building on the concept analysis, this study proposes actionable steps for weaving the philosophy of Wabi-Sabi into the fabric of the nursing profession.

- In *Nursing Education*, curricula should actively integrate these principles early on to gently challenge students' perfectionistic leanings. This involves fostering self-reflection and mindfulness to prepare future nurses to appreciate the world as it is, including the beauty of natural aging and the inherent limits of medical fixes.
- In *Nursing Practice*, Wabi-Sabi calls for a shift in clinical settings toward cultivating compassionate presence and wholeheartedness. This means prioritizing simplicity and authenticity in care, consciously valuing a patient's flaws, scars, and altered states as essential parts of their human story. Adopting this stance improves therapeutic relationships and safeguards nurse well-being by acknowledging and accepting both systemic and personal limitations.
- In *Community Health Nursing*, the philosophy encourages practitioners to embrace the imperfection inherent in community health outcomes, recognizing that meaningful progress is often slow and nonlinear. The practice should center on cultivating authentic relationships with diverse groups, promoting resilience by finding meaning in adversity, and delivering interventions with simplicity and practicality.

Ultimately, Wabi-Sabi instills a deep sense of professional humility crucial for navigating the complex realities of health and social justice.

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Conflict of Interest

The author declares that there is no conflict of interest, financial or otherwise, to disclose.

Disclosure of Use of Generative AI

To ensure the highest level of clarity and readability, AI was utilized as an assistive tool for organizing ideas and refining the grammar of this article. The content, core ideas and insights are entirely the author.

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Inter-Rater Agreement and Competency Gaps in QSEN: A Comparative Study of Student Nurse Self-Assessment and Nurse Educator Evaluation

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ABSTRACT

Introduction: Integrating of Quality and Safety Education in Nursing (QSEN) competencies in nursing education aims to support advancing education in nursing as well as ongoing initiatives to improve and safeguard health care quality and patient safety.

Aim: To determine the level of competencies of student nurses to policy guidelines on quality and safety education.

Methods: The study utilized descriptive-comparative design, employing convenience sampling. It involves 213 Student Nurses and 83 Nurse Educators using a highly valid and reliable modified QSEN survey. This study was conducted at the University of Hail, Hail City, Saudi Arabias. Data collection was conducted from August 1 to September 30, 2024.

Results: There is a very strong agreement (≈0.96) in ranking the competencies. While both groups rated to Teamwork and Collaboration as the highest competency, participants rated Evidence Based Practice (EBP), Informatics, and Quality Improvement (QI) as the lowest rated competencies. Most notably, it is only in the Patient Centered Care where a difference by one demographic (gender) is shown, as male (student nurses) respondents rated their competency higher ($p = 0.032$), and a substantial magnitude difference in EBP scores is observed (NE 2.93 vs SN 2.73) which indicates a gap in perceived confidence of the student.

Conclusion: While student nurses and educators' hand in hand recognize achievement across the six QSEN domains as confirming basic content mastery, the unrelentingly low scores in EBP, Informatics, and QI unquestionably warrant fundamental changes in the curriculum. These changes need to improve mastery in these areas, and more importantly, confidence evident in the EBP score gap so that graduates will be ready to practice with these skills.

Keywords: *Competency-Based Education, Comparative Study, Quality and Safety Education for Nurses, Students, Nursing*

I. Introduction

Nursing education must include and integrate quality and safety in patient care as a requirement due to the nature of the field. Each of the six-patient care nursing-centered competencies outlined by QSEN have associated knowledge, skills, and attitudes (KSAs) which nursing professionals are expected to carry throughout their careers (Marcomini et al., 2021; Altmiller, 2013; Armstrong et al., 2009). The purpose of integrating QSEN competencies into nursing education is to optimize the educational experience, promote quality improvement in healthcare, and to protect patient safety (Melnyk et al., 2014; Harrison, 2014). This study focuses on nursing students in Saudi Arabia due to the fast growing and modernizing of the healthcare system in the country which demands a highly skilled nursing workforce. This is particularly true as the Kingdom of Saudi Arabia (KSA) is rapidly adopting national healthcare system standards and is aligning its standards with QSEN. Although the Kingdom of Saudi Arabia (KSA) has begun to implement the SCFHS model with respect to Patient-Centered Care and Evidence-Based Practice which parallels QSEN principles, the comprehensive and intentional incorporation of the QSEN framework across all nursing programs is either inconsistent or has only recently begun to attract attention. Nursing programs that integrate these competencies into their educational practices can best equip their graduates to be responsive to the demands of contemporary health care systems.

The literature indicates an increasing concern regarding nursing students' preparedness to utilize QSEN competencies in practice. There is an abundance of literature advocating for the inclusion of the teaching of quality and safety competencies in nursing curricula. However, there still seems to be a lack of understanding of the extent to which students and faculty understand and apply these competencies. For example, many

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nursing students state that they feel unprepared and lack the necessary confidence to utilize quality improvement and evidence-based practice during their clinical placements (Cadorette et al., 2024; Cengiz & Yoder, 2020). Research indicates that many nursing programs do not seem to adequately bridge the theory–practice gap in their curricula, resulting in discrepancies in the evaluation of competencies from the perspectives of the faculty and students (Miller & LaFramboise, 2009; Ambrosio-Mawhirter & Criscitelli, 2018). The presence of these gaps' points to the need for further research to understand students' perceptions of QSEN competencies in relation to faculty perceptions in order to identify barriers that may impact effective teaching.

The results of this study have the potential to affect the policies regarding quality and safety education in nursing. Student nurse competence assessments to QSEN will enable researchers to evaluate nursing education's support of discipline-specific curriculum integration and instructional methods. The study will provide evidence-based information on how much nursing education currently addresses the current and evolving demands of the profession and the clinical practice setting as well as stimulate further research to address quality and patient safety issues (Chenot, 2020; Lee et al., 2015). The study will assist in enhancing the academic institutional frameworks and policies as well as create a culture for continuous improvement and updating of mechanisms of policies affecting patient care (Schaar et al., 2015; Young et al., 2021; McKown et al., 2011).

This study was developed to enhance policy guidelines on quality and safety education thereby increasing the level of competencies of student nurses. Specifically, this study assessed the level of competencies of student nurses to policy guidelines on quality and safety education. The study examined the six (6) competencies of QSEN and the level of students' competencies as well as nurse educator assessment of those competencies. The significance of this study lies within its ability to provide perspective on the QSEN competencies of the student nurses at a higher educational institution. The study findings will be used to develop a baseline for the level of competencies, therefore providing foundational data to inform future investigations of the pedagogical, institutional and sociocultural factors that can affect the development and use of the critical patient safety and quality competencies. This will also allow for research opportunities to assess quality and patient safety needs to support academic institutions policy and guidelines for student nurse's experiential learning, with the intent of stimulating further in-depth research to investigate the underlying factors that cause variation in the development of student competencies.

II. Methods

Research Design

The study utilized a descriptive-comparative design to analyze and interpret the current status of nursing competency assessments.

Participants and Sampling

Two populations were selected for this study, those being Student Nurses (SN) and their Nurse Educators (NE). The Student Nurses (SN) and their respective Nurse Educators (NE) that were selected for this study utilized convenience sampling. There was a total of 296 participants in this study, which consisted of 213 Student Nurses (SN) who completed surveys and 83 of their Nurse Educators (NE). The inclusion criteria for students in this study were based on the level of their baccalaureate nursing education; therefore, only students from Levels 5, 6, 7, and 8 of the baccalaureate nursing program were allowed to participate, as it is during these levels of the baccalaureate program where formal introduction to the quality and safety education for nurses (QSEN) competencies occur. These include the use of Evidence-Based Practice (EBP), Quality Improvement (QI) and Informatics (NI). These concepts are embedded with the introductory course in the baccalaureate nursing curriculum that is offered in Level 5. In addition to requiring students to be enrolled in the baccalaureate nursing program at the time of the survey, students also had to have an ongoing hospital clinical experience, as well as a hospital clinical rotation that lasted a minimum of one month in one specific clinical area, and have been supervised by the same Nurse Educator for the duration of the clinical rotation for consistency purposes. Due to the absence of hospital clinical experience, students in Levels 1 through 4 of the baccalaureate nursing program were excluded from participating in the study. A Nurse Educator (NE) was eligible to participate in the study if they were currently teaching students in Levels 5-8 of the baccalaureate nursing program, held a minimum of a master's degree, was registered to practice as a nurse, and had personally supervised each student for their one-month clinical rotation, allowing them to evaluate their clinical competence.

Setting

The University of Hail (UOH) is the only Public University in Hail, Saudia Arabia with an enrollment of over 1200 students for the College of Nursing. The university of Hail functions in a bi-campus system which is segregated, a relevant nuance in the examination of gender-based disparities in competencies. The College of Nursing, with the first Degree Nursing Program, has a multi-national faculty of around 90, which is valuable for the educational context from which the student nurses in this study and their Nurse Educators were selected.

Instrumentation

The primary data collection tool was a modified paper-and-pencil questionnaire based on the Quality and Safety Education for Nurses (QSEN). The instrument had two parts: Part I gathered the demographic profile (Sex, Age, Year Level) and was answered only by Student Nurses; Part II assessed the Level of Nursing Competence based on the six QSEN competencies (Patient-Centered Care, Teamwork, EBP, QI, Safety, and Informatics) and was completed by both Student Nurses (self-assessment) and Nurse Educators

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(student assessment). Competence was measured using a 4-point Likert scale interpreted via weighted means, where scores from 3.5–4.0 indicated a High Level of Competence (HLC) or extensive experience, and 2.5–3.49 indicated a Moderately High Level of Competence (MLC) or good experience. The tool was rigorously validated in the Saudi Arabian context, receiving a highly valid average score of 4.5 from a panel of five experts specializing in psychometrics, EBP, patient safety, nursing education, and informatics.

Furthermore, pilot testing with 15 participants each (nurse educators and student nurses) was conducted demonstrating adequate internal reliability with a Cronbach's alpha of alpha = 0.889 for nurse educators and 0.90 for student nurses.

Data Collection and Analysis

Data collection began after securing permission from IRB of the University of Hail. Nurse educators who are not involved in the teaching or evaluation of the Student Nurses from level 5-8 distributed the questionnaires to students during the first and second weeks of their second semester duty (Academic Year 2024-2025). Nurse Educators utilized a focused evaluation tool (i.e., only 10 key competencies) and maintained running observational notes during the students' duty hours. Therefore, they could complete an accurate final evaluation within 24–48 hours after the last day of their duty. The specific competencies evaluated were only those which the SNs had been scheduled to perform during the initial portion of the rotation (weeks 1–2). The Nurse Educators did not include any competencies that were scheduled to be completed later in the rotation as part of the evaluation tool used for this study. Data collection was conducted from August 1 to September 30, 2024.

Ethical Consideration

This study has been approved by the IRB of the University of Hail (H-0223-32). Confidentiality, privacy, and the voluntary nature of the participants' withdrawal any time without penalty were considered in the study. The study has been designed and performed in accordance with the provisions of the Declaration of Helsinki of the World Medical Association which deals with the ethical aspects of medical research on human subjects.

Statistical Analysis

Various methodologies have been developed to reflect on every facet comprehensively, which is why this particular study applies various methods. To measure the demographics of the respondents, the young adult, the age scope, and the sex of the young adult, the frequency and percentage descriptive statistics created a profile. To see the student competency level over the various dimensions of QSEN, a weighted mean on a particular 4-point scale was used. The study relied on inferential analytics to address two main objectives using the independent samples t-test. The first was to analyze whether a demographic characteristic, such as sex, significantly affects the competency score. Secondly, is to determine the Inter-Rater Difference by comparing the Student Nurses' self-assessment scores with the Nurse Educators' external assessment scores.

III. Results

Table 1 presents the demographic characteristics of the participants. Of the 213 participated in the study, majority of them were males (53%), 25 years old and below (55%) and belonged to level 5 (33%).

TABLE 1: Demographic Characteristics of the Participants. (N=213)

Demographic Characteristics	Category	Frequency	Percentage (%)
Sex	Male	113	53
	Female	100	47
	Total	**213**	**100**
Age in Years	25 and below	117	55
	26-30	53	25
	31 and above	43	20
	Total	**213**	**100**
Year Level	Level 5	71	33
	Level 6	29	14
	Level 7	52	24
	Level 8	61	29
	Total	**213**	**100**

Table 2 presents the Level of Competency of Student Nurses (SN) and Nurse Educators (NE) in QSEN Dimensions. Student Nurses (SN) and Nurse Educators (NE) reported a moderately high level of perceived competency (MLC) for each of the six Quality and Safety Education for Nurses (QSEN) modules/areas/components. Teamwork and Collaboration (SN 3.30, NE 3.22) was the most competent, followed by Safety (SN 3.23, NE 3.17) and Patient-Centered Care (SN 3.18, NE 3.17). In contrast, both groups reported the smallest values concerning Evidence Based Practice (SN 2.73, NE 2.93), Quality Improvement (SN 2.76, NE 2.81), and Informatics (SN 2.73, NE 2.82).

TABLE 2: Level of Competency of Student Nurses (SN) and Nurse Educators (NE) in QSEN Dimensions

	Indicators	Weighted Mean (SN)	Weighted Mean (NE)	Verbal Interpretation
1	Patient-Centered Care	3.18	3.17	MLC
2	Teamwork and Collaboration	3.30	3.22	MLC
3	Evidence-Based Practice	2.73	2.93	MLC
4	Quality Improvement	2.76	2.81	MLC
5	Safety Indicators	3.23	3.17	MLC
6	Informatics Indicators	2.73	2.82	MLC

*__MLC__ – *Moderately High Level of Competence*

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Table 3 presents the differences between demographic characteristics and QSEN dimensions as perceived by the student nurses. The Statistical analysis indicated that demographical data of student nurses (sex, age, and year of study) have shown no substantial difference. The only exception was in Patient-Centered Care where significant difference was detected with patient centered care and satisfaction, when respondents were divided into groups of different sex ($p = 0.032$). More fundamentally, participant male student nurses (Mean = 3.26) rated their competency in this QSEN domain to be significantly higher than their female counterpart student nurses (Mean = 3.09). Unlike this case, all other QSEN indicators were accepted by null hypothesis with no significant difference in age, gender and year level of study between groups for Teamwork and Collaboration, Evidence-Based Practice, Quality Improvement, Safety, and Informatics and also with Patient Centered Care.

TABLE 3: DIFFERENCES BETWEEN DEMOGRAPHIC CHARACTERISTICS AND QSEN DIMENSIONS AS PERCEIVED BY THE STUDENT NURSES

QSEN Indicator	Mean (M)	Mean (F)	t (Sex)	p-value (Sex)	Decision (Sex)	Interpretation (Sex)	F (Age)	p-value (Age)	Decision (Age)	F (Year Level)	p-value (Year Level)	Decision (Year Level)
Patient-Centered Care	3.26	3.09	2.16	.032*	H0 rejected	Significant	2.419	0.091	H0 accepted	1.754	0.157	H0 accepted
Teamwork and Collaboration	3.35	3.25	1.319	0.189	H0 accepted	Not significant	0.568	0.568	H0 accepted	0.457	0.712	H0 accepted
Evidence-Based Practice	2.76	2.71	0.885	0.377	H0 accepted	Not significant	2.846	0.06	H0 accepted	0.096	0.962	H0 accepted
Quality Improvement	2.76	2.77	-0.019	0.985	H0 accepted	Not significant	0.004	0.996	H0 accepted	0.54	0.656	H0 accepted
Safety	3.28	3.17	1.536	0.126	H0 accepted	Not significant	1.306	0.273	H0 accepted	0.966	0.41	H0 accepted
Informatics	2.72	2.74	-0.15	0.881	H0 accepted	Not significant	1.884	0.154	H0 accepted	0.208	0.891	H0 accepted

Table 4 presents the QSEN mean scores and inter-rate rank agreement. QSEN competency mean scores indicate SNs self-assessments and educator's assessments have positive association (≈0.96), meaning both parties arrive at similar conclusions about students' strengths and weaknesses. Teamwork and Collaboration got SN 3.30 while NE 3.22. In general, Safety and Patient Centered Care were considered the top rated while others, Informatics, Quality Improvement and Evidence-Based Practice, were bottom rated, indicating mutual areas for growth. The most discrepancy was in regard to EBP which NE rated higher (Mean = 2.93) than students' self-assessment (Mean = 2.73), indicating students might lack confidence in this area while NE educators hold elevated views about students' capabilities.

TABLE 4: QSEN MEAN SCORE AND INTER-RATER RANK AGREEMENT

QSEN Indicator	Student Nurse (SN)	Nurse Educator (NE)	Rank Agreement
Teamwork and Collaboration	3.30 (1st)	3.22 (1st)	High
Safety	3.23 (2nd)	3.17 (3rd)	High
Patient-Centered Care	3.18 (3rd)	3.17 (2nd)	High
Informatics	2.73 (5th)	2.82 (5th)	High
Quality Improvement	2.76 (4th)	2.81 (4th)	High
Evidence-Based Practice	2.73 (5th)	2.93 (6th)	Moderate (Disagreement on Magnitude)

IV. DISCUSSION

On the Level of Competency of Student Nurses (SN) and Nurse Educators (NE) in QSEN Dimensions

Overall, the levels of competency among Nurse Educators (NE) and Student Nurses (SN) with respect to the six Quality and Safety Education for Nurses (QSEN) areas reflected a Moderate Level of Competency (MLC) in each area. The highest level of competency was in the area of Collaboration and Teamwork, which corroborates the findings of other studies that similarly reported high competency levels in collaboration among nurses and students (Sarage et al., 2020; Steven et al., 2019). This demonstrates that both SN and NE consider collaboration and coordination to be the core of nursing practice. This might be the result of the diverse active pedagogical techniques designed to develop and evaluate outcomes of nursing students, such as teamwork and safety practice simulations, which are common practice in nursing education programs (Cengiz & Yoder, 2020).

Competency scores have been consistently low for both Student Nurses (SN) and Nurse Educators (NE) in areas of Evidence Based Practice (EBP), Quality Improvement (QI) and Informatics, which can be further explained by utilizing the framework provided by Benner's Novice-to-Expert Model. The model outlines clinical skills acquired through a developmental process that takes the nurse from a

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Novice, who relies on rules, to an Expert, who utilizes intuition (Landers et al., 2020). The types of competencies found in the areas of EBP, QI and Informatics require the nurse to think abstractly, to analyze systems, and to synthesize large amounts of information to address the needs of patients that are unpredictable and variable – all of which are hallmarks of the Competent or higher stages of practice.

Given the fact that many nursing students are still operating at either the Novice or Advanced Beginner stage of practice, it is likely that their self-reported Moderately High Levels of Competence (MLC) in these system focused competencies would reflect a level of competency consistent with where they are developmentally. However, because these competencies are critical to the ability to improve the overall quality of healthcare on a systemic basis, there is clearly a strong case for revising curricula to move students along the developmental continuum faster so that students can demonstrate greater levels of competency in these areas early in their career. This finding also corroborates literature concerns regarding the lack of adequate preparation in EBP and QI within nursing education (Al-Ratrout et al., 2025; Sanford et al., 2021). EBP proficiency is often low for newly graduated Registered Nurses, and this challenge in fully integrating these competencies has been noted in other studies (Sanford et al., 2021; Marcomini et al., 2021). It appears from literature that nursing education has generally succeeded in establishing foundational competencies like Safety and Patient-Centered Care but still faces significant challenges in providing robust education and achieving high competency levels in EBP, QI, and Informatics, which are essential for systemic health improvement (Shin & Roh, 2020).

Earlier research shows similar findings to this current study, for instance, Bianchi et al. (2016) noted that the navigation of competencies pertaining to patient safety and teamwork is integrated into nursing education more than those that deal with the promotion of QI and EBP (Bianchi et al., 2016). In the same way, one study emphasized that in comparison to more concrete areas such as patient safety and care, nursing students had lower confidence and competency in evidence-based practice (Cengiz & Yoder, 2020). Hence, the dual acknowledgment of the significance of all QSEN dimensions and the pedagogical competencies of nursing students and educators reveal the imperative for more focus and refined strategies for the teaching of these essential competencies. Such findings suggest that nursing educational programs should begin addressing the deficiencies in the relevant EBP, QI, and Informatics competencies. This is important because, as the healthcare field focus on quality and safety issues in patient care deepens, nursing graduates without these competencies will be ineffective as healthcare providers (Mako et al., 2016; McKown et al., 2011). Thus, the results support the need for further nursing curriculum changes so that all the QSEN competencies can be taught and integrated, thereby enhancing the overall preparedness of nursing students for the job market.

Differences between demographic characteristics and QSEN dimensions

The difference between the perfection male and female respondents are in regard to their respective ratings in this QSEN domain is equally troubling. This is also consistent with the literature outlining similar gendered misalignments within healthcare settings in which male healthcare professionals are often overconfident in their asserted healthcare competencies (SANÇAR et al., 2023; Cengiz & Yoder, 2020). Interestingly, the only gap in competencies across QSEN objectives was in Patient Centered Care. For the other QSEN objectives: Teamwork and Collaboration, Evidence-Based Practice, Quality Improvement, Safety, and Informatics, no differences were noted as to which gender or which year of study respondents were in. There is no other QSEN objectives presented with significant differences in average competencies which also supports the findings from Yang's (2022) study. It suggested that the equilibrium of perceived competencies across nursing students from varying demographic backgrounds is synthesized from identical educational interventions (Yang, 2022). The widespread acceptance of the null hypothesis across QSEN objectives implies that the respondents' educational experiences have provided nursing students with the educational foundations necessary to mastery these competencies irrespective of demographic factors and ensures that these educational experiences are offered to nursing students systematically across healthcare educational programs.

The findings of this data correspond with the literature regarding Patient-Centered Care (PCC) as an important aspect of nursing. The reported strong competency in the PCC domain found in male nursing students may result from certain sociocultural aspects that shape self-assessments of competence and confidence in domains considered to be more emotional and relational. As other scholars affirm, these dimensions, which are often perceived as relational and emotional care, are frequently considered socially constructed and may be more disparate due to the socially prescribed roles attributed to the female sex as being socialized to be more empathetic, caring, and nurturing (SANÇAR et al., 2023). This may lead to a different self-dynamic for individuals in highly competitive educational settings (Mohamed et al., 2024; Arani et al., 2023). On the other hand, the equal scores in the domains of Teamwork, Safety, and Quality Improvement also correspond with findings from other studies where no strong association was present between certain demographic characteristics and perceived competence in these domains (Altmiller & Hopkins-Pepe, 2019). This indicates that the current nursing education curriculum may have successfully equalized the self-efficacy perceptions across genders in domains not related to direct patient care. This success may be a result of educational practices that teach in a manner inclusive of the divergent characteristics of individuals.

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The absence of experiences based on the respondents' ages and years of study reflects the need for future study that examines whether differentiated teaching and/or clinical practice environments impact the degree to which participants believe they possess certain competencies across a heterogenous student population (Alanazi et al., 2024). Deficits portrayed by the results, while reflecting the increased equilibrium in nursing students' general competencies, and the pronounced gender gaps in regard to patient-centered care, warrant additional scrutiny and/or study in regard to how teaching strategies facilitate the bolstering of self-efficacy among women in nursing to a greater degree. Clarification of such nuances would be fundamental to structuring efforts directed at driving self-efficacy at higher, and lower, levels across various strata to enhance patient care, as the QSEN competencies in nursing education advocate.

On QSEN Mean Scores and Inter-Rater Rank Agreement

The correlation of the data is strong, suggesting that the SNs and NEs consider the same indicators as strong or weak in the educational attainment of the SNs. It is not surprising that Teamwork and Collaboration is the highest rating for both groups as these indicators in nursing education are essential. The ratings of Safety and Patient-Centered Care were also high and are consistent with the findings of Pauly-O'Neill et al. as these core competencies were deemed essential to nursing practice (Pauly-O'Neill et al., 2013).

In contrast, both groups reported lower marks in Informatics, Improvement of Quality, and Evidence-Based Practice (EBP), the latter being the most pronounced gap. The difference in Evidence Based Practice (EBP) scores – where Students' ratings of their own abilities were significantly lower than those assigned by their Nursing Educators can be effectively explained using Bandura's Self-Efficacy Theory. According to this theory, self-efficacy is defined as an individual's belief in their capability to accomplish a specific task to achieve a particular goal (Bandura, 2006). It is apparent that while students have developed some level of competence in EBP (as assessed by the NEs), students' self-efficacy is extremely low, therefore, students lack confidence in their own ability to independently apply complex EBP skills in a clinical setting. As such, rather than only educating students on EBP knowledge, educational programs need to develop explicit self-efficacy development by creating mastery experience opportunities. Additionally, there are practical strategies that can be implemented to build confidence, in addition to competence, including mandatory assignments with a high degree of fidelity, i.e., the use of simulated patient care activities to develop PICO questions in practice or using high-fidelity simulators to practice the appraisal and implementation of research studies. While NEs rated EBP higher compared to SNs , it does, however, reflect a certain degree of EBP that the students might be experiential counters while the educators might be experiential endorsers. The pattern in question could stem from an absence of encounters with EBP in contemporary nursing curricula, or from an absence of EBP in encounters (Bianchi et al. 2016). Besides, the primary, focused, and most recent literature states that the majority of nursing curricula still fail to embrace the QSEN competencies, particularly the competencies in EBP and Informatics (which, accordingly, are the ones less taught and practiced) (Marcomini et al. 2021). The claims of Gallen et al. regarding the necessity of extensive training around competencies are perfectly supported by the fact that students, as a direct result of this gap in preparedness, are unconfident to apply EBP in their practice, and, more importantly, that they feel this gap (Gallen et al. 2019).

The emphasis on teamwork and safety during nursing education has been researched previously and is built upon in this work (Cengiz & Yoder, 2020). Marcomini et al. recognized that nursing students gained more competencies in Patient-Centered Care and Safety due to its incorporation in simulation exercises (Marcomini et al., 2021). This means that even though teamwork and safety have a strong foundational presence, more efforts must be put in to improve nursing students' competencies, confidence, and skills in EBP and Informatics. The low emphasis on Quality Improvement also shows that more efforts must be put into revising the curriculum. Miller and Laframboise recently showed the importance of including these competencies in nursing education and put the emphasis on the overall educational preparation of students to deliver quality patient care (Miller & LaFramboise, 2009). Lastly, there is probably no more important implication of these findings than to highlight the sound, though under-developed, mutual appreciation that there is some degree of EBP, Quality Improvement, and Informatics competences expected of nursing students (SNs) and nursing educators (NEs). The planned future curriculum on these competencies will more than adequately cover the more than probable absence of a "whole" QSEN approach to curriculum design which will, in turn, help nursing students to orient themselves better and feel more confident in their clinical practice.

Study Implications

The results point out multiple important consequences for the nursing curriculum and practice. The persistent low scores for Evidence-Based Practice (EBP), Informatics, and Quality Improvement (QI), recognized by Student Nurses and Nurse Educators, demand a course redesign in the curriculum that moves beyond fundamental safety skills toward concentrated and engaged teaching in these areas. Specifically, to enhance EBP and QI, programs should implement mandatory "mini-research projects" where students apply PICO principles to clinical problems, and integrate high-fidelity simulations focused on error analysis utilizing QI tools like root cause analysis. Furthermore, Informatics competency requires consistent teaching through the mandated use of simulated Electronic Health Record (EHR) systems throughout the curriculum, treating data literacy as a core skill. Moreover, the considerable assessment void in EBP reveals an essential demand that faculty teaching strategies be directed toward augmenting

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students' practice confidence and self-efficacy, which cannot be achieved by knowledge acquisition alone. Finally, the differences in self-evaluation regarding Patient-Centered Care (PCC) by gender demand further investigation to ensure that educational practices are equitable and effectively address the disparity in self-efficacy, possibly through structured reflective practice and assessment reform using methods like Objective Structured Clinical Examinations (OSCEs)

Study Limitations

Several methodological issues impact both the findings from this study as well as its generalizability. Firstly, there is an issue with the generalizability of the results due to the use of a convenience sample, as well as the fact that this study was conducted within one school. Due to the nature of this sample (i.e., 213 Student Nurses and 83 Nurse Educators), it will be difficult for this study's findings to generalize to the entire nursing education community. Therefore, the external validity and generalizability of the study's findings are limited. To improve the representativeness of the sample and increase the transferability of the findings, future studies should utilize either probability or stratified sampling methods and collect data at several different higher educational institutions. Moreover, the use of independent-samples t-tests limited our ability to examine the underlying influences of competency. Therefore, future studies should utilize multivariate statistical analysis to examine the complex relationships between student demographics and QSEN dimensions; and provide a more detailed description of how various student demographic attributes (e.g., age, gender, year level) interact to impact the development of competency.

V. Conclusion & Recommendations

This research confirmed a consensus of belief among student nurses and nursing educators in relation to students' performance across the six QSEN areas, which indicates an appropriate level of understanding of the fundamental content. This study clearly identified a key concern, however, as the data reflects a substantial difference in self-efficacy - specifically in the area of Evidence Based Practice (EBP) - requiring that educational practices be focused on increasing students' knowledge and skills in EBP while simultaneously addressing the disconnect in students' confidence to apply their EBP knowledge and skills in a real-world setting. As there is a persistent gap in competency ratings in the areas of Informatics, EBP, and Quality Improvement (QI), the data clearly provides a rationale for revising the curriculum content of each of these areas, although it has been acknowledged by both groups that other areas such as teamwork, safety, and patient-centered care should continue to receive emphasis. Therefore, the data clearly supports the necessity for reform of the curriculum. To take action based upon the data collected, education policy makers and faculty must first determine and then articulate the next steps to take: (1) Require experiential learning experiences in the form of simulation-based education for EBP and QI using structured, high fidelity simulation and hands-on clinical projects (i.e. PICO project or root cause analysis); (2) Mandate the use of longitudinally integrated simulated electronic health record (EHR) systems throughout the curriculum so that data management and informatics can be treated as a required and assessed clinical skill; and (3) Develop and implement reflective practice and mentoring opportunities that are designed to promote equity and support building confidence among all student demographics in the area of Patient-Centered Care.

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Conflict of Interest

The author declares no financial conflicts of interest. The author is a faculty member and was a previous faculty member of the institution where the study was conducted, and this relationship was managed by employing an independent faculty for data collection.

Disclosure of Use of Generative AI

In the interest of achieving the highest standards of clarity, coherence, and readability, generative artificial intelligence tools were employed solely as assistive aids for the organization of conceptual frameworks and the refinement of grammatical structure within this manuscript. All original content, core ideas, analytical insights, and intellectual contributions remain wholly the product of the authors, with no substantive generation or alteration of the research findings by AI.

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RESEARCH ARTICLE

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Teaching Modalities in Nursing Education: Experiences, Challenges, and Coping Strategies of Educators During the COVID-19 Pandemic

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ABSTRACT

Introduction: The COVID-19 pandemic forced university institutions across the globe to make a sudden transition into the realm of flexible learning. In the Philippines, such change presented peculiar challenges to nursing educators who had to preserve the quality of instruction even in the absence of face-to-face classroom interaction.

Aim: This study explored the experiences, challenges, and coping strategies of nursing educators in the College of Nursing of a state university in Mindanao, Philippines, during the first semester of Academic Year (AY) 2020-2021.

Methods: A qualitative phenomenological design was used to collect the data on eight participants in semi-structured online interviews and thematically analyze it within the six-step framework outlined by Braun and Clarke (2006). Following the ideas of the Transactional Model of Stress and Coping by Lazarus and Folkman (1984), the following three themes were identified: (1) navigating pedagogical disruption and cognitive-emotional adjustment, (2) enduring institutional and instructional strain in online nursing education, and (3) reframing stress through adaptation, empathy, and institutional support.

Results: The results showed that although flexible learning first interfered with the conventional teaching habits, it also engaged educators in reflective adaptation, professional development, and resilience.

Conclusion: The study highlights the need to have institutional empathy, fair digital infrastructure, and ongoing faculty training to maintain a vibrant and caring nursing education in a rapidly changing learning world.

Keywords: N*ursing education, Flexible learning, Online instruction, Coping strategies, COVID-19*

I. Introduction

The coronavirus disease 2019 (COVID-19) pandemic impacted tertiary education within months, causing disruptive systemic changes in universities across the world by putting face-to-face education on hold and using flexible instructional methods to continue teaching and learning without putting everyone at risk. This change was institutionalized in the Philippines when the Commission on Higher Education (CHED) codifying the shift through CMO No. 4, s. 2020 and its subsequent issuances, thus making flexible learning a long-term higher education national strategy. In this study, the term teaching modalities refers to the specific delivery approaches implemented under CHED's flexible learning framework during the COVID-19 pandemic.

This sudden change made educators, who were already under the burden of instruction, research, service, and family roles, even more burdened. The faculty members had to repackage their courses into remote or blended formats with a short preparation time, insufficient training in many cases, and disparities in technology access. Researchers note that the direct transfer of classroom learning to online platforms is unlikely to result in quality unless redesigned through proper pedagogy and supported by the institution (Hodges et al., 2020). Comparative analyses also report more time needed for preparation, assessment issues, and greater inequality in access by teachers and students during the pandemic-driven transition to online and hybrid learning (Adedoyin & Soykan, 2020; Ali et al., 2021).

Although the literature during the pandemic era has primarily addressed the lives and outcomes of students, there have been essentially no studies exploring the lives and difficulties of Philippine nursing educators despite their critical role in keeping instruction going during the crisis. Safety measures forced nursing educators to face unique challenges because clinical

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placements, skills laboratories, and even face-to-face demonstrations were limited due to safety protocols. They had to support learning outcomes and professional standards through alternatives such as virtual simulation, asynchronous modules, and case-based online discussions, usually under conditions of increased psychological and professional demands (Farsi et al., 2021; Kalanlar, 2022; Kaveh et al., 2022). These international issues were aggravated in the Philippines by infrastructural limitations and socioeconomic disparities. Poor internet connectivity, expensive data rates, and disproportionate device acquisition hindered and limited the participation of students and the capacity of educators to provide interactive learning processes. Higher-education sector commentaries highlighted the importance of institutional empathy and policy responsiveness, which are cognizant of frontline faculty day-to-day challenges (Toquero, 2020).

However, teachers exhibited remarkable endurance through collegial cooperation, learning communities and webinars, flexible work schedules, and self-control, which are adaptive coping mechanisms associated with a long-lasting sense of well-being and professional perseverance during the crisis (Cutri et al., 2020; Arslan & Yıldırım, 2021; Kim & Asbury, 2020).

Within this national landscape, during the first semester of Academic Year (AY) 2020–2021, the College of Nursing of a state university in Mindanao, Philippines, introduced new teaching modalities based on the CHED framework of flexible learning. Such modalities incorporated elements of synchronous and asynchronous instruction, learning management system (LMS) platforms, and offline activities to suit the various learning contexts and connection levels of students. In the case of nursing education in the state university, these modifications required significant pedagogical redesign, workload management, engagement with students, and assessment techniques, alongside educators' efforts to overcome technological obstacles and shifting expectations. These experiences play a critical role in understanding how responsiveness can be implemented in the faculty-support system and crisis-prepared teaching models of nursing education.

The purpose of the study was to explore the experiences and challenges and coping strategies of nursing educators at the College of Nursing of a state university in Mindanao, Philippines, in implementing new teaching modalities during the first semester of Academic Year (AY) 2020–2021, the period marking the university's transition to flexible learning. The findings aim to inform institutional policy, strengthen faculty development, and support crisis-resilient pedagogical practices in higher nursing education.

II. Methods

Research Design

A qualitative phenomenological design was used to investigate the lived experiences, challenges, and coping mechanisms of nursing educators who adopted new or alternative teaching modalities during the COVID-19 pandemic. The phenomenological approach was selected because it enables an in-depth understanding of participants' experiences and the meaning they attach to them (Creswell & Poth, 2018).

Research Locale

The study was conducted in the College of Nursing of a state university in Mindanao, Philippines, and data collection was carried out using online platforms that were accessible to the respondents. Google Meet served as the primary medium for the interviews to prevent face-to-face contact and ensure safety.

Participants and Sampling Procedure

A purposive sample of eight (8) nursing educators from the College of Nursing of a state university in Mindanao, Philippines participated in the study. The inclusion criteria were: (1) full-time or part-time faculty membership in the College of Nursing; (2) teaching during the first semester of Academic Year (AY) 2020–2021; and (3) voluntary participation. Individuals who did not meet these criteria were excluded. Sampling continued until data saturation was achieved, that is, no new information emerged from additional interviews (Guest et al., 2020).

Data Gathering Tools

The researcher served as the primary instrument for gathering the data, ensuring sensitivity to participants' responses and context during the interviews. The primary tool of data collection was a semi-structured interview guide. The guide included open-ended questions addressing the experiences of educators in the implementation of flexible learning modalities, the challenges linked with it, and the coping strategies taken. Three experts in nursing education and research validated the guide to ensure clarity, content accuracy, and relevance.

Data Gathering Procedure

Ethical clearance was obtained from the Research Ethics Oversight Committee (REOC) on March 10, 2021. After approval, eligible participants were invited via email and received an information sheet and informed consent outlining the study's purpose, confidentiality, and voluntary participation. Data collection occurred from March 22 to April 18, 2021, through online interviews via Google Meet. A semi-structured guide was used, and interviews (45–60 minutes) were audio-recorded with permission. Follow-up clarifications were done through email or messenger. Before transcription, the researcher practiced bracketing to minimize bias. Interviews were transcribed verbatim, reviewed repeatedly, and supported by field notes. All digital files were securely stored.

Data Analysis

The transcription of the recorded interviews was done verbatim and was regularly frequency checked. To ensure accuracy, the transcripts were reviewed three (3) times against the audio recordings. The thematic analysis of data was performed according to the six stages of analysis presented by Braun and Clarke (2006)

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which was a widely used method in sorting the qualitative data into significant patterns of experience. The approach allowed the identification, refinement, and interpretation of themes that reflected the lived experiences of nursing educators.

Prior to coding, the researcher performed bracketing to consciously suspend preconceived beliefs, ensuring that analysis was grounded in participants' actual narratives.

The following steps were undertaken:

1) Familiarization with the data. The researcher listened to recordings and reviewed transcripts several times to gain a holistic picture, writing notes and first impressions in the margins to capture meaningful ideas, tones, and emotions.
2) Generating initial codes. Significant phrases related to experiences, difficulties, and coping mechanisms were identified and coded.
3) Searching for themes. Similar codes were clustered into conceptual hubs and grouped into preliminary themes.
4) Reviewing themes. Themes were checked for consistency and distinctiveness; overlapping categories were revised or removed.
5) Defining and naming themes. Each theme was clearly defined and labeled to reflect its core meaning.
6) Producing the report. Refined themes were woven into a coherent narrative, supported by selected quotations and relevant literature.

The analysis was iterative, with constant review of data and interpretations. Peer debriefing, member checking, and an audit trail ensured accuracy, authenticity, and faithful representation of participants' intended meanings.

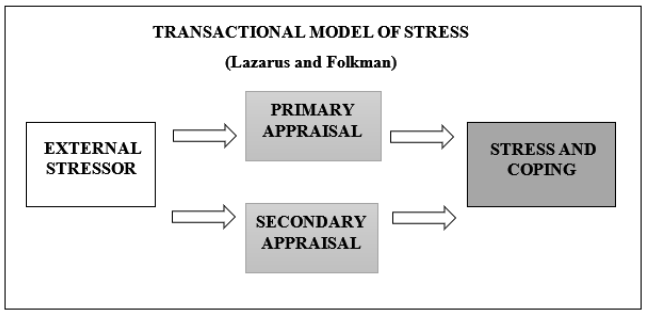
Following the thematic analysis, the themes formed were explained in the context of the Transactional Model of Stress and Coping by Lazarus and Folkman (1984) which offered the thematic framework of interpreting the perceptions and responses of educators to pandemic-related teaching stressors.

In this framework:

- Primary appraisal: This quantified the first impression of educators with the transition to flexible learning of being threatening, challenging, or manageable.
- Secondary appraisal was on the basis of how they evaluated their own resources and capacities to cope including their knowledge of technology, cooperation with colleagues and administrative backing.
- Responses to coping were problem-focused (e.g., the implementation of new teaching methods, schedule changes) or emotion-focused (e.g., self-regulation, acceptance, reframing).

This interpretive lens helped to understand the relationship between stress perception, coping behavior, and professional adaptation, and how educators could potentially transform stressful transitions into opportunities for growth and resilience.

FIGURE 1: TRANSACTIONAL MODEL OF STRESS AND COPING (*ADAPTED FROM LAZARUS & FOLKMAN, 1984*)



Note. The figure shows how external stressors are cognitively appraised and managed through coping processes, leading to adaptive outcomes among nursing educators.

Trustworthiness

The study defined rigor using the criteria of credibility, transferability, dependability, and confirmability as presented by Lincoln and Guba (1985). Triangulation of participant accounts and researcher notes supported credibility. Dependability and confirmability were ensured through the maintenance of an audit trail of transcriptions and analytical memos. Transferability was supported by providing a detailed description of the study context and factors, enabling readers to determine the applicability of the findings to other settings. Credibility was further strengthened through member checking and peer debriefing, which helped validate the accuracy of interpretations.

Ethical Considerations

The Research Ethics Oversight Committee (REOC) of a state university in Mindanao, Philippines granted ethical clearance to the study under protocol number [redacted for peer review]. Participation was voluntary, and informed consent was obtained via email prior to data collection. Participants were guaranteed confidentiality, the right to withdraw at any time, and anonymity during reporting. This study was conducted with the permission of the Dean of the College of Nursing at the state university.

III. RESULTS AND DISCUSSIONS

The chapter gives the data findings and discussion of the semi-structured interviews with the nursing educators of the College of Nursing of a state university in Mindanao, Philippines. This was a study aimed at investigating their lived experiences, challenges, and coping strategies they used during the implementation of new and flexible modalities of teaching under the COVID-19 pandemic.

Three core research questions guided the inquiry:

1. What are the experiences of educators during the practice of new teaching modalities?

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2. What are the challenges educators encountered while implementing these modalities?
3. What coping strategies did educators adopt to address these experiences and challenges?

The transcripts were analyzed using Braun and Clarke's (2006) thematic framework and interpreted through Lazarus and Folkman's (1984) stress-coping model, generating three major themes on educators' experiences, challenges, and coping strategies.

Using this analytic lens, three connected themes were created, illustrating a progression from disruption to adaptation among the educators:

1. Navigating Pedagogical Disruption and Cognitive-Emotional Adjustment
2. Enduring Institutional and Instructional Strain in Online Nursing Education
3. Reframing Stress through Adaptation, Empathy, and Institutional Support

Together, these themes illustrate a pathway from initial disruption to eventual adjustment—showing how nursing educators appraised stressors, mobilized coping resources, and restored professional balance amid the rapid digitalization of Philippine higher education.

Participant Profile

The study involved eight (8) nursing educators who were teaching actively in the College of Nursing of a state university in Mindanao, Philippines during the first semester of Academic Year (AY) 2020–2021, when the Commission on Higher Education (CHED, 2020) ordered the transition to flexible learning modalities throughout the country. Purposive sampling was used to select participants to include a mix of ages, educational qualifications, and years of teaching experience that would provide a variety of perspectives.

To maintain anonymity, pseudonyms were replaced with participant codes (P1–P8). Table 1 summarizes their demographic characteristics. The group comprised six females and two males, aged 24 to 60 years, with teaching experience ranging from 1 to 35 years. Most participants held master's or doctoral degrees, reflecting the professional maturity typical of nursing faculty in the Philippines.

TABLE 1: PARTICIPANT INFORMATION

Participant Code	Age	Sex	Educational Attainment	No. of Year Teaching
P1	46 years old	Female	Doctorate with Units	16 years
P2	38 years old	Male	Doctorate with Units	15 years
P3	56 years old	Female	Master's Degree	19 years
P4	50 years old	Female	Master's Degree	18 years
P5	24 years old	Female	Master's Degree	1 year
P6	52 years old	Female	Doctoral Degree	26 years
P7	60 years old	Female	Master's Degree	15 years
P8	59 years old	Female	Doctorate Degree	35 years

Note: All participant identifiers were replaced with codes (P1–P8) to preserve confidentiality. "Doctorate with units" indicates participants who have completed coursework toward, but not yet finished, a doctoral degree.

The diversity in demographic and professional experience enriched the data and made it possible to compare across generations and levels of digital literacy. This heterogeneity has also been found to influence educators' ability to adapt to distance learning and technology use in higher education (Myyry et al., 2022; Jogezai et al., 2023).

TABLE 2: SUMMARY OF MAIN THEME 1, SUBTHEMES, AND CODES

Main Theme	Subthemes	Codes
Navigating Pedagogical Disruption and Cognitive-Emotional Adjustments	Emotional and Cognitive Adjustment	• Making learning materials • Adjustment to the new set-up • Practicing online teaching • Difficulty adjusting • Accepting students' circumstances
	Connectivity as a Constant Barrier	• Internet instability • Limited communication • Limited interaction • Feelings of frustration
	Technological Competence and Self-Efficacy Development	• Technical issues • Seeking help • Learning presentation skills • Digital literacy challenges

The themes summarized above are discussed in detail in the following sections, together with illustrative participant quotations and supporting literature.

Main Theme 1: Navigating Pedagogical Disruption and Cognitive-Emotional Adjustment

This theme directly answers Research Question 1 by presenting the lived experiences of nursing educators during their initial transition to flexible learning modalities.

The preliminary experiences of the nursing educators indicated a disquieting period of adaptation brought about by the transition from traditional in-person teaching to flexible and online modes. The sudden shift was perceived by participants as disorienting, emotionally stressful, and technically challenging because, during the pandemic, they had to reinvent pedagogical strategies with little preparation or institutional guidance. Similar patterns were reported worldwide, as nursing and health-science professors faced steep learning curves in digital pedagogy and e-course development amid sudden campus closures (Farsi et al., 2021; Kalanlar, 2022; Bao, 2020).

In line with the concept of primary appraisal in Lazarus and Folkman (1984), the educator role initially evoked anxiety and doubt among those involved in the shift, as they questioned its implications for professional effectiveness and educational quality (Hamid et al., 2023; Inamorato dos Santos et al., 2023).

This initial period of appraisal and adjustment is described as three interconnected subthemes, including emotional and cognitive adjustment to new teaching demands, connectivity-related barriers that intensified stress, and technological competence that gradually strengthened self-efficacy. Combined, these dimensions help to exemplify the coping processes of educators as the puzzlement and frustration gave way to adaptation and development.

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Emotional and Cognitive Adjustment

When asked about the initial months of online learning the majority of the participants referred to it as stressful but necessary. The stress needed to create digital content, record lectures, and learn new platforms in a brief time created burnout and self-distrust.

"*In a very short span of time there were a lot of paper works… we became actors just to produce the necessary teaching materials.*" (P1)

"*It was very difficult for me… I'm not that techy, but I tried to make my own modules.*" (P6)

"*As a nurse we are dynamic and versatile… at least there is a transfer of knowledge; the objective of education is still there.*" (P3)

"*I was overwhelmed because everything needed to be adjusted… the lessons, the materials, even myself as an educator.*" (P2)

These experiences align with global accounts of educators reporting emotional strain, cognitive overload, and uncertainty during the abrupt shift to emergency remote teaching (Bozkurt & Sharma, 2020). Faculty had to rapidly redesign instruction, manage heavier workloads, and develop new routines without adequate preparation—mirroring the distress expressed by participants. Cutri, Mena, and Whiting (2020) described this as "transition shock," marked by anxiety, lack of readiness, and self-doubt in adapting to unfamiliar digital environments, reflecting participants' feelings of pressure and mental exhaustion.

In the Philippine context, Toquero (2020) likewise noted intensified workload, technological adjustment, and emotional fatigue among higher-education faculty navigating flexible learning. These stressors reflect the "threat appraisal" of Lazarus and Folkman (1984), where novel demands are initially perceived as overwhelming. Over time, however, many educators reframed these stressors as opportunities for growth through positive reappraisal, a coping strategy that transforms stress into professional development (Awwad-Tabry et al., 2023).

Connectivity as a Constant Barrier

Unstable internet connection emerged as both a technical and psychological burden. Participants reported feeling anxious and frustrated whenever class discussions were interrupted or delayed:

"*The feeling of frustration because I have objectives for the day and I have to wait.*" (P8)

"*When I start to discuss, students say, 'Ma'am, you're choppy…' It breaks my momentum.*" (P1)

"*Sometimes I lose the flow because I need to stop and reconnect, and it affects my confidence while teaching.*" (P4)

This narrative highlights environmental stressors largely beyond educators' control, showing how structural constraints interact with personal coping mechanisms. Both international and Philippine contexts indicate that poor internet connectivity and limited digital infrastructure significantly affect teaching quality and student interaction, especially in under-resourced settings (Alqahtani et al., 2022; UNESCO, 2023). Similar issues were reported by Bozkurt and Sharma (2020), who noted that unstable internet and platform disruptions caused frustration, interrupted instruction, and reduced teachers' sense of control.

Toquero (2020) likewise emphasized that Filipino faculty commonly faced technological strain and inconsistent bandwidth, hindering instructional delivery and affecting well-being. In the transactional stress model of Lazarus and Folkman (1984), such uncontrollable conditions generate emotion-based coping, reflected in the patient, humorous, and empathetic responses educators extend to students undergoing the same technological difficulties.

Technological Competence and Self-Efficacy Development

Participants also reported struggling with the use of digital software and platforms especially those who had little previous experience with a learning management system. Elderly teachers confessed that they turned to relatives or their peers:

"*At my age, I'm not computer-literate anymore… this is a new thing for everyone.*" (P7)

"*My niece helps me operate Google Classroom; later on, I became enthusiastic.*" (P6)

"*I needed constant guidance at first… but as weeks passed, I learned how to navigate things independently.*" (P3)

Although anxiety was initial, practice and peer mentoring gradually built mastery—an example of problem-focused coping where active engagement replaced avoidance. Empirical evidence likewise shows that structured training and group support enhance educators' digital confidence and well-being (Inamorato dos Santos et al., 2023). Participants described gaining motivation and self-efficacy as proficiency increased. Their experiences reflect a progression from fear to professional growth, consistent with Lazarus and Folkman's (1984) view that stress outcomes depend on appraisal and response. Within weeks, educators not only adapted their teaching but also redefined their competence—transitioning toward Theme 2, where deeper institutional and instructional pressures emerge.

TABLE 3: SUMMARY OF MAIN THEME 2, SUBTHEMES, AND CODES

Main Theme	Subthemes	Codes
Enduring Institutional and Instructional Strain in Online Nursing Education	Connectivity Constraints as Structural Stressors	• Internet instability • Repeated disconnections • Power interruptions • Interrupted class flow • Loss of momentum
	Financial Pressures of Digital Transition	• Cost of mobile data • Personal spending on internet • Lack of institutional support • Unreimbursed expenses • Device and equipment burden
	Pedagogical Integrity and Loss of Human Connection	• Loss of personal interaction • Lack of hands-on demonstration

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		• Reduced rapport with students • Emotional detachment • Reduced satisfaction in teaching
	Assessment of Integrity and Fairness Issues	• Academic dishonesty concerns • Students turning cameras off • Questionable exam authenticity • Similar/identical outputs • Difficulty monitoring performance
	Technological Strain and Platform Fatigue	• Digital literacy gaps • Platform switching (Google Classroom → LMS) • Cognitive overload • Frequent troubleshooting • Role confusion in new digital environment

The themes summarized above are discussed in detail in the following sections, together with illustrative participant quotations and supporting literature.

