Student Learning Environment Through a Blended Modality in Teaching Selected Maternal and Child Health Concepts

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ABSTRACT
Education plays an important role in nursing, especially in helping students gain both knowledge and practical skills. According to Benner (2017), real-life clinical experiences are just as important as classroom learning because they help students apply what they know in actual healthcare settings. When the COVID-19 pandemic started, nursing education had to quickly adjust. Many schools began using online learning and new teaching methods. This led to the use of blended learning, which combines face-to-face training with online lessons. While this approach helps keep learning going during difficult times, some people still question if it is effective, especially for courses like Maternal and Child Health (MCH) that need hands-on practice.
To better understand how students feel about blended learning, a study was done with 108 nursing students taking the Maternal and Child Health Concepts course. They were interviewed to learn about their experiences, methods of learning, and expectations when using blended learning during the pandemic. This research aims to understand the benefits and challenges students face with this type of learning.
The results of the study are expected to give useful information that can help improve blended learning in nursing. By learning about students' struggles and needs, educators can create better ways to support them. This is important so that students can build the skills and knowledge they need, especially in MCH nursing, where giving accurate and evidence-based care is very important. The goal is to make sure nursing students are well-prepared, no matter what kind of learning environment they are in.

KEYWORDS: Blended Learning Modality, Maternal and Child Health Concepts, Nursing Students, Quantitative Research

INTRODUCTION

The educational level of a nurse significantly impacts their theoretical and practical capabilities, serving as the essential groundwork they should possess. According to Benner (2017), it is important to emphasize clinical learning in nursing school since didactic learning alone is insufficient to develop strong clinical competence, which highlights the need for clinical learning in nursing education. Insufficient foundational knowledge exposes nurses to the risk of making poor judgments and lacking the necessary tools to learn from practical experiences. A solid educational base enhances the acquisition of skills through hands-on experience. Additionally, Benner underscores the significance of mentored clinical learning situations, occurring in both classrooms and practice settings, as pivotal opportunities for nurses to apply and integrate theoretical knowledge with real-world events. Therefore, any abrupt shift in the educational modality has the potential to impact the learning process significantly. It is crucial to recognize the quality of education of a nurse because it has a significant influence on the ability to provide competent and compassionate care to patients.

The global pandemic has presented significant challenges to the nursing educational sector that require a thorough reconsideration of conventional teaching methods. Nevertheless, the widespread use of technology and electronic devices in daily life has encouraged educational institutions to explore innovative approaches to sustaining the educational system (Tria, 2020). The widespread use of technology led institutions to adopt innovative solutions, particularly online education, to ensure continued learning and protect the health of students and educators. It was emphasized that this shift has fundamentally transformed education, highlighting the importance of collaboration among stakeholders to maintain accessible, high-quality learning through digital tools and innovative practices.

According to Sáiz-Manzanares (2020), the rapid shift to online education brought about significant changes in teaching and learning through the use of advanced technologies like virtual platforms and hypermedia, along with innovative methods such as project- and problem-based learning. These tools have been especially impactful in health sciences, including nursing, by enhancing content accessibility, student engagement, and collaborative learning. Despite these benefits, there is a need for ongoing evaluation to ensure online education effectively prepares students for real-world healthcare challenges. As the world adapts to the challenges posed by the pandemic and embraces the development of COVID-19 immunizations, the relaxation of quarantine restrictions has ushered in an era of adjustments in the educational landscape (Ota et al., 2021). Blended learning, which combines online tools with traditional face-to-face instruction, emerged as a vital approach. This method addresses pandemic-related challenges while enhancing the learning experience through flexibility, accessibility, and increased collaboration. However, Ota et al. emphasize that successful implementation requires strategic planning, technological infrastructure, and faculty training. Ultimately, blended learning has the potential to reshape how future healthcare professionals are educated to meet evolving healthcare needs.

Blended courses utilize the benefits of both online learning and traditional face-to-face training, offering advantages for educators and students. While blended learning provides flexibility and convenience, its effectiveness remains a topic of ongoing discussion. According to Tong D et al (2022), understanding both the strengths and weaknesses of this approach is vital for assessing its impact on education. Blending learning methods combine elements from both traditional and digital education, resulting in a more tailored and engaging learning experience. Continuous research and evaluation are essential for refining blended learning practices and meeting the evolving demands of modern education.

Ensuring a high standard of nursing education demands a thorough examination of whether initiatives in blended learning genuinely enhance knowledge levels and whether its implementation as an alternative teaching method is guaranteed (Rahma et al., 2022). Furthermore, a comprehensive understanding of the consequences caused by this sudden shift in the educational system, particularly its widespread adoption in the post-COVID-19 era, is imperative. The profound implications of blended learning for student nurses necessitate a meticulous examination of its impact on their educational experience.

