Research Article

Level of student attitudes towards artificial intelligence: Perspectives from nursing students

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Artificial intelligence in the healthcare field, especially in the academic community, is making its name and relevance. Hence, knowing how to navigate and deal with Artificial intelligence in the learning process as well as in the healthcare service is a must to keep abreast with the trends. This study aimed to understand nursing students' attitudes toward artificial intelligence from a tertiary educational institution in Olongapo City, Philippines. The investigators employed a descriptive-correlational research design with the help of an online survey as the primary data-gathering tool. Three hundred twenty-four nursing students, via purposive sampling, partook in the said online survey from September to October 2023. The study also used a standardized instrument to gather data on the attitude of student nurses toward Artificial intelligence. For the statistical analysis, the study employed both descriptive (frequency, percentage, and mean) and inferential statistics (Mann-Whitney U, Kruskal-Wallis H, Spearman rho) with the help of statistical software SPSS 23. Results from the demographics of the students mainly included females, first year in level, less than 20 years of age, with smartphones, and have a GPA between 85-89%, and have already used Artificial intelligence in their study or learning. At the same time, the respondents moderately agree with the survey's cognitive, affective, and behavioral aspects regarding the student nurses' attitudes toward Artificial intelligence. Significant differences also occurred among student nurses when the investigators grouped them according to the use of Artificial intelligence in study/ learning, year level, age bracket, and GPA. Finally, moderate to strong relationships occurred between the survey's cognitive, affective, and behavioral aspects. The study then provided pertinent recommendations at the end of the study, which focused on training, faculty development, and student advocacy towards Artificial intelligence learning and adoption.

Keywords: Academic use of AI, Artificial intelligence (AI), Healthcare field, Nursing students' attitude, Tertiary educational institution

1. Introduction

In healthcare, the amalgamation of artificial intelligence [AI] technologies can transform patient care by streamlining processes and enhancing clinical outcomes. Baigi et al. (2023) showed evidence that healthcare students had a positive attitude towards AI. As AI continues to infiltrate various aspects of the healthcare industry, especially in nursing, understanding student nurses' attitudes towards AI is crucial for ensuring these technologies' productive adoption and inclusion within healthcare settings. AI plays a pivotal role in profiling and predicting nursing research. The most used AI system in nursing is intelligent agents (Hwang

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et al., 2024). AI integration directly affects and further information is necessary on the knowledge and perception of students (Abuzaid et al., 2022). There was also a report from nurse managers that AI and robot nurses would still not replace nurses but would benefit nurses and lessen their workload (Ergin et al., 2022).

In the medical field, physicians and medical students also showed affirmative attitudes and willingness to know more about AI's application in healthcare (Al Zaabi et al., 2023; Gillissen et al., 2022; Moldt et al., 2023). There were also plans to implement AI in the curriculum to teach students about AI (Grunhut et al., 2021). Some professionals view AI as an assistive technology to reduce medical errors (Jackson et al., 2024). However, some still lack the need to gain knowledge and familiarity about AI and its practical application and other concerns (Ahmed et al., 2022; Boillat et al., 2022; Moldt et al., 2023). The responsible use of AI in nursing requires thoughtful consideration of its alignment with nursing care values (De Gagne, 2023).

Some papers say AI is commonly applied in clinical practice, especially in direct patient care (O'Connor et al., 2022). However, the concept of AI in nursing is still immature (Shang et al., 2021). Student nurses, as the future healthcare workforce, play a pivotal role in delivering patient care and implementing innovative technologies. In the previous paper by Qin et al. (2024), they found out that all students in their study had an idea about AI. Thus, Buchanan et al. (2021) discussed that curricular reform is urgently needed within nursing education and clinical practice settings to suit future nurses in the safe and efficient use of AI. Their attitudes toward AI can significantly impact the acceptance, utilization, and effectiveness of AI systems in clinical practice. For instance, Khlaif et al. (2025) found that nursing students' positive perceptions of AI—specifically trust and perceived usefulness—were strongly associated with their intention to adopt AI tools in clinical settings, highlighting the importance of exploring their beliefs, concerns, and readiness to embrace these technologies. Although most students agree that AI would play a vital role in the healthcare field (Alghamdi & Alashban, 2024), there still needs to be a greater understanding regarding the principles of AI across the nursing profession (Abuzaid et al., 2022). Syed and Al-Rawi (2023) discovered that students thought AI as a tool to help the healthcare profession. Their attitudes toward AI can significantly impact the acceptance, utilization, and effectiveness of AI systems in clinical practice. In a cross-sectional study, Labrague et al. (2023) found that student nurses' perceptions of AI's usefulness in nursing practice strongly influenced their intentions to adopt AI technology, with attitudes toward AI serving as a partial mediator in this relationship—highlighting the importance of addressing the specific beliefs, concerns, and readiness of future healthcare professionals.