Main Theme 2: Enduring Institutional and Instructional Strain in Online Nursing Education

Nursing educators indicated that in their experiences of initiating new teaching modalities, they were faced with a combination of technical, financial, pedagogical, and evaluative stressor factors that complicated their experience of going online and flexible learning. Their stories show how environmental pressures (poor connectivity and lack of institutional support) usually worked in tandem with individual limits (digital capability and exhaustion) to create a self-perpetuating cycle of teaching anxiety. Informally, this theme is related to the secondary appraisal stage of the transactional model of stress and coping of Lazarus and Folkman (1984); people made a judgment about the presence of adequate coping resources to solve the problem of external demands.

This institutional and instructional strain has five dimensions that are interrelated: structural stressors of connectivity, financial pressures of digital transition, pedagogical integrity and loss of human connection, assessment integrity and fairness, and technological strain resulting in platform fatigue. Collectively, they portray the complex pressured terrain on which teachers operated as they continued to teach in the challenging conditions of the systemic constraints.

Connectivity Constraints as Structural Stressors

Unreliable internet access was the top challenge that was mentioned by all participants. Repeated disconnections, power cuts, and bandwidth hampered synchronous meetings and motivation.

> "*Our internet…it's very difficult. Sometimes when I start to speak— 'Ma'am, you're choppy!'—they tell me.*" (P1)

> "*Sometimes I lose the flow because I need to stop and reconnect, and it affects my confidence while teaching.*" (P4)

Some educators also shared that poor connectivity led to students abruptly leaving the class or being unable to return, further compromising engagement:

> "*At first everybody is there, but slowly it dwindles… they leave one by one because of brownout or no signal.*" (P8)

These interferences reduced time to have meaningful discussions and virtual clinical simulations. The same barriers have already been reported in national and international reports, citing inadequate infrastructure and lack of regular broadband access as the main causes of uneven digitally based learning (van de Werfhorst et al., 2022; Brookings Institution, 2023; UNESCO, 2023; NRCP, 2021; ABS-CBN News, 2021).

In the case of educators, such uncontrollable connectivity issues acted as situational stressors that triggered emotion-focused coping responses. Participants frequently relied on patience, humor, and empathy toward students who were experiencing the same technological constraints, reflecting the emotion-based coping described in the model of Lazarus and Folkman (1984).

Financial Pressures of Digital Transition

Participants emphasized the economic burden of maintaining connectivity through personal spending on data and equipment.

> "*We are both buying our loads… not all faculty have Wi-Fi.*" (P4)

> "*They should give us allowances for our load… around ₱1,000 a month.*" (P5)

Others echoed that even when the school provided prepaid Wi-Fi, it was frequently insufficient, requiring them to purchase additional load to meet teaching requirements:

> "*One of the challenges… obtaining a secure internet connection. The college Wi-Fi is not enough for us, so most of us still buy our own load.*" (P5)

Another participant explained how dependence on personal funds made online classes financially draining:

> "*If we buy our own load… it would cost us more, and we don't have allowance for that. We shell out from our own money.*" (P3)

The hidden costs of flexible learning were frequently passed on to the faculty because of limited institutional subsidies. Philippine reports indicate the high costs of out-of-pocket expenses for access to the internet, devices, and instructional resources among teachers during remote classes (Macaraeg et al., 2021; DOST-SEI, 2021; NRCP, 2021). Global reports also show that such insufficient systems make educators and learners responsible for connection costs, curtailing participation and quality (UNESCO, 2023).

Having financial strain on top of workload fatigue represents a secondary stressor that heightens the perceived imbalance between effort and reward, consistent with Lazarus and Folkman's (1984) stress-appraisal model.

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Pedagogical Integrity and the Loss of Human Connection

Teachers lamented the loss of personal interaction and practical experience that used to be the core of nursing education. They reported that it was challenging to show clinical competence and form a relationship with students:

"*How can you do that online? Your hands really need to be there physically.*" (P1)

"*There is no personal connection… before, I was with them the whole week.*" (P7)

Other participants shared similar frustrations, emphasizing how the absence of face-to-face presence disrupted emotional connection and their ability to read student cues during clinical or lecture discussions:

"*I really wanted to enjoy your presence… but now I cannot see you face-to-face.*" (P8)

"*It's challenging… you cannot see their reactions, so you don't know if they understand.*" (P3)

This detachment reduced instructional satisfaction and the apparent credibility of learning. In line with recent evidence, online learning interferes with teacher-student relationships and lowers affective learning, creating emotional and moral tension in teachers (Damscha et al., 2021; Farsi et al., 2021; Pandita and Kiran, 2023).

Within the framework of Lazarus and Folkman's (1984) stress-coping model, these relational divides functioned as interpersonal stressors that required educators to adopt coping strategies rooted in empathy, communication, and intentional presence in order to maintain connection and meaning in teaching online.

Assessment of Integrity and Fairness Issues

Online assessment of student performance was also found to be a significant source of stress among educators. Faculty doubted the sincerity and legitimacy of exams when cameras were turned off or when the same output was shown.

"*How would I know if the students are really the ones answering?*" (P2)

"*Why are perfect scores now common? Temptation is there.*" (P4)

Additional participants expressed similar frustrations, noting the difficulty of verifying student performance in a remote setup:

"*When students turn off their cameras, we really have no way of checking if they're doing the activity themselves.*" (P5)

"*You don't know if the answer is theirs or they asked help from others… you just have to trust them.*" (P3)

These interruptions reduced satisfaction with instruction as well as the authenticity of the learning experience. Current literature supports the fact that virtual assessment settings increase the risk of academic dishonesty and cause tension between teachers and learners, particularly when it comes to unproctored or remote examination methods (Janke et al., 2021; Arnold, 2022). Performance authenticity, which is mandatory in nursing teaching, was a challenge for educators. Rubrics, reflective activities, and open-book testing were used frequently to ensure that fairness prevailed, but there was still doubt as to the effectiveness of curbing academic dishonesty.

Technological Strain and Platform Fatigue

Participants also reported digital-literacy gaps and frequent platform changes that demanded continual relearning.

"*My niece should be with me every time I have my class to teach me.*" (P6)

"*We're already comfortable with Google Class, now we must shift to LMS.*" (P3)

Other participants shared similar challenges, noting that their unfamiliarity with digital tools created anxiety and constant dependence on others:

"*At my age, I'm not computer-literate anymore… this is a new thing for everyone.*" (P7)

"*It is difficult… basically we are not accustomed yet with this particular platform or modality.*" (P2)

Even with seminars provided by administrators, some educators still experienced cognitive overload, self-doubt, and confusion over their new roles. International studies similarly report that despite increased technological engagement, educators continue to face role ambiguity, emotional exhaustion, and pressure to constantly update digital skills (Inamorato dos Santos et al., 2023; Wang & Chu, 2023; Kalanlar, 2022).

These experiences reflect secondary appraisals of limited control in the Lazarus and Folkman (1984) stress-coping model, with educators responding through peer cooperation, practice, and persistence as forms of problem-focused coping.

The challenges described by nursing educators show the complexity of occupational stress during digital transition. Structural barriers (internet, funding), personal capacity (digital skills, pedagogical confidence), and moral tension (assessment fairness) intersect to create a persistent institutional and instructional strain. These combined stressors highlight that the resilience of nursing education depends on individual, institutional, and resource-equity factors.

While Theme 2 captured the institutional and instructional pressures that intensified the challenges of implementing flexible learning, the narratives also revealed how educators gradually shifted from distress to adaptation. Despite systemic constraints, participants described intentional efforts to regain control, support students, and sustain teaching quality. These emerging strengths form the focus of Theme 3, which illustrates how educators reframed stress through empathy, flexibility, and collaborative support.

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TABLE 4: SUMMARY OF MAIN THEME 3, SUBTHEMES, AND CODES

Main Theme	Subthemes	Codes
Reframing Stress through Adaptation, Empathy, and Institutional Support	Understanding the Context and Adjusting with Empathy and Flexibility	• Empathy toward bandwidth limitations • Modified requirements • Deadline extensions • Allowing self-paced progress • Adjusting expectations
	Effective Communication and Feedback Loops	• Consulting students • Co-agreement on modalities • One-on-one consultations • Use of group chats • Regular check-ins and feedback
	Positive Mind-set and Professional Purpose (Resilience)	• Maintaining determination • Positive discipline • Optimism and motivation • Reaffirming professional purpose • Commitment to reaching out
	Utilizing Asynchronous Learning Strategically	• Asynchronous links • Guided questions • Curated videos • Return-demo recordings • Preparing alternative activities
	Strategic Time Management and Course Preparation	• Early preparation • Organizing materials • Setting up space and devices • Sequencing tasks • Reducing cognitive load
	Faculty Re-orientation, Peer Support, and Institutional Assistance	• Orientation seminars • Peer mentoring • IT assistance • Practice and trial-and-error • Administrative support

The themes summarized above are discussed in detail in the following sections, together with illustrative participant quotations and supporting literature.

Main Theme 3: Reframing Stress through Adaptation, Empathy, and Institutional Support

Educators explained a gradual change from early disturbance to intentional coping, combining the understanding of students' situations with practical teaching techniques. Their reactions comprised emotion-focused coping (patience, positive mindset, strengthening communication, improving time management, engaging in faculty development) and problem-focused coping (redesigning activities, strengthening communication, maintaining a positive mindset, improving time management). This coincides with the transactional model, where reappraisal transforms stress into professional growth and newfound efficacy.

This reappraisal was described in six interrelated strategies: understanding the context and adjusting through empathy and flexibility, keeping good and efficient communication and feedback loops, fostering a positive attitude and professional purpose, taking advantage of asynchronous learning, engaging in strategic management of time and course preparation, and relying on faculty re-orientation and institutional support.

Understanding the Context and Adjusting with Empathy and Flexibility

Participants emphasized leniency and contextual empathy through the acceptance of bandwidth constraints, deadline extensions, and modified requirements to allow students to progress at their own pace.

"*We are still in the process of adjustment… you have to understand that other students are just using mobile data.*" (P1)

"*I'm always giving my students a little extension… our intention is for them to learn.*" (P4)

"*We are adjusting… studying different platforms… going back to basics.*" (P2)

These practices reflect an empathetic recalibration of teaching expectations aligned with flexible learning guidance. CHED likewise calls for contextualized expectations and humane consideration of students' varied environments, particularly unstable connectivity and unequal device access (CHED, 2020; CHED, 2022). This shows that participants' strategies mirror national policy directions toward equitable learning.

International literature also identifies flexibility as essential during pandemic instruction. Hodges et al. (2020) argue that emergency remote teaching required shifting from rigid standards to compassionate expectations that recognize digital inequities. Rapanta et al. (2020) similarly highlight that flexible deadlines, adjusted requirements, and empathetic communication help sustain teacher presence and learning continuity. These perspectives support the approaches described by participants.

This flexibility aligns with Toquero's (2020) concept of "institutional and instructional empathy," which stresses humane, context-aware responses to remote-learning challenges. Within the Transactional Model of Stress and Coping, these actions exemplify positive reappraisal—educators reframing stressors into opportunities for compassion, fairness, and supportive pedagogical design.

Effective Communication and Feedback Loops

Educators described consulting students, co-agreeing on feasible modalities, providing one-on-one consultations, and using group chats for follow-ups. These practices helped maintain connection and ensured that learning remained responsive to students' needs despite unstable conditions.

"*I consult my students… we both have to agree on that.*" (P1)

"*My number one strategy is to really listen to my students and what they prefer.*" (P2)

"*One-on-one sessions help students feel welcome… call them by their name.*" (P5)

Some educators shared that opening multiple channels—group chats, messenger threads, direct messages, and meeting consultations—created a space for dialogue and helped compensate for the loss of physical interaction:

"*Reach out to the students—this is what online class is about.*" (P7)

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"*Get feedback… consider what students prefer and what the professor and administration can provide.*" (P2)

These communication patterns echo international analyses of online teaching during the pandemic, which emphasize teacher presence, dialogic communication, and continuous feedback loops as critical anchors in sustaining engagement. Rapanta et al. (2020) describe teaching presence as central to online learning, highlighting consultation, negotiated expectations, and timely feedback as mechanisms that help reduce uncertainty and support learner persistence.

Likewise, Trust and Whalen (2020) note that ongoing communication and clear, responsive feedback help stabilize the learning environment during crisis teaching, preventing isolation and confusion among students.

Within the Philippine context, CHED's flexible learning guidelines (2020; 2022) encourage transparent communication and collaborative adjustment between faculty and students to ensure humane, context-sensitive instruction during online and blended formats.

Taken together, these findings demonstrate that effective communication served as both an instructional tool and an emotional support system, enabling educators to negotiate expectations, maintain relational connection, and preserve a sense of shared responsibility in the teaching–learning process.

Positive Mind-set and Professional Purpose (Resilience)

Faculty highlighted determination, discipline, and optimism as key anchors that helped them cope with the challenges of online and flexible learning. Many described a conscious effort to remain motivated, patient, and purpose-driven despite persistent constraints.

"*Determination to meet my students… whatever it takes.*" (P4)

"*If you like to learn, later on you can overcome this… I was motivated.*" (P6)

"*We try our very best to reach out to the students.*" (P7)

Other participants emphasized resilience, emotional regulation, and a deliberate effort to remain steady amid uncertainty:

"*There are a lot of fortitude, resiliency, and of course patience… We are trying our best, going back to basics… so in other words I am adjusting, we are adjusting.*" (P2)

"*The way I overcome it is being lenient and being patient… we always try to understand their perspectives… we have to be more patient.*" (P5)

These narratives reflect professional resilience, as educators reframed difficulties into opportunities to continue supporting their learners. Ramakrishnan (2022) similarly found that teachers strengthened resilience during COVID-19 by reconstructing their professional identity and drawing on inner motivation, sustaining commitment despite uncertainty.

This emphasis on optimism aligns with Kowitarttawatee and Limphaibool (2022), who reported that resilience is reinforced by internal psychological resources such as mindfulness, emotional regulation, and a renewed sense of calling. Their findings parallel this study, where faculty relied on determination and emotional discipline to uphold their instructional roles.

Crompton, Chigona, and Burke (2023) likewise highlight that resilience in online teaching is strengthened when educators anchor their efforts in professional purpose and an adaptive mindset, helping them navigate technological limits and fatigue. This resonates with participants who continued teaching for the sake of student learning despite challenging conditions.

Together, these accounts show how a positive mindset and reaffirmed professional purpose functioned as key coping mechanisms, consistent with the reappraisal component of the Transactional Model of Stress and Coping, wherein educators reinterpret stressors in ways that enhance confidence and efficacy.

Utilizing Asynchronous Learning Strategically

To reduce connectivity pressure and maintain continuity of instruction, educators blended live sessions with asynchronous tasks such as curated videos, guided questions, return-demo recordings, and alternative offline activities.

"*I give an asynchronous link… watch this video and answer guide questions.*" (P1)

"*Be ready with alternatives so learning isn't affected when net is not available.*" (P4)

"*Return demo via video presentation.*" (P7)

Participants explained that asynchronous options served as a reliable fallback during power interruptions or unstable bandwidth and allowed students to learn at a manageable pace:

"*When the signal is poor, I just give activities they can answer offline so learning continues.*" (P3)

This approach aligns with CHED's (2020, 2022) flexible learning guidelines, which recommend asynchronous activities to ensure equitable access in bandwidth-limited environments. Similarly, Trust and Whalen (2020) and Martin, Budhrani, and Wang (2019) note that well-designed asynchronous tasks enhance self-paced learning and reduce cognitive load, especially during remote instruction.

Overall, utilizing asynchronous tools reflects problem-focused coping, as educators redesigned lessons to sustain learning despite infrastructural constraints.

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Strategic Time Management and Course Preparation

Faculty coped by planning ahead, staging materials, and organizing room and technology setups before each session to ensure smoother delivery and reduce teaching anxiety:

"*I usually prepare my lecture and materials at least two days before.*" (P4)

"*The night before, I set everything up—power, laptop, room, atmosphere.*" (P6)

"*Preparation… to make our class successful and fruitful.*" (P8)

Participants shared that early preparation helped them anticipate interruptions and sustain confidence during synchronous classes. This reflects Hodges et al. (2020), who stress that intentional planning and clear sequencing reduce cognitive overload in online learning. Rapanta et al. (2020) similarly emphasize that organized materials and teacher presence support engagement, while Trust and Whalen (2020) note that preparing content in advance enhances readiness and mitigates technological disruptions.

In this study, such preparation functioned as a problem-focused coping strategy that enabled educators to manage digital demands and maintain instructional quality—consistent with the Transactional Model of Stress and Coping, where proactive planning increases perceived control and fosters adaptive responses.

Faculty Re-orientation and Institutional Support

Participants credited orientation seminars, IT help, and collegial mentoring for rebuilding confidence and skills during the shift to online and flexible learning.

"*Orientation and seminars… the faculty is fully equipped.*" (P2)

"*Orientation helps senior faculty cope with the new platform.*" (P5)

"*Clinical and level coordinators… help us on what to teach and how.*" (P7)

Educators emphasized that institutional support—through structured training, troubleshooting assistance, and mentoring—reduced anxiety and made the transition to new platforms manageable. Faculty development sessions were crucial in helping them relearn systems, address technical issues, and regain clarity in their teaching roles. This aligns with Rapanta et al. (2020), who note that effective online teaching requires strengthened teaching presence supported by institutional guidance.

Trust and Whalen (2020) similarly found that teachers with ongoing training demonstrated stronger adaptability, reduced stress, and greater confidence in online instruction. International guidance reinforces this need: Inamorato dos Santos et al. (2023) emphasize that digital competence grows through continuous re-orientation and collaborative learning, while CHED (2020; 2022) recommends systematic faculty upskilling and platform orientation for flexible learning. UNESCO (2023) likewise stresses that organizational support is essential in technology-enhanced teaching.

Overall, institutional support functioned as a problem-focused coping strategy, restoring educators' sense of control and enhancing instructional confidence.

3.1 Insights and Dispositions of Educators to Enhance Flexible Learning Modalities

Teachers named three main directives to improve the process of providing flexible and online education: strengthening communication channels between teachers and students, enhancing internet connectivity through effective institutional support, and becoming more flexible through active professional learning and adaptive instructional design. These guidelines relate to the reappraisal phase of Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, where stressors are redefined as drivers of development and innovation.

Communication between Teachers and Students

It was also noted that participants valued building a culture of mutual understanding and opening a feedback loop where there is a consultative approach to learners about feasible modalities, an agreement on what is possible, and a space where an individual approach can be given.

"*Faculty and students should meet halfway… there should also be an involvement of the student.*" (P1)

"*Reach out to the students—this is what online class is about.*" (P7)

"*Get feedback… consider what students prefer and what the professor and administration can provide.*" (P2)

"*One-on-one sessions help students feel welcome… call them by their name.*" (P5)

These observations are consistent with Rapanta et al. (2020), who emphasize that clear communication, timely feedback, and collaborative decision-making strengthen teaching presence in online environments. Trust and Whalen (2020) similarly found that strong communication structures reduce confusion and isolation during remote instruction. In the Philippine context, CHED (2020; 2022) likewise encourages transparent communication and shared decision-making to support humane and context-sensitive flexible learning.

Overall, communication served as both an instructional and relational coping strategy, helping educators maintain connection, reduce uncertainty, and sustain meaningful engagement during flexible learning.

Improve Internet Connectivity

Based on studies, it has been established that good connectivity is a prerequisite to successful pedagogical provision and equal access to learning materials. As a result, teachers have also lobbied the institution to

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provide support through institutional bandwidth upgrades on campus and personal support for faculty data bills where necessary.

> "*The school would have to do something about connectivity… sometimes we cannot meet classes.*" (P3)

> "*The thing to improve is the net.*" (P4)

> "*Required to hold classes at school—okay if connection is provided; otherwise, we spend on our own load.*" (P5)

> "*Strengthen the internet connectivity… majority are complaining.*" (P6)

These insights reflect the structural nature of technological limitations in the Philippine context. Inconsistent internet reliability disrupts instructional flow, interrupts student learning, and forces educators to absorb hidden costs such as purchasing additional data or devices. UNESCO (2023) affirms that robust digital infrastructure is essential for equitable online learning, especially in countries with uneven broadband access. CHED (2022) likewise stresses that sustaining flexible learning requires institutional investment in campus bandwidth and data support for faculty and students. Rapanta et al. (2020) add that reliable technology is necessary to maintain teaching presence; thus, improved connectivity is fundamental to effective flexible learning.

Flexibility of Educators (Upskilling and Adaptive Design)

Strategic flexibility was a key idea developed by faculty activists, who argued in favor of experimentation with various platforms and forms of media, integration of asynchronous options, and exploration of re-orientation courses to maintain current competencies.

> "*You have to involve [students]… deliver expected activities—there are many creative ways.*" (P1)

> "*Those not oriented with LMS need to practice/research more.*" (P4)

> "*Use technology to present videos so students feel connected… go beyond comfort zones.*" (P5)

> "*We have to be updated and upgraded—attend seminars to increase knowledge.*" (P7)

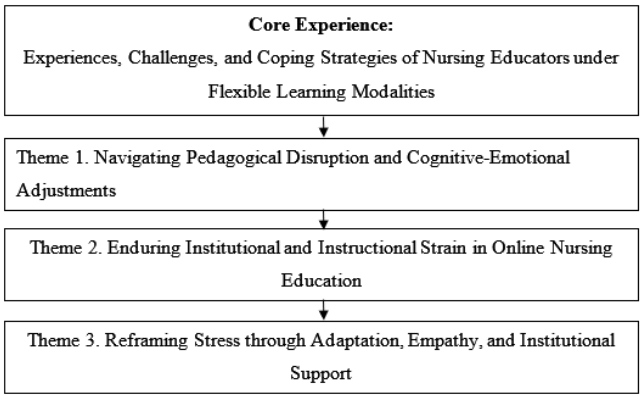
Participants described flexibility as both a pedagogical requirement and a professional expectation in the digital environment. They acknowledged that online teaching required experimentation with instructional media, a willingness to learn new tools, and the capacity to modify activities depending on bandwidth, student needs, and course requirements.

This aligns with current literature emphasizing digital competence as a core skill in flexible learning environments. Martin, Budhrani, and Wang (2019) found that educators who develop skills through short learning sessions, peer mentorship, and guided practice demonstrate higher teaching effectiveness and smoother online delivery. Similarly, Trust and Whalen (2020) highlight that educators become more adaptable when they engage in hands-on tool exploration and collaborative troubleshooting during remote instruction. More recently, Alqahtani et al. (2023) reported that digital upskilling enhances educator confidence, reduces the impact of technological stress, and enables teachers to design instruction that accommodates varying levels of access and readiness.

Taken together, these findings demonstrate that flexibility—expressed through upskilling, adaptive course design, and openness to new platforms—functioned as a problem-focused coping mechanism. By upgrading their competencies and adjusting instructional methods, educators were able to overcome contextual constraints and sustain meaningful student engagement in flexible learning environments.

Overall, the three themes show how nursing educators moved from initial confusion and emotional strain to navigating systemic barriers, and eventually toward adaptive, empathetic, and collaborative teaching practices. Their experiences highlight that flexible learning succeeds not through individual resilience alone, but through reliable connectivity, clear communication, authentic assessment, and sustained institutional and professional support. What began as an overwhelming transition ultimately became a period of growth, revealing educators' strengthened digital competence, renewed purpose, and commitment to more humane and responsive nursing education.

FIGURE 2: EIDETIC DIAGRAM OF THE THREE MAJOR THEMES



Note. This figure provides a visual summary of the thematic structure identified in the study.

Limitations

This study has several limitations that should be acknowledged. First, the findings are based on a small purposive sample from a single state university in Mindanao; therefore, while the insights are rich, they may not capture the full diversity of experiences among nursing educators across the Philippines. Second, because the data relied on retrospective accounts of experiences during the early implementation of flexible learning, participants' narratives may be influenced by recall bias or post-hoc reflection. Third, the study focused on faculty voices only and did not include perspectives from students, administrators, or policymakers, which limits a more comprehensive understanding of institutional dynamics. Finally, the qualitative design prioritizes depth over generalizability; thus, the results should be interpreted

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as context-specific but informative for similar institutions navigating flexible learning in resource-constrained environments.

IV. Conclusion & Recommendations

This study shows that the abrupt move to flexible learning triggered a progression of stress responses among nursing educators that aligns with Lazarus and Folkman's Transactional Model: an initial threat appraisal marked by emotional strain and cognitive overload, a secondary appraisal shaped by structural barriers such as poor connectivity and financial burden, and a reappraisal phase where educators transformed these pressures through empathy, flexibility, improved communication, and intentional upskilling. These findings highlight that effective coping in crisis teaching is not only an individual effort but a process mediated by institutional resources, digital access, and collegial support.

The results are especially relevant to Philippine nursing education, revealing both the remarkable adaptability of educators and the persistent gaps—unstable infrastructure, unclear guidance, and assessment challenges—that limit the full potential of flexible learning. These insights affirm that resilience alone cannot sustain quality instruction; meaningful institutional investment, equitable technological support, and continuous faculty development are essential.

In sum, the experiences of these educators show that crisis-induced disruption can drive pedagogical growth and renewed professional purpose when supported by responsive leadership and adequate resources. Future studies should examine how these coping strategies evolve post-pandemic and how institutional reforms can strengthen long-term teaching effectiveness and student learning outcomes.

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Conflict of Interest

The author declares that there is no conflict of interest, financial or otherwise, to disclose.

Disclosure of Use of Generative AI

In the interest of achieving the highest standards of clarity, coherence, and readability, generative artificial intelligence tools were employed solely as assistive aids for the organization of conceptual frameworks and the refinement of grammatical structure within this manuscript. All original content, core ideas, analytical insights, and intellectual contributions remain wholly the product of the authors, with no substantive generation or alteration of the research findings by AI.

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Mountain Province State University (MPSU) Bachelor of Science in Nursing (BSN) Graduate Tracer Survey Uncovering Trends in Employment and Education Relevance

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ABSTRACT

Introduction: This tracer study examined the licensure performance, employment outcomes, job relevance, and postgraduate engagement of Bachelor of Science in Nursing (BSN) graduates of Mountain Province State University (MPSU) from 2008 to 2024.

Aim: Anchored on Employability Theory, the study aimed to determine how effectively the nursing program prepared graduates for professional practice and career development.

Methods: Using a descriptive survey design, data were collected through a validated researcher-made questionnaire administered to randomly selected graduates across three curriculum groups: CMO 30 (2008–2016), CMO 14 (2017–2021), and CMO 15 (2022–2024). Reliability testing yielded a Cronbach's alpha of 0.785, indicating acceptable internal consistency.

Results: Findings showed a consistently high proportion of respondents who reported passing the Nursing Licensure Examination (NLE), with an overall respondent-based licensure rate of 96% that increased across curriculum groups (CMO 30: 94.9%; CMO 14: 96.8%; CMO 15: 98.3%). Employment outcomes revealed that 86.6% of graduates were currently employed, though recent graduates under CMO 15 exhibited lower employment rates and a higher proportion of those never employed. Job relevance remained high at 90.7%, yet CMO 15 showed the most notable decline. A strong shift toward local employment was observed, with 97.9% of the newest graduates working within the Philippines. Postgraduate engagement was low, with only 23.1% pursuing master's studies and 1.2% enrolling in doctoral programs, primarily among CMO 30 graduates.

Conclusion: The study concludes that the MPSU nursing program continues to produce competent graduates with strong licensure and employment outcomes, though emerging challenges among the newest graduates warrant timely institutional response. Results highlight the importance of ongoing curriculum review, strengthened school-to-work transition support, and expanded access to graduate nursing education. Establishing a Master of Arts or Master of Science in Nursing program at MPSU is recommended to promote lifelong learning and career advancement.

Keywords: *Tracer study, Nursing graduates, Licensure performance, Employability, Postgraduate education*

I. INTRODUCTION

Background

Tracer studies are important tools for evaluating the effectiveness of educational programs and assessing the alignment of curricula with industry needs and labor market demands. According to Commission on Higher Education (2023), tracer studies provide valuable feedback to higher education institutions, enabling them to enhance curriculum relevance, improve instructional practices, strengthen partnerships with industry stakeholders and assess graduates' educational preparation. Tracer surveys have emerged as a valuable tool for understanding graduates' employment status, the alignment of their jobs with their fields of study, and the competencies most valued by employers (Schomburg, 2019). Similarly, Teichler (2021) emphasized that tracking graduates' professional paths provides evidence-based data for policy reform and curriculum enhancement. Research indicates that aligning curriculum content with industry trends can significantly boost graduate employability (Nguyen et al., 2023). Further, Dzomeku et al (2024) concluded that there is a need to conduct this kind of tracer study on a regular basis to keep track of graduates' progress

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and obtain feedback on the quality of programs being offered so as to meet the ever-changing needs of society.

Results in the study of Hipona, Cuevas & Martin (2021) showed that the majority of the graduates are currently working in nursing-related occupations, largely in private institutions and graduates believe that the BS Nursing program at La Consolacion University Philippines (LCUP) has helped them grow emotionally and professionally. Findings of Austria (2023) corroborated the graduates' feedback that to produce quality graduates for the labor market, programs offering improvement in terms of faculty, curriculum and instruction, library, and physical facilities are needed. In the study of Tomas MA (2023) data shows nearly 100% of graduates are employed in their fields, with a 3- to 6-month waiting period before being hired as permanent or probationary employees in local and overseas hospitals. A report by the Philippine Business for Education (PBEd, 2020) highlights the importance of equipping graduates with 21st-century skills, such as critical thinking, problem-solving, and communication, to meet the demands of the changing workforce.

Mountain Province State University (MPSU), then Mountain Province State Polytechnic College, plays an important role in contributing to the human capital development of the Cordillera Administrative Region (CAR) and the Philippines as a whole. As a higher education institution, MPSU is committed to providing quality education and training to equip graduates with the skills and competencies needed to win in the labor market and contribute to development (MPSPC Strategic Plan, 2022). Moreover, tracer studies can inform institutional strategic planning and decision-making. By understanding the experiences of its graduates, MPSU can identify areas for program improvement, enhance student support services, and strengthen alumni engagement. As stated in the MPSU Quality Assurance Manual (2021), tracer studies are integral to the institution's quality assurance processes and contribute to continuous program improvement.

This tracer study aims to provide insights into the employment status, career paths, and contributions of MPSU graduates, particularly those from the College of Healthcare Education. The findings of this study will be used to inform curriculum review, program development, and strategic planning at MPSU, finally contributing to the institution's mission of producing competent and socially responsible graduates who contribute to regional and national development.

Theoretical Framework

This study is anchored on Employability Theory, which explains that graduates become employable when they develop the right mix of knowledge, skills, values, and personal qualities that allow them to secure and thrive in meaningful work (Knight & Yorke, 2003; Yorke, 2006). This theory fits the tracer study because it directly relates to what the research examines—licensure performance, employment outcomes, job relevance, and graduates' pursuit of further training and education.

Employability Theory also recognizes that graduate success is shaped not only by curriculum and competencies but also by external factors such as labor market conditions. This helps explain the differences in outcomes among graduates under CMO 30, CMO 14, and CMO 15. As emphasized in global tracer study practice, employability provides a useful lens for assessing how effectively programs prepare graduates for real-world careers (Schomburg, 2019).

Statement of the Problem

The overall aim of the study was to trace the graduates of Mountain Province State University – School of Healthcare Education former (Mountain Province State Polytechnic College- Bachelor of Science in Nursing) from 2008- 2024.

Specifically, it sought to answer the following questions:

1. What is the distribution of BSN graduates according to their Commission on Higher Education (CHED) Memorandum Order (CMO) group, namely:
   - CMO 30 (2008–2016 graduates),
   - CMO 14 (2017–2021 graduates), and
   - CMO 15 (2022–2024 graduates)?
2. What is the distribution of respondents who reported passing the Nursing Licensure Examination (NLE) across the three CHED Memorandum Order (CMO) groups?
3. What is the employment status of the graduates of MPSU-BSN graduate respondents in terms of current employment, employability to relevant positions, locale of relevant employment, and commendable achievements?
4. What proportion of graduates did not pursue any training or advanced studies after graduation across the three CMO group**s?**

II. METHODS

Research Design

The study used a descriptive survey design, which is appropriate for documenting the actual outcomes and characteristics of a target population such as graduates (Creswell & Creswell, 2018). This design is widely recommended for tracer studies because it allows systematic collection of data on employment, licensure performance, and career pathways (Schomburg, 2019).

Locale and Population

The study was conducted in Mountain Province and involved graduates of the BS Nursing program of Mountain Province State University from CMO 30 (2008–2016), CMO 14 (2017–2021), and CMO 15 (2022–2024). A random sampling method was used so that graduates from different curriculum groups had an equal chance of being selected to participate.

Graduates who were within reach were given printed questionnaires personally, while those living outside

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the province or far from the researchers received the survey through email, Messenger, and Google Forms.

All respondents provided informed consent before participating—either by signing a printed consent form or by confirming their agreement through the digital consent section in the Google Form. This ensured that participation was voluntary and ethically documented for both in-person and online respondents.

Data Collection Tool

The study used a researcher-developed survey questionnaire as its main tool for gathering information. This questionnaire was designed to capture key details about the graduates, such as their year of graduation, highest educational attainment, trainings attended, advanced studies pursued, and employment information, including job relevance and current work status. To make sure the tool was clear and appropriate, three experts in nursing education and research reviewed it and provided suggestions for improvement. Their input helped refine the questions and overall structure. The tool also underwent reliability testing in 15 respondents who are graduates of MPSU BSN, resulting in a Cronbach's alpha of 0.785, which indicates acceptable consistency for an instrument created specifically for this study.

Data Gathering Procedure

After the approval of this proposal, the researcher sought permission to conduct the corresponding research study through communication letters. At the same time, the researchers explained the purpose of the research and assured confidentiality. Once the request was granted, the approved questionnaires were floated either in face-to-face or through email using Google Forms. After the distribution of the questionnaires, the researchers sorted, collected, and tabulated the data that was gathered using the statistical tools appropriate to come up with results.

Ethical Considerations

The study followed ethical principles consistent with ethical standards in conducting research. Participation was voluntary, and respondent anonymity and data confidentiality were maintained during data gathering, analysis, and interpretation. The study complied with the ethical standards set by the Institutional Research Ethics Committee (IREC) of Mountain Province State University with all participants providing informed consent.

Statistical Analysis

Frequency and percentage were used to describe graduate profiles, employment status, and advanced training participation.

III. Results and Discussions

Distribution of BSN Graduates According to their Commission on Higher Education (CHED) Memorandum Order (CMO) group

The tracer study results provide important insights into the employment outcomes and career trajectories of MPSU graduates from 2008 to 2024. Analysis of the distribution among graduates revealed differences in participation rates.

TABLE 2: According to Commission on Higher Education (CHED) Memorandum Order (CMO) group

CMO		Frequency	Percent
Valid	1. CMO 30 (2008-2016 graduates)	156	63.2
	2. CMO 14 (2017-2021 graduates)	31	12.6
	3. CMO 15 (2022-2024 graduates)	60	24.3
	Total	**247**	**100.0**

If grouped according to the Commission on Higher Education (CHED) Memorandum Order (CMO): CMO 30 (graduates of 2008-2016), CMO 14 (graduates of 2017-2021), and CMO 15 (graduates of 2022-2024), graduates under CMO 30 garnered the highest number of respondents, at 63.2% of the 247 respondents. This was followed by CMO 14, with 12.6%, and CMO 15, with 24.3%.

Distribution of Respondents Who Reported Passing the Nursing Licensure Examination (NLE)

A noteworthy outcome is the consistently high proportion of respondents who reported passing the Nursing Licensure Examination (NLE), as shown above, with an overall passing rate of 96%. This shows the effectiveness of the MPSU nursing program in preparing our graduates for professional nursing practice. This performance significantly exceeds the national average passing rate for the NLE, which has fluctuated between 40% and 50% in recent years (Philippine Regulation Commission, 2023).

TABLE 3: Registered Nurses from MPSU

CMO	Frequency of NLE Passers	Percentage of NLE Passers
CMO 30 (2008-2016 graduates)	148	94.9
CMO 14 (2017-2021 graduates)	30	96.8
CMO 15 (2022-2024 graduates)	59	98.3
Total	**237**	**96.0**

Furthermore, the result shows an increasing rate on the proportion of the respondents who passed from the previous Commission on Higher Education (CHED) Memorandum Order (CMO) up to the present CMO. From a 94.9% proportion of the graduates of 2008-2016 who passed at 96% of graduates of 2017-2021. Ultimately, with the highest proportion of graduates who passed at 98.3% of 2022-2024 graduates. These results are similar to findings from other institutions that adapted the curriculum over time (Santiago & Cruz, 2022).

Employment Status of Nurses from MPSU

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Current Employment

Overall, the tracer study revealed that 86.6% of the graduates from 2008 to 2024 are currently employed. However, the data below is on all employment regardless of its relevance to the profession of nursing. A smaller percentage of graduates are self-employed (2.8%), previously employed (5.7%), or self-employed with previous employment (1.6%). However, a notable proportion of graduates (3.2%) reported never being employed, highlighting a potential area of concern for the institution.

TABLE 4: EMPLOYMENT STATUS OF NURSES FROM MPSU

CMO	NE		SE		PE		SPE		CE	
	F	%	F	%	F	%	F	%	F	%
CMO 30 (2008-2016 graduates)	1	.6	4	2.6	8	5.1	3	1.9	140	89.7
CMO 14 (2017-2021 graduates)	0	0	1	3.2	2	6.5	1	3.2	27	87.1
CMO 15 (2022-2024 graduates)	6	11.7	2	3.3	4	6.7	0	0	47	78.3
Total	**8**	**3.2**	**7**	**2.8**	**14**	**5.7**	**4**	**1.6**	**214**	**86.6**

Legend: F- Frequency; NE- Never Employed, SE- Self-employed, PE- Previously Employed, SPE- Self-employed with Previous Employment, CE- Currently Employed

By looking at employment outcomes by group, we can see that there are numerous patterns that happen over time. Graduates from CMO 30 (2008-2016) have the highest employment rate at 89.7% indicating that most of those who finished college at an earlier year are now mostly working, which is expected. Based also on the result, only 0.6% of those under CMO 30 were never employed, strengthening the fact that most in this CMO group are working. This aligns with findings from earlier tracer studies that emphasize long-term career success (Reyes, 2015).

Graduates of CMO 14 (2017-2021) group also have a high employment rate at 87.1%. However, there is a slight increase in the proportion of graduates who were previously employed (6.5%) or self-employed (3.2%), which suggests transitions in career path or the pursuit of starting their own business. This aligns with the changing trend in self-employment (DTI, 2023)

In contrast, the CMO 15 (2022-2024) group presents a different picture, with a noticeable decrease in immediate employment rates (78.3%) and the highest proportion of graduates who reported never being employed (11.7%). This may indicate challenges in securing job opportunities shortly after graduation due to increased competition, economic downturns, or skills mismatches (DOLE, 2022).

Employability to Jobs/Positions Relevant to the Nursing Degree

Among the 247 total respondents, 90.7% (224) reported that they are employed according to jobs or positions that are relevant to their degree, highlighting the program's success in preparing the graduates for relevant career paths in nursing. This finding aligns with national data indicating a positive correlation between degree relevance and job satisfaction (Philippine Statistics Authority, 2022).

TABLE 5: EMPLOYABILITY TO JOBS/POSITIONS TO THE NURSING DEGREE

CMO	Freq	%
CMO 30 (2008-2016 graduates)	147	93.6
CMO 14 (2017-2021 graduates)	29	96.7
CMO 15 (2022-2024 graduates)	48	80.0
Total	**224**	**90.7**

Analyzing the relevance of their job or positions according to groups reveals interesting trends. According to the study, the highest group employed in relation to their degree is in the group under CMO 14 (2017-2021), which is 96.7%.

In contrast, the CMO 15 (2022-2024) group showed a decline in job relevance, with only 80.0% of graduates employed in positions directly related to their nursing degree. Included in the computation that has an impact on the decline of the percentage is the increased number of graduates who are never employed.

Employment Locale of MPSPC Graduates: Trends in Local vs. International Opportunities

The study reveals that the majority of the respondents are working within the Philippines, contributing to the nation's workforce and economy. Only a small portion of the respondents are pursuing their careers abroad, potentially reflecting the global demand for Filipino talent in certain fields (PIDO, 2021).

TABLE 6: EMPLOYMENT LOCALE OF MPSPC GRADUATES

CMO	Within the Country		Outside the Country	
	Freq	%	Freq	%
CMO 30 (2008-2016 graduates)	110	74.8	37	25.2
CMO 14 (2017-2021 graduates)	25	86.2	4	13.8
CMO 15 (2022-2024 graduates)	47	97.9	1	2.1
Total	**182**	**81.3**	**42**	**18.8**

An interesting trend, as shown in the graph, shows that younger graduates prefer local employment. Specifically, 97.9% of graduates from the CMO 15 (2022-2024) group are employed within the Philippines.

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Commendable Achievements

Among the individuals working in relation to the nursing degree, 30 individuals have received awards, with 8.3% of 224 respondents.

TABLE 7: EMPLOYABILITY TO JOBS/POSITIONS TO THE NURSING DEGREE

CMO	Freq	%
CMO 30 (2008-2016 graduates)	26	17.7
CMO 14 (2017-2021 graduates)	0	0
CMO 15 (2022-2024 graduates)	4	8.3
Total	**30**	**13.4**

Graduates of CMO 30 have the highest award percentage at 17.7% of the 147 respondents, suggesting a potentially stronger emphasis on excellence, a more competitive group, or perhaps specific curricular strengths within this group (Lee et al., 2023). On the other hand, no awards were reported among CMO 14 (2017-2021) graduates, suggesting a possible gap in academic performance compared to other CMO groups.

Graduates with Training and Advanced Studies

The study also looked into the different training and advanced studies of the MPSU of the nursing department in accordance with their Commission on Higher Education (CHED) Memorandum Order (CMO) group.

TABLE 4: GRADUATES WITH TRAINING OR ADVANCED STUDIES

CMO	No training or advanced degrees		With trainings only		Started or done with master's degree		Started or done with doctorate degree	
	F	%	F	%	F	%	F	%
CMO 30 (2008-2016 graduates)	37	23.7	68	43.6	48	30.8	3	1.9
CMO 14 (2017-2021 graduates)	11	35.5	13	41.9	7	22.6	0	0
CMO 15 (2022-2024 graduates)	40	66.7	18	30.0	2	3.3	0	0
Total	**88**	**35.6**	**99**	**40.1**	**57**	**23.1**	**3**	**1.2**

A significant portion of graduates, 35.6% (88 graduates), did not pursue any form of training or advanced education. The highest percentage was recorded among CMO 15 (2022-2024) graduates, at 66.7%, indicating that a majority of the most recent graduates have yet to pursue further studies. This may be attributed to factors such as financial constraints or ongoing employment transitions (Sequeira et al., 2020). In contrast, CMO 30 (2008-2016) had the lowest percentage (23.7%) of graduates who did not pursue further studies, suggesting that the older CMO group was more prone to seek additional qualifications over time.

Across all groups, 40.1% (99 graduates) pursued professional training, with CMO 30 (43.6%) and CMO 14 (41.9%) showing relatively similar participation rates. However, CMO 15 graduates (30.0%) had the lowest rate.

The study also found that 23.1% (57 graduates) either started or completed a master's degree, showing a low level of commitment to career advancement. CMO 30 graduates had the highest percentage (30.8%), while CMO 14 (22.6%) and CMO 15 (3.3%) had notably lower rates. As for doctorate degree, only 1.2% (3) of the graduates pursued or completed a doctorate degree, all of whom were from CMO 30 (1.9%), while no doctoral pursuits were recorded among CMO 14 and CMO 15 graduates.

IV. DISCUSSION

The study showed that participation differed across the three curriculum groups, with most respondents coming from CMO 30, followed by CMO 15, and the fewest from CMO 14. This uneven distribution may be influenced by how long graduates have been out of school—older graduates may be easier to reach because they are more established and possibly more engaged in alumni networks (Smith & Jones, 2021; Brown, 2022). Meanwhile, more recent graduates may still be adjusting to work and are perhaps less responsive to tracer requests (Garcia, 2024). This highlights the need for stronger alumni tracking systems and communication channels that make it easier to follow graduates across all year levels.

Nursing Licensure Exams (NLE) proportion of passers across graduates remained high, and even showed a slight upward trend from CMO 30 to CMO 15. This improvement may be linked to curriculum revisions, strengthened alignment with licensure competencies, and the increasing use of simulation and enhanced clinical exposure in recent years (Santiago & Cruz, 2022; De Guzman et al., 2021; Liwanag & Bautista, 2020; WHO, 2020). Such results reinforce the importance of competency-based education in nursing theory. They also suggest that continuous faculty development and evidence-based teaching strategies remain vital to sustaining strong licensure outcomes. Policymakers may consider maintaining—and even expanding—support for curricular innovations that strengthen nurse licensure exam (NLE) readiness.

Employment outcomes paint a more mixed picture. While earlier graduates (CMO 30 and CMO 14) generally enjoy stable employment, recent graduates under CMO 15 appear to be experiencing more challenges, including a higher proportion of those who have never been employed. This may possibly reflect increased job competition, temporary economic slowdowns, or the natural adjustment period new

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graduates face when transitioning into the workforce (Reyes, 2015; DOLE, 2022; DTI, 2023). These results emphasize the need for better transition-to-practice support, such as job readiness workshops, coaching, and stronger institutional partnerships with healthcare employers.

Despite differences in employment levels, job relevance remains high overall, which suggests that the nursing program continues to prepare graduates for careers that match their training. However, the decline in job relevance among CMO 15 graduates may indicate emerging gaps between recent curriculum outputs and current employer expectations (Philippine Statistics Authority, 2022; Alvarez & Santos, 2020). This may call for more responsive curriculum review processes. It also suggests practical steps, such as integrating mentorship programs, strengthening internship experiences, and gathering regular employer feedback to ensure graduates continue to align with industry needs.

Another notable finding is the increased preference for local employment, especially among the newest graduates. Nearly all CMO 15 graduates chose to work within the Philippines. This shift may be due to improved local opportunities, slower overseas processing timelines, or stronger personal preferences to stay close to home (PIDO, 2021; PSA, 2023; DBM, 2021). This trend supports community-based nursing frameworks that emphasize service to local populations. It also suggests opportunities for local hospitals to develop nurse residency and retention programs, and for policymakers to sustain compensation improvements that encourage Filipino nurses to stay in the country.

In terms of recognition or commendable achievements, earlier graduates—particularly CMO 30—were more likely to have received awards than later groups. This may simply reflect that they have had more time to build their careers and gain workplace recognition, while younger graduates are still establishing themselves (Lee et al., 2023; Garcia, 2024). The gap may also indicate the need to strengthen early-career support systems that help new nurses grow professionally. These findings point to the value of mentorship, leadership development, and structured professional growth pathways in nursing practice and policy.

Finally, the study found that fewer recent graduates pursued training or advanced degrees, with CMO 15 showing the highest proportion of those who did not engage in any form of further education. This may be linked to financial challenges, workload demands, or limited access to convenient graduate programs (Sequeira et al., 2020; Shah et al., 2021). In contrast, graduates from CMO 30 were more likely to pursue master's or doctoral degrees, probably because of career advancement requirements that come with longer professional experience. These results reinforce lifelong learning as a key component of nursing theory and practice. They also highlight the need for accessible graduate nursing programs in the region—suggesting that establishing an Master of Arts in Nursing (MAN) or Master of Science in Nursing (MSN) program at MPSU could make advanced education more achievable for future graduates.

Overall, the discussion shows that while MPSU continues to produce competent and employable graduates, the newer graduates face emerging realities that require timely educational, professional, and policy responses. The findings emphasize the importance of maintaining a responsive curriculum, supporting graduates during the school-to-work transition, strengthening local employment systems, and expanding opportunities for advanced nursing education. These implications collectively support continuous improvement of nursing theory, research, practice, and policy—ensuring that the program remains aligned with the changing needs of the healthcare workforce.

V. Conclusion and Recommendations

This tracer study aimed to examine the licensure performance, employment outcomes, job relevance, and postgraduate engagement of MPSU nursing graduates from 2008 to 2024. The findings revealed that the program continues to produce highly competent graduates, as shown by the consistently high proportion of respondents who reported passing the Nursing Licensure Examination (NLE), with rates even improving across successive curriculum revisions.. Employment outcomes also showed generally strong employability, although the most recent graduates experienced lower employment rates and reduced engagement in advanced studies. The increasing preference for local employment among younger graduates, the decline in job relevance for CMO 15, and the minimal pursuit of master's and doctoral programs further highlight emerging trends and challenges that may influence graduate trajectories.

Taken together, these results suggest that while the program remains effective, the changing labor market, evolving employer expectations, and the financial or personal circumstances of new graduates may be shaping their transitions into professional roles. These findings carry meaningful implications: for nursing theory, they reinforce the value of competency-based education and lifelong learning; for research, they highlight the need for continued monitoring of graduate outcomes and deeper exploration of employment barriers; and for practice, they emphasize the importance of strengthening transition-to-practice support, career guidance, and mentorship for new nurses. At the policy level, the study emphasizes the need for responsive curriculum review and the establishment of accessible graduate nursing programs within MPSU to support professional advancement.

Overall, this paper has achieved its goal of providing a comprehensive picture of graduate outcomes across three CHED curriculum groups and has generated evidence that can guide curriculum enhancement, institutional planning, and workforce development. Looking forward, the study offers a foundation on which MPSU can build: it promises to inform ongoing program improvements, strengthen graduate support

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systems, and ultimately contribute to producing future-ready nursing professionals equipped to meet the evolving needs of the healthcare system.

Limitations of the Study

While this study offers meaningful insights into the outcomes of MPSU nursing graduates, several limitations need to be acknowledged. First, much of the information relied on self-reported responses, which may be influenced by how graduates recall or choose to share their experiences. This means some details may have been unintentionally understated or overstated. Second, although random sampling was applied, participation still depended on who was available and willing to respond. As a result, some curriculum groups may be more represented than others. Third, the use of online data collection for graduates living outside the province may have excluded those with poor or limited internet access, which could affect the diversity of responses. Lastly, because the study used only quantitative methods, it may not fully capture the richer, more personal stories behind graduates' employment decisions, challenges, or motivations.

These limitations suggest that future tracer studies could benefit from combining surveys with interviews or focus group discussions, strengthening alumni tracking systems, and conducting regular follow-up studies. Doing so may help build a more complete and insightful picture of graduates' career journeys and educational needs.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest — financial, professional, or personal — that could have influenced the conduct, results, or interpretation of this research.

DISCLOSURE OF USE OF GENERATIVE AI

Generative Artificial Intelligence (AI) tools were used solely as an editorial aid to enhance clarity, organization, and language quality of the manuscript. All scholarly processes, including study design, data generation, analysis, interpretation of results, and formulation of conclusions—were independently conducted, critically reviewed, and verified by the authors. AI was not used to create, fabricate, or manipulate data. The authors ensured ethical and responsible use of AI and take full responsibility for the accuracy, integrity, and originality of this work.