This research aims to evaluate the level of effectiveness of Blended Learning Modality in Student Learning Environment in Teaching Maternal and Child Health Concepts. This study endeavors to contribute to the ongoing enhancement of the blended learning educational approach, with a specific focus on refining students' skills and knowledge. Recognizing the pivotal role of educational tools in the healthcare field and their influence on student learning and adaptation to clinical settings, this study aims to advocate for changes that will enrich and elevate the future of blended learning in healthcare education.

STATEMENT OF THE PROBLEM

This study aims to evaluate the effectiveness of the Blended Learning Modality in the student learning environment for teaching Maternal and Child Health concepts among nursing students at St. Dominic College of Asia. Understanding the demographic profile of the respondents, including factors such as sex, age, socioeconomic status, and religion, is essential as these variables may influence the learning experience and outcomes. The research seeks to determine how effective blended learning is in enhancing students' engagement and comprehension of Maternal and Child Health topics. Furthermore, it examines whether the level of effectiveness differs significantly when students are grouped according to their demographic characteristics. By addressing these issues, the study intends to generate data that will inform educators about the impact of blended learning approaches, ultimately aiming to improve teaching strategies and better prepare nursing students for their clinical roles.

LITERATURE REVIEW

This chapter contains a variety of literature, which is presented in the following themes: Blended Learning and its Challenge in Knowledge and Skills, Educational Tools, and Maternal and Child Health Concepts.

Blended Learning and its Challenges in Knowledge and Skills

The integration of technical tools like virtual platforms and hypermedia resources, together with other innovative, methodological strategies like project-based or problem-based learning, have completely changed the teaching-learning process (Sáiz-Manzanares et al., 2020). The goal is to maximize efficiency in the classroom and resource use while maintaining sustainability. These methodological and technical resources have been used in many areas, particularly health sciences. Aguilar et al. (2021) point out that the sudden switch in the educational system in the Philippines imposed numerous issues on the effectiveness of remote studying and distance learning, which stresses the importance of four interrelated factors: infrastructure (networks and devices), online platforms (stability, interactions, and ability to improve), preparedness of teachers, students, and parents, and the home learning space.

The first interrelated factor is infrastructure. It is critical for the effective transition from onsite to online learning. Given the unique learner qualities and technological experiences of each participant, one significant challenge is how users may effectively utilize the technology and ensure participant's commitment (Kintu et al., 2017). It cannot be overstated how important it is to use a desktop or laptop together with a good connection rather than a mobile phone or a mini pad. Studies showed that those with less well-off backgrounds could not afford hardware, software, or internet connection, which affects the student's ability to learn. A study conducted by Tuladhar et al. (2020) revealed that students experienced technological issues with connectivity when pursuing online education. The projected monthly income, internet speed, possession of a personal computer, and prior use of academic websites all had an impact on attitudes in our study (Olum et al., 2020). Such challenges negatively influence the learner's ability to interact with peers and establish social connections.

The next interrelated factor is online platforms. These are also essential components of good online classrooms since they determine what information may be published, lessons, and assessments (Aguilar et al., 2021). A study found that combining traditional face-to-face and online instruction increases the efficacy of the teaching-learning process. Using online learning platforms complements traditional face-to-face teaching and significantly

improves the efficacy of instruction (Jetti al., 2023). In addition, a blended learning environment gives students a rewarding learning experience and enhances their comprehension of the course material.

Lastly is the preparedness of teachers, students, and parents and the home learning space. This sudden shift in the educational system has affected children, their families, and educators in various ways. Their readiness to transition to an online platform must be assured. This appears to be the root of the problem since, with the unexpected cancellation of in-person classes, there is no time for both professors and students to take a basic course in online learning. Students may be technologically proficient in certain ways, but they cannot always adapt that knowledge and experience to the online learning environment. Learning how to navigate E-learning has become a struggle for many faculty members. Finally, converting one's home environment into a favorable learning environment has been shown to be difficult in many ways. Therefore, schools and universities must step up and continue enhancing their online education due to the numerous problems that await students who have been pushed to use online learning platforms. As crucial collaborators in any learning process, learners' backgrounds and personality traits influence their capacity to learn successfully. For students learning in an online setting, prompt and helpful teacher feedback was essential to maintaining their interest in the subject (Topping et al., 2022). This results in disengagement with the teachers due to limited or no access to the internet, which causes feedback to be absent (Kintu et al., 2017).