This preliminary investigation seeks to delve into student nurses' attitudes toward AI, serving as a foundational study to uncover their initial impressions and viewpoints on the integration of AI in healthcare settings. A systematic review by Kimiafar et al. (2023) revealed that there needed to be a higher level of preparation, knowledge, and literacy among healthcare professionals when it comes to AI. Also, Jussupow et al. (2022) demonstrated that AI systems can be seen as a threat to the medical professional's identity. Nevertheless, Ng et al. (2021) still affirm the potential of AI in enhancing the quality of nursing care. By examining factors such as familiarity with AI, perceived benefits and challenges, ethical considerations, and overall acceptance of AI technologies, this research aims to shed light on the nuances of student nurses' attitudes toward AI and the potential implications for future practice.

Understanding student nurses' attitudes towards AI is essential for educators, healthcare institutions, and policymakers looking to integrate AI technologies into nursing education and practice effectively. Hussain (2020) said students demonstrated a positive attitude towards AI and its instructional role. Kimiafar et al. (2023) also emphasized the essential contribution of AI in the improvement of both professionals and students in the healthcare field. Some sentiments reflected students' excitement about AI and viewed it as a powerful and useful technology (Dai et al., 2020). By identifying potential barriers, concerns, and areas of enthusiasm among student nurses, stakeholders can tailor educational initiatives, training programs, and support mechanisms to enhance the acceptance and utilization of AI in nursing practice.

Some local studies tried to address the relevance of AI among students and in the healthcare field. The studies of Labrague et al., (2023), Cruz et al., (2024), Mariano et al., (2025) and Balay-odao et al., (2025 tried to explore the attitudes of nursing, and medical health science students as well as faculty about AI. On the other hand, Falcon et al. (2025) investigated the perception of the Filipino medical students' attitudes on AI integration in medical education. Moreover, Villarino (2025) also analyzed the integration of AI in the rural higher education institution in the Philippines. From these literature readings, one can already observe the diverse perspective and complex attributes of how AI plays an integrative role in learning among nursing and allied health professional courses. Literature also revealed moderate satisfaction and varying degrees of knowledge of opportunities when it comes to AI learning and understanding. With these premises, the investigation came to light in order to shed understanding on the nursing students' attitude towards AI from

a local higher education institution since, most reviewed studies came from prestigious and state universities in the country.

The primary objective of this study is to assess the level of student attitude towards AI among nursing students from a local higher education institution and, at the same time, determine any underlying variance in their perspectives and interrelationships at the end of this study.

Through this preliminary investigation, we aim to lay the groundwork for further research and initiatives to address student nurses' attitudes towards AI. By exploring their perspectives and insights, we can better equip the future nursing workforce to responsibly, ethically, and effectively use AI technologies to deliver high-quality patient care.

2. Methodology

2.1. Research Design

This study adopted a descriptive-correlational research design, using an online survey as the main data collection instrument. The primary objective was to delve into the intricate landscape of nursing students' attitudes toward Artificial Intelligence and unveil any potential variations in perceptions and relationships concerning AI among student nurses. The choice of a descriptive-correlational research design is well-suited to this investigation, as it not only allows for the comprehensive exploration of attitudes towards AI within the student nursing cohort but also enables the examination of potential correlations between various factors influencing these attitudes. In accordance with this thought, Devi et al. (2022) explained that descriptive-correlational research examines the association between or among two or more variables. By employing this methodological approach, the study can provide an understanding of how nursing students perceive and interact with AI, shedding light on the multifaceted dimensions of their attitudes toward this transformative technology.