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Strengthening Long-Term Care for Bedridden Elderly: A Community-Driven Integrated Care Model in Thailand

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ABSTRACT

Introduction: Thailand is approaching super-aged society status, yet fragmented coordination and inadequate caregiver support hinder effective long-term care for bedridden elderly, particularly in rural areas.

Aim: To develop and evaluate a community-driven integrated care model for bedridden elderly based on the Chronic Care Model (CCM).

Methods: A three-phase mixed-methods study was conducted in rural Thailand: (1) situational analysis with 64 stakeholders, (2) participatory model development and expert validation, and (3) eight-month implementation with 25 bedridden elderly and their caregivers (January–August 2021).

Results: The six-component model (health system organization, delivery system design, decision support, clinical information systems, self-management support, community engagement) achieved significant improvements across all indicators. Home visit coverage increased from 75% to 100%, satisfaction from 80% to 100%, and complications decreased from 70% to 40%. Timely referrals, screening, and standardized assessments all reached 100% (versus 65%, 65%, and 75% baseline). New complication prevention improved from 50% to 80%. Qualitative findings revealed enhanced caregiver confidence, reduced burden, and strengthened intersectoral coordination.

Conclusion: The integrated care model effectively improved care quality for bedridden elderly in rural Thailand. Healthcare systems should adopt community-based models that leverage social structures and empower caregivers through systematic training. Policymakers should institutionalize care coordination mechanisms, allocate sustained funding, and formally recognize community caregivers as essential healthcare workforce members.

Keywords: *Long-term care, Bedridden elderly, Integrated care model, Community health nursing, Chronic care model*

I. INTRODUCTION

The global population is aging rapidly, and Thailand is no exception to this trend. The country is projected to become a super-aged society by 2033, with over 28% of its population aged 60 years and older (Department of Older Persons, 2019). This demographic shift has profound implications for health systems, particularly in the provision of long-term care for older adults with chronic illnesses and functional dependence. Among this population, bedridden older adults —those confined to bed and requiring assistance with daily activities due to their complex needs, vulnerability to complications, and the burden of care placed on families and communities (Wangji & Sangsuwan, 2022).

Despite national efforts to establish long-term care (LTC) systems, fragmented coordination, inadequate caregiver support, and context-specific limitations hinder effective care for bedridden elderly people, especially in rural and semi-urban areas. Primary care units, such as subdistrict health-promoting hospitals (SHPHs), often serve as the first and only point of contact for homebound patients. However, a lack of structured collaboration with local administrative organizations (LAOs), insufficient caregiver training, and underdeveloped continuity of care mechanisms remain persistent gaps (Songtanin, 2017; National Health Security Office, 2016).

A promising approach to address these challenges is the application of the Chronic Care Model (CCM), a framework emphasizing proactive, integrated, community-participatory strategies for managing long-term health conditions. While traditionally applied to chronic disease management, the CCM can be effectively adapted for complex older adult care systems, especially in settings where family members and informal caregivers play a central role (Luciana & Maria, 2013). Recognizing the contextual realities of the Phlai Chumphon subdistrict—a semi-rural

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community in Phitsanulok Province —this study aimed to develop a locally driven, evidence-based model that strengthens collaborative long-term care for bedridden elderly people through stakeholder engagement and structural integration.

This study aimed to explore the current situation and challenges in providing care for bedridden elderly in Phlai Chumphon subdistrict, develop an integrated care model tailored to the needs of bedridden elderly using the Chronic Care Model framework, and evaluate the effectiveness of the developed model in improving care outcomes and stakeholder satisfaction.

This study employed the Chronic Care Model (CCM) as its conceptual framework, incorporating six core components: (1) Health System Organization, (2) Delivery System Design, (3) Decision Support, (4) Clinical Information Systems, (5) Self-Management Support, and (6) Community Resources and Partnerships (MacColl Center for Health Care Innovation, 2006).

II. Methods

Study Design

This study employed a research and development (R&D) design using a mixed-methods approach, integrating both qualitative and quantitative data collection and analysis. The study was conducted in three sequential phases: (1) situational analysis and needs assessment, (2) model development and expert validation, and (3) model implementation and evaluation of the results.

The conceptual framework was based on the Chronic Care Model (CCM) to guide the design and structure of the integrated care model.

Study Setting

The study was conducted in Phlai Chumphon Subdistrict, Phitsanulok Province, Thailand, a semi-rural area with 18.9% of its population aged 60 years and above. The subdistrict had 25 bedridden elderly individuals at the time of the study. The local Subdistrict Health Promoting Hospital (SHPH) serves as the primary healthcare facility and coordinator of elderly care services.

Participants and Sampling

Participants were selected using purposive sampling based on their roles in the long-term care system for bedridden older adults in Japan. A total of 64 individuals were included in this study. To address the reviewer's request for clarity, a breakdown of the participants is provided below:

- 25 bedridden older adults received home-based care;
- 25 primary family caregivers were directly involved in daily care activities;
- 6 community caregivers (LTC volunteers under the local health promotion hospital);
- 4 health professionals, including nurses and physical therapists;
- 4 local administrative representatives (municipal and subdistrict officers).

These groups were selected because they represent key stakeholders in the existing LTC system, and their insights are essential for designing a comprehensive and contextually appropriate integrated care model.

Data Collection Instruments

The research instruments were developed based on an extensive literature review and expert consultation and included: (1) Focus Group Discussion (FGD) guidelines to explore contextual problems and stakeholder perspectives, (2) Model Development Workshop Guide for participatory co-creation, (3) Outcome Measurement Checklist assessing care outcomes before and after model implementation, (4) Stakeholder Evaluation Forms to assess satisfaction and feasibility, and (5) Caregiver and Patient Interview Guides to evaluate perceived changes in quality of care.

All instruments were content validated by five experts in community health nursing, geriatric care, public health, and qualitative research methodology. The Index of Item-Objective Congruence (IOC) values for all instruments exceeded 0.6, confirming their acceptable content validity.

Procedure

Phase 1: Situational analysis and needs assessment (September 2020)

Focus group discussions were conducted with stakeholders to assess the existing elderly care system, identify gaps in service delivery, and gather local perspectives on care needs and resources of the elderly. Three FGD sessions were held: (1) healthcare providers and local administrators (n=18), (2) community caregivers and volunteers (n=23), and (3) family caregivers and elderly patients (n=23). Each session lasted approximately 90-120 minutes and was audio-recorded with the participants' consent. Field notes were taken to capture the nonverbal cues and contextual observations.

Phase 2: Model Development and Validation. (October–December 2020)

The model development phase spanned three months and involved multiple participatory activities:

1. Initial Model Drafting (Weeks 1-2): The research team developed a preliminary integrated care model based on the Chronic Care Model framework and findings from Phase 1. These draft outlines six core components adapted to the local context.
2. Participatory Workshops (Weeks 3-6): Three half-day participatory workshops (4 hours each) were conducted with different stakeholder groups to refine the model:
   - Workshop 1 (n=20): Health professionals, SHPH director, and local administrators

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reviewed the draft model structure, roles, and responsibilities.

- Workshop 2 (n=25): Community caregivers and family members provided input on practical implementation, resource needs, and potential barriers.
- Workshop 3 (n=19): A combined stakeholder meeting facilitated consensus building and finalized the operational framework.

The workshop participants engaged in facilitated group discussions, role-playing scenarios, case study analyses, and collaborative problem-solving activities to refine each component of the model. All sessions were facilitated by the research team and documented using audio recordings, photographs, and comprehensive field notes.

3. Expert Validation (Weeks 7-10): The revised model was submitted to a panel of five experts for content validation: two community health nursing professors, one geriatric medicine specialist, one public health policy expert, and one experienced community health practitioner with over 15 years of field experience. Experts independently rated the model's relevance, clarity, feasibility, and cultural appropriateness using structured evaluation forms. The feedback was systematically reviewed, and modifications were made accordingly.
4. Final Revisions and Approval (Weeks 11-12): The research team incorporated expert recommendations and presented the finalized model to all stakeholders for approval before implementation. A consensus meeting was held to ensure that all parties understood their roles and agreed to the implementation plan.

Phase 3: Model implementation and Evaluation (January–August 2021)

The developed model was implemented over eight months in the service area of the Phlai Chumphon SHPH.

Implementation Structure:

Implementation was led by a multidisciplinary care team consisting of three SHPH nurses, the SHPH director (a physician), and 15 trained community caregivers, and was coordinated by the principal investigator. Monthly coordination meetings were held to monitor the implementation progress, troubleshoot challenges, and ensure adherence to the model's protocols.

Participant Continuity:

All 25 bedridden elderly patients and their 25 primary family caregivers who participated in Phase 1 continued as participants throughout Phase 3, ensuring consistency in the evaluation and reducing selection bias. No participants withdrew during the study period, resulting in a 100% retention rate.

Baseline Assessment (January 2021):

Pre-intervention data were collected for all 12 care indicators using multiple methods:

- Comprehensive review of SHPH medical records and existing care documentation
- Structured home visits using standardized observation checklists
- Semi-structured interviews with family caregivers
- Direct assessment of bedridden elderly patients (when cognitive status permitted)
- Review of existing care plans and service utilization records

Intervention Implementation (February–July 2021):

All six components of the integrated care model were systematically implemented according to the established protocols and timelines. The key activities included the following:

- Establishment of the multidisciplinary care team with clearly defined roles
- Regular home visits following a structured schedule (monthly for stable cases, bi-weekly for complex cases)
- Training workshops for family and community caregivers (three 4-hour sessions)
- Distribution of assistive devices and care supplies
- Implementation of standardized assessment tools and care planning protocols
- Development of referral pathways and emergency response procedures
- Community engagement activities through temples and senior clubs

Post-Implementation Evaluation (August 2021):

The same assessment procedures and instruments used at baseline were repeated to measure changes in the care indicators, ensuring measurement consistency. Additionally, semi-structured interviews were conducted with 15 purposively selected stakeholders (five health professionals, five family caregivers, and five community caregivers) to gather in-depth qualitative feedback on model effectiveness, facilitating factors, implementation challenges, and sustainability prospects.

Data collection at both points at the same time was conducted by trained members of the research team who had undergone standardized training in assessment procedures and interview techniques, ensuring inter-rater reliability and reducing measurement bias.

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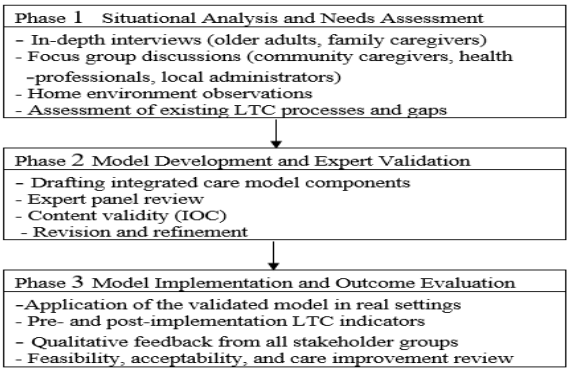

FIGURE 1. STUDY PHASES AND RESEARCH FLOW

Instruments

Instruments included:

- structured LTC indicators;
- interview guides for older adults and caregivers;
- focus group discussion protocols;
- Observation checklists.

As noted above, qualitative instruments did not undergo reliability testing, as reliability measures such as Cronbach's alpha are not suitable for open-ended and exploratory qualitative tools. Rigor was established through expert review, field testing, and the use of standardized national LTC indicators for quantitative assessment.

Ethical Considerations

Ethical approval was obtained from the appropriate Institutional Review Board. Additional measures were implemented to ensure the protection of bedridden elderly participants, who are considered a sensitive population because of their physical limitations and potential vulnerability.

The following safeguards were applied:

- Data collection was conducted at the participants' homes to ensure comfort and safety.
- The interview sessions were kept short (10–15 minutes) to minimize fatigue.
- Participants were allowed to pause or discontinue the study at any time without consequence.
- A family caregiver was present throughout the interview to provide the necessary support.
- No questions posed a risk to the participants' psychological or physical well-being.
- Participation was voluntary and did not affect access to health services or community-support programs.
- All data were kept confidential and used only for research purposes.

These procedures ensured that participation posed minimal risk and aligned with the ethical standards for research involving older adults.

Data Analysis

Quantitative Data Analysis:

Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations. Pre- and post-intervention care indicators were compared to assess changes following the implementation of the model. All statistical analyses were performed using standard analytical procedures.

Qualitative Data Analysis:

Qualitative data from focus group discussions, workshop proceedings, and interviews were analyzed using thematic content analysis following Braun and Clarke's (2006) six-phase approach. Audio recordings were transcribed verbatim in Thai and later translated into English by a bilingual research team member. Back-translation verification was performed by an independent translator to ensure accuracy.

The analysis process involved: (1) familiarization with the data through repeated reading of transcripts, (2) generation of initial codes through systematic coding of interesting features, (3) searching for themes by collating codes into potential themes, (4) reviewing themes for coherence and distinctiveness, (5) defining and naming themes to capture their essence, and (6) producing a scholarly report with vivid examples.

Data Integration:

Triangulation techniques were applied to enhance the trustworthiness and validity of the findings by systematically comparing and integrating data from different sources (stakeholders, patients, caregivers), methods (FGDs, interviews, observations), and time points (pre- and post-intervention). Convergence and divergence in findings were examined to provide a comprehensive understanding of the model's effectiveness (Jantavanich, 2009).

Trustworthiness and Rigor of Data

To ensure the trustworthiness of the qualitative findings, several strategies were employed following Lincoln and Guba's (1985) criteria.

Credibility was achieved through: (a) prolonged engagement with the community throughout the eight-month implementation period, allowing the research team to build rapport and gain a deep understanding of the context; (b) triangulation of data sources (multiple stakeholder groups), methods (FGDs, interviews, observations, document review), and investigators (multiple team members involved in data collection and analysis); (c) member checking, whereby preliminary findings were presented to participants for validation and feedback; and (d) peer debriefing sessions among the research team to discuss emerging themes and interpretations.

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Transferability was ensured through a thick description of the research context, participant characteristics, implementation processes, and findings. Detailed documentation enables readers to assess the applicability of the findings to other settings with similar characteristics.

Dependability was maintained through: (a) comprehensive documentation of all research procedures, methodological decisions, and modifications throughout the study; (b) maintenance of a detailed audit trail, including raw data, field notes, coding schemes, analysis documents, and reflexive journals; and (c) systematic documentation of the model development and implementation process.

Confirmability was established through: (a) maintaining a complete audit trail available for external review; (b) reflexivity, with researchers engaging in ongoing reflection about their potential biases and assumptions; and (c) having the findings and interpretations reviewed by external experts in community health nursing and qualitative research who were not involved in the study.

For quantitative data, reliability was ensured through: (a) use of standardized, validated assessment tools (Activities of Daily Living scale, Thammarak-Apinya Independence scale, long-term care criteria) with established psychometric properties; (b) training of data collectors in standardized assessment procedures with inter-rater reliability checks; and (c) consistency in data collection procedures and timing across all participants at both measurement points.

III. Results

Phase 1: Situational Analysis

The qualitative findings revealed that elderly care in the Phlai Chumphon subdistrict operated as a collaborative network centered around the local Subdistrict Health Promoting Hospital (SHPH), community caregivers (CGs), and civil society partners, including local administrative organizations (LAOs), temples, and senior clubs.

Key Strengths Identified:

Participants emphasized the strong foundation of community culture that supports mutual assistance. A village headman articulated this communal spirit as follows:

"We have always helped each other in this community. When someone is sick, the neighbors come to help. It is our way of life. But we need better organization to sustain this as more elderly people become dependent and need constant care."

A local administrator added:

"Our community has good intentions and willing people, but we lack a clear system. Everyone wants to help, but sometimes we duplicate efforts or miss important things because there is no coordination."

Other strengths included formal and informal stakeholder involvement across sectors and widespread willingness to participate in integrated care initiatives. A temple abbot noted:

"The temple has always been a place of community support. We are ready to participate in any program that helps our elderly members maintain dignity and receive proper care."

Notable Challenges:

However, significant gaps hinder effective care delivery. A community caregiver expressed this as follows:

"Although there is a working group and a community culture of helping one another, coordination is still not systematic, and caregivers need more confidence and skills. Sometimes I don't know if I'm doing the right thing, especially when complications arise."

The specific challenges included:

- Lack of clarity in coordination plans and referral pathways
- Limited knowledge and skills among community caregivers and family caregivers regarding proper care techniques, complication prevention, and emergency management
- Uncertainty regarding care roles, responsibilities, and accountability among different stakeholders
- Insufficient communication channels between healthcare providers and family caregivers
- Limited access to assistive devices and care supplies

A family caregiver elaborated on her struggles as follows:

"I want to take good care of my mother, but I do not know enough. When something happens, such as the development of a bedsore or breathing difficulty, I panic. I wish someone could teach me what to do and be available when I need help urgently."

Another family caregiver emphasized the emotional burden:

"Caring for my bedridden father 24 hours a day is exhausting, not just physically but mentally. I feel isolated. Sometimes I wonder if I'm doing enough or if there's a better way to care for him."

An SHPH nurse acknowledged the systemic limitations from the healthcare provider's perspective:

"We want to provide comprehensive care, but with limited staff and so many patients scattered across villages, we can only visit homes occasionally, she said. We need a team approach with trained volunteers and better systems to track patient needs and respond quickly."

The SHPH director added:

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"The challenge is not just medical care but also coordinating with families, volunteers, and local authorities. We need a structured model that clarifies everyone's role and creates sustainable partnerships."

These findings provided crucial insights that informed the conceptual foundation and practical design of the care model development in Phase 2, ensuring the model addressed actual needs and built upon existing strengths while systematically addressing identified gaps.

Phase 2: Development of the Integrated Care Model

Based on the Chronic Care Model (CCM) and guided by stakeholder input, a community-driven integrated care model was co-developed through the participatory processes described in the methods section. The model features six interconnected components:

1. Health System Organization: Defined clear roles and responsibilities for all stakeholders, established a multidisciplinary care team with formal coordination mechanisms, formalized stakeholder networks through memoranda of understanding, and secured commitment and resource allocation from local administrative leadership.
2. Delivery System Design – Structured regular home visits with standardized protocols and visit schedules, implemented individualized care planning processes using evidence-based guidelines, ensured service continuity through systematic case management, and established clear pathways for routine and emergency care.
3. Decision Support – Ongoing education and clinical consultation for healthcare providers, structured caregiver training programs covering technical skills and psychosocial support, established mechanisms for case-based consultations with specialists when needed, and developed evidence-based care protocols and educational materials.
4. Clinical Information Systems have developed efficient referral and communication channels among all care team members, implemented shared documentation systems accessible to authorized providers, utilized standardized assessment tools for consistent patient evaluation, and established mechanisms for tracking care quality indicators and patient outcomes.
5. Self-Management Support – Supplying necessary assistive devices and adaptive equipment to facilitate care, providing emotional and psychological support to both patients and caregivers, delivering practical skills training in activities of daily living assistance, and creating peer support networks among caregivers.
6. Community Engagement – Mobilized temples as centers for social support and respite activities, engaged senior clubs in promoting elderly well-being, partnered with local administrative organizations for resource provision and policy support, and involved civil society groups in sustaining care initiatives and reducing stigma.

During the validation workshops, the stakeholders expressed strong support for the model. A workshop participant stated:

"This model makes sense in our context. It uses what we already have—our community spirit, the temple, volunteers—but organizes everything better. Everyone has a clear role."

The finalized model received unanimous approval from all stakeholder groups and expert validators, with stakeholders expressing a strong commitment to implementation. An expert validator commented:

"This model successfully adapts the Chronic Care Model to the rural Thai context. It respects cultural values while introducing systematic improvements to the process. The participatory development process ensures local ownership."

Phase 3: Evaluation of Model Effectiveness

Following eight months of implementation (January–August 2021), comprehensive data from 25 bedridden elderly patients and their 25 primary caregivers were systematically collected and analyzed.

Quantitative Outcomes

The results demonstrated significant improvements across multiple-care indicators. Table 1 summarizes the pre- and post-intervention outcomes:

TABLE 1: COMPARISON OF CARE INDICATORS BEFORE AND AFTER MODEL IMPLEMENTATION (N=25)

Care Indicators	Before (%)	After (%)	Interpretation
1. Coverage of home visits	75	100	Improved
2. Client and caregiver satisfaction	80	100	Improved
3. Complications among bedridden elderly	70	40	Improved
4. Ability of patients to self-image or control chronic illness	50	65	Improved
5. Timely referral for complex cases	65	100	Improved
6. Screening and assessment by SHPH staff	65	100	Improved
7. Use of standard LTC assessment (ADL, TAI, LTC criteria)	75	100	Improved
8. Individualized care plans in place	75	100	Improved
9. Case management by trained health professionals	70	100	Improved
10. Continuity of home-based care	75	100	Improved
11. Increase in patients' ADL scores	60	65	Improved
12. Reduction in new complications	50	80	Improved

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All indicators showed improvement, with nine of the 12 achieving 100% target attainment. The most substantial improvements were observed in service delivery processes (indicators 5-10) and complication prevention (indicator 12). The modest improvement in ADL scores (Indicator 11) reflects the chronic and often irreversible nature of functional decline in bedridden elderly individuals, highlighting the importance of focusing on quality of life and complication prevention rather than functional restoration.

Qualitative Evaluation

Qualitative feedback revealed substantial improvements in caregiver confidence, knowledge, satisfaction, and emotional well-being across all the stakeholder groups.

Family Caregivers' Perspectives:

Family caregivers consistently report enhanced capacity and reduced anxiety. A daughter caring for her bedridden father said:

"Now, I feel more supported and confident. I know whom to call and what to do when my father's condition changes. The training taught me the proper techniques for turning him, preventing bedsores, and feeding him safely. The regular visits from the care team give me reassurance that I'm doing things correctly."

Another family caregiver emphasized the emotional support received:

"Before, I felt completely alone in this responsibility. Now, I have people checking on us regularly, asking how I am doing, not just my mother. They understand the stress and help me to manage it. I don't feel like I'm carrying this burden alone anymore."

A son caring for his elderly mother highlighted practical improvements:

"Having access to the proper equipment, the air mattress, the wheelchair—makes such a difference. And knowing there's a clear plan for emergencies gives me peace of mind when I'm at work."

Community Caregivers' Perspectives:

Community caregivers reported enhanced capacity, role clarity, and professional satisfaction:

"Before the model, I felt alone and unsure about what I should do during home visits. Now, we have regular coordination meetings, clear guidelines, and checklists, and I know that the nurse is just a phone call away if I encounter something beyond my knowledge. I feel like a valued part of the healthcare team, not just a volunteer."

Another community caregiver added:

"The training provided me with skills I never had before. I can now properly assess complications, teach families correct care techniques, and know when to refer to the hospital. I feel professional and competent in my role."

Healthcare Professionals' Perspectives:

Healthcare professionals have noted improved efficiency, coordination, and job satisfaction:

"The model has transformed how we work. Instead of working in isolation and feeling overwhelmed, we now function as a coordinated team with clearly defined roles. Standardized assessment tools help track patient progress systematically, and community caregivers significantly extend our reach. We can now provide truly continuous care."

An SHPH nurse elaborated:

"What I appreciate most is the systematic approach. We have regular team meetings, shared records, and established protocols. When I visit a patient, I know what the community caregiver observed last week and what the family's concerns are. This coordination makes our care much more effective."

Local Administrators' and Community Leaders' Perspectives:

Stakeholders from local administration and community leadership emphasized strengthened intersectoral coordination and community impact:

"This model brought everyone together—the temple, the health center, families, volunteers, and the local government. We all have clear roles now, and the elderly in our community are receiving better care. It's a model of community collaboration we can be proud of and want to continue."

A temple abbot noted:

"The temple has become a center for caregiver support meetings and respite activities. Seeing families support each other and share their experiences creates a compassionate community. This is in line with Buddhist principles of caring for those who cared for us."

The subdistrict mayor emphasized sustainability:

"We have committed budget resources to continue this program. The positive results—fewer emergency hospitalizations, happier families, and elderly individuals living with dignity— make this investment worthwhile. Other subdistricts are now asking us how they can implement this model."

Perspectives of Older Patients

Bedridden elderly patients, when able to communicate, expressed gratitude for more attentive, consistent, and dignified care:

"I used to feel like a burden to my family, lying here, unable to do anything. But now, I see people working together to help me—the nurses, volunteers, and even the neighbors. My daughter seems less tired and stressed because she has support from her family. That makes me feel better."

An elderly patient with better cognitive function stated:

"The regular visits and attention make me feel valued, not forgotten. They treat me with respect, explain things to me, and ask what I need. I may be bedridden, but I still feel like a person who matters."

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Summary of Results

The comprehensive evaluation demonstrated that the community-driven integrated care model achieved its intended outcomes across multiple dimensions:

- Service Delivery: All quantitative indicators improved, with nine of the 12 achieving 100% target attainment, demonstrating the successful implementation of systematic care processes.
- Stakeholder Satisfaction: Qualitative feedback emphasized increased trust, role clarity, empowerment, confidence, and satisfaction among all stakeholder groups—family caregivers, community caregivers, healthcare professionals, local administrators, and elderly patients.
- Model Appropriateness: The model was deemed culturally appropriate, contextually relevant, operationally feasible, and potentially replicable by participants and external evaluators.
- Sustainability: Strong stakeholder commitment to sustaining and expanding the model beyond the study period was evident, with local government allocating continued funding and neighboring communities expressing interest in adoption.
- Caregiver Capacity: Both family and community caregivers demonstrated enhanced knowledge, skills, confidence, and emotional resilience, reducing caregiver burden and burnout risk.
- Care Quality: Significant reduction in complications (from 70% to 40%) and improved complication management (from 50% to 80%) indicate enhanced quality and safety of care.

IV. Discussion

The findings demonstrate that the community-driven integrated care model, grounded in the Chronic Care Model (CCM), effectively improved both service delivery and health outcomes for bedridden elderly individuals in a rural Thai setting. Notably, post-intervention results showed enhanced care continuity, strengthened stakeholder coordination, and substantial caregiver empowerment, with nine out of twelve indicators achieving 100% compliance. These outcomes underscore the value of a localized, participatory approach to long-term care (LTC), particularly in resource-constrained contexts where formal healthcare infrastructure is limited but community social capital is strong.

The modest improvement in functional ability (ADL scores from 60% to 65%), though positive, highlights the chronic and often irreversible nature of many elderly patients' conditions. This finding reinforces the appropriateness of shifting care goals from curative to supportive and quality-of-life-oriented interventions, emphasizing the critical importance of caregiver capacity building, complication prevention, and psychosocial support. The dramatic reduction in complications (from 70% to 40%) demonstrates that while functional restoration may be limited, significant improvements in care quality and safety are achievable through systematic interventions.

These findings align closely with Wangji and Sangsuwan (2022), who developed a continuing care model for dependent elderly that similarly emphasized caregiver empowerment, intersectoral collaboration, and localized health system design. Both studies demonstrate that sustainable elderly care in Thai communities requires moving beyond hospital-centric models toward integrated community-based approaches that leverage existing social structures and cultural values.

Moreover, the study reinforces the conclusions of Luciana and Maria (2013), who advocated for adapting chronic care principles to elder care, particularly in family-centered cultural contexts. The successful application of the CCM framework in this study provides empirical evidence that models originally designed for chronic disease management can be effectively adapted to address the complex, multidimensional needs of bedridden elderly care when thoughtfully contextualized and implemented through participatory processes.

The results also reflect and extend the earlier work by Songtanin (2017) and the National Health Security Office (2016), which identified critical gaps in LTC coverage and called for community-based models driven by collaboration between SHPHs, LAOs, and civil society. This study not only validates those observations but provides a concrete, evaluated model that addresses identified gaps through systematic integration of healthcare services, community resources, and family support.

The qualitative findings revealing enhanced caregiver confidence, reduced isolation, and improved emotional wellbeing are particularly significant given the growing recognition of caregiver burden as a critical concern in aging societies. The model's emphasis on caregiver training, peer support networks, and accessible professional consultation addresses this issue directly, potentially preventing caregiver burnout and enabling sustainable home-based care.

Implications

This study holds multiple implications for practice, policy, and education:

For Nursing Practice:

Community nurses should be prepared and supported to function as case managers and care coordinators, orchestrating care across health and community systems rather than solely providing direct clinical services. Nursing roles must expand to include mentoring caregivers in both practical care techniques and psychosocial dimensions of caregiving, facilitating stakeholder coordination, and advocating for patient and family needs across sectors. Professional development programs should emphasize skills in team

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leadership, community engagement, and systems coordination alongside clinical competencies.

For Policy:

Local and national governments should institutionalize integrated care models as core components of long-term elder care strategies, with dedicated, sustained budget allocations for caregiver training programs, provision of assistive devices and adaptive equipment, multidisciplinary home visit teams, and care coordination infrastructure. Policy frameworks should formally recognize and support the roles of community caregivers as essential healthcare workforce members, potentially including compensation mechanisms, liability protections, and continuing education requirements. The success of this model suggests that investments in community-based integrated care may reduce more costly institutional and emergency care utilization.

For Education:

Nursing and public health curricula should integrate community-based long-term care principles, including frameworks like the Chronic Care Model adapted for elder care contexts. Educational programs should include modules on gerontological nursing, aging demographics and implications, cultural competence in elder care, interprofessional collaboration, community assessment and engagement, and participatory research methodologies. Clinical practicum experiences should provide students with opportunities to engage in community-based care coordination and to work with diverse stakeholders beyond traditional healthcare settings.

Strengths and Limitations

Strengths:

This study demonstrates several methodological and practical strengths. The model was co-created with community stakeholders through genuinely participatory processes, enhancing local ownership, cultural appropriateness, and implementation fidelity. The application of a proven theoretical framework (Chronic Care Model) provided conceptual rigor while allowing contextual adaptation. The mixed-methods approach integrated both quantitative service indicators and rich qualitative perspectives from diverse stakeholders, providing comprehensive evaluation. The 100% participant retention rate throughout the eight-month implementation period demonstrates feasibility and acceptability. Finally, the study addresses a critical gap in evidence regarding sustainable, community-based long-term care models for resource-limited settings.

Limitations:

Several limitations should be acknowledged when interpreting findings. The study was conducted in a single rural subdistrict with specific cultural and organizational characteristics, potentially limiting generalizability to urban settings, culturally distinct regions, or communities with different resource availability. The relatively small sample size (n=25 bedridden elderly) reflects the actual population in the study area but limits statistical power for detecting smaller effect sizes and conducting subgroup analyses. Functional outcomes such as ADL improvements may require longer intervention periods to fully materialize, and the eight-month timeframe may not adequately capture sustainability and long-term outcomes.

The study employed a pre-post comparison design without a randomized control group, which limits causal inference. While the consistent improvements across multiple indicators and the qualitative data provide strong supportive evidence, observed changes could potentially be influenced by temporal trends, seasonal variations, or external factors beyond the intervention. However, the absence of major policy changes or external programs during the study period, combined with the consistency of findings across multiple data sources, strengthens confidence in attributing observed improvements to the model implementation.

The participatory nature of the study, while a methodological strength, may introduce social desirability bias in stakeholder feedback, as participants who invested effort in developing and implementing the model may be predisposed to report positive outcomes. The research team's dual role as developers and evaluators could also introduce bias, although this was mitigated through triangulation, member checking, external expert review, and use of standardized quantitative indicators.

Finally, resource requirements for model implementation—including staff time for coordination, training programs, assistive devices, and ongoing support—were not systematically quantified, limiting assessment of cost-effectiveness and scalability to settings with more severe resource constraints.

Future Research Directions

Future research should address these limitations and extend findings through several avenues. Multi-site replication studies across diverse geographic, cultural, and socioeconomic contexts would establish generalizability and identify necessary contextual adaptations. Randomized controlled trials with adequate sample sizes would strengthen causal inference regarding model effectiveness. Longitudinal studies with extended follow-up periods (e.g., 2-5 years) would assess sustainability, long-term health outcomes, and identify factors supporting or hindering sustained implementation.

Cost-effectiveness analyses comparing the integrated care model to usual care would provide critical evidence for policy decisions and resource allocation. Studies should examine both direct healthcare costs and broader economic impacts including family caregiver productivity, institutional care avoidance, and emergency service utilization.

Implementation research investigating barriers and facilitators to model adoption, adaptation processes across different contexts, and strategies for scaling up would support broader dissemination. Comparative

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effectiveness research examining variations in model components, intensity of interventions, and optimal team compositions would enable refinement and optimization.

Finally, research exploring the model's applicability to other vulnerable populations requiring long-term care—such as individuals with disabilities, chronic mental illness, or advanced chronic diseases—would extend the model's utility and impact.

V. Conclusion & Recommendations

This study successfully developed and evaluated a community-driven integrated care model for bedridden elderly individuals in rural Thailand, utilizing the Chronic Care Model (CCM) as a guiding framework. The model effectively addressed critical gaps in long-term care identified in the situational analysis, including fragmented coordination, inadequate caregiver support, unclear roles and responsibilities, and limited access to comprehensive services.

Implementation of the six-component model—encompassing health system organization, delivery system design, decision support, clinical information systems, self-management support, and community engagement—resulted in substantial improvements in care quality and stakeholder outcomes. Key achievements include universal coverage of home visits, complete stakeholder satisfaction, significant reduction in complications, enhanced caregiver confidence and competence, and seamless care coordination across healthcare and community sectors.

Most notably, the participatory design process and deep integration with existing community structures ensured the model's cultural appropriateness, local relevance, stakeholder ownership, and sustainability potential. The model demonstrates that effective long-term care for bedridden elderly in resource-limited settings need not depend primarily on expensive institutional infrastructure, but can instead leverage community social capital, existing healthcare resources, and organized stakeholder collaboration through systematic coordination frameworks.

The findings strongly support the broader application of integrated, community-based elder care models in other resource-limited settings, particularly where familial caregiving and community solidarity are central to the care structure. The model offers a replicable blueprint for public health systems seeking to strengthen long-term care capacity in rapidly aging societies while respecting cultural values, optimizing resource utilization, and empowering communities as active partners in care delivery.

Future directions include scaling the model to other districts and provinces, conducting rigorous cost-effectiveness evaluations, implementing long-term sustainability assessments, and institutionalizing comprehensive training programs for community caregivers and nurse case managers within professional development frameworks. The model's success in Phlai Chumphon subdistrict demonstrates that with appropriate frameworks, stakeholder engagement, and systematic coordination, communities can effectively care for their most vulnerable members while maintaining dignity, quality of life, and family wellbeing.

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Conflict of Interest

The authors hereby declare that no conflicts of interest exist, whether financial, personal, professional, or otherwise, that could have influenced the design, execution, analysis, or reporting of this study. Full transparency has been maintained throughout the research process.

Disclosure of Use of Generative AI

Generative artificial intelligence tools were used solely for organizational structuring, grammar checking, and formatting assistance during manuscript preparation. No AI technologies were employed for data collection, analysis, interpretation, or generation of scientific content or findings. All intellectual contributions, methodological decisions, data analysis, interpretation, and conclusions represent the independent work of the authors.

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RESEARCH ARTICLE

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Health-Related Quality of Life of Older Persons

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ABSTRACT

Introduction: The proportion of people over 60 years is growing faster than any other age group. Increased longevity of older persons implies the need for attention and care as increasing age comes along with multiple health problems.

Aim: To know the extent and perception of the health-related quality of life (HRQoL) of older persons in terms of: physical and mental health, social functioning, emotional well-being, and spiritual health. It aimed to look into the variables significantly related to the HRQoL of older persons, particularly: health status, age, ethnicity, religion, gender, financial status, social support, educational attainment, marital status, and employment. Furthermore, it aimed to develop a module to enhance the HRQoL of older persons.

Methods: Mixed method sequential explanatory design was used. There were 382 and 16 respondents for the quantitative method and qualitative method, respectively. The sample size was computed using the Open Epi version 3.01. A self-made questionnaire and a semi-structured interview guide were used to gather data. Statistical tools were used to analyze the quantitative data, while Colizi was used for the qualitative data.

Results: The extent of HRQoL of older persons in terms of physical and Mental health is (61.64), Social Functioning (22.71), and Emotional well-being (24.34) interpreted as good HRQoL mean scores, while Spiritual health has a fair (7.50) HRQoL mean score. On the variables significantly related to HRQoL of older persons, gender is significantly related to spiritual health with a p=value of 0.022; social support is significantly related to emotional well-being with a p-value of 0.038; and marital status is significantly related to spiritual health with a p-value of 0.007. The other variables are not significantly related to the HRQoL of older persons in the areas of physical and mental health, social functioning, emotional well-being, and spiritual health.

Conclusion: The existential quality of life of older persons remains suboptimal despite satisfactory functioning in activities of daily living, cognition, socialization, and psychological well-being. The influence of variables differs by domain: formal education affects physiologic and cognitive wellness, social support enhances emotional well-being, and married male older persons demonstrate better spiritual contentment. An active aging module was developed to holistically enhance and sustain the health-related quality of life (HRQoL of older persons.

Keywords: *HRQoL, Older persons*

I. Introduction

Health Related Quality of Life (HRQoL) is vital among older persons whose population is growing faster than expected. The proportion of people over 60 years is growing faster than any other age group, as a result of advances in health care (WHO, 2016; University Alliance, 2016). The World Health Organization (WHO) (2016), indicated that globally, there are 8.5 percent of people worldwide who are 65 and over. It is for this reason that older person's HRQoL is being considered to be able to address their need as they are vulnerable to health risks.

In East Asia, an average of 8 in 10 Japanese, South Koreans, and Chinese described aging as a major problem in their country. In the Philippines, older persons comprised 6.8 percent of the household population (Philippines Statistics Authority (PSA), (2015), while 1,365,412 older persons are in the Cordillera Administrative Region (CAR) (PSA, 2015), and 22,539 older persons are in Baguio City (PSA, 2017).

Increased longevity of older persons implies the need for attention and care as increasing age comes with multiple chronic illnesses (WHO, 2016; Drewnowski & Evans, 2001). Along with an aging population, chronic illness, disability, and dependency (WHO, 2016), which impact global health as well as HRQoL of older persons.

As literature presents, the emergent number of older persons parallels the increasing number of care providers as well as care services. However, increasing the number of care providers and care services is unrivalled if the HRQoL of the older person is not measured.

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A lot of literature has been conducted in other countries with regard to HRQoL of older persons. Different domains and varying predictors to measure HRQoL also gave contrasting findings. However, there are a few studies conducted in the Philippines among older persons, and none in the Cordillera. Although there were several studies that used the physical and mental health domains to measure HRQoL, none of these studies presented the HRQoL holistic health dimensions provided by the WHO, which are physical and mental health, social, emotional well-being, and spiritual health. The growing population of older persons in the country, the increasing emphasis on gerontology nursing, highlighting the cultural context, and the lack of local studies on the comprehensive understanding of the HRQoL among older persons prompted the researcher to conduct this study. The researcher aims to answer the following research questions:

1. What is the extent and perceptions on the health-related quality of life of older persons in terms of: physical and mental health, social functioning, emotional well-being, and spiritual health?
2. What variables are significantly related to the HRQoL of older persons?
3. What guide can be developed to enhance the HRQol of older persons?

II. Methods

Research Design

The mixed method sequential explanatory design was used. Sequential design was used since the study started with the quantitative phase and was followed by the qualitative phase to enhance or explain the quantitative findings (Creswell, 2014). The quantitative study employed correlational design using a questionnaire to determine whether or not the variables are correlated with HRQoL. The qualitative data was gathered through focused group discussions and through interviews with selected respondents. Specifically, phenomenological design was used on the qualitative portion where the older persons related their experiences through their perceptions regarding physical and mental health, emotional wellbeing, social functioning and spiritual health.

A. Quantitative Design

Locale and Population

The locale was Baguio City. The respondents were Filipino older persons, residents of Baguio City, 60 years old and above, either a male or a female, with no psychological disturbance and with no cognitive deficit as determined by Mini Cog; may or may not have a chronic illness; and can read and write or can understand English, Tagalog, or Ilocano. An older person with a psychological disturbance and a cognitive deficit was not included in the study. The purposive sampling technique was the basis for selecting the respondents.

To determine the representative sample size, the Open Epi version 3.01 was used (Dean AG, Sullivan KM, Soe MM. 2013). Using the 95% confidence interval and 80% power, the computed sample size was 372, and the actual sample size was 382.

Data Gathering Tool

To gather the data, Borson, Scanlan, Brush, Vitallano, & Dokmak's (2000) Mini Cog test and a self-made questionnaire, which were mainly taken from RAND's (1994) RAND 36-Item Health Survey and the quality-of-life index for adults questionnaire (Becker, Reib, & Shaw, N.D.) was used. The content validity of the tool was confirmed by systematic comparisons that the tool included eight of the most frequently presented health concepts in HRQoL. Considerable evidence was found for the reliability of the tool (Cronbach's alpha > 0.85, reliability coefficient > .75 for all the dimensions except social functioning, and for construct validity in terms of distinguishing between groups with expected health differences (Ware, 2001).

Data Gathering Procedure

Upon the approval of the Saint Louis University – Research and Ethics Committee (SLU-REC), informed consent was obtained from the respondents.

Ethical Considerations

A copy of the proposal and consent forms was submitted to the Saint Louis University Research Ethics Committee (SLU-REC) for approval before actual data gathering.

Written informed consent was sought from each respondent. There was no harm to the respondents since no interventions were introduced.

All retrieved questionnaires were placed in an envelope, and all transcript files and recorded interviews during individual interviews and focus group discussions were saved on a flash drive, and it was not made known to other people. Names or any identifying data were not written in the questionnaire, and pseudonyms were given to each participant. The respondents also had the freedom to withdraw anytime during the study. The rights of older persons were observed in the conduct of the study.

Statistical Analysis

For the quantitative analysis, descriptive and inferential statistics were used in the analysis of data. To answer the questions what is the extent of the HRQoL of the older person, mean scores were used.

To determine which variables, affect the perception of older persons on the extent of their HRQoL, a comparative analysis was performed. Prior to the analysis, however, a test of normality of data was conducted on the data distribution for the score of the respondents along each of the four areas, namely: physical and mental health, social functioning, emotional well-being, and spiritual health. The Shapiro –Wilk test of normality was conducted. Results showed that the data distribution of scores on all four areas was not approximately normally distributed, hence non-

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parametric tests were used for the comparative analyses. Specifically, the Mann-Whitney U test was used to compare two independent groups, while the Kruskal-Wallis H test was used to compare three or more independent groups. The test results are not significant if the computed p- value is greater than the 0.05 significance level. Otherwise, the test results are significant.

B. Qualitative Design

Setting and Participants

The setting was Baguio City. An individual interview or the focus group discussion was done. There were 16 participants for the qualitative portion. The participants were the same participants who had participated in the first phase of the study and had signified their willingness to become participants in the 2nd phase of the study. They were selected purposively.

Data Gathering Tool

The researcher utilized a semi - structured interview guide with the main question "What are your perceptions on the quality of life of older persons in terms of: physical and mental health, social functioning, emotional well-being, and spiritual health?" The succeeding questions were based on the responses of the participants.

Data Gathering Procedure

Individual interviews and focused group discussions were conducted to further explain the quantitative data.

Data Management

Color coding was used to categorize the interview. Colaizzi's method was used to manage data with the following steps: Each transcript was read to obtain a general sense of the whole content. Significant statements that pertain to the phenomenon of interest were extracted. Meanings from Significant statements were sorted into categories, clusters of themes, and themes. The findings of the study were integrated into an exhaustive description of the phenomenon. After which, a validation of the description from the participants followed. New data revealed during the validation were incorporated.

Rigor and Trustworthiness

The principles of credibility, dependability, confirmability, and transferability were used.

C. Development of the Guide

The development of the guide was derived from the findings of this study. The quantitative data were initially collected and analyzed, followed by the qualitative data gathering to confirm or validate the results of the quantitative data. The combined quantitative and qualitative results, in consideration of the areas that require further improvement, which are the spiritual domain and areas that can be maintained, paved the way for the making of a guide on HRQoL focusing on Journeying Towards Active Aging.

Reflexivity

Reflexivity was an important consideration throughout this study on health-related quality of life among older persons. The researcher acknowledges that her professional background, personal beliefs, and social positions may have influenced the research process, including study design, data collection, analysis, and interpretation of findings. As an individual with training in health and social sciences, the researcher may hold assumptions that prioritize biomedical or functional aspects of quality of life, potentially shaping the focus of questions and interpretations. Additionally, differences in age, health status, and life experience between the researcher and older participants may have affected participant–researcher interactions. Older participants might have perceived the researcher as an authority figure, which could influence how openly they shared their experiences, particularly regarding sensitive issues such as declining health, dependency, or emotional well-being. To minimize this, efforts were made to use respectful, age-appropriate communication and to create a supportive environment that encouraged honest and voluntary responses. The researcher also reflected on cultural values related to aging, independence, and caregiving, recognizing that these may shape both participants' perceptions of quality of life and the researchers' interpretation of their accounts. Regular reflexive discussions and documentation were used to critically examine potential biases and ensure that participants' perspectives remained central to the analysis. Through this reflexive approach, the study aimed to enhance the transparency, credibility, and trustworthiness of the findings.

III. Results and Discussions

Extent of Health-Related Quality of Life of Older Persons

T Physical and Mental Domain. Table 2.a shows the extent of the HRQoL of older persons in terms of the physical and mental domains. There are 36.65% who rated excellent HRQoL, followed by 34.03% with good HRQoL, 28.01% fair HRQoL, and 1.31% have poor HRQoL.

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TABLE 2.A: EXTENT OF HRQOL OF OLDER PERSONS IN TERMS OF PHYSICAL AND MENTAL DOMAIN

HRQoL	Frequency	Percentage (%)
Poor	5	1.31
Fair	107	28.01
Good	130	34.03
Excellent	140	36.65
Mean Score	**61.64**	**(Good HRQoL)**

The table shows that 36.5% have excellent while 34.03% have good HRQoL, in terms of the physical and mental health domain. This means that older persons perceive a very satisfactory or if not a satisfactory life in relation to their goals, expectations, standards and concerns in terms of physical and mental domain.

This shows that most of the older persons are physically and mentally able to cope with the demands in terms of physical and mental domain, despite their ages. It can be observed that despite being an older person, they do gardening, or if not, do "kaingin" activities. They prefer being active physically and mentally rather than being idle.

HRQoL is equated to maintaining a mentally sound mind and body, which can be used to pass knowledge to the younger ones. To older persons, being a source of wisdom or knowledge is maintained for as long as you have a sound mind and body. Participants 1 and 2 shared:

> *"Maraming matututunan ang mga younger sa mga experience ng senior... marami na kaming karanasan na hindi pa nadaanan ng younger.* (There is a lot which the younger generations can learn from the experiences of seniors… we have a lot of experiences which are not yet experienced by the younger ones….)"

> *"Sa akin ang quality of life, ay yung marami na akong natutunan, at marami na akong basehan na maitututuro sa mga younger…* (For me, having a quality of life means I learned a lot and I have a lot of evidences as basis for sharing to the younger ones….)".

The statements show that older persons have reached their self-actualization in terms of their physical and mental domains, and this is supported by the quantitative findings, which show that older persons have good HRQoL in terms of the physical and mental domains.

Though older persons have different perceptions on HRQoL, it reflects that quality of life to them means having the basic needs, recognizing the biological changes in them, and sharing what they have learned based on their experiences, which supports the saying, *"experience is the best teacher"*. This is supported by the theory of Carmencita Abaquin (Octaviano & Balita, 2008), which presented that quality of life is the description of life as perceived by the older person as a shared outcome of the

Among the aspirations of older persons is to maintain a physically fit and mentally active mind as they continue growing older. As shared by participant 11,

> *"nu mabalin kuma ket uray nu bumak-baket kamin, kaya mi ladta nga agaramid iti inaldaw nga routine ken uray nu ada iti panag lipaten, haan met kuma nga jay talaga nga dimon amu iti ar-aramidem… jay agdementia..."* (If there is a possibility that even if we get older, we can still perform our daily routine, and even if there are instances of forgetfulness, hopefully it will not go to the extent that we no longer know what we are doing... like having dementia ...)

Participant 2 also mentioned,

> *"Pangalagahan mo ang buhay mo habang tumatanda ka. Asikasuhin mo yung buhay mo kasi hindi mo masasabi kung hanggang kailan ka…"* (Value your life while you are getting older. Take care of yourself because you never can tell until when will you live...).

This shows that older persons are aware of the wear and tear process that is taking place in them but would still wish that as they grow older as middle old and old-old, they are still cognizant of what they are doing and are able to do the daily routines in their own capacities. They are cognizant that these are some of the possibilities as one gets older, but they aspire to grow older the normal way.

Customarily, it is normal for Filipinos to have three generations of families in a household. The extended family care and support the older persons with respect, which is embedded in the Filipino culture (South Eastern Region Migrant Resource Center, 2010). These activities make them busy physically and mentally on a regular basis.

As shared by participant 5, *"… Good health, quality relationship with children, husband, and mga apo (grandchildren) even if it is not 100% keeps me going…."*

This shows that a strong family motivates the older person to keep themselves physically and mentally healthy, to be able to serve their family and to leave a good legacy to the family. As presented by Letty Kuan (2012) legacy is an act of giving, sharing, and a feeling of fulfilment and motivation.

Individually, the older person initiates certain initiatives to maintain their wellness. The profile of the respondents shows that 10.73% have no illness/es. This supports the findings revealing why older persons have excellent to good physical and mental health domain. This is backed up by the statement of participant 1, who stated that lifestyle and diet enable them to maintain a good HRQoL in terms of physical and mental health. Participant 1verbalized,

> *"Lifestyle ang may malaking impact sa physical at mental health …pag-aaruga mo sa sarili mo, yung pagkain mo... kasi kung abusado ka sa sarili mo, e di puro sakit ka nalang. Tingnan mo ang mga matatanda nuon…. Makikita mo, na ang hahaba ng mga buhay nila…Umaabot sila ng 100, 90, 80… mahabang bonus na yun... Kasi yung lifestyle nila ay di katulad ngayon, na puro diyan ka nalang kumakain sa Jollibee, Mc Do, resto…. Nuon puro*

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laga laga nalang… (Lifestyle has a great impact on physical and mental health…taking care of yourself, your diet…because if you abuse yourself, you will have illnesses….Look at the older persons before, you will notice that they have long life…They reach the ages of 100, 90, 80… that is already a long bonus…. It is because of their lifestyle… unlike at present wherein people eat at Jollibee, Mc Do, resto…. Before the food is usually plainly boiled….")

It reflects that older persons value having a well-balanced diet and having the quality and right amount of food coupled with exercise keeps older persons maintain an excellent and good physical and mental health domains. It supports the saying of Socrates, the father of medicine who mentioned, *"thy food thy medicine."*

Performing exercises and other activities that one enjoys to do are also performed, to maintain the good physical and mental health of older persons. Exercise improves circulation and enables the burning of excessive calories. Exercise prevents the formation of diseases. If diseases are prevented, it enables an older person to have a good physical health (Miller, McClave, Jampolis, Hurt, & Kristine Krueger, 2016). Furthermore, Bherer, Erickson, & Liu-Ambrose (2013) showed that physical activity and exercise can help alleviate negative impact of age on the body and the mind. Having exercises by older persons is supported by participant 5,

"Naglalakad ako kasi traffic lang din. Linalakad ko magmula dito (pertaining to Federation of Baguio Association of Senior Citizens Affairs (FBASECA) office) *hanggang Camp Allen…"* (I walk due to traffic…I walk from here, (pertaining to FBASECA office) until Camp Allen.)