Exposure to a real healthcare environment improves nursing undergraduates' communication, interpersonal, and critical thinking skills and promotes the growth of clinical competence and professionalism (Ilankoon et al., 2022). A case study by Abraham et al. (2021) conveys nursing students' experiences during online learning in terms of group communication, camaraderie, and curriculum understanding. The major findings were that students reported feeling challenged in their ability to communicate and connect with one another and with the faculty and that their ability to practice and build on practical clinical skills was limited due to the COVID-19 pandemic restrictions (Abraham et al., 2021). The nursing cohorts' ability to practice clinical skills was limited due to the impact of the COVID-19 pandemic. Students showed self-doubt in their skills because of the closure of nursing laboratory facilities by which the participants were peer-evaluated on their skills in the comfort of their homes and not guided by their clinical instructor during their clinical practice, highlighting the harm that the pandemic limitations have done to this nursing cohort's educational experience. Participants described that not having equipment like blood pressure cuffs and Foley catheterization trays at home inhibited their practice and skills learning (Aldridge, 2021). In the study by Aldridge et al. (2021), participants searched for alternative learning strategies by viewing videos, practicing at home with few or no materials, and engaging in virtual simulations. They understood that, in comparison to the actual hands-on skills lab, these techniques were inadequate, which is consistent with other studies. In blended learning, this capacity may also be impacted by the design of educational tools used.

Effects of Educational Tools

The limited clinical exposure challenges the student's improvement in skills. Nursing education involves simulation, mannequins, and other face-to-face interactive experiences. However, due to the limitations of face-to-face interactions, nursing students are provided with videos to continue practicing these skills (Ilankoon et al., 2022).

A study by Riley et al. (2021) showed that simulation was used as an online tool, which included a brief introduction to a patient scenario and real-time decision-making using a

patient mannequin in an obstetrics course. One of the simulation's primary objectives was to teach students how to use communication skills to support favorable maternal and newborn outcomes by using evidence-based treatments. Without endangering the mother and baby's lives, simulation enables students to train for an emergency clinical circumstance. Many virtual conference platforms allow for useful tools, such as electronic audience response systems, live recording sessions for repeated viewing, and student's ability to speak via their microphones and web cameras (Riley et al., 2021). To engage students, this infrastructure closely resembles the conventional face-to-face classroom, particularly when it comes to responding to student inquiries. It is essential to replicate the in-person environment while allowing for special opportunities only accessible in a remote setting and to create a collaborative, casual, and student-centered experience.

Within the clinical learning laboratory, faculty are challenged to identify teaching ways that increase students' technical skills. In comparison to traditional teaching methods, a step-by-step skill-specific video posted online allows students to learn these skills at the same level. Stone et al. (2020) explain how to create a custom-made digital movie to show the skill of wet-to-dry sterile dressing change and how to use it successfully. An internet video can be just as useful as a direct demonstration for learning a nursing skill such as sterile dressing change. This provides several opportunities for increasingly scarce nursing faculty with limited time to teach or refresh required content. Students could watch the online video before class to enable more time for supervised practice or as a review after a demonstration to boost their depth of comprehension. The online video allows students to watch the demonstration. This article addresses the creation and testing of a unique online video to teach first-year nursing students the skill of sterile wet-to-dry dressing change. The video has become an important resource for encouraging students to become more active participants in their own learning. Participants in another qualitative research, for instance, reported difficulties in using videos to acquire skills because of variations in the tools used and the order of the processes (Riley et al., 2021). In addition, instead of depending on videos from textbook publishers or internet sources, which frequently contain flaws like inadequate infection control techniques, nurse educators should think about creating their own videos. However, a study by Tuladhar et al. (2020) is contradictory, revealing that video education appears to be more effective at teaching practical skills.

Improvements in Knowledge and Skills in Maternal and Child Health Concepts

All students must experience learning through lectures at some time in their lives since it is a way to spread fundamental knowledge and, in some circumstances, it is the best method of instruction. However, this method prevents the learner from realizing that this is a crucial element. Lectures are one of the most often used teaching methods in nursing schools. Core knowledge and challenging ideas may be effectively conveyed through teaching strategies that stimulate participation and encourage self-directed learning, leading to greater learning.

Maternal-child care is one of the foundations of primary health care wherein the nurses' competency skills have been taught (Malgapo & Adjarani, 2021). This involves the promotion of preconception health and illness/injury prevention during pregnancy, delivery, the postpartum period, and the child-rearing period, which impacts the development of young children and family health. A study by Isangula, Pallangyo, and Ndirangu-Mugo (2023) revealed that increasing the hours and credits for communication skills and patient-centered care, including customer care courses in the curriculum, and developing a welcoming learning environment for clinical practice on improving interpersonal relationships are all suggestions for strengthening nurse-client relationships

through curriculum improvements. In addition, nursing education policymakers and curriculum designers must make sure that current curricula are modified to help nursing graduates gain the crucial interpersonal skills they will need to have successful therapeutic encounters with their patients.