2.2. Participants

To investigate the underlying variables of the study, 324 student nurses voluntarily participated in an online survey. These students came from a local higher education institution [HEI] in the Philippines, which offers a Bachelor of Science in Nursing course. These students were also chosen using purposive sampling due to the nature and relevance of the study. In addition, during the data gathering, the following this paper considered the following criteria for inclusion: a) a bona fide student nurse of the participating institution, b) currently enrolled as a regular student nurse, c) have a gadget and internet connection, and d) willing to participate voluntarily. On the other hand, those that exclude the participants in the study include: a) a student nurse from another institution, b) not enrolled and an irregular student nurse, c) no gadget or internet connection, and d) not interested in participating in the study. The data gathering period was during the first semester of the academic year of 2023-2024, specifically, September – October 2023. Table 1 presents a comprehensive overview of the demographic characteristics of the student population surveyed.

Table 1 indicates that there are 324 nursing students, with a significant majority being female (73.1%) compared to male students (26.9%). In terms of year-level distribution, first-year students constitute the largest group at 47.5%, followed by second-year (27.8%), third-year (21.3%), and fourth-year students (3.4%). Regarding age, the majority of students are less than 20 years old (75.9%), with smaller percentages falling into the 21-25 years old (19.4%), 26-30 years old (2.2%), and 31 years old and above (2.5%) categories. The availability of gadgets at home shows that most students have smartphones or tablets (74.1%) compared to laptops or PCs (25.9%). Regarding previous academic performance, the distribution of GPAs of the prior semester/year is spread across different ranges, with the highest percentage falling in the 85-89% category (50.3%). A minority of students have tried using AI in their study and learning practices, with 16.4% answering "Yes" and 83.6% responding "No."

2.3. Instrumentation

The paper adopted the research questionnaire of Suh and Ahn (2022), wherein the instrument was developed and validated the scale measuring the attitudes of students toward Artificial Intelligence, also known as Student Attitudes toward AI [SATAI]. The final scale contained three primary variables, namely, behavioral, cognitive, and affective components, with 26 items. The construct reliability of the scale ranges from .907 to .944.

Moreover, before the data-gathering process, the instrument underwent a pilot test since it was not locally created. After the pilot test, the test result underwent Cronbach's analysis for reliability. The overall reliability coefficient was .989, which is highly reliable based on Taber's (2018) indication.

Table 1
Demographic Characteristics of the Nursing Students

Profile	Frequency	Percentage
Sex		
Male	87	26.9
Female	237	73.1
Year Level		
First Year	154	47.5
Second Year	90	27.8
Third Year	69	21.3
Fourth Year	11	3.4
Age		
Less than 20 years old	246	75.9
21 – 25 years old	63	19.4
26 – 30 years old	7	2.2
31 years old and above	8	2.5
Available Gadgets at Home		
Laptop/ PC	84	25.9
Smartphone/ Tablet	240	74.1
GPA from Previous Semester/ Year		
75 – 79 %	5	1.5
80 – 84 %	109	33.6
85 – 89 %	163	50.3
90 – 94 %	47	14.5
Have you tried AI in your Study/Learning		
Yes	53	16.4
No	271	83.6
Total	324	100

2.4. Statistical Analysis

The gathered data underwent tabulation and statistical analysis using MS Excel and Statistical Package for the Social Sciences 23. Prior to the actual computation, the data underwent a normality test using the Shapiro-Wilk test and was found to be non-normal. Thus, the computation employed descriptive statistics (i.e., frequency, percentage, and mean) and non-parametric inferential statistics (i.e., Mann Whitney, Kruskal Wallis, and Spearman rho) to analyze the data. These statistical tools gave the paper a better perspective of what comprised the data and how it answered the research questions mentioned in the earlier part of the paper.

In addition, this paper employed a five (5) point Likert scale response for the student nurses to gauge their perceived attitudes toward AI. The scale assigned the following scores and interpretations: (5) strongly agree, (4) agree, (3) moderately agree, (2) disagree, and (1) strongly disagree.