Since the older person seldom have opportunities for regular employment, they volunteer to serve others as part of their civic commitments, making them physically and mentally active. Regularity of physical activity and mental stimulation are critical in maintaining HRQoL. This is explained by Acree, et al., (2006), who revealed that older persons who regularly perform physical activity had higher HRQoL measures in both physical and mental domains. Sun, Norman and While (2013), also buttressed that physical activity in older persons is favorably important in the prevention of disease, maintenance of independence and improvement of quality of life.

There is a robust link between good mental health and good physical health, and vice versa (Mills, 2018). Studies support the notion that physical activity and exercise can help alleviate negative impact of age on the body and the mind (Bherer, Erickson, & Liu-Ambrose, 2013). This is strengthened by the Canadian Mental Health Association (2017), which presented the associations between mental and physical health which are: Poor mental health is a risk factor for chronic physical conditions. People with serious mental conditions are at high risk of experiencing chronic physical conditions, and people with chronic physical conditions are at risk of developing poor mental health.

While the majority of the respondents have an excellent to good HRQoL, it is also noteworthy that 28.01% have fair, and 1.31% of the respondents have poor HRQoL. This shows that as some older person ages, their capacity in the physical and mental domains decreases, especially among those with health problems that is preventing them to maximally perform activities in daily living. These may be the older persons who belong to the old-old age group. They can also be older persons who have problems in terms of ambulation, or they are older persons who have comorbidities which affect their physical activities.

As presented by WHO (2016), some older persons become dependent because of restrictions in mobility, lingering pain, weakness, or other mental or physical problems. It implies that health care providers caring for older persons need the involvement of the family, as this will motivate older persons to keep themselves strong and to easily recuperate from illness.

Other explanations can also include poor family support and a lack of motivation to be physically and mentally active. Poor physical health can lead to an increased risk of developing mental health problems. In like manner, poor mental health can negatively impact physical health, leading to an increased risk of depression and dementia (World Health Organization, 2017).

Among the hindering factors to having a quality of life, as shared by some older persons, is the presence of problems in mobility. Participant 3 shared,

"uray nu kayat mo nga aramiden ngem mariknam nga haanen nga kaya iti bagim jay dati nga panag garaw…" (Even if you like to do the things you used to do, but you can feel that you already have limitations; it is no longer the same compared with your younger years.

This shows that being frail hinders older persons from having a quality of life. It not only affects the physical and mental health, but it also includes their socialization as well. Problems in mobility, hearing problems, and weakened body, limit older persons in having a quality of life.

Another hindering factor, aside from the physical state of older persons, is the lack of persons who can accompany the older person. As shared by participant 7,

"uray nu kayat mo nga aramiden ngem nu awan iti mangkadwa kanyam lalu nu agtrabaho amin iti ubbing..." (Even if I would like to do it, but nobody is available to accompany you, especially if all the children are working)."

Older persons are aware of their limitations. This implies that older persons, as much as possible, should be accompanied by significant others who help strengthen older persons in performing or doing what they would like to do. It shows that the presence of a

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support system boosts the older person's capacity to do things on their own.

A facilitating factor to the Physical and mental health of older persons is the ability to move and decide for themselves despite having physical problems. As shared by participant 11,

> "*Maka-pagna-pagna despite rayuma, high blood pressure, sakit that comes with age, but not bedridden, doing your everyday routine kas-jay met a kuma…"* (I can still walk despite arthritis, high blood pressure, illnesses that come with age, but not bedridden, doing everyday routines".

Though older persons are aware of the limitations they have, like having illnesses, they still look at the brighter side of life because of the fact that they still can move about instead of being bed-bound. It shows that to older persons; mobility is a big factor which keeps them maintaining their physical and mental health.

Despite the hindrances perceived by older persons in terms of their physical and mental health domains, there are still aspirations that older persons would like to enjoy or to have in their remaining years. Among these are having the capacity to take care of oneself, being able to actively participate in seminars, and doing self-care. Participant 11 emphasized,

> *"We forget sometimes… Ngem ha-an kuma nga umabot ti dementia…* (...but I hope it will not reach dementia). *Ordinary needed routines like linisam ti ubet mo,* (you clean your butt), *you can still communicate... You forget, natural lang dayta* (naturally acceptable). *Acceptable nga adu malipatan* (there are a lot of things you forget); *malipatan ti agkwenta, pero atleast ada paylang ti mental; Amum pakanem ti bagim"* (You forget how to compute, but at least you still maintain your sanity. You know how to feed yourself).

Another aspiration, as shared by participant 2, is to continue taking care of oneself despite the aging process.

> *"Pangalagahan mo ang buhay mo habang tumatanda ka. Asikasuhin mo yung buhay mo kasi hindi mo masasabi kung hanggang kailan ka…* (You have to take care of yourself while you are getting older. Take care of your life because you do not know when your time will come.

Older persons value their remaining years by taking care of themselves. While some older persons aspire to enjoy learning and making the most of their remaining years, some older persons would like to leave a good legacy when they are gone. Participant 2 and 1 shared their thoughts, saying,

> "*… mga example like ikaw ay mabuting lola o nanay..Wala man akong maiwan na wealth, atleast yung pag alaga sa kanila, iniintindi ko ang mga anak at apo ko… yung service ko for them…*(being a good example like you are a good grandmother or a mother…Even if I cannot leave them wealth, at least I cared for them, I understand my children and grandchildren…I give my services to them)."

> *"Makipag ambag ka rin sa mga nalalamn mo para mas maganda ang buhay…ngayong kagaya sa city council nagkakaruon ng escofad, kumukuha sila ng ideas sa matatanda…Kung nag escofad ka gagawa ka ng resolution, malay mo ang mga suggestion mo i-adopt nila ang suggestion ng senior sa city council."* (You need to contribute what you know for life to become better…. Like now, the city council has an escofad; they get ideas form older persons… If you join the escofad, you make resolutions because your suggestion might be adopted by the city council.)"

Despite the challenges older persons meet due to aging process, they still would like to live a life of contributing to the betterment of the society. They serve as fountains of wisdom. They no longer think of themselves only but would consider what is good for all.

The mean score on physical and mental health domains is 61.64 interpreted as having a Good HRQoL. Table 2.a shows that the respondents have good HRQoL along the aspects of Physical and Mental Health, as indicated by the computed mean scores based on the responses. This result is supported by WHO (World Health Organization, 2017), which stated that most older persons have good mental health; that mental health is as important in older age as at any other time of life. Furthermore, WHO (2017) stated that having good mental health has an impact on physical health and vice versa. For example, older adults with physical health conditions such as heart disease have higher rates of depression than those who are healthy.

In addition, the result implies that health workers who are taking care of older persons should consider the independence of older persons in their ability to perform activities of daily living and to perform activities for the maintenance of their physical and mental health domains. As supported by the WHO (2017), governments should have a goal of strengthening and promoting mental health in older adults and to integrate effective strategies into policies and plans. This is also supported by the Philippine government's Republic Act of 9994, known as the Expanded Senior Citizens' Act of 2010. This act mandates the implementation of the rights and privileges of older persons in the Philippines.

It is therefore imperative for health care providers to carefully assess the individual needs of older persons and actually involve them and their family support system to ensure the attainment of maximum attainment of physical and mental wellness.

Social Functioning. Table 2.b presents the extent of HRQoL of older persons in terms of social functioning. The table shows that older persons have excellent social functioning, with 60.47%..

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TABLE 2.B: EXTENT OF HRQOL OF OLDER PERSONS IN TERMS OF SOCIAL FUNCTIONING

HRQoL	Frequency	Percentage (%)
Poor	21	5.50
Fair	35	9.16
Good	95	24.87
Excellent	231	60.47
Mean Score	**22.71**	**(Good HRQoL)**

The table shows that in terms of social functioning, older persons have excellent to good HRQoL, revealing percentages of 60.47 and 24.87, respectively. Older persons are by nature sociable. They maintain their communication lines open with their family, friends, and the community.

As such, health care providers should individualize the care, the approach, and strategies they use in communicating and socializing with older persons. Health care providers should be sensitive to socializing with older persons since not all of them are sociable.

Older persons perceive that having a companion and enjoying company is a quality of life. The company may come from the family, friends, neighbors, or the community. Participant 3 shared,

> *"…Associating with fellow seniors. Giving quality time for the association…having interactions..."* Older persons prefer to have social activities. Social activities give them the feeling of fulfilment. It allows older persons to learn more from others, which in a way helps in boosting their confidence. Participant 8 further added, *"nu iti senior ket makipag socialize, it gives them the feelings that they are still useful, which gives them fulfilment… Ngem nu awan iti activities da, agsakit da…"* (when seniors join social activities, it gives them the feeling of being useful, which leads to fulfilment…but if they do not have activities, they become sick).

This is supported by the continuity theory of aging, which states that older persons continue to do their normal routines even after retirement. It also shows that older persons are more productive when they continue doing their normal routines rather than being isolated or being idle. Socialization provides an avenue for them to learn more from their fellow seniors while also sharing their knowledge and experiences from which others can learn.

Older persons also perceive that having a quality life means having good relationships not only with the family, but also with friends, as well as having a good socialization network. As shared by participants 3 and 2, and 8 respectively,

> *"Quality means good health, valuing relationship with children, husband, and mga apo…"* (Quality means good health, valuing relationship with children, husband, and grandchildren).

> *"You should go out with your friends, kailangan ng love and care sa family… maglakad-lakad ka rin... Kung may mga emotional problem ka or ano, you should tell them to your children so they can help you. Sila naman ang nakaka-intindi sa inyo… makipag socialize ka rin sa kapwa seniors…* (You should go out with your friends; there should be love and care in the family…You also need walking… If you have emotional problems or whatever, you should tell it to your children so they can help you. Besides, they are the one who can understand you… you also socialize with your fellow seniors…)"

> *"...kailangan* (there is a need) *you should not confine yourself. You should involve yourself to others... Make communication. You reach them out… You should be cheerful, talk to them, share to them whatever ideas you have, do not just be silent."*

Older persons would not like a life that is confined to being alone. It illustrates that meeting Maslow's hierarchy of needs on love and belongingness, as well as safety and security, is a quality of life to older persons. In addition, socialization for older persons does not only mean the mere socializing with others; it means having a good relationship which is not meant at hurting other's feelings. As exposed by participant 8,

> *"…wala kang na-a-apakan. Walang nasasaktan na iba… awan ti mapasaktam tapnu mayat ti panag biag. (Do not misapprehend others. Do not hurt others' feelings. Do not hurt others so we can have a peaceful life."*

Filipinos are sociable and prefer to be with their family, relatives, church groups & social clubs rather than being alone (South Eastern Region Migrant Resource Center, 2010). Older persons are able to meet new friends and strengthen their existing relationships when they socialize with others who share similar interests.

One reason why older persons are good in social functioning is the increased self-esteem and confidence they have. Self-awareness is vital to an older person's overall quality of life and satisfaction (Patton, 2012). In question item # 24 under social functioning, *"dislikes joining civic/social activities and organizations"* 55.5% of the respondents answered definitely false. Older persons are amiable. They intermingle with neighbours and friends. As verbalized by participant 5,

> *"maki kapi iti ka-ar-ruba habang maki inistorya, maki meeting iti association nga binulan…"*(drinking coffee with neighbors while enjoying sharing stories, joining association meetings monthly).

Older persons socialize with their neighbors, their children, grandchildren and other members of the family as well as the society, like volunteering themselves in church and other civic organizations.

Emotional Well-being. Table 2.c presents the HRQoL of older persons in terms of emotional well-being. The emotional well-being of the respondents mostly falls on having a good (44.76) HRQoL. This shows that older persons are more capable of controlling their emotional wellbeing compared to younger generations. Even if they are hurt, they do not go into tantrums but rather take the experience as a lesson in life to learn from and they also share it with the younger generations to learn from.

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TABLE 2.c: EXTENT OF HRQOL OF OLDER PERSONS IN TERMS OF EMOTIONAL WELL-BEING

HRQoL	Frequency	Percentage (%)
Poor	3	0.80
Fair	76	19.89
Good	171	44.76
Excellent	132	34.55
Mean Score	**24.34**	**(Good HRQoL)**

A good emotional well-being of older persons leads to a good HRQoL. Older persons perceive having a quality of life that is stress-free.

Participant 4 verbalized, *"…Keep things in stride."* Participant 1 shared, *"Express mo ang sarilo mo, huwag ka makontento na ikaw lang nakakaalam sa problema mo…"* (Express yourself and do not be contended of keeping your problems to yourself).

This shows that older persons perceive having a quality of life that is free from stress. It also reflects that older persons think of the positive and not the negative ways to keep themselves emotionally stable. Moreover, it reflects the resilience of older persons against the challenges they meet. They take challenges as something positive, which makes them better people. Participant 3 shared,

"If you hear something that is hurting, just let it pass to the other ear and forget about it…The more experience that I encountered, trials and errors in life makes me strong to fight. So you have to trust yourself that you can do it."

Being positive and relying on yourself as your source of strength, that you can do it, enables older persons to be emotionally stable. Experiences and trials in life make older persons better people. They reflect and ponder on the experience, which gives them emotional stability.

Emotional well-being is as important in older persons as at any other time of life (WHO 2016). It involves identifying, building upon, and operating from your strengths rather than focusing on fixing problems or weaknesses. Emotionally older persons have control of their thoughts, feelings, and behaviours. As shared by participant 2,

"…mas emotional nuon, kasi mas marami kang problema na naga gather sa pamilya…ung pang araw-araw na pamumuhay… ngayong may pamilya na rin sila, nai intidihan na ako ng mga anak ko… kaya lessened na yung emotional problems na dumarating sa akin…. unlike before na ako lang ang umi intindi dahil di naman nai intidihan ng mga anak ko…" (It was more emotional before because I face more problems like running our daily living... Now that my children have their own families, they can now relate as to how emotional I was in running the family... My children can now understand...So there are fewer emotional problems coming my way… unlike before that I am the only one who needs to understand because my children cannot yet comprehend how it is to run a family…)

Having good emotional support shows that older persons are cared for, and this is reflected in our Filipino culture of having an extended family. Normally, the extended family is the older persons. Unlike other nations, older persons in a Filipino family are not separated from the family due to respect, love for them, and the responsibility to care for them. In return, the older persons share their thoughts, ideas, experiences, and wisdom with the younger members of the family. Older persons serve as pillars for the family, which helps them maintain their emotional well-being.

The Filipinos, being an extended family helps maintain the emotional well-being of older persons. The support given by the family helps older persons to focus on their strengths rather than being depressed.

Filipinos are also known for their resilience (Manuncia, 2019). Even in the Cordilleras, the resilience of older persons in the past decades to colonization and invasion has preserved the present state of the region. As observed, older persons are the source of strength in terms of emotional turmoil. They help boost emotional well-being by telling or relating their own experiences as to how they were able to make it through during difficult times. Aside from sharing their experiences, they also guide the family on how to recover from emotional turmoil and to move on with daily living.

Participant 4 articulated, *"Do not allow yourself to be stressed... Positive thinking is what I do to keep myself emotionally healthy. Do not be affected by situations."*

Spiritual Domain. Table 2.d shows the extent of HRQoL of older persons in terms of the spiritual domain. Older persons have different perceptions in having a quality of life in terms of spiritual domain. Some older persons perceive it as having the totality of the self and believing in a supreme being.

The findings show that in terms of the spiritual domain, most of the respondents got poor (66.50%), some got fair (28.53%), while others got good (3.66%), and a few got excellent (1.31%). It shows that older persons perceive a very unsatisfactory to unsatisfactory life in the spiritual domain as represented by 66.5% and 28.53% respectively.

Since every individual is unique, their uniqueness in terms of their spirituality affects their views or perceptions as to their search for the deeper meaning of life. Some older persons view spirituality as the mind and the soul, others view it as the soul which separates from the body once a person dies, yet others view it as a clean conscience, and these are supported by the verbatim of the respondents in the qualitative data gathered.

Spirituality is a broad concept. Since it is broad in nature, the items on spirituality were not enough to encompass all aspects of spirituality. The limited number of questions in the questionnaire used, it may not have been enough to capture what older persons are looking for in the aspects of the spiritual domain. Spirituality includes a sense of connection to something

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bigger than oneself, and it typically involves a search for meaning in life (Bakken, 2016). This aspect of spirituality may not have been captured in the questionnaire. Aside from the number of questions under the spiritual domain, another factor that might have affected the findings is the way the questions under spirituality have been presented, like item # 40. I feel that I am treated with dignity. The dignity may be vague, which can be understood as dignity as a person and not in the aspect of spirituality.

Furthermore, Ventegodt, Merrick, & Andersen, (2003) presented that existential quality of life depends on how the older person looks at themselves from a deeper perspective. It could also be possible that there were influence of extraneous variables, which makes it difficult for older persons to understand.

As revealed in the qualitative data gathered, older persons have a different view on spirituality. Some perceive spirituality as having a union between the mind and the body, while others view it as a clean conscience.

As expressed by participant 2, as shared by participants 1 and 2 "*It is your mind and body." ... "nalinis ti consensya... an evaluation of yourself, how you control yourself... not only for God but also your mind…* (having a clean conscience... an evaluation of yourself, how you control yourself... not only for God but also your mind...) Participant 5 further added,

"...Spirituality is based on the soul... Iti spirit haan mo nga makita dayta ngem mamati tayo... It is within us... our belief... if we die, the body is left; it decays whereas the spirit goes back to the creator." (Spirituality is based on the soul... We cannot see the spirit, but we believe that it is there… It is within us, our belief…if we die, the body is left; it decays whereas the spirit goes back to the creator).

Older persons consider quality of life as looking into the wholeness of the self not only on the physical but also the spiritual, which to them is something innate. It is a part of our self which separates from the physical body after death. Others would also connote spirituality to being religious. However, Kaplan & Berman (2016), presented that spirituality and being religious are not identical concepts. Religion is institutional, more structured, and it involves traditional activities, rituals and practices; whilst spirituality is intangible and immaterial. It implies that health care providers should consider the older person's religious beliefs and practices in the provision of care. The beliefs and practices affect the patients' mental and physical health (Kaplan & Berkman, 2016).

Most of the respondents got poor (66.50%), some got fair (28.53%) while others got good (3.66%) and a few got excellent (1.31%) spiritual domain. This implies that there is a need for older persons to continue to strengthen or to improve their spiritual domain as they enjoy their bonus years.

TABLE 2.D: EXTENT OF HRQOL OF OLDER PERSONS IN TERMS OF SPIRITUAL DOMAIN

HRQoL	Frequency	Percentage (%)
Poor	254	66.50
Fair	109	28.53
Good	14	3.66
Excellent	5	1.31
Mean Score	**7.5**	**(Fair HRQoL)**

Older persons have poor or if not fair HRQoL in terms of spiritual domain due to having different beliefs or approaches towards spirituality. The findings show that older persons have a very unsatisfactory to an unsatisfactory life in relation to their goals, expectations standards and concerns in the spiritual domain. This is supported by the HRQoL theory specifically on existential quality of life which revealed that an individual has a deeper nature that deserves to be respected and that the individual can live in harmony with (Ventegodt, Merrick, & Andersen, 2003).

Another reason for older persons to get a fair and a poor findings for spiritual domain can be attributed to some extraneous factors. It can also be attributed to biological nature having to be fulfilled, that these factors like the conditions of growth of an older person (Ventegodt, Merrick, & Andersen, 2003).

Others view it as a part of the self which is not seen. To others, they perceive it as their source of life, yet to some they consider is as having harmony with the self and with a supreme being. This is supported by participant 6.

"Spirituality is more on the religious aspect. It means having a harmonious relationship, prayer, mass, doing acts of mercy to the poor, loving your neighbor... Doing what is good... What you think is right that connects you to the Lord".

Older persons view spirituality as a link between the self and the Lord. Spirituality is guided by their religious beliefs. As older persons practice their religious beliefs, they are at the same time looking into the deeper meaning of themselves. Searching for their inner peace and solace.

On the other hand, participant 6 views it as having relationships, while participant 11 considers it as a preparation for after life.

"Amu tayo nga asidegen iti time nga kunada, so we are prone to listening more, looking up to somebody up there..." (We know that our time is about to come so we are prone to listening more, looking up to somebody up there...).

Older persons believe that spirituality is all about the life after death. That having reached their age is best time to prepare for it. Older persons believe that life there is a new life after death. They prepare themselves for this event. They do not only savor their life on their but also prepare for the life after death.

According to Udhayakumar & Ilango (2012), research confirmation shows that spiritual beliefs help many physical and mental illness, by plummeting severity and relapse rate, enhancing recovery, as well as

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rendering distress and disability. Spiritual beliefs of older persons help them be relieved from stress. Rather than focusing on stressors, they focus on their spiritual beliefs. If the individual has a good spiritual foundation, the least likely that the person is affected by stress. This is supported by Batalla et al (2019), who revealed that stress greatly influences spirituality.

Spiritual care is a way of helping older persons in their search for hope and meaning, especially as they face issues of grief, loss and uncertainty (Udhayakumar & Ilango, 2012). As shared by participant 7,

> *"we visit others who are sick, we pray for them, we tell them agpapigsa ka baba-en iti tulong iti Apo* (be strong by God's grace) *..."*

Older persons show their spirituality not only for themselves, but also by visiting others who are sick. They help other older persons through prayer or the mere act of visiting a fellow older person who is sick in bed in their homes or in the hospitals. The mere act of visiting and praying can uplift the spiritual as well as the emotional well-being of the sick older person. To older persons, visiting someone to uplift the feelings and emotions of the person is in itself spirituality.

The above verbatim presented from older persons show that older persons have varied ways of attaining their spiritual domain. It shows that spiritual domain for older persons can be practiced in numerous ways. Some are active in religious activities; others reflect spirituality through sick visitations, some strengthen their relationship with the Supreme Being, yet others view it as an aspect of connectedness of the mind body and spirit. The different ways of practicing spirituality may be the reasons why the mean score in the spiritual domain is fair. It implies that as health care professionals, we have to consider the spiritual preferences of older person clients in addressing their spiritual health needs. As Bashir, Shafi, Yousuf, Parveen, & Akher (2016), presented, spiritual domain is about the inner self and our relationship with the outside world. It can be practiced in numerous ways with its main purpose of being to find purpose and meaning in life. This shows that most of the older persons have focused on the relationship with the outside world and have given little attention to their inner selves. This implies that older persons are focused on the then and now, and a few of them consider the life after or the future.

Another reason why spirituality is perceived among older persons as having a fair extent is the fact that spirituality is a concept shaped by culture, religion, life experiences, belief systems and upbringing (Love, Moore, & Warburton, 2017). As shared by participant 10,

> *"...Depende ngamin iti dinmakelam. Nu idi ubbing paylaeng ket naimulaten iti spiritual nga banag, eggem mo daytan..."* (...it depends on the upbringing. If spirituality was inculcated at a young age, it follows through as the person ages).

This shows that upbringing and culture plays an important role in shaping a person's perception on spiritual domain.

There are also aspirations of older persons in relation to their spiritual domain. Participant 3 articulated,

> *"You should continue to be God fearing person. Get involved with church activities; be an instrument; makes one spiritually healthy".*

This supports Kaplan & Berkman's (2016) findings which revealed that active involvement of older persons in religious activities correlates with better maintained physical functioning and health.

Another aspiration of older persons is leaving a good legacy to their family. Participant 3 voiced,

> *"...you must be a good example to your children and grandchildren and to the community you are serving; you must be God fearing. You must believe in God..."*

Older persons would like to leave a legacy which is rooted on their spirituality being God fearing people who will guide them from doing what is right and avoiding what is wrong.

There is facilitating as well as hindering factors to spirituality among older persons. Among the identified hindering factors were inability to find satisfaction, lack of support from family and friends and being unable to understand what spirituality is. Below are verbatim from participants 3, 7 and 5 to support the hindering factors.

> *"...nu saan mo nga mabirukan iti kapnekan iti spiritual desire mo... kas kuma nu dim pay amu aging-ga tatta iti pagturungam..."* (…if you cannot find peace in your spiritual desire... like if you do not know where you are heading to…). *"Kurang da iti pammati which is not connected...* (They lack faith which is not connected…)

To older persons, it is a hindering factor to spirituality if they still are not sure of their destination after life despite reaching their golden years. There is no inner peace within themselves. They are not yet fulfilled with their spirituality. Yet to others, a hindering factor to spirituality is if their family and friends do not understand them. As shared by participant 2,

> "*Kung hindi ka na-i-intidihan ng family mo, balakid yun... Kailangan kasi na ipa-u-nawa sa senior para maunawaan nila... my iba kasi sumasalungat sa gusto mo... Kung minsan din ang balakid ay mga friends kung di ka nila naiintindihan..."* (If your family does not understand you, it becomes a hindrance. They need to let the older person know that the family understands them. There are other family members who are against what you like… Sometimes friends are also a hindrance if they do not understand you…).

There are different ways on how to fulfil spirituality among older persons which may sometimes be mis-interpreted by family and friends. The family and friends may understand it as a change in the behavior or

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a change in the activities or routines of the older person without knowing that to the older person it is a hindrance to their spirituality.

Still a hindering factor to spirituality is if the older person does not know what spirituality is. As shared by participant 8,

> *"…There are so many ways to maintain it. Visit other family members, pray for them, or you go attend wakes of a friend bible prayer/sharing you have responsibility say your brother needs financial and you help... Spirituality derives love… you're not spiritual if you do not love..."*

On the other hand, the facilitating factor to spirituality is to have persistence in your faith. It means being consistent with your faith in the God. As shared by participant 3,

> *"Maintain my trust in God… whatever problems and trials, you have, you have to be strong …learn to love your neighbor …"*

Having a strong faith in God is a facilitating factor to spirituality among older persons. They find contentment as long as they maintain their faith and obey the 10 commandments among which is to love your neighbor. As supported by participant 6,

> *"Spiritual means having a harmonious relationship, prayer, mass, doing acts of mercy to the poor, loving your neighbor... doing services… the body is the container of the spirit, the spirit will report to the Lord… you do what is good… what you think is right that will connect you to the Lord..."*

Loving one's neighbors and being a Good Samaritan to others not only facilitates spirituality, but it also strengthens the relationship with older persons. This is strengthened by participant 8.

> *"Ask guidance from the Lord, you have to pray, make reconciliation, with your neighbour, with your family, because it is very hard to accept fault, it needs help from the Lord. Prayer tapnu iti kasta ma-law-lawagan ka pumigsa ti paki nakem mo."* (In that way you will have a better understanding... your faith becomes stronger)"

There is an aspiration of older persons in terms of spirituality. They would like as much as possible that the spiritual contentment they found for themselves would be the same or if not better for the generations they will live behind. As shared by participant 2,

> *"…Wala man akong maiwan na wealth, atleast yung pag a-alaga sa kanila, ini-intindi ko ang mga anak at apo ko… yung service ko for them... Pag maganda ang minimulat mo sa kanila, kahit man lang yung honesty, yung spiritual yung may takot sa diyos, maalala nila na tinuro yan ng nanay ko…"* (Even if I do not have wealth, the caring and understanding I am giving to my children and grandchildren, my services to them… If you have taught them honesty and spirituality, to have fear in God, they will always remember that this value has been taught by their mother).

This was re-joined by participant 6, with her sharing *"Its starts from childhood... It starts from the family... if the family does not attend to the spiritual upliftment... Teaching children how to pray is spirituality. Love God, connect yourself with the Lord..."*

Older persons believe that the best way to start molding spiritual values is when the children are still young. They aspire that every family should start instilling spirituality among the children. Once it is instilled in every child, the value goes on with the other members of the family.

Furthermore, participant 6 added, *"At this age, it is difficult to redirect the thoughts of people... Ma-ta-tanda (older persons) becomes close minded."* In addition, participant 11 shared,

> *"Ba-sul da met-lang... They were too busy finding for a living. Ha-an da nga na-isuro ti values i-ti ub-bing... Ha-an da nga in-pakita ti modelling..."* (It is their fault... They were too busy finding for a living. They did not teach the values to the cfault.... They did not do role modelling).

Older persons believe that it is a hindrance to spirituality if it was not started at an early age when the children were still young. It should be the role of parents to start values formation and to be role models in the values they would like their children to have, which their children in return will model to their future children.

It is difficult to instil spirituality among older persons who did not have it during their childhood as older persons are close minded. They stick to what they believe is good for them.

Another aspiration of older persons is to have prepared the soul before dying. As participant 5 shared, *"…clean your soul before nga matay ka…"* (Clean your soul before you die).

Older persons want to have a good life after death so they prepare themselves for the life after through the preparation of the soul which they believe will return to the Supreme Being who has lend their lives to them.

As supported by participant 6, *"… the body is the container of the spirit, the spirit will report to the Lord..."*

Older persons aspire that in terms of spirituality, having honesty and fear in God is a very good value that should be instilled among the family members, which at the same time could serve as a good legacy.

TABLE 2.E: EXTENT OF HEALTH RELATED QUALITY OF LIFE OF OLDER PERSONS

Aspect	Mean Score	Extent of Quality of Life
Physical and Mental Health	61.64	Good HRQoL
Social Functioning	22.71	Good HRQoL
Emotional Well-being	24.34	Good HRQoL
Spiritual Health	7.50	Fair HRQoL

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Analysis results presented on Table 2.e shows that the respondents have Good Quality of Life along the aspects of Physical and Mental Health, Social Functioning, and Emotional well-being as indicated by the computed mean scores based on the responses. This result indicates that the respondents, on the average, answered *"mostly false"* to the items in the questionnaire that were asked of them.

This suggests that older persons perceive a satisfactory life in relation to their goals, expectations, standards, and concerns in terms of physical and mental health, social functioning, and emotional well-being. Furthermore, it shows that older persons are physically and mentally, psychologically and socially well. They are able to positively adapt to the changes happening in them in terms of their physical and mental health, social functioning, as well as emotional well-being. As emphasized by WHO (2012), health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. This shows that generally, older persons are healthy considering their present state.

Significant Difference of Variables to Health-Related Quality of Life

Table 3 presents the variables significantly related to the HRQoL of older persons. Among the variables in the study, there are four variables that are significantly related to the HRQoL of older persons when grouped according to the different aspects of HRQoL. These are: gender, social support, educational attainment, and marital status.

TABLE 3: VARIABLES SIGNIFICANTLY RELATED TO HRQOL OF OLDER PERSONS

Factors/Variables	Aspects or Areas of HRQoL							
	Physical and Mental Health		Social Functioning		Emotional Well-Being		Spiritual Health	
	p-value	Int.	p-value	Int.	p-value	Int.	p-value	Int.
Health Status	0.804	n.s.	0.607	n.s.	0.586	n.s.	0.083	n.s.
Age	0.611	n.s.	0.760	n.s.	0.528	n.s.	0.803	n.s.
Ethnicity	0.471	n.s.	0.617	n.s.	0.733	n.s.	0.474	n.s.
Religion	0.072	n.s.	0.992	n.s.	0.994	n.s.	0.317	n.s.
Gender	0.201	n.s.	0.518	n.s.	0.301	n.s.	0.022*	s.
Financial Support	0.165	n.s.	0.795	n.s.	0.918	n.s.	0.983	n.s.
Social Support	0.417	n.s.	0.688	n.s.	0.038*	s.	0.814	n.s.
Educational Attainment	0.016*	s.	0.325	n.s.	0.659	n.s.	0.243	n.s.
Marital Status	0.123	n.s.	0.509	n.s.	0.770	n.s.	0.007*	s.
Employment Status	0.591	n.s.	0.784	n.s.	0.976	n.s.	0.277	n.s.

In terms of gender, Table 3 shows that along the area of Spiritual Health, it is observed that a significant difference ($p < 0.05$) exists between the perception of male and female older persons on the extent of HRQoL. Specifically, it is seen that male older persons have significantly higher extent of perception on their HRQoL along the Spiritual Health aspect as compared to their female counterparts. This is indicated by the computed mean scores of 7.75 and 7.43 for males and females, respectively.

The findings show that men have higher perceptions on their spiritual health. The result of the study is supported by King (2010), who revealed that men have defined what counts as spirituality, who can practice and teach it, and who holds spiritual authority. As supported by King (2010), traditionally, spirituality has been the official prerogative of males. It was primarily among men that spiritual disciplines were developed and passed on from generation to generation. It shows that Filipinos value traditional practices that has been rooted in our culture and our tradition. Among Cordillerans, elders in the community are men.

Kirby, Coleman, & Daley (2004), also support the findings of the study. They presented that spirituality plays an important part in the lives of older persons, noting that older men have higher levels of subjective well-being than older women. In another study Miller, Korinek & Ivey (2006), presented that male supervisors were viewed as addressing spirituality more frequently than female supervisors. Nilsson (2012) also presented that women often receive lower scores on measures of HRQoL than men.

The higher is the educational attainment of the older persons, the better is their perception of HRQoL. Older persons whose educational attainment are higher are most likely able to comprehend how to address their health needs, thus leading to better HRQoL. This result implies that extent of HRQoL along Physical and Mental Health is affected by or is dependent on the educational attainment.

On the other hand, no significant differences were noted on the perception on the extent of HRQoL of older persons along Social Functioning, Emotional Well-Being, and Spiritual Health ($p > 0.05$). This implies that perception on the extent of Quality of Life along these areas do not depend on the educational attainment of older persons.

In relation to marital status, it is seen to affect the perception on the extent of HRQoL of older persons particularly on the area of Spiritual Health ($p < 0.05$). Spirituality is the desire of the older persons to give meaning and a purpose in life. Older persons perceive that spiritual health is important in relation to marital status.

No significant differences, on the other hand, were noted along the Physical and Mental Health, Social Functioning, and Emotional Well-Being areas ($p > 0.05$). In this case, marital status does not affect the

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perception on the extent of HRQoL of older persons along these three areas.

The table shows that there were no significant differences ($p > 0.05$) in the perceived HRQoL among older persons, when grouped according to health status, age, ethnicity, religion, financial support, and employment status on all the four aspects – Physical and Mental Health, Social Functioning, Emotional Well-Being, and Spiritual Health. This implies that these variables are not factors affecting the perception of older persons on their HRQoL. This is supported by the Office of Disease Prevention and Health Promotion (ODPHP) 2017, which presented that quality of life, is not directly equated with health status; rather it is based on the older person's ability to participate in society. It denotes that health status is not a hindrance for older persons to have a good HRQoL. As long as older persons are able to contribute to society and can still perform their roles expected of them, their health status is not a constraint. It indicates that function ability of older persons is important to them. Though wear and tears are taking place, they are still able to perform their roles. The result is supported by the role performance model, which indicates that health is indicated by the ability of the person to perform social roles.

The overall findings of Table 3 suggest that the variables affecting the HRQoL of older persons differ in the domains of physical and mental health, social functioning, emotional well-being, and spiritual health. It shows that HRQoL is multifactorial and can be measured using different domains. It also reflects that factors affecting the HRQoL of older persons in each of the domains are not the same. HRQoL is measured by the older person's subjective and objective evaluation of each domain, depending upon the older person's perception of each domain. Thus, quality of life is multidimensional, and its parts affect each other as well as the sum (Brown, Bowling, & Flynn, 2004). As such, the older person who has a positive outlook on life tends to have social participation, which in turn affects the older person's emotional well-being. Brown, Bowling, & Flynn, (2004) further explained that HRQoL is composed of both positive and negative experiences and self-evaluations of life may change over time in response to life and health events and experiences.

The overall result of the table is also supported by Maslow's Hierarchy of needs. Maslow presented that the lower levels which are: physiological needs, safety, belongingness, and esteem are considered physiological needs or lower order needs; the top level which is self-actualization is considered growth needs. The growth need is the desire to grow as a person. Persons reaching this stage are persons who seem to be fulfilling themselves and to be doing the best that they are capable of doing (Cherry, 2018).

The existential quality of life means how good one's life is at a deeper level. It is assumed that the individual has a deeper nature that deserves to be respected and that the individual can live in harmony with. We might think that a number of needs in our biological nature have to be fulfilled, that these factors such as conditions of growth must be optimized, or that we must all live life in accordance with certain spiritual and religious ideals laid down by the nature of our being.

IV. Conclusion

The existential quality of life of older persons is not fully achieved while their performance of activities of daily living, cognitive mindset, socialization activities, and psychological well-being are satisfactorily achieved within their optimum capacity.

The influence of variables varies by domain. Formal education influences the quality of physiologic and cognitive wellness. Emotional well-being is enhanced with adequate social support, while married male older persons have better spiritual contentment.

A module on active aging was developed to holistically enhance and/or maintain the HRQoL of older persons.

V. Recommendations

The guide developed from the findings of this study can be used by older persons to further enhance/and/or maintain the quality of life. The guide can also be used by family members and health care providers as a guide in rendering holistic and supportive care to ensure the full attainment of HRQoL of older persons. To enhance the spiritual health of older persons, they must be guided to focus on the deeper meaning of self to better understand spirituality as it is a unified quality of the mind, heart, and soul. Family members should maintain the support they are giving to older persons, which boosts their self-esteem.

Older persons must be conditionally supported and empowered to achieve their physical and mental health by encouraging regular, appropriate exercises and maintaining an active lifestyle. Family support in the socialization activities of the older persons must be maintained and exploring other opportunities for active interactions and service to the community. Older persons should continue to be recognized as a source of wisdom and inspiration to fellow older persons and family members, which strengthens their emotional well-being. A similar study be conducted focusing on other variables on HRQoL across age groups. The findings of this study can also be widely disseminated to all senior citizens through an assembly organized by the senior citizen organizations as an opportunity for exploring concrete strategies that support their needs as a specified population group.

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VI. Development of Educational Guide

The results of the study paved way for the development of an educational guide which can be used by the older persons to help improve their HRQoL.

JOURNEYING TOWARDS ACTIVE AGING

Health-related quality of life (HRQoL) is the individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns (WHO, 2012). It is a cognitive judgement of satisfaction in one's life (Jack Rejeski & Mihalko, 2011). HRQoL means having a good life, and a good life is the same as living a life with high quality (Ventegodt, Merrick, & Andersen, 2003). HRQoL is a concept including the domains of: physical and mental health, social functioning, and emotional well-being (WHO, 2012) as well as spiritual health.

The development of the guide is anchored on existentialism. This guide focused on how to improve the spiritual health of older persons at the same time maintaining the other aspects of HRQoL, which include physical and mental health, social functioning, and emotional well-being. These aspects are included in the guide so as to present all the aspects that encompass HRQoL.

The physical and mental health domain includes the older person's capacity to undertake daily tasks. Mental health, on the other hand, affects how the older person thinks, feels, and acts. It enables the older person to determine how to handle stress, relate to others, and make choices. It is the older person's sense of confidence and self-esteem. Mental health enables the older person to fully enjoy day-to-day life and activities and the environment.

The social functioning pertains to how the older person interacts with their environment and the ability to fulfil their role within such environments, like work, social activities, and relationships with partners and family (Bosc, 2000). Social functioning is the socialization activities of the older person with family, friends, neighbours, or groups of older persons.

Emotional well-being shows how older persons feel and how things have been working for them. The emotional well-being of older persons affects the time spent on work or activities. Emotional well-being reflects how much older persons accomplish things.

Spiritual health is the desire of the older person to give meaning and a purpose through internal examination of his/her worldview. If the older person believes in a supreme power that intervenes in life, the older person will spend time praying or meditating in order to nurture their spiritual health. The older person reflects on his/her previous life, talks with someone about the meaning of life/suffering, and talks about the possibility of life after death. The older person dwells at places of quietness and peace, plunges into the beauty of nature, talk with others about fears and worries (Büssing, Balzat, & Heusser, 2010).

The HRQoL in each of the domains presented above varies among older persons, as well as the factors affecting the perceptions of older persons. This module was developed as a result of the study conducted on the perceptions of older persons on HRQoL. Therefore, the aim of this module is to give inputs to older persons on how they can achieve active ageing in the different domains.

This guide is intended for older persons who belong to the young old, the middle old, and the old-old. It can also be used by adults who are nearing the older person stages.

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Conflict of Interest

The authors hereby declare that no conflicts of interest exist, whether financial, personal, professional, or otherwise, that could have influenced the design, execution, analysis, or reporting of this study. Full transparency has been maintained throughout the research process.

Disclosure of Use of Generative AI

In the interest of achieving the highest standards of clarity, coherence, and readability, generative artificial intelligence tools were employed solely as assistive aids for the organization of conceptual frameworks and the refinement of grammatical structure within this manuscript. All original content, core ideas, analytical insights, and intellectual contributions remain wholly the product of the authors, with no substantive generation or alteration of the research findings by AI.

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Effect of NursePlay in the Critical Thinking Disposition of Student Nurses

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ABSTRACT

Introduction: The utilization of Virtual Gaming Simulation (VGS) intensified during the pandemic, which affected the critical thinking disposition of student nurses. With this, the NursePlay, a VGS was created.

Aim: The study determined the effect of NursePlay on the critical thinking disposition of student nurses.

Methods: A non-equivalent pre-test post-test control group design was employed with 44 BSN level 2 students in Baguio City, comprising 22 students in the intervention group and 22 in the comparison group. Fishbowl sampling was used. Both groups answered a self-made questionnaire with a CVI of 0.94 to measure the critical thinking disposition of the students. The weighted mean and repeated measures ANOVA were utilized.

Results: The results revealed that student nurses possess an outstanding disposition in critical thinking, specifically in terms of maturity and innovativeness, while also demonstrating a very satisfactory disposition in critical thinking, particularly in engagement. Furthermore, the repeated measures ANOVA revealed that the within-subject effects of the interaction along the Overall Critical Thinking Disposition are significant (p 0.03 < 0.05). This indicates a significant difference between the mean scores from the pretest to the post-test in the control and intervention groups.

Conclusion: Prior to NursePlay, student nurses have a pre-existing disposition towards critical thinking. NursePlay enhances the engagement and maturity disposition of student nurses, with a minimal effect on their innovativeness. The NursePlay's features, such as time on task, feedback, virtual patient interaction, and design characteristics, effectively improve the student nurses' critical thinking disposition, including their engagement and cognitive maturity.

Keywords: *NursePlay, Virtual gaming simulation, Critical thinking disposition, Engagement disposition, Cognitive maturity disposition, Innovativeness disposition*

I. INTRODUCTION

The continuous advancement of technology has vastly affected human cognitive development in education. People can now access learning concepts and realities through a single click on the virtual arena. According to Palvia et al. (2018), online learning has been one of the driving forces behind education trends in recent years and has become increasingly conventional during the COVID-19 pandemic.

At the onset of the global pandemic, onsite classes were suspended, and alternatives were established in the online setup (Nagdee et al., 2022). One of these alternative approaches is the use of Virtual Gaming Simulation (VGS). Nursing institutions progressively use VGS, and assessing its effectiveness and applicability is crucial. Therefore, the researchers developed NursePlay and investigated its effect in the critical thinking disposition among student nurses.

Umoren and Rybas (2019) stated that VGS uses 2D objects and environments to create immersive and engaging learning experiences. It contains patient cases that utilize simulated systems and recreate reality on a computer screen. In this setup, the user selects an action to interact with virtual settings, situations, and items. When actively participating in VGS, learners encountered simulated clinical events from a computer screen. As they give virtual patient nursing care, students choose from a menu of actions and communications. Sim et al. (2022) recommended creating various scenarios in virtual gaming simulations

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with post-scenario feedback to deliver the appropriate learning that students need to acquire regarding managing patient care.

The researchers found numerous studies investigating how VGS positively affects the critical thinking skills of student nurses. According to Dela Rosa and Arguello (2018), it is significantly helpful in enhancing students' knowledge, skills, and psychological outcomes, thereby improving the effectiveness of nursing interventions for patient care. Other previous reviewers echoed these results (Fu et al., 2016; Shin et al., 2015; Smetana & Bell, 2012; Wouters et al., 2013 cited in Vlachopoulos & Makri, 2017), emphasizing the vital role of games in knowledge acquisition and content understanding. With these positive effects, the researchers developed a virtual gaming simulation, NursePlay, to support the quality education of nursing institutions. The researchers believed that NursePlay would enhance the critical thinking skills of student nurses, primarily level 2 students, in the area of Maternal and Child Health Nursing.

Apart from these positive impacts of VGS, some studies discussed contrasting results of VGS in the learning experience. Günay and Klnç (2018) mentioned that VGS learning has a significant inconsistency in the perception of VGS training on clinical skills, such as the contrast between the 'ideal' as portrayed by theory and the 'reality' as experienced in the provision of patient care when trying to bridge the gap between theoretical knowledge and practical application. Similarly, the study by Blakeslee (2020) did not support the use of VGS as a teaching strategy to enhance the critical thinking skills of student nurses. Moreover, Padilha et al. (2019) stated that little is known about its success in enhancing student learning satisfaction, information retention, and clinical reasoning, particularly when utilizing the most recent advancements in a VGS, which is a gap in the effectiveness of VGS on student nurses. The conflicting studies from the above literature indicate that VGS has an impact on students' learning. Since some studies still showed adverse effects from the use of VGS, the researchers wanted to investigate the impact of NursePlay on student nurses.

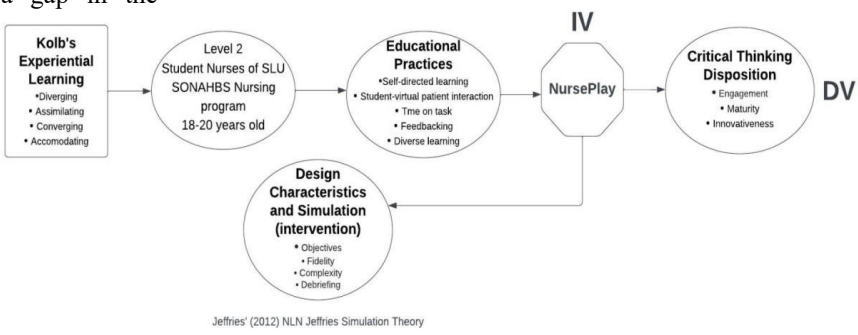
The researchers chose NursePlay as the VGS intervention of the study from the various VGSs available because it is an original simulation website created by the researchers. NursePlay is a virtual gaming simulation that recreates a clinical environment with integrated patient responses, designed to train student nurses on their critical thinking disposition, specifically their ability to think critically, in preparation for real-life situations.

Critical thinking disposition is a reasoning process that involves gathering information from the resources, analyzing it, deciding based on the analysis, and eventually applying this in the appropriate field and evaluating its results. In contrast, critical thinking disposition activates and maintains the critical thinking process (Poonedj & Lerpornkulrat, 2015). According to Stedman et al. (2009), critical thinking disposition is an individual's attitude regarding critical thinking. It involved the learner's engagement, cognitive maturity, and innovativeness. Specifically, engagement disposition is the ability of sound reasoning, where one can determine certain circumstances that need a reason, solve problems, and make decisions confidently. Cognitive maturity, on the other hand, is the ability to recognize the factors that influence one's beliefs, opinions, and positions, such as personal biases and experiences. Lastly, the innovative disposition of critical thinking is the eagerness to acquire new knowledge. People with innovativeness are intellectually curious and long to fulfill that curiosity (Ricketts et al., 2007). According to Jeffries et al. (2018), practical critical thinking is discipline-specific. It should be enhanced through nursing-specific programs (i.e., Maternal and Child Health, Community Health Nursing) to facilitate nursing students' critical thinking.

With this, critical thinking disposition is a crucial skill that students need to develop to build confidence and self-reliance in both the clinical setting and the institution. While previous studies showed the positive impact of VGS, no studies have investigated the effect of NursePlay on the critical thinking disposition of student nurses. NursePlay is a new VGS on Maternal and Child Nursing. Moreover, the utilization and feasibility of NursePlay are not investigated. Thus, there is a need to examine the effect of NursePlay on student nurses.

Conceptual Framework

The study made use of Jeffries' (2012) Nursing Education Simulation Framework and Kolb's (1984) Experiential Learning, that is presented below:



Jeffries, P. R. (2012). Simulation in nursing education: From conceptualization to evaluation (2nd ed.). National League for Nursing.
Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Englewood Cliffs, N.J: Prentice-Hall.

FIGURE 1: CONCEPTUAL PARADIGM OF THE STUDY

First, the cognitive learning of young adults is influenced by their experiences. Their experiences are affected by their learning styles. Kolb (1984) discussed various learning styles that students could have. First is diverging, where they showed great interest in people and enjoyed receiving immediate criticism with an open mind, much like return demonstrations. The second is assimilating, where they read their modules or listen to conversations on themes. This allowed them to gain a

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deeper understanding of the topics by applying logical reasoning. The third is converging, where they use their knowledge to solve difficulties; they are interested in resolving technical problems with documents or manual labor that does not involve people. Lastly, they are accommodating, relying on their intuition when executing their plans. All these learning styles are present in nursing students, but diverging is the most common among them.

Furthermore, to investigate the appropriateness of NursePlay in the critical thinking disposition of student nurses, Jeffries' Nursing Education Simulation is utilized. This framework consists of five major concepts and design characteristics: facilitator, participant, or respondent, educational practices, outcomes, and simulation design characteristics. The variables used from Jefferies' Nursing Education Simulation Framework in this study are: (1) the respondents (18-20-year-old student nurses). (2) Educational practices (different learning styles, self-directed learning, time on task, and feedback). The NursePlay design was used as the intervention's main element in creating the application layout the respondents used. Debriefing after playing NursePlay helped the players reflect on their performance and how they could apply it in real-life situations to provide safe and effective patient care.

The outcome of the study is the portion wherein the gathered data was analyzed and interpreted by the researchers to conclude the effect of the intervention on the respondents. The outcome revealed the impact of NursePlay on the Engagement, Cognitive Maturity, and Innovativeness disposition of the student nurses.

Research Questions

The study aimed to determine the effect of NursePlay on the critical thinking disposition of student nurses. Specifically, it sought to answer:

1. What is the critical thinking disposition of student nurses according to their engagement disposition, cognitive maturity disposition, and innovativeness disposition?
2. Is there a significant difference in the pretest and post-test scores between the intervention and control groups along their engagement disposition, cognitive maturity disposition, and innovativeness disposition.

Significance of the Study

The study results can help novice nurses develop a critical thinking disposition before they are rotated into the delivery room. Their engagement with their clients' cases, knowledge, and innovativeness can be developed after playing NursePlay. Furthermore, the VGS can be a technique that recreates clinical activities in a virtual environment without harming an actual client. With this, training officers of the hospital can use NursePlay in training novice nurses who will be rotated in the Labor Room, Delivery Room, and OB-GYN department.

The results can encourage nurse administrators in the academe and the clinical setting to include NursePlay in the curriculum, which will be utilized during simulations.

The results of the study can fill in the gaps between existing literature and add new knowledge on the effect of NursePlay on the critical thinking disposition of student nurses in the Philippines. The study's results may serve as a reference to future researchers in have the same study objectives.