There were chances to introduce new teaching methodologies and produce creative answers to the crisis since other clinical experiences and evaluation methods were required. (Ridgway et al., 2022). A study by Soriano, Dela Rosa, and Oducado (2020) showed results that increasing students' knowledge in the classroom can greatly contribute to students' performance in the clinical setting. Nursing schools that care about their student's performance must give them the necessary theoretical background before exposing them to clinical settings, and they must also create tactics that are suitable for the environment and particular student cohorts. In order to improve and promote performance in actual clinical placements, efforts should be made to guarantee that students are given high-quality theoretical education in nursing courses. In addition to expressing uncertainty and increased flexibility, educators also recognized the potential to develop maternal and child nursing education in the future and new methods to engage with students and clinicians (Ridgway et al., 2022).

METHODOLOGY

Research Design

The study utilized a quantitative descriptive research design to assess the level of effectiveness of the blended learning modality on the student learning environment in teaching selected Maternal and Child Health (MCH) concepts. This approach was appropriate for systematically collecting data through survey questionnaires and analyzing responses using statistical methods. The descriptive aspect aimed to provide a clear picture of how students perceive blended learning within the context of MCH education.

Sampling and Participants

Participants were second-year nursing students enrolled in the Maternal and Child Health Concepts course at St. Dominic College of Asia during the academic year 2022–2023. Using purposive sampling, 108 students were selected from a total population of 149, based on inclusion criteria such as enrollment status, course participation, and availability during the study. The sampling method ensured the inclusion of respondents with direct experience in blended learning.

Instrumentation

The researchers utilized a modified questionnaire adapted from Bouilheres et al. (2020), which included items from the Blended Course Student Survey (UCF and AASCU) and Biggs' Student Approaches to Learning survey. The instrument measured students' perceptions across areas such as online and face-to-face learning integration, flexibility, engagement, and interaction. It employed a 4-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree).

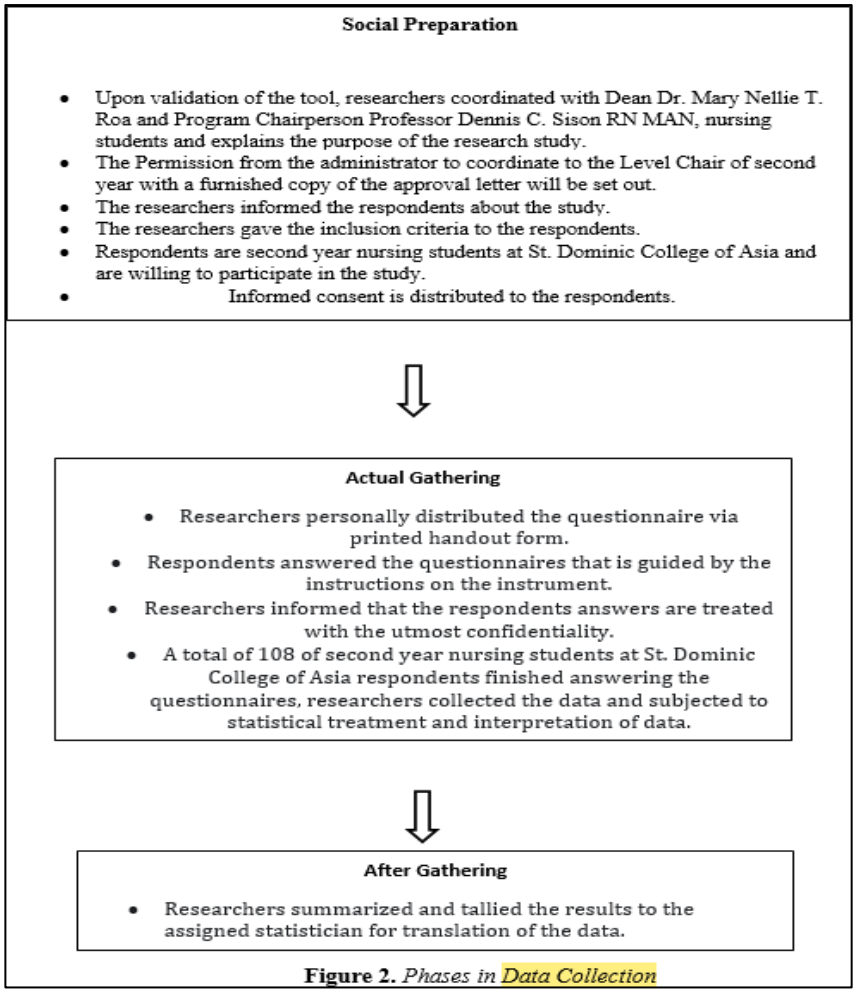

Figure 2. *Phases in Data Collection*

Data Collection

Data collection was conducted in two phases: social preparation and actual data gathering. During social preparation, researchers coordinated with institutional leaders including the Dean and Program Chair to secure approval. Informed consent was distributed and explained to the participants. During the actual data gathering, researchers personally distributed printed questionnaires to the selected respondents, guided them in answering, and ensured that all responses were treated with strict confidentiality. A total of 108 completed questionnaires were collected.