2.5. Ethical Consideration

Prior to any actual data gathering, the online survey was only available to those who were willing to participate. Therefore, the distributed survey link was only answered if the students were deemed to participate voluntarily. Non-participation was not an issue for the study. There were no students who were harmed or threatened by any means during the data gathering. The study also employed strict data privacy and confidentiality. They were also informed prior to the online survey wherein, there is an option in the survey that if they do not feel to join the survey, they are free of doing so without any consequences.

3. Results

This paper analyzed nursing students' attitudes towards Artificial Intelligence. At the same time, it intended to address the variances and relationships that may exist among the variables involved. The following tables revealed the results of the statistical analysis. Table 2 displays the distribution of nursing students' attitudes specifically related to the cognitive aspect.

Table 2
Level of Nursing Students' Attitude in Terms of Cognitive Aspect

Statement	Mean	Interpretation
1) It is important to learn about AI in school.	3.52	High
2) AI class is important.	3.09	Moderately High
3) Lessons about AI should be taught in school.	3.23	Moderately High
4) Every student should learn about AI in school.	3.30	Moderately High
Overall Mean	3.28	Moderately High

Note. Legend: 5.00-4.20=Very High; 4.19-3.40=High; 3.39-2.60=Moderately High; 2.59-1.80=Low; 1.79-1.00=Very Low.

Table 2 provides insights into the nursing students' attitudes regarding the cognitive aspect of AI education. The mean scores indicate that students not only hold positive views towards AI education but also have a strong belief in its potential. The highest mean score of 3.52 suggests that students have a high level of cognitive ability in learning about AI in school. Following this, statements 3 and 4 also receive moderately high mean scores of 3.23 and 3.30, respectively, indicating that students believe lessons about AI should be integrated into the school curriculum and that every student should learn about AI. The overall mean score of 3.28 suggests that, on average, students have a moderately high level of cognitive aspect in terms of AI education, reflecting a positive attitude towards incorporating AI into their learning experiences. Table 3 displays the nursing students' attitude levels as they relate to the affective (emotional) aspect of learning.

Table 3
Level of Nursing Students' Attitude in Terms of Affective Aspect

Statement	Mean	Interpretation
1) AI is essential for developing society.	3.40	High
2) I think AI makes people's lives more convenient.	3.67	High
3) AI is related to my life.	2.84	Moderately High
4) I will use AI to solve problems in daily life.	2.38	Low
5) AI helps me solve problems in real life.	2.99	Moderately High
6) I will need AI in my life in the future.	2.65	Moderately High
7) AI is necessary for everyone.	2.80	Moderately High
8) AI produces more good than bad.	2.96	Moderately High
9) AI is worth studying.	3.28	Moderately High
10) I think that most jobs in the future will require knowledge related to AI.	3.26	Moderately High
Overall Mean	3.02	Moderately High

Note. Legend: 5.00-4.20=Very High; 4.19-3.40=High; 3.39-2.60=Moderately High; 2.59-1.80=Low; 1.79-1.00=Very Low.

Table 3 offers insights into nursing students' attitudes regarding the affective aspect of AI. The mean scores indicate a generally positive outlook among students towards AI and its implications. The highest mean score of 3.67 for statement 2 reflects a high level of attitude that AI makes people's lives more convenient. Additionally, statements 1, 9, and 10 also receive moderate level of mean scores, suggesting that students see the importance of AI for societal development, consider AI worth studying, and believe that future jobs will require AI-related knowledge. At the same time, statements 6, 7, and 8 received moderate level of mean scores, indicating a more reserved stance towards AI's necessity and personal use in daily life. Only statement 4 generated the lowest mean with a score of 2.38, which means a low degree of affective aspect in terms of AI. The overall mean score of 3.02 indicates a moderate agreement towards the affective aspects of AI, showcasing a nuanced perspective among students on the role and impact of AI in various domains. Table 4 presents the level of nursing students' attitudes in terms of the behavioral aspect.