The results of this study can be evidence as a teaching modality in developing the competencies of student nurses. Nurse educators can use NursePlay in introducing the maternal and child nursing concept and can be used as an exciting tool in evaluating the decision-making, communication, problem-solving, and delegation skills of their students. Moreover, student nurses can experience a closer to real-life experience without harming an actual client and can have fewer medical mistakes in clinical practice.

II. METHODS

Research Design

Specifically, the researchers used the Non-Equivalent Control Group Design (NECGD). The purpose of using such a design was not simply to determine whether the respondents who received the intervention improved, but also to determine whether they improved more than the respondents who did not receive the intervention. According to Burns and Groves (2013), NECGD is appropriate when study respondents are not randomly assigned to conditions and confounding variables have not been eliminated. The researchers lacked control over the manipulation of the intervention and management of the setting, as the student nurses' critical thinking disposition was investigated in their natural environment. Therefore, the researchers could not randomly select the respondents or control certain variables, such as gender, age, and cognition.

Locale and Population

The study was conducted at Saint Louis University, Baguio City, from January - May 2023. The subjects were Level 2 students under the Bachelor of Science in Nursing (BSN) curriculum. The inclusion criteria were as follows: (a) must be currently enrolled in the second Semester of A.Y. 2022-2023; (b) must be 18 - 20 years old; (c) must have a General Weighted Average (GWA) of 85-90% second semester, A.Y. 2021-2022. The study did not include the respondents who are: (a) Working and (b) clinically diagnosed with mental and/or psychological disorders.

The researchers conducted a priori power analysis using G*Power version 3.1.9.4 to determine the minimum sample size, based on an estimated effect size of 0.5. Based on the G*Power analysis, the sample sizes would be Control: N = 21 and Intervention: N = 21. The researchers decided to add four more respondents to each group to achieve a more significant effect, resulting in Control: N = 25 and Intervention: N = 25.

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However, due to the unavailability and conflicting schedules between the respondents and researchers, the final sample size was reduced to Control: N = 22 and Intervention: N = 22. The fishbowl method was used to select respondents for both groups in the study. The recruitment of respondents was carried out as follows: 1) Initially, a letter of communication addressed to the department head of Level 1 of the nursing program was forwarded, requesting the list of BSN 1 students with a GWA of 85-90%. 2) Using the fishbowl method, the researchers copied students' names with 85-90% GWA on small pieces of paper. These papers were randomly picked in alternating order and assigned to the intervention and control groups. The researchers then coded the respondents according to the sequence in which they were randomly selected. 3) Once the sample size needed per group was completed, the students were assigned a letter-number code, like I for intervention, and C for the control, followed by a number. 4) A letter of communication to the department head of level 2 was forwarded, requesting the conduct of the study and the email addresses of the chosen respondents in both groups. 5) After approval, the chosen respondents in the intervention and control groups were emailed about the study and its objectives. Messenger was also used. 6) Once the students showed interest in the study, the researchers set a schedule to meet via Google Meet to explain the informed consent. The online platform was used instead of conducting it face-to-face to avoid the risk of contracting the coronavirus since the pandemic has yet to end. The researchers reiterated that a stable connection and a functional laptop or personal computer with a compatible web browser, such as Google Chrome or Microsoft Edge, were necessary for executing NursePlay. 7) If the student did not want to participate in the study, the researchers further explained the research implementation process to alleviate their confusion or doubt. Raising concerns or questions was encouraged so they would be addressed appropriately. Nonetheless, if respondents continued to express uncertainties even after further elaboration, prompting them to withdraw, they were free to do so. The information gathered from them was destroyed to protect their privacy.

Data Gathering Tool

A self-administered, closed-ended questionnaire using Google Forms was used in the study. The researchers formulated the Perinatal EMI: Critical Thinking Disposition Scale, which is based on the Florida Critical Thinking Disposition Scale (UF/EMI - the University of Florida Engagement, Maturity, and Innovativeness Critical Thinking Disposition Instrument). Three experts on MCN validated the tool which yielded 0.94. Pilot testing was implemented for the PEMI tool. Reliability testing was conducted wherein a Cronbach's alpha of 0.96 was obtained.

Data Gathering Procedure

Prior to data gathering, the researchers developed the NursePlay which is a virtual clinical simulation website that recreate a clinical environment with integrated patient responses designed to train student on their cognitive, technical, and behavioral skills in preparation for real-life situations.

FIGURE 2: VISUALS AND LAYOUT OF THE NURSEPLAY SCREEN

Development of the Nurseplay: The researchers divided the tasks according to the contents, design, and layout (Figure 2 and Figure 3) of the NursePlay website. For the content of the intervention, the researchers used "Maternal and Child Health Nursing: Care of the Childbearing and Childrearing Family" by Adele Pillitteri. The researchers classified the concepts into three categories: prenatal, intranatal, and postnatal, which would serve as the three levels of the simulation game proper. After which, scenarios for each level were formulated by the researchers. After compiling all the needed data for NursePlay, the researchers created a design and layout of the prototype using Canva and Microsoft PowerPoint applications. The NursePlay prototype was forwarded to the developer for website creation after a formal agreement on the program development was reached. The NursePlay website was checked and validated by an IT expert and content experts through the Medical Educational Website Quality Evaluation Tool (MEWQET). It has a Cronbach's alpha score of 0.92, which shows high internal consistency reliability. The Content Validity Score of NursePlay is 69, indicating that NursePlay is a recommended educational tool, as per expert evaluations.

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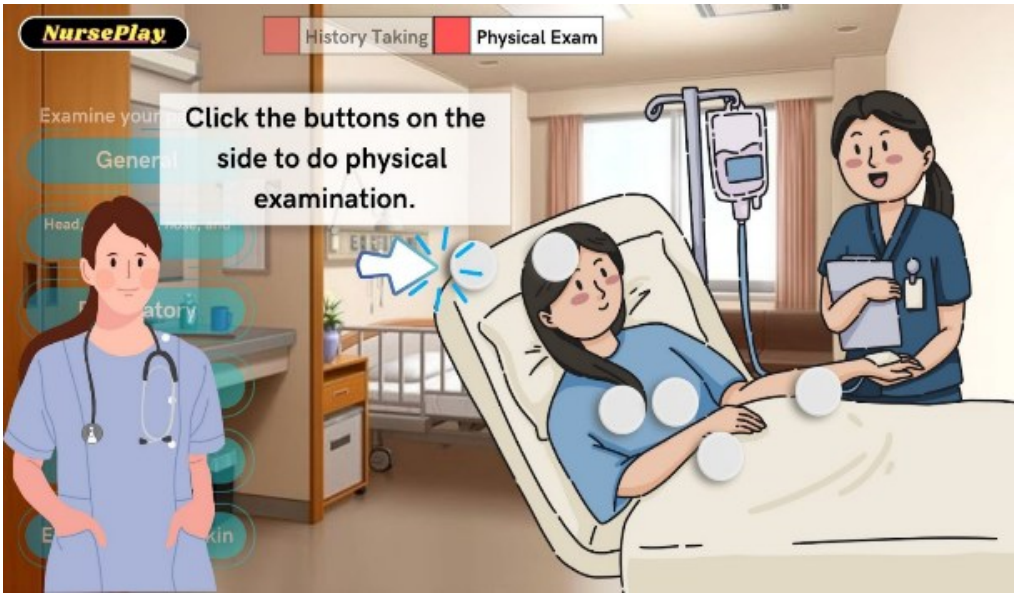

FIGURE 3: LAYOUT OF THE SCREEN GAME

A. Pre-Test

On the first day of data collection, the Perinatal EMI: Critical Thinking Disposition Assessment (PEMI) was administered via Google Form to both groups.

B. Intervention Period

The intervention group was oriented about the mechanics of NursePlay. They also agreed with the respondents to play the first level on day 2. On the 2nd day, the intervention group played the first level of NursePlay until it was completed, followed by a debriefing session about their experience. The third meet was completed by allowing the respondents to complete the second level of NursePlay, followed by a debriefing session similar to day 2. Lastly, the researchers waited for the respondents to complete the third level of the VGS and conducted another debriefing session. The comparison group received no intervention.

C. Post-Test

One week after the intervention, the researchers set another schedule with their assigned respondents via Google Meet. A one-week interval was allowed to avoid the recency effect, a cognitive bias where recent ideas are remembered more clearly than those that came first. Longer intervals may also influence cognitive retention. Both groups received the same set of questionnaires from the pre-test. Then, the researchers gave the respondents 20-30 minutes to complete the post-test questionnaire. The researchers then tallied and compared the respondents' scores from the pre-test questionnaire with those from the post-test questionnaire.

Ethical Considerations

The study was submitted to the Research Ethics Committee of Saint Louis University, Baguio City, and was approved with protocol number SLU-REC-UG #2023-020.

Informed consent was sent to the respondents individually through email. The primary tool used for gathering responses was Google Forms. It was done to lessen face-to-face exposure of the respondents to infectious diseases. Additionally, meetings were held online via Google Meet. This ensured that the data gathered was not tampered with by any cheating or intervention of outside variables. The respondents were informed that whenever they felt anxiety or embarrassment during the introduction of the intervention or data collection, and will make them want to withdraw, they are free to do so. Fortunately, no respondents verbalized anxiety or embarrassment in the study. Raising concerns or questions was encouraged, as they were addressed promptly and effectively. Additionally, a debriefing process was implemented to provide emotional and psychological support to the respondents after they received the intervention.

Statistical Treatment

Statistical analysis was carried out using Microsoft Excel 2010 and Jeffreys's Amazing Statistics Program (JASP) 0.17.1. MS Excel was used to compute the weighted mean scores. The Repeated Measures ANOVA was used to examine the significant difference between the pre-test and post-test scores of the intervention and control groups.

III. RESULTS AND DISCUSSIONS

TABLE 1: CRITICAL THINKING DISPOSITION OF STUDENT NURSES ALONG WITH ENGAGEMENT, COGNITIVE MATURITY, AND INNOVATIVENESS

	Engagement		Maturity		Innovative ness		Overall Critical Thinking Disposition	
	x̄	DE	x̄	DE	x̄	DE	x̄	DE
Intervention	3.23	VST	3.33	OCT	3.74	OCT	3.43	OCT
Control	3.19	VST	3.52	OCT	3.87	OCT	3.52	OCT
Average	3.21	VST	3.41	OCT	3.81	OCT	3.48	OCT

Scale	Description
3.26-4.00	Outstanding Critical Thinking (OCT)
3.51-3.25	Very Satisfactory Thinking (VST)
1.76-2.50	Satisfactory Thinking (ST)
1.00-1.75	Poor Thinking (PT)

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Table 1 shows that the intervention group (3.43) and the control group (3.52) obtained scores on the OCT reflecting their critical thinking disposition. The mean scores suggest that the student nurses demonstrate a high level of achievement and commitment, along with strong cognitive maturity and innovativeness. They exhibit qualities such as open-mindedness, curiosity, maturity, and a pursuit of truth, which may be linked to their inherent sense of optimism. According to Seligman (2020), incorporating a sense of optimism in the learning process maximizes mental health resulting in better decision-making skills, increase interest in learning new concepts, and creativity. Such data that student nurses learn not only because of having good scores but also because of the impact of what they have learned.

Furthermore, the results can be attributed to student nurses' self-awareness. They think critically because of their self-awareness, as they examine their opinions, beliefs, and biases before taking action. MacIntosh et al. (2016) support this factor, as students who are able to investigate their personal prejudices have an increased critical thinking disposition. It implies that awareness of their positions effectively improved their overall critical thinking disposition.

Additionally, their online learning systems also affected their OCT levels. Recognizing that the respondents belong to a generation where technological advancements are prevalent, their learning is facilitated, and they are motivated by these advancements, aligns with the study by Taplak and Sener (2022). The technological experiences have provided students with a convenient way to browse and discover topics they want to absorb, leading to a positive outcome for student nurses and resulting in an excellent overall critical thinking disposition.

Lastly, their overall critical thinking disposition is outstanding because they were already exposed to various situations through the K-12 program. They underwent an additional two years in senior high school, which allowed them to gain experience and skills (Trance & Trance, 2019). The evidence shows that previous learning and experience have contributed to their critical thinking, enabling them to distinguish between their own feelings and those of others, learn about them, and respond appropriately in various situations.

Engagement Disposition

Table 1 presents the mean scores of the intervention group (3.23) and the control group (3.19), with the former being slightly higher than the latter. Nevertheless, both groups in this dimension are interpreted as VST, which means that students have exceeded expectations above the established standards and exhibit mastery in most dimensions of engagement. According to Sattar et al. (2018), the involvement of student nurses in their learning environment revealed that they are positively engaged, allowing them to respond and behave optimally. The results, which show that the innovativeness dimension is outstanding, may lead to a satisfactory engagement with knowledge. Hurt et al. (1977) discussed how learners connect to the idea if they exhibit outstanding reactions to new ideas, demonstrate creativity, actively improvise, generate innovative ideas, and accept challenges. Their engagement in critical thinking is linked with the problem-solving ability and creativity of student nurses.

Moreover, previous clinical experience explains the VST of student nurses along with engagement. During their clinical duties, student nurses communicate with their peers, professors, healthcare workers, and clients. Alonso-Tapia et al. (2022) explain that the degree of engagement is positively affected by their interaction with classmates during group work and practical classes, as well as listening during discussions and participating in various learning situations. The results suggest that the interactions they have established have influenced their decision-making and rational thinking. Garcia and Estioko (2021) discussed that Filipino level two student nurses showed a very satisfactory engagement because of the combined effective teaching-learning techniques employed by the clinical instructors, such as the use of active and collaborative teaching methods like encouraging student participation and gamification of lectures and tests, and allowing students to perform the skill in the clinical area along with proper supervision. The findings suggest that the facilitators employ effective teaching strategies that enhance student motivation, manage their study habits, and foster their ability to reason and make decisions, resulting in very satisfactory engagement. Such a dimension may not be extraordinary, as the student nurses exhibited average independent decision-making skills, as evidenced by their responses to the PEMI questionnaire. Similar to the discussion by Günay and Klnç (2018), most student nurses noted and claimed that their capacity to apply theories in practice is insufficient, making them hesitant to conduct interventions on their patients and reliant on others for their cognitive and decision-making skills. This makes their initial engagement VST as compared with the OCT level, where students are independent and have exceptional decision-making abilities.

Cognitive Maturity Disposition

Student nurses in both groups demonstrated outstanding cognitive maturity (OCT), with the intervention group showing measurable post-test improvement (3.45 vs. 3.33). It means that student nurses generally possess an extraordinary sense of open-mindedness and maturity, and exhibit a high level of mastery, which can be attributed to their exposure to learning situations in the clinical and classroom settings. Such experiences are added to their existing knowledge, which they use for reflection, contributing to their cognitive development and ultimately impacting the learning process. According to Kolb (1984), learning occurs when individuals engage in the process of reflection and inquiry, building knowledge and skills through their experiences. Kolb's theory suggested that experiences are a key factor in the cognitive development of student nurses. For example, a nursing student may have a clinical experience where they encounter a patient with a complex medical

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history. Through reflection on this experience, the student may begin to identify patterns and connections between the patient's health issues, develop hypotheses about potential treatments or interventions, and consider the broader implications of the patient's condition. The said process of reflection and inquiry contributed to the cognitive development of student nurses, helping them to mature and develop a more nuanced disposition and gain a deeper understanding of the complexities of healthcare. Moreover, the results can also be attributed to the advanced competencies being taught to students in their Related Learning Experience (RLE) in Mother and Child Nursing. Fooladi et al. (2022) found that a supportive educational setting with an interactive curriculum enhances students' performance in both classroom and clinical settings, as well as their preparation for practice. The aforementioned is supported by Alo (2017), which suggests that the best way for student nurses to acquire the enhanced understanding, skills, attitudes, and values required to become exceptional nurse practitioners is through their participation in RLE classes, which indicates that their RLE contributes to the outstanding critical thinking of student nurses along with cognitive maturity.

Furthermore, the high cognitive maturity level of the respondents can also be attributed to their self-awareness, as they are able to examine their own biases and prejudices before caring for their patients or performing nursing interventions. A study conducted by MacIntosh et al. (2016) found that students who were able to effectively set aside personal feelings and issues during clinical experiences exhibited higher levels of cognitive maturity and were more likely to engage in professional behaviors, such as effective communication with patients and collaboration with other healthcare professionals. Such a study suggested that the ability to set aside personal issues and act professionally when needed is a crucial factor in developing cognitive maturity and critical thinking skills in nursing students, implying that developing professional behaviors among student nurses during their level 2 nursing education enhances their ability to manage complex clinical situations and make informed decisions, which fall under the cognitive maturity domain.

Innovativeness

Table 1 presents that the intervention group has a lower mean score of 3.74 than the control group, which has 3.87, which is interpreted as OCT. The values suggest that the student nurses have outstanding levels of inquisitiveness and curiosity, which can be attributed to their eagerness to explore and delve deeper into concepts that they want to learn about in mother and child Nursing. Orhan (2022) explained that when learners are exposed to a new concept, they tend to continue learning it, overcome challenges, and apply their problem-solving skills, which is manifested in their performance in both clinical and academic settings. Meaning, their eagerness to learn enhances their disposition to become innovative.

Another factor may be their reward system, which boosts their inner drive to perform an activity. For instance, obtaining good grades resulted from their behavior of constantly seeking to explore new ideas and information, which motivated them to become more innovative. This is supported by Skehan's (1989) study, in which good results are understood as rewards for the learner, thereby fostering students' motivation in their learning. This indicates that these reinforcement methods increased their curiosity to learn. Furthermore, the results may be due to a sense of competitiveness that drives them to attain something, which in turn motivates them to learn new things. Student nurses are competitive, especially now that they are undergoing face-to-face classes, where they can see their batchmates' progress and compare it with their own (Fang et al., 2022). It can be inferred that they became more driven to go outside their comfort zones and explore novel things and ideas to achieve their goals. Moreover, Taplak and Sener (2022) discussed how online learning systems used in nursing education increased students' interest and motivation in lessons and affected their eagerness to acquire new knowledge. Since the respondents are part of the Generation Z demographic cohort, they are highly exposed to using gadgets, applications, websites, and other technological advancements in their daily lives, which has become a driving force for them to be skillful in using technology when searching and confirming new information. According to Chicca and Shellenbarger (2018), student nurses use their smart devices for 15.4 hours per week to browse the internet and search for resources, such as videos and encyclopedias, that can help them learn more outside of their classrooms. Giedd (2012) also noted that the adolescent brain's ability to adapt to new technology could keep pace with the rising speed of digital technology, thereby enhancing their inquisitiveness and curiosity. This suggests that online learning systems are increasing their innovativeness levels.

Aligned with advances in technology utilization, Gherghel et al. (2023) revealed that motivation in learning is enhanced due to the immediate feedback provided by online learning systems in nursing education. Shute (2008) discussed the immediate feedback processes that create conditions that strengthen students' inquisitiveness and competence, driving them to become more motivated and curious about new information. The technology utilization has contributed to the learning success of student nurses, especially when new concepts are introduced.

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TABLE 2: PRETEST AND POSTTEST SCORES OF THE INTERVENTION AND CONTROL GROUPS, ALONG WITH ENGAGEMENT, COGNITIVE MATURITY, AND INNOVATIVENESS

Disposition	Test	Group	$\bar{x}$	F	p-value
Engagement	Interaction (Test* Group)			4.70	0.04*
	Pretest	Control	3.19		
		Intervention	3.23		
	Posttest	Control	3.26		
		Intervention	3.56		
Maturity	Interaction (Test* Group)			5.75	0.02*
	Pretest	Control	3.52		
		Intervention	3.33		
	Posttest	Control	3.33		
		Intervention	3.45		
Innovativeness	Interaction (Test* Group)			1.18	0.29
	Pretest	Control	3.87		
		Intervention	3.74		
	Posttest	Control	3.83		
		Intervention	3.86		
Overall Critical Thinking	Interaction (Test* Group)			4.88	0.03*
	Pretest	Control	3.52		
		Intervention	3.43		
	Posttest	Control	3.47		
		Intervention	3.63		

Significant : p≤0.05 Highly Significant p≤0.01***

Table 2 highlights an increase in the post-test scores of the intervention group, resulting in a p-value of 0.03, which is less than 0.05, indicating a significant difference between the change in mean scores from the pre-test to the post-test in the control and intervention groups. The results can be attributed to the features of NursePlay, such as its timer, immediate feedback, virtual patient, design, objectives, fidelity, and complexity. López et al. (2020) reported that the respondents significantly improved their critical thinking disposition after participating in a simulation intervention via VGS that incorporated the aforementioned features. Thus, NursePlay's design, age-appropriate content, instant feedback, the timer on tasks for each question, and accessibility significantly increased the intervention group's overall critical thinking disposition compared to the control group.

Altogether, the intervention group's critical thinking disposition scores increased as compared with the control group after the implementation of NursePlay. As a result, NursePlay had a significant impact on the overall critical thinking disposition of the student nurses in the intervention group. Therefore, new technology tools, such as NursePlay, could help create educational materials more effectively. According to the engagement disposition, Table 2 reveals a p-value of 0.04, which is lower than the threshold of 0.05 for the engagement dimension. This means a significant difference exists between the intervention and control groups' pre-test and post-test scores. Thus, the null hypothesis is rejected. This can be attributed to the situation presented in NursePlay. The situation must have been encountered by the students in the clinical setting or in the classroom. It can be attributed to the situation presented in NursePlay. The situation must have been encountered by the students in the clinical setting or in the classroom. The students were able to relate to the virtual patient, and every time they answered the VGS, immediate feedback and rationales for their answers were provided. According to Cant et al. (2023), students enjoy interacting with virtual patients, claiming they were accessible, fun, and engaging ways to learn. This indicates that the respondents' engagement with NursePlay was influenced by the 2D animation design, which incorporates age-appropriate and course-appropriate scenarios and challenging yet interesting questions concerning prenatal assessment and nursing treatments. In addition to being a 2D animated intervention with a virtual client, NursePlay enables learners to interact with the virtual client by clicking options to ask the client questions or respond to their queries. Such interaction is fun and appealing to the student, increasing their attention to the game. This aligns with the discussion by Umoren and Rybas (2019), who state that 2D objects can create immersive and engaging learning experiences.

Furthermore, a notable feature that NursePlay possessed is the time on task, which as explained in the framework, focused the students' minds on answering the question within the allotted time. In line with Jeffries' Nursing Education Simulation Framework, this educational practice provides optimal performance in terms of critical thinking. In a study by Duncan (2020), respondents mentioned that time constraints and the pressure to meet deadlines were positive motivators. The result allows students to enhance their reasoning skills and answer more competently. This implies that the timer included in the simulation is successful in increasing learner engagement.

Another educational practice evident in the framework is the provision of immediate feedback and rationalization for every question, enabling students to learn from their errors and apply this knowledge to subsequent problems. The student nurses in the intervention group showed an increased engagement level because, upon clicking their final answer to the question, the correct answer and immediate feedback were displayed on the screen. This claim was supported by the study of Hulsbergen et al. (2022), which stated that responsive simulations enable students to apply their existing knowledge. This implies that by providing direct feedback, the simulation informs students about what they already know and where they fall short, allowing them to understand.

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The website's design also contributed to increased student engagement. NursePlay engaged the learners' eyes by using an understandable interface and easy-to-use functions. It also showcased exciting color schemes and icons, which instantly increased the learners' commitment to the VGS. Moreover, the intervention was validated by experts who highly recommended (CV: 69) the simulation. According to one expert, the game's design utilized bright and fun color schemes and logos, helping players become active participants in the VGS. Therefore, this indicates that NursePlay improved the student nurses' concentration and focus, enabling them to reason soundly and determine specific circumstances that require justification, solve problems, and make decisions confidently.

Other aspects of the game, such as positive reinforcement (using words like Excellent, Very Good, and Superb) for correct answers, were also added to the intervention group's high engagement scores. As discussed earlier, Skinner's Operant Conditioning theory supports this attribute because when the player receives a positive consequence, a positive behavior can be continually reinforced. In this situation, the encouraging words condition the student nurses to become more immersed in the game and continue playing until they finish the level. Thus, NursePlay positively impacted the intervention group's engagement, as evidenced by the increased mean score and a significant difference.

In terms of their cognitive maturity disposition, Table 2 shows that along the Maturity Disposition, the within-subject effect of the interaction is significant at ($p\ 0.02 < 0.05$). This indicates that the change of mean scores from the pretest to the posttest significantly differs between the control and intervention groups. This result can be attributed to the features of NursePlay, as discussed in the conceptual framework, including the introduction of objectives, fidelity, complexity, debriefing, self-directed learning, and immediate feedback and rationalization.

The first key element of the VGS is establishing objectives before the game begins. The goals for each level were displayed on the respondents' screens to explain the desired outcomes of the level. This encourages them to examine their role in their educational process. This concurs with the discussion of Vlachopoulos and Makri (2017), who explained that in simulations, the students apply their skills and knowledge to achieve their goals, which improves their maturity disposition. The guidance the respondents receive on how the application is played boosts their ability to recognize their positions, opinions, and beliefs, which is part of their cognitive maturity disposition.

Another feature of NursePlay is its fidelity. NursePlay has low-fidelity graphical details that attract players throughout the activity. The VGS enables student nurses to explore their beliefs in a low-concern setting, which can facilitate their growth as learners and the development of a deeper understanding of Mother and Child Nursing. Furthermore, NursePlay is less structured compared to higher-fidelity simulations. This enables players to investigate several solutions to a problem and test various theories, which may help them create a more comprehensive application of the concepts in the simulation. In a study conducted by Alconero-Camarero et al. (2021), a low-fidelity simulation produced a more satisfactory result in student nurses as compared with high-fidelity ones because the simple situations that are appropriate to the student's degree of knowledge allow the learners to be creative and mature in answering their simulation, indicating that the authenticity of the VGS helps the learners be more cognitively mature in their learning.

NursePlay also has an increasing complexity of levels. This immerses and challenges the respondents on how they would respond and act in their performance of patient care. This is in harmony with the results of Sadler (2010), who elucidates that increasing complexity concepts allows the students to develop their critical thinking, such as analysis, evaluation, and synthesis, as appropriate to their learning capacity. The results suggest that the escalating complexity level of NursePlay stimulates learners' maturity in acting based on what the scenario reveals to them at specific levels.

There was also a debriefing that took place after each session at each level. As mentioned in the conceptual framework, respondents were given a debriefing before playing NursePlay, during which they were informed about the study's goals and how they would participate. The researchers discovered how they could improve NursePlay by conducting debriefing sessions after playing it. The gamers also had the opportunity to reflect on their performance and consider how they might utilize the VGS to assist patients in real-world settings. This is consistent with the study by Sabei and Lasater (2016), who discuss how debriefing allows the simulation player to reflect and take charge of their individual learning process. This increased their cognitive maturity level as they are given a wider perspective on how they can apply their learnings from NursePlay to their academic performances.

Another educational practice in line with the framework is self-directed learning (SDL). NursePlay stimulates learners to engage in SDL because they teach themselves the concepts of MCN while playing the VGS. By setting their own learning pace, the student nurses are given the opportunity to take charge of their education. This degree of autonomy can help them achieve a sense of responsibility for their own learning, which can foster a broad perspective in their studies. This aligns well with Khiat (2017), who explains that SDL fosters a deeper understanding and awareness in students, which can lead to personal growth. This implies that the NursePlay feature was effective in enhancing the learners' growth.

Lastly, the immediate feedback and rationalization of the answers are also vital elements in enhancing the cognitive maturity of student nurses. As previously discussed, respondents can process their mistakes by receiving feedback to correct their previous understanding of the concept. This modifies the incorrect positions, beliefs, and opinions of the student into the correct ones. This corroborates the study of

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Dichev & Dicheva (2017), in which feedback provides a safe space for learners to obtain experience without being judged or punished for failure. This, in turn, increases their individual growth disposition for learning. This means that immediate feedback and rationalization of answers play a vital role in developing student nurses' cognitive maturity dispositions.

Along with the innovativeness disposition, the intervention did not have a differential impact compared to the control group, as the within-subject effect of the interaction is not significant (p (0.29) > 0.05). The values suggest that the change in mean scores from the pretest to the posttest between the intervention and control groups is not statistically significant. This means that even without NursePlay, the student nurses investigate creative solutions to healthcare difficulties and cultivate an environment that fosters creativity. This result may be attributed to their outstanding critical thinking disposition, along with their innovativeness, as seen in Table 3. As previously discussed, their motivation, sense of competitiveness, online learning systems, and technology utilization have all affected their OCT levels in terms of innovativeness disposition.

Based on the table, there was an increase of 0.12 in the post-test scores of the intervention group, along with an increase in the innovativeness of student nurses. Thus, NursePlay still influences the respondents, but the effect is not statistically significant. Furthermore, factors such as eagerness to explore, competitiveness, the importance of rewards, and the impact of advanced technologies have sustained the outstanding critical thinking disposition of student nurses, along with their innovativeness. Student nurses have already explored uncharted areas because they have been exposed to the knowledge they acquired from their resources, most especially the Internet. As previously mentioned, they are part of Generation Z, which exposes them to emerging technologies.

Another significant aspect of innovativeness is discussed by Garcia and Estioko (2021), who proved that level-two student nurses in the Philippines had high innovativeness due to increased motivation. This is noted in their self-directed learning (SDL) techniques. This confirmed the theoretical framework, as both groups had the same level of innovativeness in the pre-test, because, in SDL, each student is responsible for their own learning activities. Level 2 student nurses are intermediate autonomous learners. Thus, self-directed learners exhibit a deeper understanding of their responsibility to make learning meaningful and to monitor their own progress, thereby improving their curiosity levels.

Moreover, one of the factors affecting this result is the challenges faced by the Level 2 student nurses during the blended learning, which was centered on the adaptability and creativity of each student nurse. They were challenged to cultivate their innovativeness, such as switching from physical notes to online notes, which required students to be imaginative and innovative in devising new approaches to the circumstances. In line with this factor, Sternberg's Triarchic Theory of Intelligence (2001) emphasizes three distinct types of intelligence: analytical, practical, and creative. This theory posits that success is achieved through the balance of the three distinct types of intelligence, enabling one to adapt and shape oneself in unfamiliar environments. In line with the creative type of intelligence, this distinct type of intelligence is the ability of an individual to use existing knowledge to create new ways to cope with a new situation, as evident in the experiences of Level 2 student nurses during the Blended learning. Thus, the student nurses' inquisitiveness may have increased by applying this attribute.

IV. Conclusion & Recommendations

Students are influenced in three crucial disposition areas: Engagement, Maturity, and Innovativeness. This demonstrates that prior to NursePlay, student nurses have pre-existing critical thinking dispositions. NursePlay increased the engagement and maturity disposition of student nurses, while having a minimal effect on their innovativeness. Nevertheless, NursePlay has a positive impact on the overall critical thinking disposition of student nurses, which in turn enables them to care for clients more effectively in the Labor Room, Delivery Room, and OB-GYN department. Thus, it can be integrated as a complementary instructional strategy to traditional classroom and clinical experiences. The NursePlay's features, such as its time on task, feedbacking, virtual patient interaction, and design characteristics, effectively improve the student nurses' overall critical thinking disposition, including their engagement and cognitive maturity. Technology tools like NursePlay help student nurses effectively relate the virtual situation to their actual experience. The integration of VGS supports and extends existing nursing education theories emphasizing learning through experience, reflection, and active engagement. The results also highlight the potential of VGS as a rich area for further investigation.

Limitations of the Study

The study had several limitations. First, the researchers were not able to match the respondents in the control and intervention groups by age and gender. Second, a limited number of local Related Literature and studies were found and utilized in the study to support the title and objectives. Furthermore, there was also a limitation on the funding of the NursePlay intervention. Lastly, the respondents were limited to level 2 students.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this article. The submitted article is original and is not an official position of the institution.

DISCLOSURE OF USE OF GENERATIVE AI

Generative artificial intelligence tools were used solely to assist with language editing and to enhance the clarity of the manuscript. The authors take full responsibility for the content, analysis, and conclusions of the study, as they independently developed the research proposal and conducted the data collection and analysis, ensuring the accuracy and integrity of the work.

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GENEVIVE CLAIRE B. ANTONIO, PhD, RN, a faculty member of the Nursing Program at SLU, served as the research adviser and provided scholarly guidance in mentoring future nurse researchers. She is dedicated to cultivating globally competitive student nurses with ethical professional attitudes and enhancing nursing research capacity.

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RESEARCH ARTICLE

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The Level of Cultural Competence of Nursing Students Among Nursing Schools in Baguio City

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ABSTRACT

Introduction: Cultural competence enables nurses to provide culturally congruent care to various populations. As Baguio City is home to different ethnic and cultural groups, nursing students must develop this competence to meet the distinctive healthcare needs of multicultural and multiethnic communities. Despite integrating cultural competence into national nursing education standards, its actual implementation in curricula remains inconsistent and often insufficiently assessed. Moreover, empirical research in the Philippine context is limited, particularly in Baguio City.

Aim: To assess the cultural competence level of nursing students in terms of cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice and to identify significant differences on the cultural competence level based on year level and ethnic group.

Methods: The study utilized a descriptive quantitative research design and was conducted across three universities in Baguio City. A total of 367 nursing students participated in the study, with 151 respondents from level 2, 124 from level 3, and 92 from level 4. Stratified and systematic random sampling were used to determine the sample size and to select the respondents. Data were gathered using the Cultural Competence Assessment Tool (CCATool), which was modified to suit the Philippine context. The data was analyzed using mean scores, standard deviation, Kruskal-Wallis Test, All Pair testing, and the Mann-Whitney U test.

Results: Results showed that nursing students had a high level of cultural competence, particularly in cultural awareness, knowledge, and practice which is very high level. However, a significant gap was observed in the domain of cultural sensitivity, which scored notably lower than other domains. The analysis revealed significant differences in cultural competence across year levels, specifically in cultural awareness and cultural practice, with level 4 students revealed higher cultural awareness and competence, while level 3 students showed higher cultural practice. When grouped according to ethnic group, there is a significant difference in cultural knowledge and competence, with the Kankanaey being the highest.

Conclusion: Level 2 to 4 nursing students from three universities in Baguio City generally provide adequate healthcare, including cultural beliefs, behaviors, and needs in patient care. They have an extensive awareness of their cultural identity and comprehensive knowledge of health beliefs, behaviors, power dynamics, and structural inequalities of different ethnic groups, and they apply these exceptionally in clinical practice. However, they partially recognize clients as equal partners, with some trust, acceptance, and respect in care. The year level and ethnic group of these students also affect their competencies in the four domains of cultural competence.

Keywords: *Cultural awareness, Cultural knowledge, Cultural sensitivity, Cultural practice, Cultural competence*

I. Introduction

The Background of the Study

Cultural competence is widely viewed as an essential component of contemporary nursing practice. It is defined as the capacity of healthcare personnel to offer care that is respectful of and attentive to the cultural beliefs, attitudes, and practices of patients from varied origins. In the nursing profession, cultural competence goes beyond the acquisition of basic knowledge about different cultures. It involves a deeper understanding of cultural diversity, the development of self-awareness, and the application of empathy and sensitivity in clinical interactions. These competencies support the creation of meaningful therapeutic relationships, improve communication, and foster trust, all of which are critical for promoting

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positive health outcomes and reducing disparities in care delivery (Beattie et al., 2024; Caino & Castillote, 2024).

The global context in which healthcare is delivered today is increasingly multicultural. The World Health Organization predicts that over 50% of the global population will reside in urban areas by 2050. These urban centers are expected to become significantly more ethnically and culturally diverse, driven by migration, globalization, and shifting population dynamics. This transformation is placing pressure on healthcare systems worldwide to adapt their practices to serve a more culturally diverse patient population (Dadson et al., 2025; Timmins et al., 2024). As a result, cultural competence has been embedded into nursing curricula in countries such as Israel, the United States, and Australia. These initiatives aim to equip nurses and nursing students with the skills needed to interact effectively with individuals from different cultural, linguistic, and religious backgrounds (Al-Btoush and El-Bcheraoui, 2024; Nematollahi et al., 2022). This aligns with recommendations from the International Council of Nurses (ICN), which emphasize the need for globally relevant, culturally sensitive nursing education (American Nurses Association, 2021).

Although academic year level and clinical exposure are often associated with increased cultural competence among students (Oanh et al., 2024; Aruzza & Chau, 2021; O'Brien et al., 2021), some studies reveal that progression alone does not guarantee improvement. Senior nursing students may still demonstrate low levels of cultural sensitivity due to limited experiential learning, inadequate exposure to diverse patient populations, and insufficient integration of transcultural content in the curriculum (Sagarra-Romero et al., 2024; Tosun et al., 2021). These results highlight that the development of cultural competence is influenced not merely by academic seniority but also by educational approaches, personal reflection, intercultural experiences, and mentorship by culturally responsive faculty.

The Philippine healthcare system presents a unique challenge in addressing cultural competence in a localized setting. With over 7,000 islands and more than 170 ethnolinguistic groups, the Philippines is one of Southeast Asia's most culturally diverse countries, posing potential barriers to culturally competent care (Loreche et al., 2023; Abuso, 2022; Candilada et al., 2023). Patients' cultural beliefs heavily influence their health seeking behavior, acceptance of treatment, and trust in healthcare providers. Therefore, Filipino nurses, whether working domestically or abroad, must be properly trained to deliver culturally competent care (Alberto et al., 2023; Barral et al., 2023; Salinda et al., 2024). Despite being acknowledged in national nursing education standards, cultural competence is inconsistently integrated and assessed in curricula, resulting in varied levels of preparedness among students. Empirical research examining how nursing students develop and demonstrate cultural competence across different academic year levels and ethnic groups is still lacking (Tamayo & Rosales, 2025; Diaz et al., 2023; Joo & Liu, 2021).

Baguio City, located in the Cordillera Administrative Region (CAR), provides an ideal context for such a study. Renowned for its multicultural composition, the city is home to Indigenous groups such as the Ibaloi, Kankanaey, and Ifugao, as well as migrants from across Luzon, Visayas, and Mindanao (Catama et al., 2024; Felipe-Dimog et al., 2022). As an academic hub with several institutions offering nursing degree programs, the city trains thousands of nursing students annually. These students typically undergo clinical training at Baguio General Hospital and Medical Center (BGHMC), a tertiary government run training hospital that serves Baguio and neighboring provinces and regions. This environment offers valuable opportunities for students to engage with patients from a wide range of cultural backgrounds, languages, and health beliefs.

Despite this diverse environment, limited systematic research has been conducted on the cultural competence of nursing students in Baguio City. International studies offer several conclusions as to whether students' academic year level or ethnic group correlates with greater competence. Some findings suggest that students from Indigenous groups may possess heightened cultural sensitivity due to their lived experiences navigating cultural boundaries (Mohyeddin, 2024; Antón-Solanas et al., 2021). However, other researchers caution against assuming this and instead advocate for structured pedagogies, inclusive teaching, and self-reflective practices (Ličen & Prosen, 2023; Vella et al., 2022). These ongoing debates emphasize the importance of context specific evidence, especially in the Cordillera region, where cultural diversity presents both opportunities and challenges in nursing education and service delivery.

This study seeks to address this gap by investigating the level of cultural competence among nursing students in Baguio City. It specifically explores four domains: cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice. The research examines whether significant differences exist in cultural competence based on students' academic year level and ethnic group. To ensure contextual relevance, a modified version of the Cultural Competence Assessment Tool (CCAT) was used, adapted to Philippine cultural realities. The findings aim to inform nursing curricula and institutional training programs by identifying key areas where improvements can be made.

In conclusion, cultural competence remains an underexplored yet essential component of nursing education, especially in culturally complex cities like Baguio. Understanding how factors such as academic year level and ethnic group direct students' development of cultural competence is vital for producing nurses who are equipped to provide equitable, respectful, and effective care. This study contributes to bridging the knowledge gap and promotes the advancement of inclusive and responsive nursing education in the Philippines.

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Theoretical Framework

This study is grounded in the Papadopoulos, Tilki, and Taylor (PTT) Model for Developing Cultural Competence, a middle-range theory on transcultural nursing education (Papadopoulos, Tilki, and Taylor, 1998 retrieve from Yava & Tosun, 2021; Papadopoulos, 2002 retrieve from Yava & Tosun, 2021). The model conceptualizes cultural competence as a progressive process that nurses undergo as they develop the capacity to deliver culturally responsive care (Theodosopoulos et al., 2024; Tuominen & Warburg, 2023; Gradellini et al., 2021). It consists of four interrelated domains: cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice.

The foundation, cultural awareness involves critical self-examination of personal values, biases, and assumptions about other cultures. Nursing students must become aware of how their cultural background shapes their perceptions and interactions with patients (Inocian et al., 2022; Lau & Rodgers, 2021). This awareness is a prerequisite for developing a respectful and nonjudgmental stance in clinical settings.

Cultural knowledge refers to the acquisition of factual information about the values, beliefs, practices, and health-related behaviors of diverse cultural groups. This knowledge enables nurses to understand how cultural differences affect patient expectations, symptom expression, and responses to treatment (Kwame & Petrucka, 2021). It also involves a structural understanding of health disparities, social determinants of health, and systemic inequities (Thimm-Kaiser et al., 2023; Clark et al., 2022).

Cultural sensitivity emphasizes the emotional and relational aspects of care, including empathy, trust, respect, and the recognition of patients as equal partners. This domain reflects the interpersonal behaviors that support inclusive care, especially in multicultural settings where misunderstandings can arise without mindful communication (Lauwers et al., 2024; Schuster-Wallace et al., 2022).

Finally, cultural practice represents the integration of awareness, knowledge, and sensitivity into professional nursing actions. It includes the delivery of culturally congruent care by adapting clinical interventions to align with patients' cultural values and practices (Fabry et al., 2024; Day et al., 2023). It also entails effective negotiation with patients and families to ensure collaborative decision-making (Li et al., 2023).

This theoretical framework provides a robust structure for assessing the development of cultural competence among nursing students. While grounded in the PTT model, the study highlights its unique contribution by contextualizing cultural competence specifically within local nursing education in Baguio City. In such multicultural and multiethnic environments, diverse patient populations challenge students to engage across cultural boundaries. Analyzing students' levels across these four domains can inform curriculum design, clinical training, and institutional support systems tailored to the Philippine context.

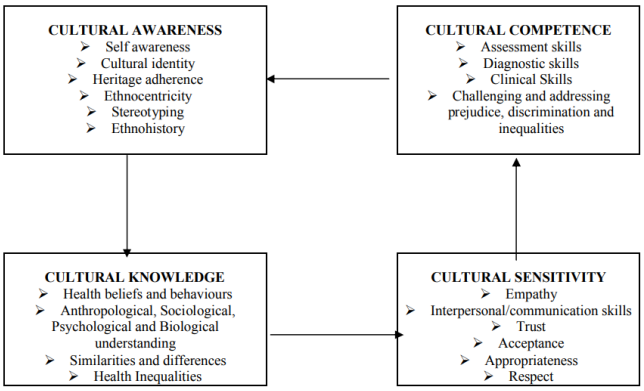

FIGURE 1: THE PAPADOPOULOS, TILKI, AND TAYLOR MODEL FOR DEVELOPING CULTURAL COMPETENCE (PAPADOPOULOS, 2006)

Research Questions

This study is focused on determining the cultural competence of level two to level four nursing students from three universities of Baguio City. Hence, the research aims to answer the following research questions:

1. What is the level of cultural competence among nursing students in terms of?
   a. Cultural Awareness
   b. Cultural Knowledge
   c. Cultural Sensitivity
   d. Cultural Practice
2. Is there a significant difference in the cultural competence of nursing students when grouped according to?
   a. Year level
   b. Ethnic group

Significance of the Study

This study provides insight into the current cultural competence of nursing students in Baguio City, promoting culturally responsive care. It supports delivering safer, more effective, patient-centered services by reducing cultural misunderstandings and enhancing communication and trust between nurses and patients.

The results serve as a guide for nursing administrators in designing programs that support cultural competence. They highlight the need to create inclusive institutional policies and environments that value cultural diversity and ensure students are prepared to work in multicultural healthcare settings.

The findings highlight the significance of improving cultural competency education in the nursing curriculum. They aid in establishing focused educational initiatives that will enhance nursing students' awareness, knowledge, sensitivity, and

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practice, establishing them for effective clinical interaction with various populations.

This study contributes quantitative evidence on cultural competence among nursing students and identifies specific gaps for future exploration. It supports using culturally appropriate assessment tools and offers baseline data for further studies focused on improving educational strategies and evaluating outcomes in diverse clinical environments.

Importantly, this research contributes quantitative evidence on cultural competence, identifies specific gaps for future exploration, and provides baseline data to guide the use of culturally appropriate assessment tools. The findings have potential implications for the Philippine Nursing Education Framework, supporting the integration of cultural competence as a core component in curriculum standards, and for local policy formulation in healthcare institutions, providing evidence to develop policies and training programs that ensure nursing students are prepared to deliver culturally responsive care in multicultural clinical settings..

II. Methods

Research Design

This study employs a quantitative descriptive research design to determine and examine the level of cultural competence among nursing students in Baguio City based on the four domains of the Papadopoulos, Tilki, and Taylor Model across educational year levels and ethnic groups. This approach allows for systematically quantifying and comparing observable trends without manipulating any variables (Ghanad, 2023).

Locale and Population

This study was conducted in three universities in Baguio City, Philippines, that offer Bachelor of Science in Nursing (BSN) programs. A proposed ordinance by the Baguio City Council supports its designation as the "Education Center of the North", emphasizing its commitment to inclusive, quality education (See, 2024). This diversity and academic environment make it an ideal setting for examining cultural competence among nursing students.

The study involved level 2 to level 4 BSN students enrolled during the academic year 2024-2025. These students were selected for their adequate exposure to clinical and theoretical components of the nursing curriculum, as required by CHED Memorandum Order No. 15, Series of 2017 (Commission on Higher Education, 2017). Students without recent hospital or community-based clinical exposure were excluded since cultural competence is significantly impacted by actual interactions with diverse patients and communities, an essential element of clinical immersion in the Philippines (Xames & Topcu, 2024). Individuals who participated in similar research within the same academic year were excluded to avoid response bias and to ensure self-reported data validity (Purnell, 2021). Eligibility was determined through screening questions during the informed consent process.

Participants who initially agree to participate may withdraw at any time, such as feeling uncomfortable with the survey questions or process. They may also leave the study if they experience physical or emotional health issues that make participation difficult. The researchers may also initiate withdrawal in some instances. If a participant no longer meets the study's inclusion criteria, such as changing courses or leaving the program, they may be withdrawn from the study.

Sample Size

The researchers used stratified sampling to obtain a sample that represented the target population. It was a type of probability sampling that involved choosing samples from the population based on classification and relying on selection (Rahman, 2023). This method involved selecting a sample from each stratum based on the year level of the participants. In this study, to ensure that each nursing student from level 2 to level 4 per institution had an equal chance of being chosen, the researchers used Slovin's formula, applying a 95% confidence level with a 5% margin of error, resulting in a total of 367 nursing students selected to participate in the study. As a result, a total of 367 nursing students were selected to participate in the study.

After determining the expected overall sample size, the researchers determined the number of participants needed per stratum using proportionate stratification, wherein the sample size of each stratum was proportionate to the population size of the stratum, determined by $nh = Nh/N \times n$. The total number of participants is 65 for School A, 122 for School B, and 180 for School C, based on the formula mentioned. Please see Table 1 for better illustration.

After determining the sample size per institution, each school's sample was divided among its respective year levels using the same proportionate stratification formula. For School A, the resulting sample allocation was 23 participants for level 2, 22 participants for level 3, and 20 participants for level 4. For School B, the computed sample sizes were 45 participants for level 2, 47 participants for level 3, and 30 participants for level 4. For School C, the sample sizes computed were 83 participants for level 2, 55 participants for level 3, and 42 participants for level 4.

TABLE 1: Sample Size Needed per School and Year Level Using Proportionate Stratified Randon Sampling Formula

School	Year Level	Population	Size
School A		**785**	**65**
	Level 2	276	23
	Level 3	262	22
	Level 4	247	20
School B		**1,489**	**122**
	Level 2	548	45
	Level 3	569	47
	Level 4	372	30
School C		**2,187**	**180**
	Level 2	1006	83
	Level 3	676	55
	Level 4	505	42
Total		**4,461**	**367**

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Sampling Technique

The researchers then used systematic random sampling to select the potential participants from each subgroup, which is k=N/n, where k is the sampling interval, N is the total population size, and n is the desired sample size. This study's total population of nursing students from the three universities was 4,461, and the required sample size was 367. By dividing the total population by the total sample size: k=4461/367≈12.15. The value was rounded to 12 to obtain a whole number interval. A random starting point of 12 was chosen via the fishbowl method, meaning the 12th student on the list was selected first. From there, every 12th student was selected. If the end of the list was reached before the count to the next 12th student could be completed, the researchers resumed counting from the top of the list. This approach ensured the systematic sampling maintained the correct interval throughout the selection process. This method preserved the randomness and representativeness of the sample while fully adhering to the systematic sampling procedure.

Data Gathering Tool

The tool of this study was an adapted questionnaire with five parts. The first part was entitled About You, wherein the questions were related to their current educational level and ethnic group, which was based on the 2020 census of population and housing, in which the respondents were able to tick their year level and as much as where ethnic group they belong to. Parts two through five included 10 questions for each of the four domains of the adapted Cultural Competence Assessment Tool (CCATool) developed by Dr. Irena Papadopoulos. These domains are cultural awareness, knowledge, sensitivity, and practice. The tool, which was designed to determine nursing students perceived cultural competence level in these domains, used a 4-point Likert scale for scoring. This scale, with the options 5 - strongly agree, 4 - agree, 2 - disagree, and 1 - strongly disagree, was carefully chosen to ensure fairness and accuracy in the assessment process. The scale excluded a neutral option to encourage participants to indicate their true feelings of agreement or disagreement. The Papadopoulos' Cultural Competence Assessment Tool (CCATool) had a reverse scoring in the cultural practice domain number 10 and cultural sensitivity domain items 1, 3, 6, and 9, wherein the scoring was: 1 - strongly agree, 2 - agree, 4 - disagree, and 5 - strongly disagree. This reverse scoring was another element of the fair and comprehensive assessment process. Participants could obtain a score of 0 to 10 points in each subscale, knowing the scoring was designed to reflect their cultural competence levels accurately.

The tool was an adapted survey questionnaire since several sections of the questionnaires were not fully aligned with the Philippine context. In the domain of Cultural Awareness, two items were revised in terms of wording, which were numbers 1 and 10. For the domain of Cultural Knowledge, six items were modified: numbers 1, 4, 6, 7, 8, and 9. However, some items like 1, 6, and 9 had minor changes in terminology. Still, for statement number 4, there was an added phrase: "folks/traditional systems of the client as well as other Indigenous health practices," also, for item 8, the statement had added: "compared to those from majority ethnic groups." Additionally, statement 7 in the original tool was unsuitable for the Philippine setting; therefore, it was adjusted to the Philippine Context. In Cultural Sensitivity, there were also changes implemented in the tool: items 1, 2, 3, 4, 5, 7, and 8 were statements that had minimal changes in terms of wordings. The revised version was then emailed to Dr. Papadopoulos to allow her to check the newly revised version of the tool, ensuring its applicability and avoiding formulating null and void questions.