Ethical Considerations

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Data Analysis

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RESULTS

Table 1. Profile Characteristics of Nursing Students (N=108)

Profile Characteristics among Nursing Students	F	%
Age		
19 – 21	79	73.1
22 – 25	29	26.9
Total	**108**	**100.0**
Sex		
Male	20	18.5
Female	88	81.5
Total	**108**	**100.0**
Religion		
Catholic	86	79.6
Non – Catholic	22	20.4
Total	**108**	**100.0**
Annual Family Income		
113,000 pesos and below	37	34.3
114,000 – 161,000 pesos	13	12.0
162,000 – 267,000 pesos	22	20.4
268,000 – 313,000 pesos	10	9.3
314,000 – 460,000 pesos	11	10.2
461,000 – 866,000 pesos		
867,000 and above	15	13.9
Total	**108**	**100.0**

Legend:
f - Frequency
% - Percentage

Table 1 provides a comprehensive overview of the profile characteristics among student nurses in terms of age, sex, religion, and socio-economic status. This study allows an understanding of the demographic composition within the nursing profession.

According to the data gathered, a significant proportion of second-year nursing students enrolled in Maternal and Child Health Concepts fall within the age range of 19 to 21, constituting 73.1% of all student nurses. Conversely, 26.9% of the data reflects students aged between 22 and 25, indicating a smaller but notable portion of older students within the cohort.

Regarding gender distribution, the findings reveal a notable gender imbalance, with 81.5% of nursing students identifying as female, while only 18.5% identify as male. This highlights a clear predominance of female students among those enrolled in Maternal and Child Health Concepts.

Research in nursing education globally reveals a notable gender imbalance, with female students outnumbering their male counterparts. The article by Smith and Johnson (2022) aims to delve into the multifaceted reasons behind this disparity. Over time, nursing has become strongly associated with femininity and caregiving, leading to entrenched societal stereotypes. These stereotypes often dissuade men from pursuing nursing careers due to concerns about conforming to traditional gender roles and facing societal judgment. Consequently, nursing is predominantly viewed as a field for women, further discouraging male enrollment. Addressing this gender gap in nursing education requires a comprehensive approach, tackling societal perceptions, educational environments, career biases, and recruitment strategies. By fostering inclusivity, challenging stereotypes, and

promoting diverse role models, nursing education can create a more equitable environment for male students, enriching the profession with diverse perspectives and talents.

In terms of religious affiliation, most nursing students, accounting for 79.6% of the total, identify as Catholic. The remaining 20.4% represent various non-Catholic religious affiliations, including Iglesia ni Cristo, Born Again Christian, and Baptist, among others. This diversity in religious background underscores the heterogeneous nature of the student population and emphasizes the importance of fostering an inclusive and respectful learning environment that accommodates diverse religious beliefs and practices.

The Philippine Statistics Authority (2023) revealed that 78.8% reported Catholic as their religious affiliation, and the remaining 21.2% were non-Catholic. According to Harvard Divinity School (2023), Catholicism has been a foundation of Filipino identity since the colonial period, hence resulting to a majority of religious affiliation.

The socio-economic status of nursing students was categorized into seven options based on the Philippine Statistic Authority's data from 2018. The findings revealed that 34.3% of nursing students reported an annual family income of 113,000 pesos and below, making it the most prevalent income bracket among the respondents. Followed by 20.4% of nursing students who reported a family annual income ranging from 162,000 to 267,000 pesos. Additionally, 13.9% of nursing students reported an annual family income of 867,000 pesos and above, indicating a significant portion of students from higher-income households. Other reported income brackets included 12.0% for the range of 114,000 to 161,000 pesos, 10.2% for 314,000 to 460,000 pesos, and 9.3% for 268,000 to 313,000 pesos. These findings provide valuable insights into the socio-economic diversity among nursing students, highlighting the need for targeted support and resources to address the varying financial backgrounds within the student population.