The tool also underwent an Item Content Validity Index, wherein four experts were asked to score how well a specific item within the questionnaire reflected the content it was supposed to measure, which resulted in 0.9 and was interpreted as Appropriate (Appendix F). The statistical analysis showed that Cronbach's alpha for the overall scale (N = 367) for the four domains was 0.844. Meanwhile, Cronbach's alpha for each domain was 0.714, 0.664, 0.619, and 0.781. The overall Cronbach's α result was interpreted as Good, while the Cultural Awareness (α = 0.714) and Cultural Practice (α = 0.781) were Good and Acceptable. In contrast, the other two domains, Cultural Knowledge (α = 0.664) and Cultural Sensitivity (α = 0.619), were analyzed as Acceptable.

Data Gathering Procedure

First, the researchers awaited approval from the Saint Louis University Research Ethics Committee, which was then received on March 12, 2025.

Second, the researchers proceeded to the research coordinator and then to the level 3 Department Head to give a letter for permission to leave the campus and provided the consent that was signed by the researchers' parents or guardians. Then the researchers proceeded to the University Research and Innovation Center (UnRIC) for the approval of floating a survey questionnaire in School A, which took 2 working days for their approval for the data gathering in their university. The researchers visited School C and delivered a letter addressed to the Dean. They then waited three working days for approval. In contrast, for School B, the researchers first communicated with the University RIECO and waited two working days to receive their approval for data gathering.

Third, after the researchers received the approval from UnRIC in School A, the researchers then proceeded to the Associate Dean of School of Nursing, since her approval was needed to be able to start with data gathering in School A and then approved after 2 working days. After the Associate Dean approval, the researchers then started with the collection of the respondents' name per year level by asking the respective Department Head for levels 2, 3, and 4. However, for School C, they provided the list of students and blocks; therefore, the researchers started to

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do the systematic method to list the student names and blocks in the google spreadsheet, which was done for 1 day. After organizing the questionnaires and informed consent for School C, the researchers gave it to School C to start the data gathering in their university. However, for School B, the researchers needed to approach their own university RIECO, Dean, and the Research Coordinator to be able to help in the data gathering in their university.

Fourth, after obtaining approvals and communicating with the relevant individuals at the three universities, the researcher began distributing a survey questionnaire at School A, as it was the first to grant approval. While collecting the completed questionnaires, the researchers ensured that each one was checked for completeness. If any questionnaire was found to be incomplete, it was returned to the participant to complete the missing data. However, for School B and School C, the researchers asked for assistance of the designated respective personnel per school to help the researchers to float the survey questionnaire in their university. Therefore, the researchers only went to School B and School C to collect the finished questionnaires that were done.

Finally, the researchers organized the raw data from the participants of each institution into a Google Spreadsheet to summarize all responses, dividing them according to their institution School A, School B, and School C. Within these groups, the data were further categorized into subgroups based on year levels 2, 3, and 4. The raw data were then analyzed by the statistician to obtain the needed information, which were the mean and standard deviation, fulfilling the first objective, as well as to determine the differences between the cultural competence of nursing students based on year level and ethnic background, addressing the study's second objective.

Data Analysis

Descriptive statistics were applied to address the first objective, with the mean and standard deviation calculated to describe responses for each item within the domains of cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice among nursing students. For research objective 2, the Kruskal-Wallis Test was employed to determine whether there was a significant difference in the level of cultural competence of nursing students when grouped according to year level and ethnic group. Additionally, All Pair testing and the Mann-Whitney U test were performed to examine significant differences between groups, considering all possible variable interactions for a thorough comparison.

Scale of Interpretation of Means

TABLE 2: COMPUTED MEAN VALUE FOR CULTURAL AWARENESS

Arbitrary Value	Mean Range	Interpretation	Description
1	1.00 – 1.75	Very Low Cultural Awareness	Limited awareness of cultural identity
2	1.76 – 2.50	Low Cultural Awareness	Emerging awareness of cultural identity
3	2.51 – 3.25	High Cultural Awareness	Developed awareness of cultural identity
4	3.26 – 4.00	Very High Cultural Awareness	Extensive awareness of cultural identity

TABLE 3: COMPUTED MEAN VALUE FOR CULTURAL KNOWLEDGE

Arbitrary Value	Mean Range	Interpretation	Description
1	1.00 – 1.75	Very Low Cultural Knowledge	Minimal knowledge of health beliefs, behaviors, power dynamics, and structural inequalities of different ethnic groups
2	1.76 – 2.50	Low Cultural Knowledge	Moderate knowledge of health beliefs, behaviors, power dynamics, and structural inequalities of different ethnic groups
3	2.51 – 3.25	High Cultural Knowledge	Substantial knowledge of health beliefs, behaviors, power dynamics, and structural inequalities of different ethnic groups
4	3.26 – 4.00	Very High Cultural Knowledge	Comprehensive knowledge of health beliefs, behaviors, power dynamics, and structural inequalities of different ethnic groups

TABLE 4: COMPUTED MEAN VALUE FOR CULTURAL SENSITIVITY

Arbitrary Value	Mean Range	Interpretation	Description
1	1.00 – 1.75	Very Low Cultural Sensitivity	Limited recognition of clients as equal partners, leading to a lack of trust, acceptance, and respect in care
2	1.76 – 2.50	Low Cultural Sensitivity	Partial recognition of clients as equal partners, leading to a lack of trust, acceptance, and respect in care
3	2.51 – 3.25	High Cultural Sensitivity	Substantial recognition of clients as equal partners, leading to a lack of trust, acceptance, and respect in care
4	3.26 – 4.00	Very High Cultural Sensitivity	Full recognition of clients as equal partners, leading to a lack of trust, acceptance, and respect in care

TABLE 5: COMPUTED MEAN VALUE FOR CULTURAL PRACTICE

Arbitrary Value	Mean Range	Interpretation	Description
1	1.00 – 1.75	Very Low Cultural Practice	Insufficient application of cultural awareness, knowledge, and sensitivity in practical skills
2	1.76 – 2.50	Low Cultural Practice	Basic application of cultural awareness, knowledge, and sensitivity in practical skills
3	2.51 – 3.25	High Cultural Practice	Proficient application of cultural awareness, knowledge, and sensitivity in practical skills
4	3.26 – 4.00	Very High Cultural Practice	Exceptional application of cultural awareness, knowledge, and sensitivity in practical skills

TABLE 6: COMPUTED MEAN VALUE FOR CULTURAL COMPETENCE

Arbitrary Value	Mean Range	Interpretation	Description
1	1.00 – 1.75	Very Low Cultural Competence	Struggles to provide effective healthcare; does not consider cultural beliefs, behaviors, or needs
2	1.76 – 2.50	Low Cultural Competence	Provides some effective healthcare; does not consider cultural beliefs, behaviors, or needs

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3	2.51 – 3.25	High Cultural Competence	Provides effective healthcare; does not consider cultural beliefs, behaviors, or needs
4	3.26 – 4.00	Very High Cultural Competence	Provides highly effective healthcare; does not consider cultural beliefs, behaviors, or needs

Ethical Considerations

The Philippine Health Research Ethics Board (PHREB), established under DOST Special Order No. 091, series of 2006, serves as the national authority governing the ethics of health research in the Philippines. Its mandate ensures that studies uphold ethical principles that protect participants' rights, dignity, and well-being while making meaningful contributions to society. Guided by these standards, this study is specifically designed to enhance nursing students' cultural competency, a crucial skill for delivering high-quality care in complex healthcare environments.

Before data collection, the researchers submitted the complete research protocol, informed consent forms, and data management plan to the Saint Louis University – Research Ethics Committee (SLU-REC), an accredited Institutional Ethics Review Committee (IERC). The committee evaluated the study for compliance with PHREB guidelines and approved it under Protocol No. SLU-REC 2025-022. This formal ethical clearance confirms that the study met institutional and national requirements for responsible research conduct.

All respondents voluntarily provided informed consent after being clearly informed of the study's purpose, potential risks, and anticipated benefits. The researchers took careful steps to minimize discomfort and anxiety throughout the participants' involvement. Confidentiality was strictly maintained, with anonymity preserved and data securely stored in accordance with the Data Privacy Act of 2012. Additionally, stratified and systematic sampling methods were applied to respect participant autonomy and ensure transparency in sample selection. Through these measures, the study upheld honesty, scientific integrity, and rigorous ethical standards, thereby reinforcing the credibility and trustworthiness of its findings and contributing responsibly to the advancement of nursing education.

III. Results

The study's first objective was to determine nursing students' cultural competency in four domains: cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice. The tables below provide statistical measurements such as weighted mean (M) and standard deviation (SD).

TABLE 7: Level of Cultural Competence

Domain	Mean (M)	Standard Deviation (SD)	Interpretation
Cultural Awareness	3.48	0.85	Very High Cultural Awareness
Cultural Knowledge	3.39	0.90	Very High Cultural Knowledge
Cultural Sensitivity	2.30	1.07	Low Cultural Sensitivity
Cultural Practice	3.44	0.90	Very High Cultural Practice
Cultural Competence	3.15	0.55	High Cultural Competence

Table 7 presents the level of cultural competence in terms of the four domains among nursing students from the three nursing institutions. In Cultural Awareness, the findings indicate that nursing students possess a notably high cultural awareness (M = 3.48), which is needed in today's diverse healthcare environment. Their comprehension of the importance of cultural considerations in patient care is shown in this increased awareness. According to the domain Cultural Knowledge (M = 3.39), nursing students have a very high degree of cultural knowledge. They get education on diverse cultural customs and beliefs that affect patients' experiences. The domain Cultural Practice revealed that nursing students have a very high cultural practice (M = 3.44). This high level of cultural practice demonstrates their capacity to effectively apply cultural knowledge in real-world clinical settings. Nursing students can better communicate and establish a stronger connection with patients when they acknowledge and incorporate cultural ideas, values, and traditions into their care plans. However, in the Cultural Sensitivity domain, the results revealed that the nursing students have a low cultural sensitivity (M = 2.30). This might result from inadequate exposure to other cultural viewpoints or a lack of education about identifying and meeting the special requirements of patients from different origins. This may make it more difficult for nurses and patients to build rapport and trust. They may feel marginalized or misunderstood, which can discourage them from seeking care or adhering to treatment plans. The data reveals that nursing students' overall level of cultural competence in the said schools is High Cultural Competence.

Cultural Awareness

The survey results testify that the nursing students have a very high cultural awareness, with a mean of 3.48. These findings shed light on the student's ability to understand and cater to diverse patient populations by examining their values and beliefs and constructing cultural identity in shaping health beliefs and practices, as outlined in the first stage of the Papadopoulos, Tilki, and Taylor (PTT) Model for Developing Cultural Competence. The findings show that nursing students have a high degree of cultural awareness, indicating that they have effectively participated in critical self-reflection and understand the impact of culture on health care delivery. Cultural awareness can be significantly increased in nursing students through intentional, multimodal teaching strategies. Students demonstrated a greater awareness of their prejudices and a closer link between patient care and cultural sensitivity through their reflections. This indicates that exposing nursing students to educational opportunities promotes significant cultural awareness development. (Pool et al., 2024) Nursing students exhibited a significantly higher total score in cultural awareness after participating in online strategies and exposure to clinical settings designed to enhance this aspect (Chan et al., 2024). The study suggests that exposure to different cultures over time and including cultural topics in the nursing curriculum can effectively enhance students' awareness. The findings emphasize the importance of formal education and social exposure in developing cultural awareness among nursing students. This aligns with the idea that nursing students, especially when taught about cross-cultural communication and diversity early

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on, create a heightened cultural awareness essential for quality care delivery. (Oanh et al., 2024).

Cultural Knowledge

The findings for the cultural knowledge domain reveal a mean of 3.39, indicating that nursing students have a very high level of cultural knowledge. The result is consistent with the Papadopoulos, Tilki, and Taylor Model, which stresses acquiring cultural knowledge via meaningful encounters with people from other backgrounds. It also highlights the need for a fundamental understanding of the societal structures that significantly influence health outcomes, making the students aware of the broader implications of cultural knowledge. In relation to the results of the study, nursing students are progressing in this stage of developing their cultural competence and have a solid basic understanding of health beliefs, cultural customs, and systemic inequalities that affects patient care. Salinda et al. (2024), noted that active patient learning, developing an awareness of cultural differences, and having creativity in the creation of patient-centered care plans are the ways in which cultural knowledge is gained. Moreover, the results of the study by Louis et al. (2025) showed that study abroad programs greatly improved the cultural knowledge of nursing students, especially in the areas of understanding healthcare practices in different countries and growing more empathetic toward patients from different ethnic backgrounds. Together, these results show how important cultural knowledge is in training nursing students to provide efficient, culturally appropriate care.

Cultural Sensitivity

Based on the findings, the cultural sensitivity field registered low cultural sensitivity with a mean of 2.30. The cultural sensitivity emphasizes having patients as equal care partners and developing relationships characterized by trust, acceptance, and respect. Despite the high awareness and knowledge outcomes, the results reflect low cultural sensitivity among nursing students. Low cultural sensitivity indicates a gap in their ability to translate knowledge into empathetic, cooperative patient care.

The findings show that student nurses in the schools above are not culturally sensitive, which is a cause for concern about the future of nursing practice regarding these fundamental principles. The documented absence of cultural sensitivity among student nurses reveals a gap in their training and preparation to engage with various patient populations, which can hinder the provision of respectful and responsive care to the backgrounds and needs of patients. The patients highly regard shared decision-making and empowerment, while nurses might not fully respect or react to these values (Mills et al., 2025). This lack of connection can reinforce a patriarchal nurse-patient relationship where the patient feels passive and disempowered, thereby increasing the challenges that marginalized groups face in getting access to equal care.

Cilluffo et al. (2024) identifies the challenges nurses face in establishing mutuality with patients, especially emotional sharing and joint planning. If student nurses are not culturally sensitive, they will increasingly experience difficulties building mutual relationships with patients from different backgrounds, thus lacking space for shared decision-making in care planning. Guiding student nurses in becoming more culturally sensitive is essential to ensure all patients are treated with respect and dignity, thus fostering equality and diversity in healthcare (Stonehouse, 2021). To enhance care for diverse populations, such as refugees, it is imperative that healthcare providers actively seek opportunities for cultural sensitivity training and engagement with individuals from other cultures (Karasu et al., 2021).

Cultural Practice

The findings in the cultural practice showed a very high cultural competence (M = 3.44), while the overall level of cultural competence of nursing students reveals a high cultural competence (M = 3.15). In Papadopoulos, Tiki, and Taylor's Model for Developing Cultural Competence, cultural competence synthesizes and applies awareness, knowledge, and sensitivity in clinical practice. Nursing students showed a typically high level of competence. Despite the identified weakness in cultural sensitivity, the high awareness, knowledge, and practical cultural application suggest that nursing students have the potential to integrate culturally competent practices into their care, reinforcing a positive outlook on their cultural competence.

Antón-Solanas et al. (2021) found that nursing students developed cultural practices by adapting their communication styles and nursing interventions when interacting with patients from diverse backgrounds. Students reported that through experiential learning, including exchange programs and clinical placements with multicultural patients, they learned to assess cultural needs, involve family preferences, and provide culturally tailored patient education. Thus, they moved beyond theory into real culturally competent practices during clinical care. A research conducted in Ethiopia evaluated nurses' cultural competency with an emphasis on how they treat a variety of patient demographics. The study demonstrated that nurses with greater cultural understanding were more adept at integrating cultural sensitivity into their work, such as modifying their methods of treatment to accommodate patients' cultural health preferences and beliefs.

Cultural competence is essential to effective practice in social work, nursing, and healthcare professions. It involves understanding and respecting clients' or patients' diverse cultural practices, beliefs, and needs (Attipoe, 2024; Kaledio et al., 2024). The research was conducted by Contaoi (2025) at Sultan Kudarat State University, wherein the study also utilized the Cultural Competence Assessment Tool (CCATool), which showed good knowledge and high cultural competence. While Slovenian nursing students had a high degree of cultural awareness, another study found that their practical application of cultural competence was less developed. Students found it difficult to apply cultural sensitivity to their clinical work, especially when it came to comprehending how certain cultural values affect medical judgments. The study emphasized the importance of hands-on experiences, such internships or employment in culturally varied environments, in enhancing students' capacity to provide culturally sensitive care (Ličen and Prosen, 2023). Accordingly, culturally competent practice can lessen health inequities, boost patient satisfaction, and enhance patient outcomes (Kaledio et al., 2024). Implementing cultural competence in professional practice fosters positive therapeutic relationships and lays the foundation for effective interventions (Attipoe, 2024).

The second objective of the study focused on identifying whether there is a significant difference in terms of the cultural competence among nursing students according to their year level and ethnic background. The following tables integrate statistical measures such as the weighted mean (M), standard deviation (SD) and p-value.

TABLE 8: SIGNIFICANT DIFFERENCE IN CULTURAL ACCORDING TO YEAR LEVEL USING KRUSKAL-WALLIS TEST

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Domain	Level 2	Level 3	Level 4	p-value	Interpretation
Cultural Awareness	3.21 (0.95)	3.65 (0.73)	3.70 (0.69)	<0.001*	High Significant Difference
Cultural Practice	3.03 (1.07)	3.77 (0.65)	3.66 (0.77)	<0.001*	Highly Significant Difference
Cultural Competence	3.02 (0.57)	3.23 (0.49)	3.27 (0.54)	<0.001*	Highly Significant Difference

Legend:
p > 0.05 = No Significant Difference
p ≤ 0.05 = Significant Difference
p ≤ 0.01 = Very Significant Difference
p ≤ 0.001 = Highly Significant Difference

Table 8 presents the significant difference in cultural competence among nursing students based on their year level specifically, between Level 2, Level 3, and Level 4. The results show that the students' year level plays a critical role in their cultural competence. The overall p-value score is <0.001, indicating a highly significant difference among the year levels. Specifically, students in Level 2 had lower scores in cultural awareness (M = 3.21) and cultural practice (M = 3.03) compared to those in Level 3 (mean awareness = 3.65; mean practice = 3.77) and Level 4 (mean awareness = 3.70; mean practice = 3.66). This suggests that as students progress through their nursing education, their cultural awareness improves and they are better able to apply culturally appropriate practices in clinical settings. Moreover, there is also a significant difference in the domains Cultural Awareness with a p-value score of <0.001 and Cultural Practice with a p-value score of <0.001 both with an interpretation of highly significant difference. These findings imply that students gain deeper cultural insights and practical skills as they advance academically, likely due to increased clinical exposure, enhanced coursework, and more opportunities for real-world patient interaction. This study, which aligns with the findings of Barral et al. (2023), has significant practical implications. It uncovers a substantial difference in the quality-of-care nurses provide, depending on their cultural competence levels. The study's implications are clear, suggesting that as cultural competence levels vary, so do the quality of care. This study demonstrates that cultural competence is a key factor in the quality-of-care nurses provide and that a higher level of competence can significantly enhance nursing practice. This knowledge can empower and motivate healthcare professionals to strive for higher cultural competence.

A study found that second-year students had higher cultural knowledge compared to third-year students (Korkmaz Aslan and Sönmezer Öcal, 2023). A study on cultural competence levels among senior and junior nursing students revealed that senior students demonstrated higher mean scores in areas such as cultural awareness, knowledge, skills, and encounters. This progression was attributed to the increased clinical exposure and educational experiences that accumulate over time. (Senarathne and Meegoda, 2021). A study anticipated that third and final year students would demonstrate a higher level of Cultural Competence compared to those in their first and second years. This expectation is founded on the understanding that students in their third and fourth years of study benefit from a broader array of learning opportunities, also argued that exposure to complex cultural interactions becomes more frequent and meaningful during the later stages of nursing education. (Sagarra-Romero, et al., 2024).

TABLE 9: SIGNIFICANT DIFFERENCE IN CULTURAL COMPETENCE ACCORDING TO YEAR LEVEL USING ALL-PAIR TEST AND MANN-WHITNEY U TEST

Group 1	Group 2	p-value	Interpretation
Level 2	Level 3	0.002	Very Significant Difference
Level 3	Level 4	0.387	No Significant Difference
Level 2	Level 4	0.001	Highly Significant Difference

Legend:
p > 0.05 = No Significant Difference
p ≤ 0.05 = Significant Difference
p ≤ 0.01 = Very Significant Difference
p ≤ 0.001 = Highly Significant Difference

Table 9 presents the significant difference between the cultural competence of nursing students per year level, utilizing the All-Pair Test wherein it focuses on testing every possible combination of the variables, which are the level 2, level 3, and level 4. While the Mann-Whitney U test was utilized to compare the two groups, the results showed a very significant difference for levels 2 and 3, and a highly significant difference for levels 2 and 4. The results show that students in Level 3 had significantly higher cultural competence scores than those in Level 2, with a p-value of 0.002, indicating a very significant difference. Similarly, the comparison between Level 2 and Level 4 also revealed a highly significant difference, with a p-value of <0.001. In contrast, there was no significant difference between the cultural competence of Level 3 and Level 4 students, shown by a p-value of 0.387. The differences highlight how the level of education or year level affects students' ability to understand and apply culturally appropriate care. This progression is supported by the Papadopoulos, Tiki, and Taylor's Model recognizes cultural competence as a progressive learning process. This also supports the results of the study that senior students demonstrated higher competence due to increased theoretical knowledge and clinical exposure as compared to the junior students. The study has found significant differences in cultural competence levels between first and final year students, with final year students generally scoring higher (Walkowska, et al., 2023).

TABLE 10: SIGNIFICANT DIFFERENCE IN CULTURAL COMPETENCE ACCORDING TO ETHNIC GROUPS USING KRUSKAL WALLIS TEST

Ethnic Group	Cultural Knowledge (M ± SD)	Overall (M ± SD)
Tagalog	3.51 (0.80)	3.11 (0.50)
Ilocano	3.46 (0.89)	3.13 (0.60)
Kapampangan	3.18 (0.98)	3.18 (0.36)
Pangasinense	3.03 (1.05)	3.10 (0.60)
Kalinga	2.73 (1.01)	2.89 (0.57)
Ibaloi	3.14 (1.11)	3.10 (0.48)
Bontoc	3.53 (0.74)	3.43 (0.38)
Tuwali	2.13 (0.83)	3.19 (0.56)
Kankanaey	3.93 (0.26)	3.60 (0.31)
Others in North	3.30 (1.03)	3.16 (0.60)
Others in South	3.0 (1.00)	3.42 (0.14)
Foreign	3.50 (1.00)	3.31 (0.77)
Total	**3.39 (0.90)**	**3.15 (0.54)**
p-value	*0.011*	*0.024*

Legend:
p > 0.05 = No Significant Difference
p ≤ 0.05 = Significant Difference
p ≤ 0.01 = Very Significant Difference
p ≤ 0.001 = Highly Significant Difference

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Table 10 presents the p-value scores for each domain and the overall cultural competence using the Kruskal-Wallis test, revealing a significant difference in overall cultural competence when nursing students are grouped according to their ethnic background. The Kruskal-Wallis test was appropriately chosen to compare multiple independent groups, ensuring the statistical rigor and credibility of the findings regarding differences in cultural competence across both year levels and ethnic groups. This choice not only strengthens the validity of the results but also supports evidence-based recommendations for curriculum enhancement in multicultural settings (Mondal et al., 2022). The p-value for cultural knowledge is 0.011, indicating a very significant difference, while the overall p-value is 0.024, signifying a significant difference in overall cultural competence based on ethnic background.

These findings appear to support the Papadopoulos, Tiki, and Taylor Model's emphasis on the personal level of cultural competence. The model highlights the significance of self-awareness, suggesting that individuals' cultural backgrounds may influence their values, perceptions, and interactions. The differences observed in this study indicate that nursing students' ethnic backgrounds might be associated with variations in their levels of self-awareness and personal cultural competence.

Furthermore, within the framework of the Developing Cultural Competence Model which includes cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice the results suggest that ethnic background may play a role in shaping how students develop and apply these competencies. Differences in empathy, openness, and willingness to provide culturally sensitive care could be influenced by students' personal cultural experiences, which might affect their ability to recognize, respect, and bridge cultural differences in clinical settings. Thus, the findings provide support for the idea that personal cultural identity could contribute to the cultivation of cultural competence within education and practice (O'Brien et al., 2021).

Recent studies have indicated that cultural knowledge among nursing students may vary according to their ethnic backgrounds, potentially due to differences in personal cultural exposure. El-Messoudi, Lillo-Crespo, and Leyva-Moral (2023) conducted a multicenter study suggesting that students from culturally diverse families or peer groups tend to demonstrate higher levels of cultural competence, particularly in cultural knowledge. These findings imply that ethnic background, shaped by daily multicultural interactions, might have an influence on cultural understanding.

TABLE 10: SIGNIFICANT DIFFERENCE IN CULTURAL COMPETENCE ACCORDING TO YEAR LEVEL USING ALL-PAIR TEST AND MANN-WHITNEY U TEST

Group 1	Group 2	p-value	Interpretation
Tagalog	Bontoc	0.015	Significant Difference
Tagalog	Kankanaey	<0.001	Highly Significant Difference
Ilocano	Kankanaey	0.002	Very Significant Difference
Kapampangan	Kankanaey	0.005	Very Significant Difference
Pangasinense	Kankanaey	0.004	Very Significant Difference
Kalinga	Bontoc	0.018	Very Significant Difference
Kalinga	Kankanaey	0.002	Very Significant Difference
Ibaloi	Bontoc	0.042	Significant Difference
Ibaloi	Kankanaey	0.002	Very Significant Difference
Kankanaey	Others in Northern	0.009	Very Significant Difference

Legend:
$p > 0.05$ = No Significant Difference
$p \leq 0.05$ = Significant Difference
$p \leq 0.01$ = Very Significant Difference
$p \leq 0.001$ = Highly Significant Difference

Table 11 presents the significant differences in cultural competence according to ethnic groups, analyzed using the All-Pair Test and Mann-Whitney U Test. The findings statistically show various pairwise comparisons between ethnic groups, their corresponding p-values, and the interpretation of the level of significance. Results reveal that the Tagalog group shows a significant difference with Bontoc ($p = 0.015$) and a highly significant difference with Kankanaey ($p = <0.001$). In the context of Baguio City, the Kankanaey group, as one of the major indigenous groups in the Cordillera region, is often more deeply rooted in traditional practices and communal health beliefs. This strong cultural grounding results in a meaningful engagement with their cultural heritage, which enhances their ability to understand and respect cultural differences in healthcare settings. Therefore, the Kankanaey's strong indigenous identity and cultural immersion contributed to a highly significant difference in cultural competence compared to Tagalog, while the Bontoc group also differed significantly (Pelila & Ayao-Ao, 2024). Similarly, Ilocano, Kapampangan, Pangasinense, Kalinga, and Ibaloi also show significant differences with Bontoc.

Moreover, Kankanaey exhibits a very significant difference when compared to other Northern ethnic groups ($p = 0.009$). Kankanaey students have richer, more nuanced understanding of cultural diversity and patient care, which often translates into higher levels of cultural competence compared to their peers from other Northern groups who may have experienced greater acculturation or urban influence. Furthermore, their emphasis on collective identity and community health practices enhances their ability to navigate cross-cultural interactions, making them more adept at providing culturally congruent care. This contrasts with other Northern ethnic groups who may not have the same level of immersion or may have adopted more mainstream Filipino cultural norms, leading to observable and statistically significant differences in cultural competence scores (Cada-o, 2025).

These results further imply that cultural competence, as proposed by Papadopoulos, Tiki, and Taylor (PTT) Model, is not a static but a continuous process that is deeply shaped by one's cultural upbringing and experiences. The variation among ethnic groups suggests cultural knowledge, sensitivity, and skill. Essential domains outlined in the PTT framework develop uniquely depending on an individual's cultural context. For instance, ethnic groups with broader

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intercultural exposure may display higher levels of competence compared to groups with more homogenous cultural environments (Figueroa & Hofhuis, 2024). The findings underscores the importance of culturally responsive education and practice, central to the PTT model's vision of fostering truly competent and equitable care across multicultural populations.

According to the model, cultural competence begins with Cultural Awareness, recognizing one's own biases and cultural identity and progresses through stages of knowledge acquisition, sensitivity building, and practical application. The variations observed among ethnic groups suggest that nursing students' development within these four domains is affected by their unique cultural backgrounds and experiences. In healthcare education, the findings underscore the importance of systematically addressing each domain of cultural competence to ensure that nursing students are adequately prepared to deliver culturally responsive and respectful care to diverse populations.

Limitations

The limitations of this study that were recognized are generalizability and time constraints. The study was limited to level 2 to level 4 nursing students from only three universities in Baguio City, restricting the generalizability of the findings to other regions of the Philippines or to students in different disciplines. The researchers conducted the study using random sampling, which did not allow for the preselection of specific ethnic groups. As a result, some ethnic groups ended up being represented by only a few participants, while others had a significantly larger number, such as Tagalog and Ilocano. Although the sample included nursing students from both the northern and southern regions of the country, as well as a small number of foreign students, the uneven representation among ethnic groups has limited the study's ability to capture a more balanced and representative range of cultural backgrounds in the quantitative analysis. Furthermore, the study did not explicitly address the intersectionality or the influence of student nurses' own ethnic backgrounds on the development of their cultural competence. While the participants came from various regions and some international settings, the study's design and limited sample size could not adequately capture the complex ways in which ethnic identity, cultural upbringing, and lived experiences shape cultural competence. This represents an area for further exploration to provide a deeper understanding of how personal cultural identity intersects with professional cultural competence development.

To address these limitations, future studies may consider strategies that intentionally improve the balance of ethnic representation and deepen the exploration of lived experiences. For instance, expanding the study to include more universities across different regions of the Philippines may enhance the generalizability of findings. Also, incorporating qualitative methods such as interviews or focus group discussions can help capture the nuanced cultural experiences and intersectional identities of student nurses, areas that were not fully explored in the current design. These approaches may provide richer insights into how cultural upbringing and personal identity shape the development of cultural competence, thus strengthening the future research pathway of the paper.

IV. Conclusion

The overview of this study regarding cultural competence is significant towards heralding the connection of culture in nursing care. The study indicates that nursing students exhibit an overall high level of cultural competence, particularly in the areas of cultural awareness, cultural knowledge, and cultural practice. However, a significant gap was observed in the domain of cultural sensitivity, which scored notably lower compared to the other dimensions. The study acknowledges the low scores in cultural sensitivity and recommends targeted training; however, it could be strengthened by explicitly discussing how this deficiency disrupts the sequential development outlined in the PTT Model. Without adequate sensitivity, students' knowledge remains largely theoretical and does not consistently result in culturally competent practice. Therefore, a more critical integration of the PTT Model would involve analyzing how bridging the sensitivity gap is essential for students to move beyond awareness and knowledge toward genuine, effective, and patient-centered cultural competence. This implies that while students have the knowledge and skills to engage in culturally appropriate practices, they may need to enhance their ability to empathize with and understand the nuances of the patient's culture. The analysis showed variations in cultural competence across year levels, with senior students at level 4 exhibiting higher competence, likely due to increased clinical exposure and educational experiences. The variations between year levels, where senior students demonstrated marginally more proficiency than their junior peers, emphasize how crucial experience learning and increasing clinical exposure are to the development of cultural competency. Lastly, there is a significant difference among the students' ethnic background that could affect cultural competence. The difference between ethnic groups suggests that students' comfort and preparedness to engage in culturally competent activities may be affected by their personal cultural background, indicating that cultural competence is not just a learned talent but also entwined with lived experience. Given these findings, several practical implications arise for nursing institutions. First, the identified gap in cultural sensitivity highlights the need for strengthened training modules and simulation-based learning that target empathy, communication, and cultural humility. Nursing programs may integrate scenario-based simulations, reflective practice sessions, or culturally focused OSCEs to help students operationalize their knowledge. Educational institutions may also revise curricula by embedding more community-based learning opportunities and structured cultural encounters with multicultural groups or local cultural organizations. In terms of policy development, nursing schools can incorporate cultural competence benchmarks into

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clinical evaluation tools, refine institutional guidelines to reflect culturally responsive care, and promote interprofessional partnership programs with social workers, community leaders, and cultural organizations. These initiatives help ensure that cultural capability is reinforced not only in the classroom but also within clinical practice environments. This study contributes theoretically by reinforcing the PTT Model's framework for sequential development of cultural competence and highlighting areas where students may plateau without targeted sensitivity training. Practically, it informs curriculum design, teaching strategies, and institutional policies aimed at preparing nursing students for effective, culturally responsive clinical practice in increasingly diverse healthcare environments.

V. Recommendation

The study recommends that nursing schools retain and enhance curricular strategies that promote cultural competence while strengthening cultural sensitivity training through targeted education, simulations, and interdisciplinary learning opportunities. Refinement of assessment tools, such as the Cultural Competence Assessment Tool, is also suggested to ensure accurate, context-specific measurement of students' competencies. Nursing students are encouraged to engage in self-directed learning and reflective practices that deepen their understanding of cultural sensitivity, beliefs, and practices. Future studies should include more universities and nursing programs across various regions, as well as diversify the student sample to better represent different cultural, ethnic, and socioeconomic backgrounds. Future studies could incorporate qualitative and quantitative approaches. Interviews or focus groups, for example, could enhance quantitative data from surveys, offering more profound insights into how nursing students perceive and implement cultural competence in practice.

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Conflict of Interest

The authors hereby declare that no conflicts of interest exist, whether financial, personal, professional, or otherwise, that could have influenced the design, execution, analysis, or reporting of this study. Full transparency has been maintained throughout the research process.

Disclosure of Use of Generative AI

In the interest of achieving the highest standards of clarity, coherence, and readability, generative artificial intelligence tools were employed solely as assistive aids for the organization of conceptual frameworks and the refinement of grammatical structure within this manuscript. All original content, core ideas, analytical insights, and intellectual contributions remain wholly the product of the authors, with no substantive generation or alteration of the research findings by AI.

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From Sea of Emotions to Reflective Shores: The Lived Experiences of Nursing Students in the Context of Do Not Resuscitate Orders

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ABSTRACT

Introduction: Involvement in Do Not Resuscitate (DNR) orders is a significant responsibility for student nurses, as it supplements the personal needs of patients to achieve a holistic quality of care. Student nurses often lack the necessary knowledge and experience in end-of-life care, leading to hesitation, discomfort, and even fear when faced with dying patients and dealing with ethical dilemmas.

Methods: This phenomenological study explored the experiences of nursing students with patients with DNR orders to promote improved learning and assistance for future nursing students. This study comprises nine (9) participants from the Bachelor of Science in Nursing, including level 3 to 4 students of the University of the Cordilleras, selected through purposive sampling. An in-depth interview was utilized through face-to-face and virtual interviews. These participants were chosen following an inclusion and exclusion criterion. Data management commenced with the Colaizzi's seven (7) step phenomenological approach and management.

Results: The analysis revealed four main themes — (a) Sea of Emotions, (b) Sailing Through Vocation, (c) Sudden Surges from the Depths, and (d) Reflective Shores of the Distant Beyond highlighting the (a) sadness and hesitance, (b) navigating responsibilities in patient care and competency development, (c) encountering communication barriers and ethical dilemmas, (d) recognizing the importance of professional preparedness and personal growth, and facing reality in handling DNR cases.

Conclusion: Based on findings, it is concluded that the experience of student nurses with Do Not Resuscitate patients expressed a sea of emotions, including empathy, compassion, ethical dilemmas, and personal growth. The student nurses encountered sudden surges as they faced physical and emotional challenges, but despite that, they acted their roles as nurses in addressing the issues. Sailing through their vocation, the participants provided compassionate care, honoring patients' preferences, and supporting them in their final moments. The participants have been concerned with saving lives and respecting patients' autonomy as well as rendering care to the patients and their families. Furthermore, the participants' understanding of DNR orders delved into their knowledge, attitudes, skills, and values regarding end-of-life care decisions, having developed their improved and enhanced personal and professional views on DNR situations as they reflected on their experiences. It is recommended that continuous learning about end-of-life care and ethical dilemmas surrounding Do-Not-Resuscitate (DNR) orders should be encouraged among healthcare workers, with hospitals and schools facilitating discussions and collaboration among different healthcare professionals to ensure all perspectives are considered.

Keywords: *Challenges, Do Not Resuscitate (DNR), End-of-Life care, Nursing student roles, Patient care*

I. Introduction

Student nurses involved in Advance Directives particularly in Do-Not-Resuscitate (DNR) orders during clinical duties, are encouraged to critically reflect on their clinical training along with their own life experiences, resulting in an impact on their attitudes and views toward end-of-life care (Fristedt et al., 2021). However, student nurses often lack the necessary knowledge and experience in end-of-life care, leading to hesitation, discomfort, and even fear when faced with dying patients and dealing with ethical dilemmas (Allchin, 2006). Education on end-of-life care in student nurses highlights the need for enhancements in knowledge and attitudes concerning nursing care at end-of-life (Hamilton, 2023), which identifies areas for improvement, such as communication with dying patients and families, students' capacity to handle end-of-life scenarios, and addressing ethical dilemmas in end-of-life patient care. Clinical exposures play a vital role in student nurses'

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learning process regarding end-of-life care education, which can provide valuable insights for future situations involving DNR orders (Li et al., 2019). However, student nurses' ethical and emotional dilemmas still affect their perspectives on DNR orders (Hamilton, 2023).

In contemporary healthcare practice, the concept of advance directives has emerged as a vital component of ethical and patient-centered decision-making, particularly in end-of-life situations. Advance directives are formal expressions of a person's healthcare preferences in anticipation of circumstances where they may be unable to communicate their wishes. Among these directives, the Do Not Resuscitate (DNR) order specifically indicates the patient's decision to decline cardiopulmonary resuscitation (CPR) in the event of cardiac or respiratory arrest. These documents serve not only as medical instructions but also as reflections of a patient's values, autonomy, and dignity at the end of life. In the context of nursing, respecting DNR orders demands both technical competence and deep ethical understanding, as nurses play a central role in upholding these directives within the care setting. Grounded in Jean Watson's Theory of Human Caring, adherence to advance directives and DNR orders reflects a commitment to holistic and compassionate care, where the nurse honors the patient's humanity, comfort, and peace during the final stages of life. Similarly, Patricia Benner's Novice to Expert framework emphasizes that nurses develop clinical wisdom and moral sensitivity through experiential learning, particularly when navigating ethically challenging situations such as DNR implementation. For student nurses, encountering DNR cases for the first time can be both educational and emotionally demanding. These experiences expose them to the complex realities of death, dying, and professional responsibility—often prompting reflections on their own values, empathy, and readiness for future nursing roles. Despite the increasing awareness of advance directives and end-of-life care practices, there remains limited understanding of how student nurses experience and make sense of caring for patients with DNR orders. Exploring their lived experiences provides valuable insight into the formation of professional identity, ethical competence, and compassionate caregiving in nursing education. Hence, this study seeks to illuminate the emotional, ethical, and learning dimensions of student nurses' encounters with DNR patients, contributing to the broader discourse on caring, autonomy, and dignity at the end of life.

The concept and practice of DNR have been recognized and upheld by judges in some countries if there is strict compliance with the statute and human rights (Samuels, A., 2021). In the Philippines, the legal basis for DNR order is not found in a single comprehensive statute. Rather, it rests on a combination of constitutional rights, professional-ethical standards, and hospital/institutional policies – with notable gaps in specific legislation. While the Philippines is yet to have a comprehensive legal framework for advance directives, including DNR orders, most hospitals in the Philippines still honor these documents as part of end-of-life planning for seriously ill patients (De Castro et al., 2023).

In the Bachelor of Science in Nursing (BSN) curriculum prescribed by the Commission on Higher Education (CHED) through CHED Memorandum Order (CMO) No. 15, series of 2017 (BSN curriculum), nursing students are expected to develop a clear understanding of ethical-legal responsibilities in patient care, including end-of-life decisions such as DNR orders.

In committing to the ethical standards of providing holistic care to patients with DNR orders, student nurses often face dilemmas in continuing to provide benevolence regardless of ethical breaching, denouncing negligence or concealing to silence, and giving proper management despite the cultural boundaries and respect to the idea of self-determination of the patient (Albert et al., 2020). In coping with the challenges of clinical practice, student nurses are subjected to anxiety and mental and emotional strain as they strive to protect and respect their patients' rights (Naseri-Salahshour & Sajadi, 2019; Ward & Ward, 2017). The ethical challenges seem crucial to emphasize since they can lead to distress, moral dilemmas such as guilt, stress, conscience, and some uncertain attitudes (Tomajan, 2022). It arises as part of the DNR experience, and some of the impacts that are mentioned negatively affected the emotional aspects of the nursing students when they made decisions that conflicted with their values or when they faced situations where they could not provide the desired level of concern (Albert et al., 2020; Naseri-Salahshour & Sajadi, 2019).

Henceforth, student nurses often face significant ethical dilemmas when dealing with DNR situations compounded by emotional struggles. According to Ward & Ward (2017), these dilemmas are further complicated by difficulties in resolving practical challenges in providing holistic care, along with a lack of expertise and experience in addressing the concerns of patients and their families, resulting in student nurses feeling overwhelmed and uncertain about how best to navigate such emotionally charged situations. Thus, highlighting the importance of providing adequate support and education to help student nurses develop the skills and resilience needed to effectively manage these complex scenarios while ensuring compassionate care for patients and their families.

A study entitled "Aspects of Caring for Dying Patients Which Cause Anxiety to First Year Student Nurses" (Cooper & Barnett, 2005) found that during Cardiopulmonary Resuscitation (CPR) of dying patients, nursing students looked to be generally perplexed that DNR directives emerged and had doubts about the decision-making process. Study shows that involvement in DNR orders is a significant responsibility for student nurses in supplementing the personal needs of patients to achieve a holistic quality of care (Naseri-Salahshour & Sajadi 2019).

While previous studies offer light on many aspects of student nurses' involvement in DNR scenarios, major

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gaps remain. Such experiences provide valuable insights into the ethical dilemmas faced by healthcare providers (Albert et al., 2020). Thus, to prepare nursing students for these morally challenging settings, future research should investigate multidisciplinary views and assess related educational strategies (Elibol & Akpinar, 2023; Naseri-Salahshour & Sajadi, 2019; Ward & Ward, 2017). Moreover, this emphasizes the importance of improved education and assistance for students in understanding the legal and ethical implications of DNR decisions (Albert et al., 2020; Ward & Ward, 2017). Hereby, understanding their emotional experiences can aid in the development of methods for giving enough assistance during these challenging encounters (Albert et al., 2020; Naseri-Salahshour & Sajadi, 2019; Mutto et al., 2010). Exploration of the lived experiences of nursing students who were involved in advance directives will offer assistance to improve the instructive programs (Tas Arslan et al., 2022) and receiving a compassionate and learned approach to end-of-life care, it is conceivable to enhance students' preparedness (Gonzales et al., 2021), their capacity to create moral choices (Petterson et al., 2018) in clinical situations, and eventually progress in understanding care results. Therefore, this study was undertaken to share the experiences of level 3 and 4 student nurses at the University of the Cordilleras regarding a clinical situation where a DNR order is being implemented. And, to better understand the impact of these experiences on nursing students' clinical education and future practice as healthcare professionals.

Researchers Background

The researchers are BSN 3 students at the University of the Cordilleras. In acknowledging potential biases within this study, the researchers disclose that they do not possess firsthand experience with DNR orders. However, an observational incident during a subsequent shift, where a DNR order was implemented for one of the patients under our care, served as a motivation for our curiosity and inquiry into the lived experiences of student nurses involved in advance directives. Since this is our first endeavor to conduct a phenomenological qualitative study, there is a necessity for frequent consultation with our advisor and further readings about the process of the qualitative phenomenological approach.

Despite these limitations, we intend to perform this qualitative study with diligence and honesty, acknowledging its potential to give essential insights into the lived experiences of student nurses in DNR circumstances.

This study generally aimed to explore the lived experiences of student nurses who were involved with DNR orders during their clinical duties. Specifically, it sought answers to the following questions:

1. What are the emotions felt or experienced by the participants related to DNR patients?
2. What are the roles that were rendered to the patients and family?
3. What challenges did students face during their clinical duty, specifically during DNR order?
4. What realizations/ reflections of the participants related to DNR patients?

The study findings serve as information/insights for student nurses emphasizing ethical sensitivity and compassionate end-of-life care. This study provides an avenue for self-reflection and professional growth. Through their experiences with DNR patients, the nursing students can develop greater emotional resilience, ethical awareness, and sensitivity toward the holistic needs of dying patients. The findings can enrich nursing curriculum and clinical practice by promoting respect for patient autonomy and the holistic values of caring. Moreover, the findings of the study provide valuable information to curriculum planners to create better training programs for future nurses. For DNR patients and their families, the study findings may contribute to improving communication and trust between healthcare providers, patients, and their families regarding advance directives and DNR decisions. By fostering a deeper understanding of the emotional and ethical aspects of end-of-life care, nurses can help ensure that patients' wishes are honored and that families are supported through a process that values dignity, comfort, and peace.

Meanwhile, these experiences with advance directives in end-of-life care will provide valuable insights for future studies. The research study will be the basis for future research studies dealing with end-of-life issues, which will help understand healthcare decision-making complexities. This research will contribute to the development of best practices and guidelines for addressing these sensitive issues in clinical practice.

II. METHODS

A. *Research Design*

This study utilized a descriptive phenomenological approach to explore or to describe how they experience a certain phenomenon. Descriptive phenomenology aims to achieve a pure and objective description of the phenomena, based on the direct and rich descriptions of the participants. Using a descriptive phenomenological approach, in-depth individual interviews were conducted with each participant to explore their experiences of providing care with a DNR.

B. *Settings and Participants*

For The study was conducted at the University of the Cordilleras, located at Governor Pack Road in Baguio City, that offers the Bachelor of Science in Nursing (BSN) program, where the participants are enrolled in. Three (3) interviews were conducted face-to-face in the nursing building classrooms which provided a quiet and private environment conducive to in-person discussions. While six (6) of the interviews were conducted virtually via Google Meet that facilitated participation from the participants who have faced constraints in attending in-person interviews.

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The study sample consisted of nine (9) participants, two (2) of whom were females and seven of whom were males. The recruitment of participants was done through purposive sampling, specifically the referral system, by first identifying representatives of each class for the 3rd and 4th-year levels. We then asked these representatives to refer classmates who were fit and might be interested in participating in our study through personal and social media platforms such as Messenger and Instagram. The nine (9) participants had their DNR experiences at the Baguio General Hospital and Medical Center (BGHMC) and Benguet General Hospital (BeGH). The total of nine participants is appropriate for qualitative design, as this number allowed for rich, detailed narratives while ensuring data saturation, as no new themes emerged from additional interviews. The sample size aligns with Creswell's (2013) and Polit and Beck's (2021) recommendations for small, purposive samples in qualitative research.

The participants were students enrolled in the University of the Cordilleras College of Nursing; BSN students who were at the third-year and fourth-year levels; who had handled a patient with a DNR order in end-of-life care during their clinical rotations; and (4) were able to speak and understand English, Filipino, and Ilocano languages.

Student nurses who were not yet exposed to any clinical duties; student nurses who had not participated and encountered patients with an issued DNR order during their clinical exposure; and students who had a close family member or loved one currently receiving end-of-life care to prevent emotional distress or psychological harm as they maybe experiencing a heightened emotional vulnerability, are excluded from the study.

During the clinical exposure, the student nurses cared for a total of nine patients. Of these, six patients were under observational care, where the students primarily performed monitoring, routine assessments, and documentation of patient status. The remaining three patients were receiving comfort-focused care associated with active Do Not Resuscitate (DNR) orders, allowing the student nurses to experience the provision of symptom-relief measures and supportive, non-invasive care while respecting end-of-life decisions.

C. *Data Gathering Tool*

The main data gatherers were the researchers who made use of a semi-structured interview tool to gather data. A semi-structured interview was used as this allows for a more natural conversation and the opportunity to delve into unexpected or important areas that may arise during the interview (Creswell & Poth, 2016). The tool used in this study was pilot tested among student nurses who were not a part of the main participants. The purpose of the pilot test was to evaluate the clarity, relevance, and comprehensibility of the interview questions and to ensure they effectively elicited responses aligned with the study's objectives. The script included open-ended questions accompanied by conversational probes, focusing on the lived experiences of student nurses from the University of the Cordilleras who were involved with advance directives during their clinical duties. The main startup question was "During that situation, please describe your experience when you got involved with DNR". Probing questions were also used by the researchers to gain clarification and encourage participants to provide more information about the subject (Robinson, 2023). Some of the probing questions include: "How did you handle and manage the situation while dealing with a patient's DNR order?", "Now that you have the experience, what were the challenges you have encountered?" and "How did you manage the situation?" The tool was developed based on the study's objectives and previous literature.

D. *Data Gathering Procedure*

The research process was initiated with the thorough preparation of the researchers, which involved crafting the interview questions tailored to the study's objectives. Subsequently, a pilot interview was facilitated with two (2) people who had similar experiences with the targeted participants to ensure the appropriateness of the questions and to gauge the feasibility of the research design. . Feedback from the pilot participants indicated that questions were generally clear and appropriate. The results of the pilot test confirmed the validity and reliability of the interview guide as an effective tool for exploring the lived experiences of nursing students with DNR orders. Following this preparatory phase, the researchers sent a letter seeking approval from the University of the Cordilleras - Ethics Research Committee. After the ethics approval, permission was sought and granted by the Dean of the College of Nursing to proceed with the data gathering, followed by recruitment efforts to enlist participants who met the criteria for the research. Informed consent was obtained by first explaining the process and assessing the respondents' comprehension of the objective of the research, how it would be conducted, and why they were chosen as respondents. They were asked to sign the consent form before starting the interview to ensure that they agreed to participate without being coerced. Additionally, proactive steps were taken to secure permission for audio recording. The interviews were either held in an unoccupied classroom or through virtual meetings to ensure the participants' comfort and convenience. The actual interview included follow-up questions, with one- or two-members asking questions while another researcher recorded the interview. In addition to listening to the participants' responses, efforts were made to observe their non-verbal cues. After the interview, researchers expressed their gratitude to the participants for their time, contribution, and willingness to share experiences. Participants were informed about the next steps in the research process and were asked for permission to meet again for the confirmation of their responses. The responses were then subjected to data processing and theming.

E. *Data Management*

Data management commenced with Colaizzi's seven (7) Step phenomenological approach and management. Initially, after the transcription of the audio recordings

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from the interviews, each transcript was carefully read several times to achieve a holistic sense of the subjective experiences of participants. Secondly, significant statements or phrases were extracted and highlighted from the transcripts with coding. We then explained further what those highlighted words mean based on the participants' verbal and non-verbal accounts. The verbal and non-verbal data were managed through audio recordings and detailed field notes to ensure consistency and accuracy. We compared transcripts with nonverbal observations and sought participant validation when meanings were unclear, ensuring the credibility and authenticity of the data. For the third step, from the extracted significant statements, we attempted to draw and formulate meanings by cutting the printed transcribed statements and grouping similar statements, allowing patterns and recurring ideas to emerge from the participants' narratives. Fourth step, these formulated meanings were sorted into clusters of main themes and sub-themes using a conceptual map. In this process, the researchers assigned and organized formulated meanings into groups of similar types. For the fifth step, the researchers compiled a complete description of everything generated from steps one to four. In the sixth step, we summarized the complete description to get a clear idea about the phenomenon and finalized our conceptual map. Finally, member checking was done with a copy of the conceptual map, which validated the descriptive results with their experiences.