Table 2. Level of level of effectiveness of Blended Learning Modality

Level of Effectiveness of Blended Learning	Mean	SD	Verbal Interpretation
1. Activities I completed in Blackboard prepared me for in-class learning.	2.99	0.4833	Effective
2. Online materials help me gain a clearer understanding of the subject.	3.02	0.5957	Effective
3. Understanding online materials helped me move the topics further in class.	2.98	0.6969	Effective
4. I feel more confident coming to the class with certain knowledge in advance by studying online.	2.96	0.7725	Effective
5. My online experiences helped me engage actively in my learning.	2.71	0.7241	Effective
6. With a certain understanding before coming to class, I'm more likely to ask questions in the class.	2.66	0.7509	Effective
7. My online learning experience using Blackboard were well-integrated with my face-to-face learning.	2.65	0.7650	Effective
8. Blackboard materials provided me with opportunities to apply or practice what I learned during in-class sessions.	2.80	0.7203	Effective
9. With online materials provided on Blackboard, I can study anytime, anywhere I can.	3.11	0.7148	Effective
10. With online materials provided on Blackboard, I can study at my own pace.	2.96	0.6401	Effective
11. With this Blended Learning approach, I interact more with other students inside and outside of classroom.	2.65	0.8572	Effective
12. With this Blended Learning approach, the quality of my interaction inside and outside of classroom with other students is much better.	2.64	0.6879	Effective
13. With this Blended Learning approach, the quality of my interaction inside and outside of classroom with other students is much better.	2.88	0.6371	Effective
14. It was clear about the expectation of lecturers in terms of students' participation and output from studying online.	2.76	0.6246	Effective
OVERALL MEAN	**2.84**	**0.4588**	**Effective**

Legend:
SD – Standard Deviation Mean:
1.00 - 1.75 Highly Ineffective
1.76 - 2.50 Ineffective
2.51 - 3.25 Effective
3.26 - 4.00 Highly Effective

DISCUSSIONS

This chapter presents the collected data's findings, analysis, and interpretation. Its findings were based on information gathered from questionnaires. The study's results were presented in a form and interpreted by the researchers.

Problem 1: What is the profile of the respondents in terms of age, sex, religion, and socioeconomic?

The Profile Characteristics among Nursing Students

Table 1 Profile Characteristics of Nursing Students (N=108)

Profile Characteristics among Nursing Students	f	%
Age		
19 - 21	79	73.1
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Total	**108**	**100.0**
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461,000 – 866,000 pesos		
867,000 and above	15	13.9
Total	**108**	**100.0**

Legend:
f - Frequency
% - Percentage

Table 1 shows the profile of the respondents when grouped according to age. Age is grouped into: (a) 19 to 21 years old and (b) 22 to 25 years old. Out of 108 respondents 79 or 73.1% were 19 to
21 years old and 29 or 26.9% were 22 to 25 years old. Therefore, most respondents were 19 to 21 years old.
According to Reverté-Villarroya (2021), the median age of the nursing students was 21 years and almost 85% are between 18 and 24 years old. Therefore, the majority of the respondents were aged 19 to 21 years old.

The profile of the respondents when grouped according to sex was also shown in Table 1. Sex is grouped into (a) male and (b) female. Out of 108 respondents, 20 or 18. 5% were male, and 88 or 81.5% were female. This revealed that most of the respondents were female.

Research in nursing education globally reveals a notable gender imbalance, with female students outnumbering their male counterparts. This article by Smith and Johnson (2022) aims to delve into the multifaceted reasons behind this disparity. Over time, nursing has become strongly associated with femininity and caregiving, leading to entrenched societal stereotypes. These stereotypes often dissuade men from pursuing nursing careers due to concerns about conforming to traditional gender roles and facing societal judgment. Consequently, nursing is predominantly viewed as a field for women, further discouraging male enrollment. Addressing this gender gap in nursing education requires a comprehensive approach, tackling societal perceptions, educational environments, career biases, and recruitment strategies. By fostering inclusivity, challenging stereotypes, and promoting diverse role models, nursing education can create a more equitable environment for male students, enriching the profession with diverse perspectives and talents.

The profile of the respondents according to religion was grouped into (a) Catholic and (b) non-Catholic. Out of 108 respondents, 86, or 79.6%, were Catholic, and 22, or 20.4%, were non-Catholic. Therefore, most of the respondents were Catholic.

The results from the Philippine Statistics Authority in 2023 revealed that 78.8% reported Catholicism as their religious affiliation, and the remaining 21.2% were non-Catholic. According to Harvard Divinity School (2023), Catholicism has been a foundation of Filipino identity since the colonial period, hence resulting in a majority of religious affiliations.

The profile of the respondents according to annual family income was grouped into (a) 113,000 Pesos and below (b) 114,000 – 161,000 Pesos (c) 162,000 – 267,000 Pesos (d) 268,000 –
313,000 Pesos (e) 314,000 – 460,000 Pesos (f) 461,000 – 866,000 Pesos (f) 867, 000 and above. Out
of 108 respondents 37 or 34.3% were 113, 000 Pesos below, 13 or 12.0% were 114,000 – 161,000
Pesos, 22 or 20.4% were 162,000 – 267,000 Pesos, 10 or 9.3% were 268,000 – 313,000 Pesos, 11 or
10.2% were 314,000 – 460,000 Pesos, no respondent answered 461,000 - 866,000 Pesos and 15 or 13.9% were 867,000 and above. This revealed that most respondents had an annual family income of 113,000 Pesos and below.

The socioeconomic status of nursing students was categorized into seven options based on the Philippine Statistics Authority's data from 2018. The findings revealed that 34.3% of nursing students reported an annual family income of 113,000 Pesos and below, making it the most prevalent income bracket among the respondents. Following by 20.4% of nursing students who reported a family annual income ranging from 162,000 to 267,000 Pesos. Additionally, 13.9% of nursing students reported an annual family income of 867,000 Pesos and above, indicating a significant portion of students from higher-income households. Other reported income brackets included 12.0% for the range of 114,000 to 161,000 Pesos, 10.2% for 314,000 to 460,000 Pesos, and 9.3% for 268,000 to 313,000 Pesos. These findings provide valuable insights into the socioeconomic diversity among nursing students, highlighting the need for targeted support and resources to address the varying financial backgrounds within the student population.

Problem 2: What is the level of effectiveness of Blended Learning Modality on Student Learning Environment in Teaching Maternal and Child Health Concepts?

Level of Effectiveness in Blended Learning	Mean	SD	Verbal Interpretation
15. Activities I completed in Blackboard prepared me for in-class learning.	2.99	0.4833	Effective
16. Online materials help me gain a clearer understanding of the subject.	3.02	0.5957	Effective
17. Understanding online materials helped me move the topics further in class.	2.98	0.6969	Effective
18. I feel more confident coming to the class with certain knowledge in advance by studying online.	2.96	0.7725	Effective
19. My online experiences helped me engage actively in my learning.	2.71	0.7241	Effective
20. With a certain understanding before coming to class, I'm more likely to ask questions in the class.	2.66	0.7509	Effective
21. My online learning experience using Blackboard were well-integrated with my face-to-face learning.	2.65	0.7650	Effective
22. Blackboard materials provided me with opportunities to apply or practice what I learned during in-class sessions.	2.80	0.7203	Effective
23. With online materials provided on Blackboard, I can study anytime, anywhere I can.	3.11	0.7148	Effective
24. With online materials provided on Blackboard, I can study at my own pace.	2.96	0.6401	Effective
25. With this Blended Learning approach, I interact more with other students inside and outside of classroom.	2.65	0.8572	Effective
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27. With this Blended Learning approach, the quality of my interaction inside and outside of classroom with other students is much better.	2.88	0.6371	Effective
28. It was clear about the expectation of lecturers in terms of students' participation and output from studying online.	2.76	0.6246	Effective
OVERALL MEAN	**2.84**	**0.4588**	**Effective**

Legend:
SD – Standard Deviation Mean:
1.00 - 1.75 Highly Ineffective
1.76 - 2.50 Ineffective
2.51 - 3.25 Effective
3.26 - 4.00 Highly Effective

Table 2 shows the level of effectiveness of Blended Learning in teaching selected Maternal and Child Health Concepts. The level of effectiveness of blended learning was determined based on the rating scale presented on the questionnaire. The mean was categorized as (a) 1.00 - 1.75, interpreted as highly ineffective; (b) 1.76 - 2.50, interpreted as ineffective; (c.) 2.51 - 3.25, interpreted as effective. And (d) 3.26 - 4.00 interpreted as highly effective.

The respondents perceived the effectiveness of Blended Learning in teaching selected Maternal and Child Health Concepts as evidenced by an overall mean score of 2.84 and a standard deviation of 0.45. Among the effects, the statement: *With online materials provided on Blackboard, I can study anytime, anywhere I can,* ranked the highest, as evidenced by the mean score of 3.11. This could be because having online materials provided can help the student to be flexible and accessible, and allows the student for a customized

learning experience.

On the other hand, the following ranked the lowest: *With the Blended Learning approach, the quality of my interaction inside and outside the classroom with other students is much better,* and *With the Blended Learning approach, I interact more with other students inside and outside the classroom* as evidenced by the mean score of 2.64 and 2.65 respectively.

This could be due to college students having fair treatment with their other co-students and an increased desire to succeed academically. As a result, more time is spent studying online rather than face-to-face. This supports the findings of (Dowell & Small, 2011), which indicate that students are incorporating online environments into their learning strategies, resulting in higher grades. Furthermore, the findings suggest that teachers can help students develop self-learning strategies by creating encouraging and resource-rich online environments.

Problem 3: Is there a significant difference in the level of effectiveness of Blended learning in Student Learning Environment in Teaching Selected Maternal and Child Health Concepts among nursing students when grouped according to sex, age, socioeconomic status, and religion?