F. Ethical Consideration

Ethical clearance was obtained from the University of the Cordilleras - Ethics Research Committee. Consent forms were properly explained to and signed by the participants before the actual interview. Free, prior, and informed consent of the participants and key informants was taken after securing the institution's approval.

The KIIs were recorded after obtaining the consent of the respondents. Any sensitive information or issue disclosed during the interviews was not shared without the respondent's approval. The audio files of the interview could only be accessed by the researchers. Subsequently, the gathered data will be stored for at least a minimum of 5 years and will be deleted by the provisions of the national ethical guidelines. The identity and responses were kept confidential and shall be used for academic purposes only. Moreover, only the researchers and the adviser had full access to the research records. All files and records were managed by the researchers, and all electronic files were kept in a secure and password-protected device.

The names of the respondents were not obtained; instead, participants were each given codes or pseudonyms. If a violation of privacy or anonymity was discovered during an interview, the team considered suspending or canceling the interview. It was emphasized that participants had the right to withdraw without facing any consequences. Participants' worries were addressed, and they were comforted through frank discussion, with apologies for any unintended violations. This included removing identifying information from data, offering additional support, or implementing new safeguards to prevent future occurrences. For anonymity, the use of codes or pseudonyms ensured that even in the event of accidental disclosure or unauthorized access, individual participants could not be identified. Researchers made clear from the outset that they were committed to maintaining participant confidentiality. This was achieved by providing participant information sheets and informed consent forms explaining how their data would be collected, stored, and protected.

The participants were assured that there was minimal risk in participating in the study. The possible benefits were included and discussed with the respondents during the attainment of consent. Also, importance was given to the participant's emotional condition rather than continuing with the interview. Their feelings were recognized, and sympathetic and encouraging remarks were made. The opportunity for participants to share any concerns or reflections was encouraged, and individuals were urged to seek professional help, such as counseling, if necessary. Contact information for appropriate support groups was provided. To help participants recall their experiences more properly during a qualitative study interview, the use of prompts, probing questions, and building rapport was implemented to reduce recall bias. Data dependability was improved by conducting follow-up interviews or having participants record their experiences in diaries in between sessions.

To safeguard participants' emotional well-being, a distress protocol was observed throughout the study. Participants were informed beforehand that recalling experiences with DNR patients might evoke emotional responses. We, researchers, remained attentive to signs of distress/ and paused interviews when needed to provide reassurance and emotional support. If participants continued to experience discomfort, they were referred to the Guidance and Counseling Office for further assistance. A brief debriefing followed each interview to help participants process their feelings and restore emotional balance.

G. Establishing Trustworthiness/Rigor of Data

In conducting the research on nursing students' experiences with advance directives, the researchers ensured the confirmability, dependability, transferability, and credibility of data.

Confirmability was implemented in the study through reflexivity, which involves documenting emotions, presumptions, and discoveries throughout the research process to maintain fairness and transparency. This practice helps prevent personal biases from influencing data collection and analysis. Additionally, peer debriefing sessions before and after interviews validate interpretations and insights gained, ensuring the credibility and authenticity of the research outcomes.

The establishment of a comprehensive audit trail was essential in ensuring dependability. Every step taken during data collection, analysis, and interpretation was carefully documented. This detailed record served as a

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roadmap of decisions made and actions taken, enhancing the reliability and consistency of the research process. By engaging in this analytical exercise, the researchers prevented their own opinions from impacting the data gathering and processing.

To enhance transferability, the researchers provided detailed explanations of the research context, participant demographics, and details of the process in the study report. By providing detailed explanations of the interview settings and methodologies, researchers invited readers to immerse themselves in the research environment, facilitating a deeper understanding and applicability of the findings in diverse healthcare settings.

Credibility was upheld through participant validation, where individuals were given the opportunity to review transcripts of their interviews. The researchers ensured the non-manipulation of data by transcribing and representing the voices and verbalizations of the participants without altering the original expression, preserving the authenticity of their lived experiences. This validation process ensured that the participants' voices were accurately represented in the final report, reinforcing the authenticity and credibility of the research outcomes. Additionally, the researchers' adherence to ethical considerations further strengthened the credibility of the study, demonstrating a commitment to maintaining participant anonymity, obtaining informed consent, and minimizing harm throughout the research process.

H. Reflexivity

As researchers, we acknowledge that our background as nursing students may have influenced how we understood the participants' experiences with DNR orders during clinical duty. To reduce bias, we practiced reflexivity by setting aside our own beliefs, keeping a reflective journal alongside other rigorous measures after each interview to record our thoughts, emotional reactions, and potential biases. This process allowed us to remain aware of our influence on the research and to ensure that the essences derived from the data truly reflected the participants' voices and not our preconceived notions. conducting the research on nursing students' experiences with advance directives, the researchers ensured the confirmability, dependability, transferability, and credibility of data.

III. Results & Discussions

This section presents the findings of the study that explored the lived experiences of nursing students who encountered patients with DNR orders during their clinical duty. Through in-depth interviews and phenomenological analysis, the study sought to uncover the meanings, emotions, and insights that emerged from their encounters with end-of-life care. The themes that surfaced – "Sea of Emotions", "Sailing Through Vocation," "Sudden Surges from the Depths," and "Reflective Shores of the Distant Beyond" collectively depicted the emotional journey and professional growth experienced by the participants. These themes illustrate how the student nurses navigated feelings of empathy, uncertainty, and moral conflict while remaining guided by compassion and their nursing values, as they are constantly learning and growing from their experiences. Therefore, the overall view of the lived experiences of student nurses involved in DNR is a profound journey filled with challenges, growth, and self-discovery – much like a sailor's voyage on the open sea.

Sailor's Voyage (Representing the Student Nurse). The sailor symbolizes the student nurse, both embarking on a journey filled with challenges, discoveries, and growth. Such as the emotional impact experienced by the student nurses when caring for DNR patients, challenging responsibilities, and continuous reflection to provide compassionate and effective DNR scenarios (Cabalan, 2011). Thus, the analysis generated four main themes namely: (a) Sea of emotions with 2 main subthemes; sadness and hesitance. (b) Sailing through Vocation with 2 main subthemes; patient-care priority, and competency, (c) Sudden Surges from the Depths with 2 main subthemes; barriers to communication, and ethical challenges or dilemma. And lastly, (d) Reflective shores of the distal beyond with 3 main subthemes; importance of professional preparedness and continuous learning in handling DNR cases; personal growth and facing reality.

Figure 1: "The Sailor's Voyage"

A. Sea of Emotions (Depthness of the Sea)

This theme captures the profound and often overwhelming feelings experienced by nursing students as they cared for patients with DNR orders during their clinical duty. Participants described being immersed in a surge of emotions ranging from sadness, empathy, hesitance and fear to compassion and moral uncertainty, as they witnessed the fragility of life and final moments of their patients. This emotional turbulence reflected their internal struggle between the desire to preserve life and the ethical duty to respect the patient's wishes as participants shared:

> *"So yung nafeel ko noon, medyo nalungkot ako sa time na iyon ...*" (So what I felt then, I was a little sad at that time because, when I found out that it was a DNR; *"Uhm [teary, ayon nakakasad .*" (Uhm [teary] it's just really sad)

Such emotional encounters became defining moments that tested their emotional resilience and shaped their understanding of nursing beyond technical skills. Consistent with then findings of earlier studies on end-of-life care, these emotions served as both a challenge and a catalyst for growth, deepening their

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sense of empathy and compassion in the practice of nursing. The response is clear that when providing care for patients who have DNR orders, nursing students go through a range of emotions. Wherein, they specifically speak about sadness and having trouble accepting the circumstances, maybe because of their attachment to the patient already by taking care of them, then they pass away. This implies a wide range of emotions, such as sadness and a feeling of hesitance, because they are in DNR order in the face of patients' end-of-life choices. (Danziger, J. et. al., 2020).

B. *Sailing Through Vocation (Paddling Through Responsibilities)*

The second main theme is "Sailing through Vocation," signifies how nursing students navigated the challenges and ethical uncertainties of caring for patients with DNR orders while remaining anchored in their sense of purpose as future nurses. Despite feelings of confusion and emotional distress, participants expressed that their experiences strengthened their commitment to the nursing profession as they prioritized patient care and competency. In this study, the participants' experiences revealed that their sense of competence grew alongside their ability to show empathy, respect patient autonomy, and manage the moral challenges of end-of-life care. Guided by Jean Watson's Theory of Human Caring, these findings suggest that nursing competence extends beyond skills to include the humanistic and relational dimensions of care. The participants then viewed these moments as opportunities to understand the deeper meaning of competency, where caring is one that goes beyond saving lives to honoring dignity, comfort, and peace in dying. As participants verbalized:

> "*Nung naka-DNR status na yung pasyente, yung mga strategies na binigay sa akin ay mag-monitor continuously at maghanda na rin, ibigay yung mga gamot na prescribed, palaging i-monitor yung oxygen levels niya, at i-check yung mga tubes niya. (*When the patient was under DNR status, the strategies given to me were to monitor continuously and be prepared, to give the prescribed medications, always monitor her oxygen levels, and check her tubes; "*monitoring lang kasi marami kaming pasyente, VS... vini-VS pa rin kahit unresponsive na siya. Uhm, nagpapatulong sila magpalit ng beddings, magbihis ganun. Tapos nung dumating yung family members, sabi sa akin pakialalayan ganun." (*Just monitoring because we had many patients, did VS even though she was unresponsive. They asked for help to change the beddings, to change clothes, like that. When the family members arrived, they asked me to assist them.) *"Chineck ko kung may bedsore wala naman, so sabi ko na lang i-support yung bed para di ma-bedsore yung likod ganon."* (I checked for bedsores, but there were none, so I just suggested supporting the bed to prevent bedsores on the back, like that.) :*"Meron kasi nung once nagdedesat na, tinawagan ang family, sinabihan na lang namin na magpakatatag sila kasi yung SpO2 nasa 50 na." (*There was a situation where the patient was desaturating, the family was called, We just told them to stay strong because the SpO2 was at 50.).

The verbalizations echoed the vocational dimension of nursing, where compassion and presence become acts of service even in the face of helplessness. The theme reflects how the participants' encounters with DNR situations helped them reaffirm their calling and internalize the moral and spiritual essence of their chosen profession.

The subtheme on competency which refers to the ability, knowledge, and skills required to perform tasks, duties, or responsibilities effectively in a particular field or role. Competency in understanding and implementing DNR orders is essential for nursing students, enabling them to provide respectful and appropriate care in complex healthcare scenarios. The knowledge, skills and attitudes emerged as very important element of nursing competency that guided the students as they navigated the complex experience of caring for patients with DNR orders. Participants realized that beyond theoretical understanding of ethical and legal principles, it was their ability to apply clinical knowledge in assessing patient needs, their skills in providing comfort care, and their attitude of compassion and respect that defined their professional growth. The participants shared:

> *"Uh, sa tingin ko nagamit ko yung mga natutunan ko sa school. Handa ako kasi sa simula pa lang ng nursing journey ko, pinaalalahanan na ako na makakaranas ako ng mga sitwasyon na may kinalaman sa end-of-life."* (Uh, I think I was able to apply what I learned in school. I was ready because at the beginning of my nursing journey, I was warned about encountering end-of-life). Participant Hanzo verbalized: "*Hindi talaga masyadong kumpleto ang clinical training, parang mas theoretical lang.* (It's not really much of clinical training, more like just theoretical). Participant Hanabi verbalized: *"Sa loob ng apat na taon sa nursing school, natutunan kong maging matatag, lalo na para sa aking mga pasyente at kanilang pamilya. Natutunan ko rin na huwag masyadong maging attached sa mga pasyente o kanilang pamilya. Pero kahit may professional boundaries, ikaw pa rin ay tao, may malasakit, at ang iyong mga kilos ay nagmumula sa puso."* (After four years of nursing school, I've learned to be strong, especially for my patients and their families. I've learned not to get too attached to patients or their families. But despite the professional boundaries, you're still human, you care, and your actions come from the heart).

The verbalizations show the importance of empathy in nursing care, particularly in DNR orders. Empathy, sympathy, and compassion are often conflated, with empathy involving emotional understanding, sympathy entailing pity, and compassion being a social response to others' suffering (Moudatsou et al., 2020). The emphasis on the importance of strengthening one's resolve and enduring difficult situations in nursing practice suggests that a resilient attitude is necessary to navigate emotionally challenging scenarios, such as dealing with end-of-life care and DNR orders.

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Resilience is a term commonly used to describe the ability to turn adversity into opportunities and learn from demanding situations. According to Amsrud et al. (2019), there seems to be a need to identify support strategies for developing resilience among nursing students in order to strengthen their professional practice. The proactive approach of communicating with the patient's relatives not only demonstrates a commitment to patient-centered care but also highlights the significance of fostering a supportive atmosphere within the healthcare environment. Providing healthcare services that respect and meet patients' and caregivers' needs are essential in promoting positive care outcomes and perceptions of quality of care, thereby fulfilling a significant aspect of patient-centered care requirements. Effective communication between patients and healthcare providers is crucial for the provision of patient care (Kwame & Petrucka, 2021).

The integration of knowledge, skills, and attitudes demonstrated how nursing competency is not limited to technical proficiency but extends to moral sensitivity and emotional intelligence, especially in end-of-life situations. As they "sailed through vocations," the students learned that true nursing competence involves balancing the head, the hand, and the heart – translating knowledge into caring actions grounded in humane and ethical attitudes.

C. *Sudden Surges from the Depths (Unexpected Waves)*

Sudden surges from the depths emerge as the third main theme, revealing unexpected challenges encountered by participants in their journey towards understanding DNR situations. Just as the sea can be unpredictable with sudden waves and surges, student nurses encounter unforeseen challenges and obstacles throughout their journey, experiencing barriers to communication and ethical challenges or dilemma. Participants shared:

> *"Yung mga patient kasi namin noon yung may colon cancer hindi na talaga siya nakaka talk masyado, pero parang ang communication niya na lang is through eyes. Tapos yung isa naman naka mechanical ventilator na ata siya. Hindi na rin siya nakakapagsalita, depleting na rin yung oxygen saturation niya. Hindi masyadong nakapag-usap with us, mga student nurse, and noon mag arrest na, naiyak na ako."* (Our patients with colon cancer can not really talk that much anymore. It seemed like his/her way of communication is through eyes. The other patient is already on a mechanical ventilator. The patient can not speak anymore, and the oxygen saturation is also depleting. He/she didn't really talk much with us, the student nurses, and when the moment came, I could not hold back my tears.) *"Yung una nag-code na siya, ni-run na namin yung code. Then suddenly, tumatakbo na yung doctor telling us to stop CPR, kasi DNR na yung patient. So, stop CPR sabi nila, we have to stop."* (The first one is the patient coded, so we ran the code. Then suddenly, the doctor rushed in telling us stop CPR, because the patient is under DNR already. So, when they said stop CPR, we have to stop.) *"As a human being, so parang nagkakaroon ng ethical dilemma, you're learning while losing a patient."* (As a human being, it's like experiencing an ethical dilemma; you're learning while losing a patient.) *"Nasa area kami kung saan hindi kami ang gumagawa ng mga patakaran. Ang staff ang nagbibigay ng mga opsyon at nagpapaliwanag ng mga pros and cons. Sa huli, nagkakasundo kami sa final nila na desisyon. Kahit na inuuna ko ang buhay sa mga personal kong paniniwala, sa ospital, kailangan namin sundin ang mga protocol na nakatakda."* (We are deployed in this area, and we don't make the rules or policies. The staff provide options and explain their advantages and disadvantages. Ultimately, the final decision is based on our agreement. Although my personal values prioritize life, in a hospital setting, we need to follow the established protocols.) *"Para sa akin, mahalaga ang bawat buhay. Kaya kahit kritikal ang kondisyon, dapat pa rin natin subukan. Kung hindi man magtagumpay, at least ginawa natin ang lahat para i-revive sila."* (My principle is that every life matters. So, even if the condition is critical, we should continue trying. If it doesn't work out, at least we tried our best to revive them.)

Such experiences underscored the deeply human aspect of nursing, where emotional vulnerability becomes an inevitable part of caring for those at life's end. Consistent with previous literature, these sudden emotional awakenings served as a catalyst for self-awareness and emotional maturity, helping the students recognize that emotional strength in nursing does not mean the absence of feeling, but rather the ability to channel those emotions toward compassionate and ethical care. Amidst the emotional turbulence brought by exposure to DNR situations, the participants demonstrated gradual development of emotional resilience, which became a vital component of their growth in compassion. Initially, many admitted to being overwhelmed and uncertain about how to manage their emotions in the face of death and patient suffering. However, through reflection, peer support, and mentorship from clinical instructors, they learned to process their emotions constructively rather than suppress them. The participants' struggles to reconcile personal values with institutional protocols highlight the intricate balance between individual ethics and professional duties in healthcare. This reflects the broader definition of ethics as universal guidelines guiding actions and decision-making (Östman et al., 2019). Similarly, the participant's commitment to preserving life despite challenging circumstances resonates with the core ethical principle of prioritizing individual well-being in healthcare (Trobec & Starcic, 2014). The tension between personal beliefs and institutional guidelines underscores the complex ethical landscape that healthcare professionals navigate daily. Ultimately, the experiences of the participants underscore the necessity for healthcare professionals to navigate ethical complexities with integrity, considering both personal values and established ethical standards (Epstein & Turner, 2015). Going through these experiences, the participants emerged with a more

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mature and humanistic perspective, recognizing that authentic compassion grows from the very depths of their emotional encounters.

D. Reflective Shores of the Distant Beyond (The Horizon)

Finally, the reflective shores symbolize moments of contemplation and introspection that occur as student nurses look back on their journey. The horizon represents a distant point in time or perspective where they can reflect on their experiences, lessons learned, personal growth, and professional development. It's a metaphorical endpoint that encourages student nurses to pause, ponder, and derive meaning from their unforgettable journey. Thus, it led us to the fourth theme, which reflects on the student nurses' realizations of their lived experiences with DNR orders. It paints a picture of deep thoughts about experiences that go beyond the here and now. In the case of student nurses dealing with patients who have DNR orders, suggested that they engage in profound reflections, looking into the importance of professional preparedness and continuous learning in handling DNR Cases, personal growth, and facing obligations as discussed in the following verbalizations or scenarios.

Participant Mark verbalized, *"Compassionate care, kung sa training, sa hospital… whenever we go on our hospital duty, doon tayo natututo eh, sa ganung dnr or dni… doon mo marerealize, doon ka mamomold na marerealize mo yung mga bagay na di mo dapat gawin.,"* (Compassionate care, whether in training or in the hospital... whenever we go on our hospital duty, that's where we learn, in my opinion. So as a student nurse, it's like I realized more about the clinical duties upon actually doing them, upon being exposed to areas with scenarios like having DNR or DNI... that's where you realize, that's where you're molded to realize the things you shouldn't do.) Participant Hanzo verbalized, *"if there is clinical training of course mai-improve iyong capacity natin to resilience, mental tawag na dito yung fortitude mo yung courage mo as well as your compassion to give ah, care in DNR situations na dapat na orient tayo para di tayo mag panic or alam natin yung gagawin natin..."* (If there is clinical training, of course there will be an improvement in our capacity to uh resilience mental what do we call this the fortitude and your courage as well as your compassion to give uh, care in DNR situations that we must be oriented so that we won't panic and we know what to do.) Participant Aldus verbalized, *"Kinabukasan, I tried to learn from my experience na rin ganon at least I have to try my best next time."* (The next day I tried to learn from my experience and at least I have to try my best next time.)

The findings in these statements show that the ethical dilemma of whether to prolong a patient's life while aware that doing so would increase their suffering frequently confronts medical personnel. Everybody involved in patient care is greatly affected by this difficult decision. The story emphasizes the idea that, in certain situations, a patient's life may not be best served by being kept in pain or suffering for an extended period. According to Grosek, et. al. (2020), healthcare professionals frequently encounter ethical dilemmas in their practice, with 70.4% of surveyed professionals facing such challenges.

Participant Mark said, *"So medyo nakakaaffect siya in a way na, it made me stronger, in a positive way."* (So, it quite affected me in a way that it made me stronger, in a positive way.) Participant Maloi verbalized, *"Tapos naiiyak na rin ako pero hindi pwede hindi pwede umiyak… emotional support lang talaga"* (I'm starting to cry too but I can't cry, emotional support is what I gave.)

The findings in these statements show that the emotional impact is frequently unavoidable, even though healthcare professionals, including student nurses—are taught to deal with difficult situations like caring for patients who have a DNR order. The story highlights the human aspect of healthcare professionals who, despite their professional demeanor, truly feel the seriousness of their patients' situations, and also illustrates a sincere response to learning about a patient's DNR status. Such verbalizations signify the culmination of their emotional and professional journey, where empathy, acceptance and understanding converged to form a deeper sense of vocation. This reflective stance aligns with phenomenological principles, emphasizing how lived experiences become sources of wisdom that enrich both personal and professional growth.

Figure 2 presents the conceptual map of the lived experiences of nursing students in the context of Do Not Resuscitate (DNR) order.

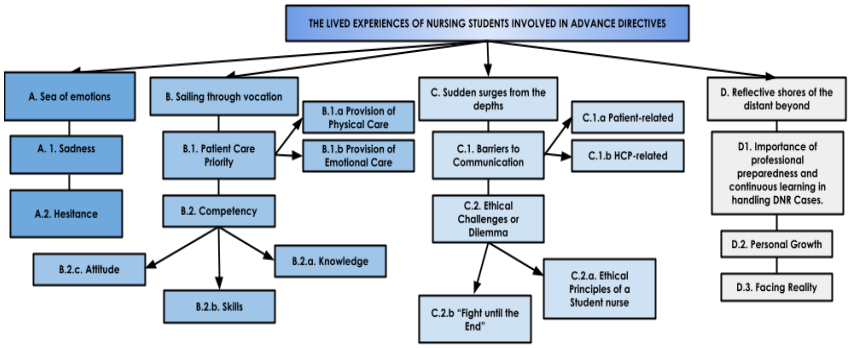

FIGURE 2: CONCEPTUAL MAP

Limitations of the Study

The study was limited to student nurses who encountered DNR situations during their hospital clinical duty. Their experiences were mostly observational due to their limited exposure to actual cases, and reflected only their viewpoints on DNR situations. Institutional policy differences, emotional sensitivity to the topic, and a small sample size also constrained the generalizability of the findings.

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The participants came from the University of the Cordilleras and were placed at certain hospitals (BGHMC and BeGH) for their clinical practice. Consequently, this might not be applicable to other nursing curricula or other hospital systems where end-of-life (EoL) policies or training programs differ.

Since some of the participants were directly involved in providing comfort care, while others had only preliminary engagement, this can affect how deeply they reflect.

IV. Conclusion

We therefore conclude that the experience of student nurses with Do Not Resuscitate patients expressed a sea of emotions, including empathy, compassion, ethical dilemmas, and personal growth. The student nurses encountered sudden surges as they faced physical and emotional challenges, but despite that, they acted in their roles as nurses in addressing the issues. Sailing through their vocation, the participants provided compassionate care, honoring patients' preferences, and supporting them in their final moments. The participants have been concerned with saving lives and respecting patients' autonomy as well as rendering care to the patients and their families. Furthermore, the participants' understanding of DNR orders delved into their knowledge, attitudes, skills, and values regarding end-of-life care decisions, having developed their improved and enhanced personal and professional views on DNR situations as they reflected on their experiences.

Based on the findings and conclusions of this study, it is recommended that nursing education integrates more focused DNR orders and end-of-life care to enhance students' ethical understanding and emotional preparedness. Incorporating simulations, case discussions, and reflective activities can help student nurses develop empathy and moral sensitivity when dealing with DNR situations. Faculty should also be trained to effectively facilitate learning on sensitive ethical issues. These initiatives will strengthen students' competence, compassion and professionalism in providing dignified end-of-life care. Nursing education and practice emphasize the importance of respecting patient autonomy, cultural diversity, and family preferences., where students are encouraged to uphold the principles of compassion, respect, and dignity in all aspects of end-of-life nursing care. Nursing schools and partner healthcare institutions should establish clear and consistent policies that uphold patient autonomy and ethical standards. Regular education and communication to nurses and students to ensure compassionate and informed end-of-life care.

V. Recommendation

Based on the findings and conclusions of this study, it is recommended that nursing education integrates more focused DNR orders and end-of-life care to enhance students' ethical understanding and emotional preparedness. Incorporating simulations, case discussions, and reflective activities can help student nurses develop empathy and moral sensitivity when dealing with DNR situations. Faculty should also be trained to effectively facilitate learning on sensitive ethical issues. These initiatives will strengthen students' competence, compassion and professionalism in providing dignified end-of-life care. Nursing education and practice emphasize the importance of respecting patient autonomy, cultural diversity, and family preferences., where students are encouraged to uphold the principles of compassion, respect, and dignity in all aspects of end-of-life nursing care. Nursing schools and partner healthcare institutions should establish clear and consistent policies that uphold patient autonomy and ethical standards. Regular education and communication to nurses and students to ensure compassionate and informed end-of-life care.

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Conflict of Interest

The authors declare that there are no conflicts of interest that affected the conduct and results of this study. This research was undertaken independently and solely for academic purposes, with full adherence to ethical standards and respect for all participants.

Disclosure of Use of Generative AI

Generative Artificial Intelligence (AI), specifically ChatGPT, was used only to assist in grammar correction, phrasing, and formatting of the manuscript. The authors retained full responsibility for the content, analysis, and interpretation of data. No AI tools were used to generate or modify research findings or participant responses, ensuring the authenticity and ethical integrity of the study.

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Quality of Life (QoL) Among Cancer Patients Undergoing Chemotherapy: A Concurrent Mixed Methods Approach

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ABSTRACT

Introduction: Cancer continues to represent a critical global and national health concern, with profound physical, psychological, social, and environmental impacts on affected individuals.

Aim: To explore the quality of life (QoL) of Filipino cancer patients undergoing chemotherapy across the four domains: physical, psychological, social, and environmental.

Methods: A concurrent mixed-method triangulation design was employed, integrating quantitative and qualitative approaches. The quantitative phase used the WHOQOL-BREF to measure QoL, while the qualitative phase employed semi-structured interviews to capture patients lived experiences during chemotherapy.

Results: Key findings indicated that physical QoL was moderate, with fatigue and treatment-related side effects as major concerns. Psychological and social QoL were rated high, supported by spirituality, family, and peer connections. Environmental QoL was also moderate, reflecting adequate living conditions and healthcare access, although financial burdens and logistical challenges, such as transportation, persisted. Quantitative analysis showed no statistically significant associations between QoL and demographic variables, including age, gender, marital status, educational attainment, region, cancer type, and treatment duration. However, qualitative findings revealed that these factors influenced individual experiences. Coping strategies such as acceptance, faith, and lifestyle adjustments fostered resilience, while emotional distress, reduced intimacy, and stigma remained challenges. These findings highlight the need for enhanced psychosocial support, financial assistance, and health education tailored to cancer patients in resource-limited settings.

Conclusion: The study offers locally grounded insights into the multifaceted impact of chemotherapy, supporting the design of holistic care approaches and informed healthcare policies in resource-constrained settings. These findings can guide healthcare providers, caregivers, families, and policymakers in developing culturally sensitive, patient-centered interventions to enhance the quality of life of Filipino cancer patients.

Keywords: *Cancer, Quality of life, Chemotherapy, Filipino patients*

I. Introduction

Cancer remains a global health crisis with profound physical, psychological, social, and environmental impacts. The International Agency for Research on Cancer (IARC) (2024) reported about 20 million new cases and 9.7 million deaths globally in 2022, with the burden greatest in underserved populations lacking access to care (World Health Organization, 2024). In the Philippines, cancer is a leading cause of morbidity and mortality, ranking second in deaths on 2023 (Philippine Statistics Authority, 2025). The Philippine Institute for Development Studies noted about 25,000 new cases and 9,000 deaths annually (Reganit, 2024). The disease threatens survival and imposes heavy psychological, emotional, social, and financial burdens, with over 40% of patients experiencing financial toxicity from costly treatments (Columbres et al., 2024; Fernandez & Ting, 2023).

Chemotherapy remains one of the most commonly utilized treatments for advanced malignancies (Zhu et al., 2024). While it offers therapeutic benefits, it also causes debilitating side effects such as fatigue, pain, and nausea that diminish patients' quality of life (QoL) (Choi et al., 2021). These are compounded by anxiety and depression (Johnson et al., 2023). Nonetheless, Filipino cancer patients show resilience through strong family bonds and deep spiritual faith, which positively influence their QoL (Pascual et al., 2022). A holistic approach to care that integrates physical, emotional, and spiritual support has been emphasized, highlighting the role of family and hope in improving QoL (Manalo & Velasquez, 2021; Dela Cruz et al., 2020).

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Despite extensive global research on the QoL of cancer patients, empirical evidence specifically focused on Filipino patients undergoing chemotherapy remains limited, particularly regarding culturally embedded coping mechanisms. In the Philippine context, patients rely heavily on spiritual faith, family support, and social networks, which enhance psychological well-being, social relationships, and overall QoL (Garcia et al., 2021; Badr et al., 2020). However, few studies have systematically examined how these culturally grounded coping strategies interact with demographic factors and influence QoL across the physical, psychological, social, and environmental domains, particularly within the framework of Filipino family structures and cultural norms.

This study aimed to explore the lived experiences of Filipino cancer patients undergoing chemotherapy across the four domains of quality of life, namely physical, psychological, social, and environmental. Through this, it addressed the gap in understanding how multiple interrelated factors shape patients' unique perspectives and how coping mechanisms emerge within these domains. By capturing these lived experiences, the study provides valuable insights into the multifaceted impact of chemotherapy on patients' lives and emphasizes the importance of culturally sensitive, patient-centered interventions to improve quality of life among Filipino cancer patients in resource-constrained settings. It also offers a deeper understanding of how these factors interact, generating evidence to guide the development of holistic and culturally appropriate care approaches. The findings contribute to existing literature by providing locally grounded insights that can inform healthcare providers, caregivers, families, and policymakers in strengthening support systems and enhancing cancer care outcomes in the Philippine context.

II. Methods

Research Design

This study employed a concurrent mixed-method triangulation design that integrated a descriptive-correlational quantitative approach with a phenomenological qualitative method. This concurrent triangulation design allowed the researchers to integrate statistical patterns with rich narrative accounts, resulting in a more balanced and in-depth understanding of the complex phenomenon of quality of life in Filipino cancer patients undergoing chemotherapy.

Population and Setting

This study employed a purposive sampling method to ensure the selection of participants who met specific inclusion criteria and were most relevant to the research objectives. Purposive sampling, as outlined by Creswell and Creswell (2018) and Creswell and Clark (2017), enabled the researchers to intentionally identify individuals capable of providing rich and meaningful insights into the phenomenon under investigation. Participants were recruited personally by the researchers through their professional and academic networks. The research was conducted among Filipino cancer patients aged 18 years and above, residing anywhere in the Philippines, who had completed at least one chemotherapy cycle up to a full course. Using purposive sampling, 12 participants were recruited, a sample size consistent with phenomenological inquiry emphasizing depth over breadth. The same participants were involved in both the qualitative and quantitative phases.

Data Collection

Data collection utilizes two instruments. For the qualitative component, semi-structured interviews with open-ended questions were conducted either face-to-face or online, recorded with consent, and lasted 45–60 minutes. For the quantitative component, participants completed the 26-item WHOQOL-BREF questionnaire, which measures overall quality of life and health satisfaction across four domains: physical, psychological, social, and environmental health. Ethical approval was secured, and informed consent was obtained from all participants prior to data collection.

Data Analysis

Thematic analysis following Braun and Clarke's (2006) six-phase framework was applied to the qualitative data. This six-phase process allowed for the systematic identification and presentation of patterns or themes within the data. The qualitative analysis began with familiarization, where researchers read and re-read the transcripts of the recorded interviews, noting initial impressions and insights. This was followed by generating initial codes, where the data was systematically broken down into smaller, meaningful segments. The researchers independently coded the transcripts before collaborating to refine and adjust the codes as new insights emerged. The codes were then organized into broader themes and subthemes, capturing recurring patterns relevant to the research questions. The potential themes underwent a thorough review to ensure alignment with the dataset and distinctiveness. Each theme was then defined and named, ensuring clarity and support from the data. This process culminated in the production of a final report, where each theme was discussed in relation to the research objectives, supported by illustrative examples from the data. To minimize researcher bias during qualitative analysis, bracketing was employed to suspend personal biases, assumptions, and preconceptions, ensuring the analysis remained grounded in participants' authentic narratives. While quantitative data were analyzed using the Kruskal-Wallis H test to determine differences in QoL across demographic variables. Integration of findings was achieved through triangulation, whereby themes from interviews were compared with standardized WHOQOL-BREF results to validate and enrich interpretations. This mixed-methods approach provided a holistic understanding of the multidimensional quality of life of Filipino cancer patients undergoing chemotherapy. .

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III. Results & Discussions

This study integrated quantitative and qualitative findings to provide a comprehensive understanding of the multidimensional quality of life (QoL) among Filipino cancer patients undergoing chemotherapy. Quantitative data were analyzed descriptively (no inferential tests applied due to violations of normality and independence, as described below). Qualitative themes were derived through thematic analysis of interview transcripts. Results address the study objectives by examining QoL across the physical, psychological, social, and environmental domains, along with related coping experiences.

Quantitative Descriptive Results

The quantitative results show that participants reported the highest quality of life (QoL) in the social relationships domain (M = 4.17, SD = 0.48), indicating strong interpersonal support and social connectedness. This was followed by the environmental domain (M = 3.99, SD = 0.52), reflecting generally favorable living conditions and access to essential resources. Psychological QoL was moderate (M = 3.69, SD = 0.56), suggesting relatively stable emotional well-being but with potential stress or health-related concerns. The lowest scores were observed in the physical domain (M = 3.02, SD = 0.61), with approximately 60% of participants reporting moderate physical QoL and 25% reporting low physical QoL. These findings address Objective 1 by outlining varying QoL levels across domains, highlighting physical well-being as the most affected area requiring attention.

Integrated Findings

Theme 1: Emotional and Psychological Challenges

Participants' narratives reflected significant emotional and psychological difficulties during their treatment journey.

> *"Sige ko maghilak… maguol kos akong lawas."* (I kept crying… I worry about my body.) – January

Patients reported anticipatory anxiety as treatment dates approached, sleep difficulties, and a tendency to mask distress when speaking with others. One participant stated:

> *"Kada kita nako sa mga tawo ingnon man dayon ka 'kamusta man ka?' tubag ko 'okay ra gihapon', tubag ra ko 'okay ra"* (Every time people see me, they immediately ask, 'How are you?' even if I don't really know where I'm headed. I still say, 'I'm okay.')" – April

These narratives echo the moderate mean score in the psychological domain (M = 3.69) and its considerable SD (0.56). The variability (range 2.8–4.8) suggests that while many respondents struggle, some demonstrate resilience or adaptation. Unlike Kwekkeboom et al. (2018), who found primarily linear declines in psychological QoL among chemotherapy patients, this study observed a more complex pattern with variability in psychological well-being among Filipino patients. This nuance may reflect culturally specific coping, such as acceptance and faith-based resilience.

This theme addresses how emotional distress influences psychological QoL. It also extends previous QoL research by contextualizing psychological experiences within Filipino cultural values of *pakikisama* (maintaining social harmony) and emotional suppression. The prominence of emotional suppression—where participants mask distress to avoid burdening others is consistent with Filipino cultural expectations around family and social relations.

Theme 2: Physical and Treatment Related Challenges

Participants' narratives reflected ongoing physical and treatment-related burdens.

> *"Kapoy, walay lami ikaon." (I felt weak and food had no taste.) – May*

> *"Murag gidauban akong lawas.. Dili nako molihok sa balay… gahigda nako" (My body feels like it's burning. I can't move around at home… I just lie down.) – January*

The moderate mean physical QoL score (M = 3.02, SD = 0.61, Range = 1.9–4.3) shows that, overall, respondents perceived their physical well-being as compromised but not universally severely impaired. Some participants reported low physical QoL (below 2.5), corresponding to those who faced more severe side-effects and limitations.

Whereas prior local research by Sarmiento et al. (2019) reported fatigue and pain in Filipino patients, and an international study by Rezaei et al. (2018) found that nausea and physical symptoms impaired physical QoL and promoted social withdrawal, this study reveals how these physical symptoms ripple into social work functioning through the qualitative data. This theme explores the interrelationships among QoL domains, and extends existing literature by elucidating the pathway through which physical symptoms contribute to social and occupational disruption, ultimately leading to a decline in overall quality of life.

Theme 3: Environmental Challenges

Participants' narratives reflected concerns about treatment costs, access, and systemic support.

> *"₱600,000, almost ₱700,000… ingon ko 'Dili ko, wala koy kwarta.'"* ("₱600,000, almost ₱700,000… I said, 'I can't, I don't have money') – August

> *"Daghan silag ipang recommend… PCSO ray naka tabang."* (They gave many referrals… only PCSO helped) – August

The environmental domain mean score (M = 3.99, SD = 0.52, Range = 3.1–5.0) and variation reflect that while many patients had decent access/support, others experienced significant burdens. These findings align with international research on financial toxicity in cancer care, and in the Philippine context where financial constraints and delays affect treatment access (see Manansala et al., 2020; recently Columbres et al., 2024).

By elucidating the influence of systemic and environmental determinants, this theme focuses on

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identifying external factors that affect QoL. Furthermore, it extends the body of QoL research by situating the environmental dimension within the unique context of the Philippine healthcare financing structure and social support systems an aspect that remains underexplored in the existing global literature.

Theme 4: Coping Strategies

Participants' narratives reflected adaptive coping, social connectedness, and culturally embedded support mechanisms.

"Wa gyud lain… Ginoo ra gyud akong gisampit." (There's no one else I can turn to but only God.) – December

"Ako lang gyud gidawat ang tanan. Si Lord lang jud akong gisaligan." (I just accepted everything. I placed all my trust in the Lord.) – October

The high mean social relationships score (M = 4.17, SD = 0.48, Range = 3.5–5.0) correlates with strong narratives of family and peer support. This aligns with recent Philippine qualitative research showing how faith and family ties shape coping and meaning making in cancer (Ahmadi et al., 2024). It is also consistent with recent studies showing that acceptance and spiritual coping are key resilience factors for cancer patients globally (Pérez et al., 2019).

This theme seeks to examine the influence of coping mechanisms and social support on QoL. The findings affirm that, among Filipino cancer patients, spirituality and family cohesion function as salient resilience factors. Whereas many international studies conceptualize social support as a singular construct, the present study advances existing scholarship by delineating an integrated coping framework that encompasses social, spiritual, and cultural dimensions rooted in Filipino values such as *pakikisama* (social harmony), faith, and extended familial interdependence. In doing so, this research extends prior QoL literature by contextualizing coping and support processes within the socio-cultural milieu of the Filipino cancer experience.

Theme 5: Social Challenges and Support Systems

The social relationships domain exhibited a high mean score (M = 4.17, SD = 0.48, Range = 3.5–5.0), indicating generally positive perceptions of social quality of life among participants. Participants' narratives reflected both robust social support and the presence of social challenges.

"Tungod sa supporta sa pamilya… nakapadayon ra ko." (*Because of family support, I kept going.)* – November

"Mga barkada… bisitahon ko… ma-relieve ko." (*My friends visit me… it relieves me.)* – May

These accounts corroborate the quantitative finding and illustrate how family and peer networks served as practical and emotional resources that buffered treatment-related distress. Nevertheless, participants also reported intimacy concerns and experiences of stigma:

"Mahadlok man ta… dili nalang mag-engage sa sex." (We become afraid… so we just avoid engaging in sex.) – April

"Makadungog kog mga istorya na maot… mura kog gi-marites." ("I hear unpleasant stories… it feels like I'm being gossiped about.") – October

This pattern aligns with international and local literature showing that social support mitigates psychological distress and improves QoL, while stigma and intimacy problems may persist despite strong family networks (Helgeson & Cohen, 2017; Dela Cruz et al., 2019). Unlike studies that report predominantly social withdrawal following chemotherapy, the present data indicate that social connectedness remains a salient resilience factor in this Filipino sample, even when concerns about intimacy and reputation are present.

This theme examines the influence of coping mechanisms and social support on quality of life. The results affirm that spirituality, family cohesion, and peer support operate as integrated resilience resources among Filipino cancer patients. By articulating both the protective functions and the limitations of social networks (e.g., persistent stigma, reduced sexual intimacy), the study advances QoL research by situating social support within the socio-cultural dynamics of Filipino caregiving, communal obligation, and concern for social reputation.

IV. Conclusion

This mixed-methods study demonstrated that Filipino cancer patients undergoing chemotherapy experience a moderate overall quality of life. Social relationships showed the highest domain score, while physical functioning was most affected. Qualitative narratives highlighted fatigue, financial burden, anxiety, and diminished intimacy, but also emphasized spirituality, family support, and acceptance as core coping strategies. These findings reinforce the centrality of cultural values, particularly faith and familial bonds in shaping patient well-being. Holistic, culturally responsive care is needed, including psychosocial support, spiritual care integration, and early financial counseling. Policy-level support through expanded insurance and streamlined financial assistance may mitigate treatment burden. Future research with larger, regionally diverse samples and inclusion of other treatment modalities is recommended.

Limitations

This study's small sample (N=12) limits generalizability. Although participants came from varying locations, the sample does not represent all Filipino regions and socioeconomic backgrounds. Purposive sampling may have introduced selection bias. Data were self-reported and retrospective, increasing the risk of recall and social desirability bias. Findings apply only to chemotherapy patients; those receiving surgery, radiation, immunotherapy, or

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palliative care were not assessed. Outcomes may differ across treatment modalities.

V. Recommendation

These findings highlight the need for integrated psychosocial support and targeted financial assistance for Filipino cancer patients undergoing chemotherapy to address emotional distress and treatment-related financial strain. Specifically:

1. Healthcare providers should incorporate routine psychosocial screening and culturally sensitive interventions that recognize spirituality, family-centered support, and emotional suppression tendencies.
2. Cancer care policy in the Philippines should strengthen financial protection mechanisms, given the environmental domain burdens and delays in treatment access documented.
3. Social support programs should be developed or expanded to leverage existing Filipino community and faith-based networks recognizing that social relationships and spirituality operate as culturally specific coping resources influencing both psychological and environmental QoL.
4. Future research should evaluate interventions that enhance adaptive coping (such as acceptance, faith-based resilience) and evaluate their impact on each QoL domain.

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Conflict of Interest

The authors hereby declare that no conflicts of interest exist, whether financial, personal, professional, or otherwise, that could have influenced the design, execution, analysis, or reporting of this study. Full transparency has been maintained throughout the research process.

Disclosure of Use of Generative AI

In the interest of achieving the highest standards of clarity, coherence, and readability, generative artificial intelligence tools were employed solely as assistive aids for the organization of conceptual frameworks and the refinement of grammatical structure within this manuscript. All original content, core ideas, analytical insights, and intellectual contributions remain wholly the product of the authors, with no substantive generation or alteration of the research findings by AI.

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Musculoskeletal Disorders Among Traditional and Modern Jeepney Drivers: Prevalence, Location, and Severity Analysis

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ABSTRACT

Introduction: Jeepneys are an essential form of public transportation in the Philippines. Drivers face occupational health risks, particularly musculoskeletal disorders (MSDs), influenced by multiple factors. Despite modernization efforts under the Public Utility Vehicle Modernization Program (PUVMP), MSDs continue to affect drivers, emphasizing the need for a comprehensive health assessment.

Aim: The study aims to assess the prevalence, location, and severity of MSDs among traditional and modern jeepney drivers in Baguio City, and to investigate associations with age, number of hours driven, and years of experience.

Methods: This study, guided by Neuman's System Model, examined the prevalence, location, severity, and associated factors of musculoskeletal disorders (MSDs) among traditional and modern jeepney drivers in Baguio City. A cross-sectional analytic design was employed involving 113 male jeepney drivers recruited through stratified random sampling. Data were collected using the modified Extended Nordic Musculoskeletal Questionnaire (NMQ-E) to assess the prevalence, location, severity, and associations of MSDs with driver age, type of jeepney, hours of driving, and years of driving experience. Statistical analyses included chi-square, Fisher's Exact, and Monte Carlo tests.

MSD prevalence was 56.6% (95% confidence interval, 47.5%-65.7%), with low back pain (33%; 95% CI: 25-42.4) being the most reported location. Severity varied, affecting functional abilities, although severe consequences, such as hospitalization, were rare. No significant associations were found between MSD prevalence, location, or severity and driver characteristics. These findings support a multifactorial etiology involving occupational exposures and individual factors.

Conclusion: Nurses play a vital role in educating drivers on proper posture, encouraging regular health breaks, and promoting the use of simple, supportive aids to reduce MSD risk, especially during ongoing vehicle modernization. Immediate and practical nurse-led interventions can significantly improve driver well-being while vehicle modernization progresses. Future research may focus on longitudinal studies, workplace ergonomic assessment, and objective measurements of vibration exposure to better understand the progression of MSDs and support evidence-based interventions and policy development.

Keywords: *Modern jeepney drivers, Musculoskeletal disorders, Occupational health, Public utility vehicle Modernization program, Traditional jeepney drivers*

I. Introduction

The jeepney is an iconic symbol of Filipino culture and resilience, serving as an essential means of public transportation. Originally repurposed from World War II vehicles, jeepneys became an affordable transport option for many Filipinos. Currently, traditionally fueled jeepneys are being gradually replaced by electric-powered modern jeepneys under the Public Utility Vehicle Modernization Program (PUVMP), launched by the Department of Transportation in 2017 to promote environmental sustainability and improve efficiency (DOTr, 2017; Magramo, 2024).

This modernization effort is highly important for society and policy, as it affects the livelihoods and well-being of jeepney drivers, whose physically demanding work exposes them to occupational health risks, particularly musculoskeletal disorders (MSDs) (Philippine Daily Inquirer, 2025).

Musculoskeletal disorders are the most common health issues reported by jeepney drivers, attributed to prolonged sitting, awkward postures, repetitive

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motions, and exposure to vehicle vibrations during long shifts (Punnett & Wegman, 2003; Coz et al., 2015). Previous studies report that between 70% and 88% of drivers experience MSDs, with low back pain being the most frequent complaint, resulting in decreased comfort, productivity, and quality of life (Atlas et al., 2006; Coz et al., 2015). Although modern jeepneys have introduced some vehicle design improvements, musculoskeletal symptoms continue to be prevalent, underscoring the need for comprehensive health evaluations (Rasheed et al., 2023).

Ergonomic research by Libre et al. (2023) utilized validated tools, including the Rapid Upper Limb Assessment (RULA), Rapid Entire Body Assessment (REBA), and the Nordic Musculoskeletal Questionnaire (NMQ), along with anthropometric measurements, to reveal medium ergonomic risk levels associated with work design challenges. However, no clear correlation was found between these ergonomic risks and the reported musculoskeletal symptoms, illustrating multifactorial causes of MSDs. Libre et al. (2023) also assessed this ergonomic risk based on manufacturer-specified measures, which include seat dimensions, control placements, and the workstation layout, that align closely with the modern jeepney design in our study.

Considering these similarities, this research focuses on Baguio City's mountainous urban terrain, where different physiological and biomechanical demands arise due to terrain and driving conditions. This perspective differs from the lowland setting, emphasizing the importance of localized research in accurately capturing occupational health risks during transport modernization.

Although the ergonomic designs and manufacturers' specifications of the modern jeepney, as studied by Libre et al. (2023), are consistent with those of our study, detailed ergonomic or vehicle measurements of physical exposures, such as seat design, suspension, and vibration levels, were not directly collected. Therefore, this study uses the jeepney type as an indirect measure to examine patterns of MSDs amid the ongoing modernization process. This descriptive baseline study fills an important knowledge gap by focusing on a unique mountainous urban setting, providing evidence to guide tailored occupational health interventions and policy for the local jeepney drivers.

Using Neuman's System Model as a theoretical framework provides a comprehensive approach to occupational health, offering practical guidance to policymakers and health professionals seeking to enhance driver well-being as transportation evolves. Furthermore, this research contributes to the United Nations Sustainable Development Goals (SDGs), specifically Goals 3 (Good Health and Well-being) and 8 (Decent Work and Economic Growth), by promoting safer working conditions and sustainable transportation solutions.

This cross-sectional analytical study aims to assess the prevalence, location, and severity of MSDs among traditional and modern jeepney drivers in Baguio City, and to investigate associations with age, number of hours driven, and years of experience. By providing baseline descriptive assessment of musculoskeletal health and comparative profiles between traditional and modern jeepney drivers, this study offers locally relevant insights to contribute actionable evidence to support policy readiness and occupational health improvements during the ongoing modernization of jeepneys.

II. Methods

Research Design

This study employed a cross-sectional analytic design to examine associations between musculoskeletal disorders (MSDs) and factors such as type of jeepney, driver age, number of hours of driving, the years of driving among jeepney drivers in Baguio City. Data was collected at a single point in time from both traditional and modern jeepney drivers across multiple days and different route locations. No repeated or longitudinal measurements were conducted. This design enabled the observational comparison of their musculoskeletal health outcomes without requiring any experimental manipulations.

Participants and Sampling

The study population consisted of male traditional and modern jeepney drivers from Trancoville and Aurora Hill, aged 25-65, with at least 2-5 years driving experience and driving between 5 to 22 hours daily. From BAMAPCOM records listing 73 traditional and 58 modern jeepney units, a stratified sampling with proportional allocation by jeepney type was employed, resulting in a total sample of 62 traditional and 51 modern drivers, as calculated using OpenEpi with a 0.05 margin of error. A *priori power* analysis using chi-square tests indicated that the sample size of 113 was sufficient to detect moderate to large effect sizes (Cramer's $V > 0.3$) at $\alpha = 0.05$. The study acknowledges limited power to detect small effects, which is noted as a limitation.

Data Collection

Data was collected using a structured questionnaire adapted from the Extended Nordic Musculoskeletal Questionnaire (NMQ-E) developed by Anne P. Dawson et al. (2009), which allowed assessment of the prevalence, location, and severity of musculoskeletal disorders on different parts of the body. The researchers modified the questionnaire to include demographic and driving-related factors such as the type of jeepney, age, hours of driving, and years of driving experience, to understand how these factors affect MSDs.

The questionnaire had two sections: one collecting demographic and driving data, and another identifying MSD characteristics, including prevalence, location, severity, age of onset, occupational impact, and medical consultations, all of which were answered with "yes" or "no." Severity was operationalized by summing affirmative responses to specific questions related to the impact of MSDs, with categories (mild, moderate, severe) detailed in the results section. To reduce recall

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bias, respondents reported experiences within the past three months. Although the NMQ-E primarily contains dichotomous items, Cronbach's alpha was reported to maintain consistency with prior studies, as the questionnaire includes some mixed-format items. KR-20 was considered but not computed. The reported Cronbach's alpha values (0.80 and 0.95) indicated strong consistency. Validity was supported by expert review and pilot testing with 10 jeepney drivers, yielding an acceptable reliability score of 0.79.