Hypothesis: There is no significant difference in the level of effectiveness of Blended learning in Student Learning Environment in Teaching Selected Maternal and Child Health Concepts among nursing students when grouped according to age, socioeconomic status, and religion. There is a significant difference in the level of effectiveness of Blended learning in Student Learning Environment in Teaching Selected Maternal and Child Health Concepts among nursing students when grouped according to sex.

Table 3. *Grouped according to age*

ANOVA

Overall

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.801	3	.267	1.300	.278
Within Groups	22.595	110	.205		
Total	23.396	113			

Not Significant

The ANOVA results showed that there is no significant difference in the level of effectiveness of blended learning in student learning environment in teaching selected maternal and child health concepts among nursing students when grouped according to age since the overall p-value of .278 is higher than the 0.05 level of significance.

Table 4. *Grouped according to sex.*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Overall	Equal variances assumed	2.507	.116	-2.093	112	.039	-.22668	.10833	-.44132	-.01205
	Equal variances not assumed			-1.718	25.016	.098	-.22668	.13198	-.49849	.04513

Significant

The t-test results showed that there is a significant difference in the level of effectiveness of blended learning in student learning environment in teaching selected maternal and child health concepts among nursing students when grouped according to sex since the

overall p-value of .039 is lower than the 0.05 level of significance.

Table 5. *Grouped according to socioeconomic status.*

ANOVA

Overall

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.404	6	.234	1.138	.345
Within Groups	21.993	107	.206		
Total	23.396	113			

Not Significant

The ANOVA results showed that there is no significant difference in the level of effectiveness blended learning in student learning environment in teaching selected maternal and child health concepts among nursing students when grouped according to socioeconomic status since the overall p-value of .345 is higher than the 0.05 level of significance.

Table 6. *Grouped according to religion.*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Overall	Equal variances assumed	2.821	.096	-.302	112	.763	-.03124	.10341	-.23614	.17366
	Equal variances not assumed			-.397	65.335	.693	-.03124	.07870	-.18840	.12592

Not Significant

The t-test results showed that there is no significant difference in the level of effectiveness of blended learning in student learning environment in teaching selected maternal and child health concepts among nursing students when grouped according to socioeconomic status since the overall p-value of .763 is higher than the 0.05 level of significance.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that the majority of respondents were aged 19–21, predominantly female, identified as Catholic, and belonged to the socioeconomic bracket of PhP 113,000 to PhP 161,000. The overall mean score of 2.84 indicated that students had a high perception of the effectiveness of the blended learning modality in the teaching-learning environment of Maternal and Child Health (MCH) concepts. There was no significant difference in perceived effectiveness when respondents were grouped according to age, religion, and socioeconomic status. However, a significant difference was found when grouped according to sex. These results apply only to the studied population and context. The findings provide useful insights for improving blended learning strategies, particularly in delivering MCH concepts. They also highlight the need to consider gender-related factors when designing educational interventions. This study supports the potential of blended learning as an effective approach in nursing education, especially when guided by data-driven strategies and collaborative efforts between academic and clinical institutions.

Recommendation

From the findings of this study, the following were recommended:

1. **Nursing leaders** can utilize these findings to assess the status of collaboration between academic institutions and healthcare service providers in implementing blended learning approaches. By identifying strengths and weaknesses in existing partnerships, leaders can strategically plan initiatives to enhance the integration of blended learning modalities into nursing education curricula, ensuring optimal learning outcomes for students.
2. **Nursing students** stand to benefit from the insights provided by this study, as they are active participants in the teaching-learning process. Understanding the effectiveness of blended learning in Maternal and Child Health Concepts enables students to engage more actively with course materials and learning resources, thereby enhancing their overall educational experience. Additionally, collaboration between academic and service institutions in delivering blended learning programs can address barriers to access and ensure that students receive comprehensive exposure to key concepts and practical skills in maternal and child health care.
3. **Professional nursing organizations** can play a crucial role in advocating for the integration of blended learning modalities into nursing education and practice. By leveraging the findings of this study, these organizations can promote the importance of collaboration between academic and service partners in implementing effective blended learning strategies. This advocacy can lead to increased opportunities for continuing education and professional development in maternal and child health care, ultimately improving patient outcomes and advancing the nursing profession.
4. **For future researchers,** the findings of this study underscore the need for further investigation into the effectiveness of blended learning modalities in nursing education, particularly in the context of maternal and child health care. By building on the insights gained from this study, future research can explore innovative approaches to blended learning delivery, assess their impact on student learning outcomes, and identify best practices for integrating blended learning into nursing curricula. This ongoing research effort will contribute to the continual improvement of nursing education and practice, ultimately benefiting both students and patients in the maternal and child healthcare setting.

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