After obtaining ECREC-2024-001-V.B approval on November 22, 2024, data were collected from jeepney drivers plying the Trancoville and Aurora Hill routes in Baguio City. The researchers personally administered the questionnaires. The collected data were checked for completeness, coded using Microsoft Excel, and analyzed using SPSS software.

Data Analysis

Descriptive statistics summarized the prevalence, location, and severity of MSDs as well as driver characteristics. Initial inferential analysis employed Pearson's chi-square test when assumptions for minimum expected cell frequencies were met. For 2x2 tables with low expected counts, the Fisher Exact test was applied. For larger contingency tables that failed these assumptions, the Monte Carlo method was used. Effect sizes were reported using Phi (Φ) for 2x2 tables and Cramer's V (V) for larger tables. Statistical significance was set at a p-value of 0.05. Exact p-values, degrees of freedom, and effect sizes with interpretations were reported. Although reviewer 1 recommended the use of multivariable logistic regression models, which include binary logistic regression for MSD prevalence (yes/no), ordinal logistic regression for severity, and multinomial logistic regression for pain location, to adjust for co-variates such as age, driving hours, years of experience, the type of jeepney, these analyses were not performed due to resource constraints. Consequently, the current analyses are limited to bivariate relationships, which provide preliminary screening but cannot control for potential confounding factors or estimate adjusted effect sizes. All inferential analyses were conducted using SPSS V. 29.0.0.0 (SPSS Inc., 2021), which facilitated the robust handling of chi-square tests, exact methods, and Monte Carlo simulations. Initial screening via chi-square and related exact tests provided insights into associations but recognized the need for future multivariable modeling to further develop these findings.

The chi-square test showed no significant associations between drive characteristics and MSD outcome, with small sizes observed. A professional statistician agreed with Reviewer 1's feedback, recommending multivariable logistic regression models to properly account for outside factors, such as age, driving hours, and experience, that could influence results. However, limited resources prevented implementation of these more advanced analyses. The study, therefore, relied on bivariate analyses to provide preliminary evidence of relationships, while recognizing the need for future research employing multivariable modeling to yield stronger and more reliable findings.

Ethical Considerations

This study adhered to ethical guidelines, ensuring informed consent from all participants (aged 18 and above), maintaining confidentiality through the use of anonymized data and coded identifiers, and minimizing risk by employing clear questionnaires and allowing participants to withdraw at any time. No conflict of interest was declared, and no compensation was offered.

III. Results

Prevalence of MSDs

Table 1 presents the prevalence of MSDs among jeepney drivers. Of the 113 respondents, 64 (56.6%) reported experiencing MSD. The 95% confidence interval for this prevalence was 47.5% to 65.7%, indicating the precision of the estimate within the study sample.

TABLE 1: Prevalence of MSD Among Jeepney Drivers (N = *113*)

MSD	Frequency (n)	Percentage (%)
With MSD	64	56.6
Without MSD	49	43.4

Note. Percentages are based on the total number of respondents (N) = 113

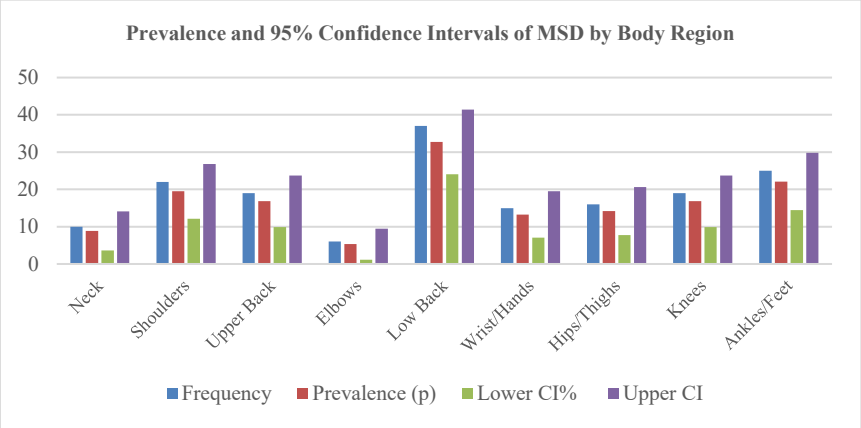

Figure 1: Prevalence of MSD by Body Region with 95% Confidence

Neck pain was reported by 10 drivers (9%; 95% CI: 4.4-15.5), shoulder pain by 22 drivers (19%; 95% CI: 12.3-27.8, and upper back pain by 19 drivers (17%; 95% CI: 10.5-25.6). Elbow pain was noted by 6 drivers (5%; 95% CI: 2.3-10.8). Low back pain had the highest prevalence, reported by 37 drivers (33%; 95% CI: 25-42.4). Wrist or hand pain was present in 15 drivers (13%; 95 CI: 7.2-20.6), hips or thighs in 16 drivers (14%; 95% CI: 8.1-22), knees in 19 drivers (17%; 95%

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CI 10-25.6), and ankles or feet in 25 drivers (22%; 95% CI: 14.5-30.7).

Severity of MSDs

TABLE 2: SEVERITY OF MUSCULOSKELETAL DISORDERS: ITEM-SPECIFIC RESPONSE DISTRIBUTION

Question (Severity Item)	Mild Severity (1-3)	Moderate Severity (4-6)	Severe Severity (7-9)
Q3. Have you ever been hospitalized because of the trouble?	3	0	0
Q4. Have you ever had to change jobs/duties (even temporarily) because of the trouble?	1	0	1
Q5. Have you had trouble (ache, pain, or discomfort) today?	31	1	2
During the last 3 months, have you at any time:			
Q6. been prevented from doing your normal work (at home or away from home) because of the trouble?	16	2	0
Q7. been prevented from doing your normal work (at home or away from home) because of the trouble?	27	4	4
Q8. taken medication because of the trouble?	24	2	3
Q9. taken sick leave from work/duties because of the trouble?	16	4	4

Note. Response categories represent mild (1-3), moderate (4-6), and severe (7-9) severity or frequency of musculoskeletal disorder-related problems

MSD severity among jeepney drivers was assessed across multiple indicators related to healthcare use, pain experience, work impairment, and functional limitations (Table 2). Hospitalization due to <MSD was reported by 3 drivers (2.7%, and one driver (0.9%) reported changing jobs or duties because of MSD symptoms. On the day of the survey, 31 drivers (27.4%) experienced musculoskeletal pain or discomfort.

In the preceding three months, 16 drivers (14.2%) had been prevented from performing their usual work at least once due to MSD, while 27 drivers (23.9%) reported limitations in work performance. Pain medication use was reported by 24 drivers (21.2%), and 16 drivers (14.25) had taken sick leave related to MSD symptoms.

Severity categories correspond to the number of body parts reported with MSD symptoms: mild severity (1-3) indicates symptoms checked in 1-3 body parts; moderate (4-60 indicates 4-6 affected body parts; severe (7-9) indicates symptoms in 7-9 body parts. Response categories represent increasing symptom frequency, where higher numbers indicate greater severity or effect related to MSDs.

TABLE 3: CHI-SQUARE TEST OF ASSOCIATION BETWEEN DRIVER CHARACTERISTICS AND PREVALENCE OF MSD

Driver Characteristic	Test Used	χ^2 (df, N)	p-value	Effect Size	Interpretation	Strength
Age	Pearson χ^2	4.37(5,113)	.359	V = .040	Not significant	Small
Jeepney Type	Fisher's Exact	-(1,113)	.706	φ = .040	Not significant	Small
Hours of Driving	Monte Carlo	2.294(4,113)	.518	V = .142	Not significant	Small
Years of Experience	Monte Carlo	3.323(5,113)	.534	V = .171	Not significant	Small

Note. MSD = musculoskeletal disorders; χ^2 = chi-square statistics; φ = Phi coefficient; V = Cramer's V. Pearson's chi-square test was used when the assumption of minimum expected cell frequency was met. The Fisher's exact test was applied for 2x2 tables when more than 20% of cells had expected counts below 5. The Monte Carlo method was used for larger contingency tables with more than 20% of cells having expected counts below 5. Significance threshold was set at $\alpha = 0.05$. Effect sizes are interpreted as small = 0.10, medium = .30, and large = 0.50 (Cohen, 1988)

Association between Driver Characteristics and Prevalence of MSD

The association between driver characteristics and the prevalence of musculoskeletal disorders (MSDs) was examined using various statistical approaches according to data structure. No significant associations were found between age and the prevalence of MSD (χ^2 (5,113) = 4.37, p = 0.359, Cramer's V = 0.040). Similarly, the jeepney type showed no significant association based on Fisher's Exact test (p = 0.706, φ = .040). Hours of driving per day (χ^2 (4,113) = 2.29, p = 0.518, Cramer's V = 0.142), and years of driving experience (χ^2 (5,113) = 3.323, p = 0.534, Cramer's V = 0.171) also showed no significant association. All observed effect sizes were small.

Association between Driver Characteristics and Location of Pain

The association between driver characteristics and the location of pain was analyzed using the Monte Carlo method due to small, expected counts in some cells. The results showed no significant relationship between age and the location of pain (χ^2 (40,113) = 28.98, p = 0.414, Cramer's V = 0.253). Similarly, the jeepney type was not significantly associated with the location of pain (χ^2 (8,113) = 7.75, p = 0.374, Cramer's V = 0.262). The hours of driving per day had no significant association (χ^2 = 17.098, p = 0.550, Cramer's V = 0.225), nor did years of driving experience (χ^2 = 16.597, p = 0.944, Cramer's V = 0.192). All effect sizes were considered small.

TABLE 4: CHI-SQUARE TEST OF ASSOCIATION BETWEEN DRIVER CHARACTERISTICS AND LOCATION OF PAIN

Driver Characteristic	Test Used	χ^2 (df, N)	p-value	Effect Size	Interpretation	Strength
Age	Monte Carlo	28.98 (40,113)	.414	V = .253	Not significant	Small
Jeepney Type	Monte Carlo	7.75 (8,113)	.374	V = .262	Not significant	Small
Hours of Driving	Monte Carlo	17.10 (32,113)	.550	V = .225	Not significant	Small
Years of Experience	Monte Carlo	16.60 (40,113)	.944	V = .192	Not significant	Small

Note. Dependent variable = Location of Pain. Monte Carlo method was used since more than 20% of cells had expected counts below 5. Significant at p < .05; Effect sizes are expressed as Cramer's V since all tables are larger than 2×2, where 0.10 = small, 0.30 = medium, 0.50 = large (Cohen, 1988).

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Association between Driver Characteristics and Severity of MSD

TABLE 5: CHI-SQUARE TEST OF ASSOCIATION BETWEEN DRIVER CHARACTERISTICS AND SEVERITY OF MSD

Driver Characteristic	Test Used	χ^2 (df, N)	p-value	Effect Size	Interpretation	Strength
Age	Monte Carlo	13.93 (10,113)	.314	V = .203	Not significant	Small
Jeepney Type	Monte Carlo	.83 (2,113)	.835	V = .086	Not significant	Small
Hours of Driving	Monte Carlo	6.20 (8,113)	.685	V = .135	Not significant	Small
Years of Experience	Monte Carlo	11.63 (10,113)	.476	V = .185	Not significant	Small

Note. Dependent variable = Level of Severity; Monte Carlo method was used since more than 20% of cells had expected counts below 5. Significant at $p < .05$.
Effect sizes are expressed as Cramer's V since all tables are larger than 2×2, where 0.10 = small, 0.30 = medium, 0.50 = large (Cohen, 1988).

The relationship between the driver's characteristics and the level of severity of MSD, categorized as mild, moderate, or severe, was analyzed using the Monte Carlo method due to small, expected cell counts in the contingency tables. Each characteristic was compared to the severity of MSD among 113 respondents. Results showed no significant association between age and MSD severity (χ^2 (10, 113) = 13.927, p = 0.314, Cramer's V = .203), suggesting that MSD severity was similarly distributed across all age groups. The type of jeepney driven also showed no significant relationship with MSD severity (χ^2 (2,113) = 0.83, p = 0.835, Cramer's V = 0.086). Similarly, neither hours of driving per day (χ^2 (8, 113) = 6.20, p = 0.685, Cramer's = 0.135) nor years of driving experience (χ^2 (10,113) = 11.63, p = 0.476, Cramer's = 0.185) were significantly associated with the severity of MSD. For all driver characteristics, the effect sizes were small, and none of the calculated χ^2 reached statistical significance at $p < .05$. indicating that the severity of musculoskeletal disorder symptoms among jeepney drivers does not differ between age groups, type of jeepney driven, hours spent driving per day, or years of driving experience.

Summary of Findings

In the present study, none of the summary statistics examined, nor any of the driver characteristics (age, type of jeepney, hours of driving per day, or years of driving experience) were significantly associated with musculoskeletal disorder prevalence, location, or severity. Statistical analyses yielded non-significant results across all comparisons (all p> .05), with consistently small effect sizes (Cramer's V range).

IV. DISCUSSION

The study found the prevalence of MSDs among jeepney drivers to be 56.6%, indicating a substantial occupational health concern. The observed prevalence is lower than the 70% to 88% rates reported in prior studies, potentially due to differences in sample characteristics, such as the types of vehicles used, route variations, and recall periods. Specifically, the recall period in this study is three months, compared to six to twelve months in others. Methodological differences such as the use of the modified Extended Nordic Musculoskeletal Questionnaire with dichotomous response options and specific operationalization of severity levels, may also influence severity estimates. These factors may be considered when comparing prevalence across studies. This study's findings align with Libre et al. (2023), who emphasized the occupational health risks faced by jeepney drivers in Quezon Province. These baseline findings emphasize the importance of prevention at three levels: mitigating risks before they escalate into problems, early detection of symptoms, and providing support for recovery among affected drivers.

Regarding the location of MSDs, low back pain was the most frequently reported, consistent with prior studies (Amit & Malabarbas, 2020; Tigari & Santhosh, 2020; Tchounga et al., 2022; Yirdaw & Adane, 2024; Raza et al., 2024; Rezaei et al., 2022). Elbow complaints were among the least common. Prolonged sitting in fixed positions likely contributes to increased lumbar spine stress, compounded by the limited frequency of breaks and inconsistent use of supportive seating (Pickard et al., 2022). Occupational factors common to all drivers, such as whole-body vibration, repetitive movements, inadequate seating, and poor road conditions, appear to contribute more to the risk of MSDs than demographic or experiential differences (IEOM Society, 2023). These work factors point up the opportunity to prevent problems early by improving jeepney design to make driving more comfortable and reduce risks.

The severity of MSD symptoms, categorized in this study by the number of affected body parts mild (1-3), moderate (4-6), and severe (7-9), provides a measure of symptom burden and functional impact. Although severe outcomes such as hospitalization and job changes were uncommon, many drivers reported pain and functional limitations sufficient to impair work performance, use medication, or take sick leave. These findings align with recent studies documenting high MSD prevalence and impact among drivers who experience prolonged sitting, vibration exposure, awkward postures, and repetitive motions (Joseph et al., 2020; Rasheed et al., 2023; Tahernejad et al., 2024). The reported work limitations emphasize the importance of regular NMQ-E screening for early detection, and job changes with pain relief programs are essential for recovery support.

Analysis of associations between driver characteristics (age, jeepney type, hours of driving per day, and years of driving experience) and MSD prevalence, location, and severity revealed no significant relationships, with consistent small effect sizes. This suggests that occupational exposures characteristics in the driving environment and work conditions may play a greater role than demographic or occupational experience in influencing MSD involving individual health, lifestyle, and psychosocial stressors, as well as physical work demands.

The application of Pearson's Chi-Square, Fisher's Exact Test, and Monte Carlo statistical methods

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demonstrate careful attention to sample size and data distribution, supporting the robustness of the findings despite the absence of statistically significant results. Studies by Tigari and Santhosh (2020), Tchounga et al. (2022), and Yirdaw and Adane (2024) support the important role of making physical work conditions better, such as by improving seat design and allowing regular rest breaks, as well as the impact of workplace environment and personal habits, including health routines, in reducing MSD risks. These findings reinforce the importance of adopting a holistic and systematic strategy for MSD prevention and management, in line with Neuman's framework.

Given these findings, the Newmann System Model provides a comprehensive way to understand jeepney drivers as individuals constantly interacting with various physical, psychological, and environmental challenges. This model views stressors as the factors that can affect the drivers' overall well-being and suggests that effective prevention requires not only improving work conditions but also educating drivers on posture and fatigue management, as well as promoting healthy habits. This approach extends beyond merely examining personal characteristics and instead acknowledges that various factors in a person's environment and daily life also impact on their health (Hannoodee & Dhamoon, 2023).

Lastly, these findings have practical policy relevance in the Philippine setting. Existing guidelines under Republic Act No. 11058 and DOLE Joint Memorandum Circular No. 1, series of 2020, address workplace posture, repetitive strain, and vibration exposure relevant to MSD prevention in jeepney drivers. However, enforcement and support remain limited. The Public Utility Vehicle Modernization Program (PUVMP), initiated in 2017 to enhance vehicle safety and efficiency (DOTr, 2017; Magramo, 2024), presents an opportunity to implement practical improvements for driver health and comfort. These include enhanced seating design, regular health screenings, and education on proper posture and fatigue management. Strengthening policy implementation based on current findings can help reduce the prevalence of MSDs and improve occupational health among jeepney drivers.

Future research with a larger sample size and longitudinal designs is necessary to understand the development of MSD over time, establish a causal relationship, and comprehensively evaluate the effectiveness of interventions.

Limitations of the Study

This study has several limitations that should be taken into account when interpreting the findings. The sample size of 113 jeepney drivers may have limited statistical power to detect smaller associations, thereby reducing the generalizability of the results. Data was collected through self-reported questionnaires, which could introduce recall bias or inaccurate reporting of symptoms. Additionally, focusing on drivers on just two routes in Baguio City may limit the applicability of the findings to other regions or working environments. Important factors, such as psychosocial stress, lifestyle habits, and pre-existing health conditions, as well as specific health behaviors including physical activity, BMI, and smoking, were also not collected. Therefore, the differences observed between traditional and modern jeepney drivers cannot be attributed directly to modernization features or occupational exposures but rather reflect associations with vehicle type as a substitute. Despite these limitations, the study provides valuable insights into the occupational health challenges faced by jeepney drivers and identifies areas for targeted interventions.

V. Conclusion and Recommendations

This study found a high prevalence of musculoskeletal disorders (56.6%) among jeepney drivers in Baguio City, with low back pain being the most frequently reported location and varying severity affecting functional abilities. These results emphasize the significant occupational health risks associated with prolonged sitting, vehicle vibration, and poor ergonomics. Nurses play a vital role in educating drivers on proper posture, encouraging frequent breaks, and promoting the use of simple supportive aids such as cushions or lumbar supports to reduce MSD risk while working with existing jeepney designs. Although improvement in vehicle design under the Public Utility Vehicle Modernization Program (PUVMP) is necessary, immediate practical interventions led by nursing and allied health professionals can significantly help alleviate symptoms and improve driver well-being. Future research may focus on longitudinal studies, ergonomic evaluations of current workstations, and objective measurements of vibrations and strain to better understand the progression of MSDs and support practical, evidence-based interventions and policy development.

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Conflict of Interest

The author declares that there is no conflict of interest, financial or otherwise, to disclose.

Disclosure of Use of Generative AI

QuillBot and Grammarly were used to check grammar, reduce redundancy, and enhance the flow of ideas, ensuring clarity and refinement.

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RESEARCH ARTICLE

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Impact of Excessive Online Health Searches on Parental Well-Being

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ABSTRACT

Introduction: Technology transformed how parents access health information, but excessive online searches, or cyberchondria, can fuel reassurance-seeking and anxiety in managing family health. Demographic factors like age, education, socioeconomic status, and family structure shape vulnerability, yet their interplay with cultural beliefs remains understudied in Filipino contexts. This study examines the impact of excessive online health searches on parental well-being in the Philippines, aiming to address gaps in understanding digital health behaviors.

Aim: This study aimed to determine the impact of cyberchondria on parental well-being, focusing on compulsion, distress, excessiveness, reassurance-seeking, mistrust, and thoughts, feelings, and behaviors. It analyzed how sociodemographic factors affect cyberchondria and well-being. The research also explored the relationship between cyberchondria and parental well-being.

Methods: A quantitative correlational design explored the relationship between cyberchondria and parental well-being. Four hundred parents from 10 barangays in Baguio City were selected through systematic random sampling. Data collection utilized the Cyberchondria Severity Scale-15 and Health Anxiety by Proxy Scale. Descriptive and inferential statistics were applied. Ethics approval was granted by the REC on February 20, 2025 (Protocol No. SLU-REC 2025-047).

Results: Cyberchondria results revealed parents were severely affected in Excessiveness and Reassurance-seeking; thoughts and behaviors showed high anxiety. Significant differences appeared in Age (cyberchondria) and Monthly Income (health anxiety). A moderate positive correlation showed that higher cyberchondria was linked to increased health anxiety by proxy.

Conclusion: Cyberchondria diminishes parental well-being by fueling anxiety, reassurance-seeking, and reduced resilience. Anchored in Media Dependency Theory, findings support interventions and culturally adapted tools for responsible digital health-seeking.

Keywords: *Cyberchondria, Health Anxiety, Parental Well-being, Parents*

I. Introduction

The expansion of the internet has fundamentally altered how parents seek and appraise health information. While digital platforms offer immediate access to expert-curated repositories, the overwhelming volume of conflicting content often precipitates "cyberchondria" (Starcevic & Berle, 2021). This phenomenon is defined as an excessive online health searching pattern characterized by prolonged, repeated sessions that intensify distress and erode trust in professional advice (McMullan et al., 2019). Although high-quality sites can strengthen parental confidence, excessive searching is distinct from functional information seeking; it is a compulsive behavior often driven by the need for reassurance (Starcevic et al., 2021). In this study, cyberchondria is measured by the Cyberchondria Severity Scale-15 (CSS-15), which probes five distinct domains: compulsion, distress, excessiveness, reassurance-seeking, and mistrust of medical professionals. Despite the prevalence of these behaviors, few studies have applied this multidimensional framework specifically to parental populations.

In this research, parental well-being is operationally defined through the lens of "health anxiety by proxy" the acute anxiety parents experience regarding their child's health (Rask et al., 2023). Parental well-being encompasses more than dispositional traits; it reflects specific reactions manifested in thoughts (intrusive worries), feelings (emotional distress), and behaviors (such as checking or avoidance) (Smith & Johnson, 2022). When parents lack certainty about a child's symptoms, they often turn to the media to satisfy informational needs, a process explained by Media Dependency Theory (Ball-Rokeach & DeFleur, 1976).

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However, rather than alleviating concern, this dependency often fuels a cycle of anxiety where online searches increase cognitive burden and emotional strain, negatively impacting the parent's overall ability to function (McMullan et al., 2019).

The Philippine context presents a unique landscape for this investigation, characterized by high internet penetration and specific cultural norms that may influence health-seeking behaviors. The country consistently ranks among nations with the highest social media and internet usage, with parents frequently turning to online platforms as their primary source of health information (Del Rosario & Dizon, 2021). An increased reliance on digital health content has been observed, particularly among families with limited access to healthcare resources, creating conditions where misinformation, conflicting advice, or alarming self-diagnoses can easily influence parental decision-making (Manalo & Soriano, 2022).

Cultural values such as *hiya* (sense of propriety or shame) and *pakikisama* (social harmony) may discourage parents from questioning healthcare professionals directly, prompting them to turn to online sources as a non-confrontational alternative (Tan & Goonawardene, 2022). However, the interaction between these demographic and cultural factors and cyberchondria remains understudied. Although limited health literacy and distrust in public healthcare are known to delay help-seeking, empirical data are lacking on how factors such as age, education, and family structure shape the facets of cyberchondria in the Philippines (Zheng et al., 2023).

Therefore, this study aims to determine the impact of excessive online health searches (cyberchondria) on parental well-being (health anxiety by proxy). Specifically, it analyzes the degree of effect across the domains of compulsion, distress, excessiveness, reassurance-seeking, and mistrust. Furthermore, the research explores how sociodemographic profiles influence these behaviors to address gaps in understanding digital health dependency in the Filipino context.

Research Objectives and Questions

The study seeks to know the impact of excessive online health searches on parental well-being. Notably, it intends to answer the following questions:

1. What is the degree of effect of excessive online health searches among parents in the following domains:
    a. Compulsion
    b. Distress
    c. Excessiveness
    d. Reassurance-seeking
    e. Mistrust
2. What is the level of parental well-being along the following domains:
    a. Thoughts
    b. Feelings
    c. Behavior
3. Is there a significant difference between the degree of excessive online health searches among parents when grouped according to:
    a. Age
    b. Educational attainment
    c. Socioeconomic status
    d. Type of family structure
4. Is there a significant difference in the level of parental well-being when grouped according to:
    a. Age
    b. Educational attainment
    c. Socioeconomic status
    d. Type of family structure
5. Is there a significant relationship between the degree of excessive online health searches and parental well-being?

Significance of the Study

Nursing Practice

This study emphasizes the significance of nurses recognizing parents' diverse levels of technological literacy, which affects their health decisions and interactions with healthcare providers (Nomaguchi & Milkie, 2020). Guiding parents toward credible online resources and addressing misinformation can reduce anxiety and promote informed choices (César-Santos et al., 2024). By strengthening digital health literacy, nurses can enhance communication, increase parental confidence, and support improved child health outcomes within family-centered care approaches (Nomaguchi & Milkie, 2020; Rivera & Santos, 2024).

Nursing Administration

The findings advocate for policies that prioritize digital health literacy, including programs to mitigate the risks associated with excessive online health searches and promote the use of reliable e-health resources. Nursing administrators can foster patient-centered environments by organizing checkups to assess digital health behaviors and developing family-focused initiatives (McGonigle & Mastrian, 2021). Such measures strengthen institutional support for nurses while ensuring equitable access to accurate health information.

Nursing Research

This study provides foundational insights into how excessive online health information-seeking affects parental well-being, highlighting gaps in understanding demographic influences, including socioeconomic status and family structure. It encourages future research on tailored interventions and the long-term consequences of digital health dependency, offering a framework to explore strategies for mitigating risks and enhancing parent-centered care (Hebda & Czar, 2019).

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Nursing Education

The results suggest the need to integrate digital health literacy into nursing curricula, equipping students with the skills to address online health behaviors and leverage informatics for patient education (McGonigle & Mastrian, 2021). Educators can expand discussions on parental health management, preparing future nurses to navigate evolving digital landscapes and co-manage online health practices effectively.

The Researchers

Researchers gain insight into the cognitive, emotional, and behavioral impacts of excessive online health searches, including anxiety and misdiagnosis (César-Santos et al., 2024). This study also expands current understanding of cyberchondria within the Philippine cultural context, supporting future studies on preventive strategies and risk-reduction interventions (Lorenzo & Javier, 2024).

The Participants and Society

Parents and families benefit from heightened awareness of risks, such as misinformation and cognitive overload, which empowers them to balance online resources with professional care (Nomaguchi & Milkie, 2020). Society gains tools to identify vulnerable populations and promote equitable access to credible health information, advancing public health outcomes.

II. Methods

Research Design

This study employed a cross-sectional, quantitative, correlational design to investigate the relationship between cyberchondria and parental well-being among Filipino parents. Although correlational in nature, the design also allowed for group comparisons across demographic categories, as these analyses were conducted on the same cross-sectional dataset without variable manipulation.

Participants

The study was conducted in Baguio City. Using Cochran's formula for unknown populations, a minimum sample size of 385 participants was determined; however, 400 parents were recruited to compensate for potential attrition and unusable responses. Participant ages ranged from below 29 to above 50 years (mean = 42.2), with 76.0% identifying as female. Most respondents were married, with an average of 2.52 children per household. Educational backgrounds varied, with 32.8% having completed high school or below and 36.8% holding a bachelor's degree or higher. Full-time employees constituted the largest employment group, and 43.3% reported earning less than Php 10,957 per month. Family decision-making was predominantly matriarchal (50.7%).

The inclusion criteria consisted of being a biological parent residing in the selected barangays, engaging in online health information searches for at least 30 minutes or at least three times a day, and having at least one child. Exclusion criteria included having a diagnosed mental health condition, working as a healthcare professional or barangay official, or voluntarily withdrawing from the study.

Sampling

A systematic random sampling method was implemented. Five districts in Baguio City were randomly selected for the study. From each district, two barangays were randomly drawn, resulting in ten barangays: Engineers' Hill, Cabinet Hill, Pacdal, Mines View, Bakakeng Central, Bakakeng Norte, Aurora Hill, Brookside, South Sanitary Camp, and North Sanitary Camp. Within these barangays, every third household was approached for recruitment. Refusals were documented, after which the sampling interval resumed with the next eligible household.

Data Gathering Tools

Data were gathered using both online and paper-based formats to ensure accessibility. Google Forms was used for participants with internet access, while paper questionnaires were provided to those without reliable connectivity. The Cyberchondria Search Scale (CSS-15) consisted of 15 items across five domains rated on a 5-point Likert scale, demonstrating Cronbach's alpha values ranging from 0.89 to 0.95. The Health Anxiety by Proxy Scale (HAPYS) consisted of 26 items across four domains, each with domain-specific Likert formats, and had a Cronbach's alpha of 0.95. Face validity was confirmed by experts, and readability assessments using the Gunning Fog Index indicated that the instruments were appropriate for the target population (CSS-15: 9.9; HAPYS: 7.2).

Data Collection

Data collection involved a combined household and online administration approach. Trained data collectors visited the systematically selected households and provided either paper questionnaires or QR codes linking to the Google Forms version of the survey. Participants chose the format that was most convenient for them. Informed consent was obtained prior to survey completion, and all refusals were recorded. Completed paper questionnaires were encoded into the digital dataset for analysis.

Data cleaning and organization were performed using Google Sheets (Version 2025). Statistical analyses, including descriptive statistics, correlation tests, and group comparison procedures, were conducted using Jamovi (Version 2.5).

Data Analysis

Data was processed using Microsoft Excel and Jamovi. Descriptive statistics were used to summarize demographics. The Shapiro-Wilk test assessed data normality. For Research Questions 1 and 2, mean scores for each CSS-15 and HAPYS domain were calculated and interpreted using Likert levels. For Research Questions 3 and 4, non-normal data were analyzed using the Kruskal-Wallis test with Dwass-Steel-Critchlow-Fligner post-hoc analysis. For Research Question 5, Spearman's rank correlation was used to

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determine the relationship between cyberchondria and parental well-being. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was secured from Saint Louis University Research Ethics Committee, with approval granted on February 20, 2025 (Protocol No. SLU-REC 2025-047). Participants were informed about the purpose of the study, assured of confidentiality, and given the option to withdraw at any point without consequence. No identifying information was collected, and responses were stored securely.

III. Results & Discussion

This section discusses the findings of the study on excessive online health searches, termed "*cyberchondria*" (Khazaal et al., 2020), by showing how demographic and contextual factors influence parents' digital health reliance, response to anxiety, and coping behaviors, which can provide direction for promoting safer and more balanced health information use. In the Filipino context, cultural values such as *hiya* (shame), *pakikisama* (avoiding conflict to maintain good relations), and a sense of overconfidence in the ability to interpret online health information contribute to how parents manage health concerns. These cultural values may lead some parents to prioritize online health sources and delay seeking professional care (Serrano & Alampay, 2020).

With these cultural and contextual influences, the findings reveal that among the 400 parents who responded, excessiveness and reassurance-seeking were the most prominent traits of cyberchondria, indicating that parents frequently search online for health information and seek answers that may provide instant reassurance. From the perspective of Filipino culture, these behaviors can be explained by cultural values that discourage Filipino parents from approaching healthcare professionals directly and instead encourage reliance on friends or relatives over professionals. On the other hand, *mistrust* had the lowest score, indicating a moderate degree of skepticism towards healthcare providers. However, it may still increase in response to conflicting or inconsistent online health information.

The scores for *thoughts, feelings,* and *behaviors* show distinct patterns of parental health anxiety. Thoughts indicate frequent preoccupation with the symptoms of their children, often fueled by their fear of hidden or severe illness, which drives parents to anticipate health problems. Consequently, *feelings* reflect moderate emotional responses, which are typically influenced by Filipino norms, particularly *hiya*, that discourage individuals from openly expressing distress (Pineda, 2024). This explains why anxiety is less intense emotionally than it is cognitively. *Behaviors* show that parents frequently engage in reassurance-seeking actions, such as repeated symptom checks and monitoring routines. These findings suggest that while emotional distress is present, Filipino parents manifest their anxiety most strongly through persistent worry and active caregiving behaviors rather than through emotional expression.

TABLE 1: Differences in the Degree of Effect of Cyberchondria across Demographic Groups

Variable	N	CSS-15 Score Mean	Interpretation	p-value
Age				
50 and over	97	5.63	MA	0.047
45-49	67	5.87	MA	
40-44	62	5.89	MA	
35-39	62	5.81	MA	
30-34	60	5.22	MA	
29 and below	62	6.09	MA	
Educational Attainment				
No formal Education/ Elementary/ High School Graduate	131	5.63	MA	0.243
College Undergraduate / Vocational/ Technical Certification	122	4.41	MA	
Bachelor's degree/Master's Degree /Doctoral/ Professional Degree	147	5.81	MA	
Socioeconomic Status				
a. Employment Status				0.201
Full Time	157	5.92	MA	
Part-time/ Self-employed	144	5.58	MA	
Unemployed / Retired/Others	99	5.75	MA	
b. Monthly Income				0.214
Less than Php 10,957	178	5.63	MA	
Php 10,958 – 21,914	118	5.96	MA	
PhP 21915 – and Above	104	5.74	MA	
Type of Family Structure				
Matriarchal	203	5.73	MA	0.921
Patriarchal	82	5.80	MA	
Egalitarian	115	5.77	MA	

Legend: 0 = Not Affected (NA); 1-6 = Moderately Affected (MA); 7-12 = Severely Affected (SA)

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In relation, parents aged 30–34 had the lowest cyberchondria scores, while those ≤29 and 35–39 scored highest due to first-time parenting anxiety and mid-life health concerns. Younger parents may feel pressure from social comparison on social media, while middle-income parents worry more, likely due to financial strain and a desire to avoid hospitalization. Meanwhile, family structure shaped cyberchondria through decision-making roles, expectations, and *pakikisama*, influencing how Filipino parents monitor and manage health concerns. These findings align with the Media Dependency Theory, suggesting that when parents face health uncertainties and lack alternative sources of information, they rely heavily on online platforms for both information and emotional support (Hasyim et al., 2021). In conclusion, parental cyberchondria involves excessive searching and reassurance-seeking to manage uncertainty, which may evolve into habitual checking and mistrust of professionals.

Table 1 Cyberchondria peaks among parents ≤ 29 years (CSS = 6.09), those with bachelor's degrees or higher (CSS = 5.81), full-time workers (CSS = 5.92), middle-income earners (Php 10,958–21,914; CSS = 5.96), and participants in patriarchal families (CSS = 5.80); whereas lower levels appear among parents 30-40, vocationally trained individuals, part-time workers, and very low or very high earners show lower cyberchondria. However, only age showed a significant difference in the Kruskal-Wallis test ($p = 0.047$), suggesting that individual anxiety and information-seeking tendencies outweigh demographic factors. Although post-hoc results revealed no significant pairwise difference, suggesting that, despite demographic trends, individual anxiety and information-seeking tendencies drive cyberchondria more than background factors.

Younger parents showed the highest levels of cognitive worry, emotional concern, and behavioral alertness, whereas older parents exhibited steadier responses. Lower-educated parents reported greater cognitive worry than degree holders but maintained similarly high vigilance. Unemployed or retired parents showed the greatest worry and alertness compared to full-time or part-time workers. Income patterns revealed that mid-income parents experienced the greatest cognitive worry, while higher-income parents showed the lowest, and the lowest-income group demonstrated the highest behavioral vigilance. Matriarchal households exhibited the greatest cognitive worry and vigilance, and patriarchal families showed the lowest. Overall, Media Dependency Theory

TABLE 2: LEVEL OF PARENTERAL WELL-BENING ALONG WITH THOUGHTS, FEELINGS, AND BEHAVIOR ACROSS DEMOGRAPHIC GROUPS

Variable	Thoughts		Feelings		Behavior	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Age						
50 and over	2.43	Q	2.18	S	2.53	Q
45-49	2.43	Q	2.19	S	2.39	S
40-44	2.31	S	2.12	S	2.60	Q
35-39	2.54	Q	2.24	S	2.59	Q
30-34	2.43	Q	2.29	S	2.73	Q
29 and below	2.54	Q	2.25	S	2.74	Q
Educational Attainment						
No formal Education/ Elementary/ High School Graduate	2.44	Q	2.20	S	2.58	Q
College Undergraduate / Vocational/ Technical Certification	2.41	Q	2.14	S	2.55	Q
Bachelor's degree/Master's Degree /Doctoral/ Professional Degree	2.31	S	1.35	AL	2.50	Q
Socioeconomic Status						
a. Employment Status						
Full Time	2.43	Q	2.22	S	2.42	Q
Part-time/ Self-employed	2.43	Q	2.03	S	2.58	Q
Unemployed / Retired/Others	2.60	Q	2.19	S	2.93	Q
b. Monthly Income						
Less than Php 10,957	2.43	Q	2.22	S	2.67	Q
Php 10,958 – 21,914	2.53	Q	2.25	S	2.65	Q
PhP 21,915 – and Above	2.32	S	2.08	S	2.43	Q
Type of Family Structure						
Matriarchal	2.47	Q	2.22	S	2.61	Q
Patriarchal	2.38	S	2.17	S	2,51	Q
Egalitarian	2.44	Q	2.20	S	2,58	Q

Legend: 0- 0.80 = Not at all (N); 0.81-1.60 = A little(AL); 1.61-2.40 = Sometimes (S); 2.41-3.20 = Quite a lot (Q); 3.21-4.00 = A lot (A)

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explains that younger, less-educated, unemployed, mid-income, and matriarchal parents lean more on digital health resources under uncertainty, intensifying cognitive, emotional, and behavioral anxiety.

TABLE 3: IMPACT OF PARENTAL HEALTH ANXIETY ON DAILY LIFE, RELATIONSHIPS, AND WELL-BEING OF PARENTS ACROSS DEMOGRAPHIC GROUPS

Variable	Score
Age	
50 and over	6
45-49	7
40-44	8
35-39	12
30-34	6
29 and below	8
Educational Attainment	
No formal Education/ Elementary/ High School Graduate	8
College Undergraduate / Vocational/ Technical Certification	7
Bachelor's degree/Master's Degree /Doctoral/ Professional Degree	6
Employment Status	
Full Time	9
Part-time/ Self-employed	8
Unemployed / Retired/Others	7
Monthly Income	
Less than Php 10,957	8
Php 10,958 – 21,914	11
PhP 21915 – and Above	9
Family Structure	
Matriarchal	8
Patriarchal	6
Egalitarian	11

Legend: Higher scores indicate a more severe Impact (1-18)

Parents aged 35–39 reported the most significant functional burden from health anxiety by proxy (12), while those aged 30–34 and 50+ were lowest (6), suggesting peak stress in the late 30s versus more resilience or less exposure at other ages (Avçin & Can, 2021; Rask et al., 2023). Low–to middle-income families (Php 10,958–21,914) had the highest impact (11), exceeding even the lowest-income group (8), highlighting the *"income gap"* stress among those who are too well-off for aid yet not financially secure (Chin et al., 2021; Ganson et al., 2022). Egalitarian households showed greater impairment (11) than patriarchal ones (6), suggesting that shared but uncoordinated decision-making amplifies cognitive and emotional load (Starčević & Berle, 2021; Rains & Turner, 2021).

TABLE 4: DIFFERENCES IN LEVEL OF PARENTERAL WELL-BEING ACROSS DEMOGRAPHIC GROUPS

One-Way ANOVA (Non-parametric) (Kruskal-Wallis)
Significant difference in the level of parental well-being among parents when grouped according to:

Variables	χ^2	df	p	ε^2
Age	3.11	5	0.683	0.00778
Educational Attainment	3.72	2	0.155	0.00931
Employment Status	4.82	2	0.090	0.0120
Monthly Income	6.05	2	0.048	0.0151
Family Structure	1.68	3	0.642	0.00419

Legend: p-value is > .0001. The significance level is 0.05

The Kruskal–Wallis test, used because HAPYS scores violated normality (Shapiro–Wilk $p < .001$), revealed that only monthly income significantly affected parental well-being ($\chi^2 = 6.05$, $df = 2$, $p = .048$, $\varepsilon^2 = .0151$). Since age, education, employment, and family dynamics did not yield significant HAPYS differences, we infer that excessive online health searching has a uniform impact on parental well-being across these groups. While there is a small but significant income effect, it suggests that greater financial stability may help parents cope better with digital health uncertainty. Post-hoc DSCF comparisons for income brackets revealed no pairwise differences (all $p > .05$), likely due to the limited economic range, broad income categories, and shared social support that mitigated financial stress.

TABLE 5: CORRELATION BETWEEN THE DEGREE OF CYBERCHONDRIA OR EXCESSIVE HEALTH SEARCHES AND PARENTAL WELL-BEING

Spearman's rho	P-value	Correlation
0.464	<.001	<.001

Legend: p-value is <.001. The significance level is 0.05. Spearman's rho is 0.464. Weak correlation: $|\rho| \approx 0.1$ to 0.3. Moderate correlation: $|\rho| \approx 0.4$ to 0.6. Strong correlation: $|\rho| >$ 0.7.

A moderate positive correlation ($\rho = 0.464$, $p < .001$) was found between cyberchondria and poorer parental well-being, indicating that frequent, compulsive health-related searches align with higher proxy health anxiety. In contrast, strong emotion regulation, adaptive strategies like mindfulness, and social support help buffer anxiety triggered by online health information. These results parallel earlier findings showing that cyberchondria heightens health anxiety (McMullan et al., 2019) and distress (Starčević et al., 2021), while coping skills and supportive networks offer protection (Lee & Cho, 2023; Smith & Johnson, 2022), collectively reinforcing the need to strengthen self-efficacy, promote adaptive coping, and guide parents in navigating online health information.

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Limitations

This study has several limitations. The sample was demographically skewed—over three-quarters of participants were mothers aged 40 and above, and most belonged to lower-income households with an annual income of below Php 21,914—limiting generalizability to younger parents, fathers, and higher-income groups. Data were collected from only ten barangays in Baguio City, which excludes rural, coastal, and highly urbanized settings where digital access, health-seeking behaviors, and support systems differ. Because the study relied on self-reported questionnaires, responses may have been influenced by recall errors and social desirability, especially in a Filipino context where *hiya* (shame) and *pakikisama* (maintaining social harmony) can shape how individuals present their well-being. The cross-sectional design further prevents establishing causal links between online health-seeking and parental well-being.

Sampling across age, education, and income was uneven, which may have limited the ability to detect subgroup differences. The study also failed to differentiate between reliable medical sources and unverified platforms, despite Filipino parents commonly navigating a mix of professional advice, community recommendations, and traditional practices, such as *halamang gamot* (home remedies). This may influence anxiety in ways not fully captured by Western-developed measures such as the CSS-15 and HAPYS. Additionally, voluntary participation may have excluded parents who were either highly anxious or less digitally engaged. Although only age and monthly income showed significant associations with cyberchondria and well-being, unmeasured factors—such as existing mental health conditions or reliance on barangay health workers—may have affected results. Despite these limitations, the study offers early insight into how online health-seeking intersects with parental well-being in this local context.

IV. Conclusion

The study concludes that cyberchondria diminishes parental well-being by increasing anxiety and reducing resilience. The patterns observed underscore that when parents repeatedly turn to online health information, they can become trapped in a self-reinforcing cycle of anxiety and reassurance-seeking that ultimately undermines their overall well-being. These effects were most evident under domains of Excessiveness and Reassurance-seeking, with thoughts and behaviors revealing high levels of anxiety. Rather than simply confirming that cyberchondria heightens distress, these results conclude that addressing digital health behaviors must be a proactive component of family-centered care.

Anchored in Media Dependency Theory, the findings may contribute to clinical, educational, familial, and policy-level interventions aimed at addressing the adverse effects of excessive online health searches. The study may serve as evidence for integrating digital health literacy models, promoting culturally adapted tools, and improving the fields of nursing to strengthen the provision of care. In conclusion, the study's findings compel individuals to shift from merely documenting the harms of cyberchondria toward implementing structured, multi-level strategies that restore balanced, health-affirming information-seeking among parents.

V. Recommendations

Nurses must first assess parents' engagement in online health searches and steer them to trusted, clear online health sources. Moreover, they should also introduce some easy-to-apply coping mechanisms, such as stopping deep breathing and limiting daily search time to an hour, in order to manage parental anxiety and avoid spending time rechecking the same things repeatedly. Nurse educators should integrate digital health literacy and the prevention of cyberchondria into the core curriculum for nursing students, preparing them for interactions with parents who are heavily reliant on the internet for medical information. Nursing administrators must formulate clinic policies that mandate the evaluation of online parental search habits, the dissemination of printed or electronic materials that mention reliable sources in Filipino or native languages, and the organization of staff training sessions to develop and maintain a coherent and supportive method of responding to cyberchondria. Interventions like mindfulness programs, support groups, or culturally tailored screening tools should be developed and tested by researchers to help reduce the incidence of cyberchondria in Filipino families.

Additionally, they should conduct in-depth studies to examine the long-term impact of online searching on family well-being. To make this possible, community programs from government institutions and local health units should train families on how to critically assess online health information, avoid misinformation, and practice healthy search habits. Instead of health workers merely performing their usual health education duties, they would do so through *"safe Googling"* sessions, especially created for parents in the barangays, while local authorities would direct efforts to control online health misinformation. For example, app developers could consult with nursing staff to develop parenting apps in Filipino that provide trustworthy information, thereby reducing their reliance on repeated online searches. All these actions at different levels can not only reduce but also support the well-being of digital-dependent parents, so the latter will not be affected by cyberchondria.

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CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

DISCLOSURE OF USE OF GENERATIVE AI

The authors utilized digital tools to enhance the quality and integrity of this manuscript. QuillBot and Grammarly were used exclusively for language refinement, including grammar correction and clarity enhancement. Additionally, Turnitin was employed to verify the originality of the content and manage similarity indices. These tools were not used to generate research concepts, analyze data, or interpret results.

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About the Author

AL-LAINE E. ALBA, MA. MICHAELA L. ALCANTARA, CHRISTINE DIANNE A. CASABAR, SOPHIA CZARINA T. CASTAÑEDA, JEHAN GWYNETH U. GABIOLA, JASMINE BAE H. GALABOC, RALPH ANGELO S. LUGOD, ADRIANO LORENZO L. MACAPUGAY, REEM ANGELA A. MANZANERO, AND JULIANNE THEODORE M. MARZAN, are fourth-year Bachelor of Science in Nursing students at Saint Louis University, Baguio City. As co-authors of this cross-sectional study focusing on parents, they employed the Media Dependency Theory to examine the influence of media on parental perceptions and behaviors. Their work highlights the impact of media exposure on family decision-making and emphasizes the importance of evidence-based education and policy development to support parental well-being.

RACHEL CACHO ALFONSO, MN, RN, is a graduate of Bachelor of Science in Nursing (Batch 1999) from Saint Louis University. She began her academic career at the SLU College of Nursing in 2004 and obtained her Master's degree in 2012. Currently, she has served as the Department Head Level III of the Nursing Department since 2024. She has been a dedicated Research Promoter since 2013, actively guiding and supporting nursing research initiatives.

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JOURNAL POLICIES AND ETHICS

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NEPJ strives to achieve the highest level of ethical scholarly practice in the science and art of nursing by ensuring a robust and transparent peer review. All manuscripts submitted to the journal undergo a double-blind peer review by field specialists with expertise in the relevant subject areas. This guarantees scientific, article quality, and nursing education and practice advancement articles are relevant and their significance is consequential.

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The manuscripts are evaluated based on the following criteria:

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- Clarity and coherence of the writing
- Appropriateness to the journal
- Ethical considerations
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Article Submission Guidelines

Only those manuscripts that report original research, which have not been published or not being assessed for publication elsewhere, are eligible for publication.

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Author Contributions

All authors contributed to the work and should be submitted in terms of their significance with respect to the following:

- *Conception and Design:* Engaging in the formative stages of the study and formulation of the study
- *Data Acquisition:* Participation in data collection and analysis
- *Data Analysis and Interpretation:* Contribution to the interpretation of results
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ARTICLE STRUCTURE

Author(s) should ensure the writing of their article in a systematic manner, with sections under specific headings, which should be clear and brief. Each section should start on a new line. Subsections are used to subdivide the materials and promote cross-referencing

Sections

1. Abstract

The author(s) should provide an informative structured abstract, following the introduction, aim(s), methods, results, and conclusions of the research. The author(s) need to make sure to limit the abstract to 200-300 words]. As much as possible, citation(s) should be avoided.

Keywords: *Keywords should be in alphabetical order up to 5 keywords only.*

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- The author(s) should provide a unique and succinct synopsis of this research.
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The conclusion should synthesize the research findings and explain the contribution of the study. Authors should not introduce any new material or arguments in this section.

7. Acknowledgements

Acknowledge the names of individuals and organizations who contributed to the research but did not meet the criteria of authorship.

8. Funding (If applicable)

The author(s) need to write the funding sources (if any). This may copy the funding statement of their funding agency, which was provided in their grant contract. However, the author(s) may use the following statement as a template:

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Every author needs to declare any possible conflict of interest regarding the work in question that could have influenced the outcome or its explanation. Conflicts of interest include but not limited to the following:

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List all references cited in the text following the APA 7th Edition format and ensure accurate and complete citations.

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The author(s) used [NAME TOOL/SERVICE] for [WHY]. Author(s) verified the publication and content and revised all the necessary aspects. Moreover, the author(s) of this publication take full responsibility for the content of this publication.

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NEPJ has a triannual publication following the schedule, April, August, December.

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For inquiries about submissions, the editorial process, or other issues pertaining to the Nurse Educators and Practitioners Journal (NEPJ), contact the editor's office as follows:

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PUBLICATION PROCESS

The Nurse Educators and Practitioners Journal (NEPJ) invites prospective ***authors to submit original and unpublished manuscripts that are not under consideration elsewhere***. Submissions may include theoretical, empirical, or practice-based studies that contribute to advancements in nursing education, clinical practice, and interdisciplinary collaboration.

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6. Editorial Decision

- Based on reviewer feedback, manuscripts may be Accepted, Revisions Required or Rejected.

  If the article is accepted for publication—whether in its final form or subject to revisions, the author(s) are required to pay a one-time Article Processing Charge (APC) prior to the issuance of the editorial review.

- Authors are notified of the decision within 6–8 weeks of submission.

7. Revision and Resubmission (if applicable)

- Authors receiving a "Revise" decision must address reviewer comments and resubmit within the given timeline.

8. Final Acceptance

- Upon acceptance, authors will be asked to complete a Copyright Agreement Form and Author Undertaking Form.

9. Publication

- Accepted articles are scheduled for publication in the next issue.
- Authors will receive an official notification once their article is published.
- Digital certificates of publication will be provided for all listed authors.

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