Table 4 provides insights into the nursing students' attitudes regarding the behavioral aspect of AI. The mean scores suggest a mixed perspective among students towards engaging with AI-related activities. While statements 4, 5, 6, 8, 9, 10, 11, and 12 receive moderately high mean scores, indicating a positive inclination towards learning, using, and contributing to AI-related developments, there is room for growth. Statements 1, 2, and 3 exhibit lower mean scores, suggesting a lack of interest in pursuing a career in the field of AI or actively participating in AI-related clubs. However, statements 7 and 11 reflect a moderate interest in AI-related content and a slight inclination towards dedicating more class time to AI in school. The overall mean

Table 4
Level of Nursing Students' Attitude in Terms of Behavioral Aspect

Statement	Mean	Interpretation
1) I want to work in the field of AI.	2.40	Low
2) I will choose a job in the field of AI.	2.26	Low
3) I would participate in a club related to AI if there were one.	2.36	Low
4) I like using objects related to AI.	2.75	Moderately High
5) It is fun to learn about AI.	3.15	Moderately High
6) I want to continue learning about AI.	3.04	Moderately High
7) I am interested in AI-related TV programs or online videos.	2.91	Moderately High
8) I want to make something that makes human life more convenient through AI.	3.06	Moderately High
9) I am interested in the development of AI.	3.09	Moderately High
10) It is interesting to use AI.	3.26	Moderately High
11) I think that there should be more class time devoted to AI in school.	2.67	Moderately High
12) I think I can handle AI well.	2.99	Moderately High
Overall Mean	2.83	Moderately High

Note. Legend: 5.00-4.20=Very High; 4.19-3.40=High; 3.39-2.60=Moderately High; 2.59-1.80=Low; 1.79-1.00=Very Low.

score of 2.83 indicates a moderately high behavioral aspect of AI, highlighting a varied level of interest and engagement among students regarding practical involvement with AI technologies and concepts. Table 5 displays the differences in nursing students' attitudes toward artificial intelligence based on their sex.

Table 5
Variances in the Nursing Students' Attitude towards AI when Grouped According to Sex at Birth

Variable / Sex	N	Mean Rank	z	U-value	p
Cognitive					
Female	237	159.05	−1.105	9492.500	.269
Male	87	171.89			
Affective					
Female	237	159.91	−0.822	9696.000	.411
Male	87	169.55			
Behavioral					
Female	237	158.35	−1.318	9352.500	.187
Male	87	173.81			

In examining the variances in nursing students' attitudes towards artificial intelligence (AI) when categorized by sex at birth, Table 5 displays the result of the Mann Whitney U test. The results showed no significant differences in attitudes towards AI based on sex at birth across the cognitive (U = 9492.500, p = .269), affective (U = 9696.000, p = .411), and behavioral (U = 9352.500, p = .187) variables. Despite some variations in mean ranks, the findings suggest that nursing students' attitudes towards AI do not significantly differ between female and male nursing students at birth, indicating a similar perception of AI regardless of sex at birth among the participants. Table 6 presents the variances in nursing students' attitudes toward AI when grouped according to the availability of gadgets at home.

Table 6
Variances in the Nursing Students' Attitude towards AI when Grouped According to Available Gadgets at Home

Variable / Gadgets	N	Mean Rank	z	U-value	p
Cognitive					
Laptop/ PC	240	160.63	−0.614	9631.000	.539
Smartphone/ Tablet	84	167.85			
Affective					
Laptop/ PC	240	162.41	−0.029	10058.500	.977
Smartphone/ Tablet	84	162.76			
Behavioral					
Laptop/ PC	240	160.93	−0.512	9702.500	.609
Smartphone/ Tablet	84	166.99			

In the computation for the differences in nursing students' attitudes towards artificial intelligence (AI) based on the devices available at home, Table 6 shows the results of the Mann-Whitney U tests. The results indicated that there are no statistically significant differences between the groups in the cognitive (U = 9631.000, p = .539), affective (U = 10058.500, p = .977), and behavioral (U = 9702.500, p = .609) variables. Despite slight variations in the mean ranks, it is concluded that the type of device available at home does not significantly influence nursing students' attitudes toward artificial intelligence. Table 7 presents the variances in nursing students' attitudes toward AI when grouped according to their use of AI in learning or study.

Table 7
Variances in the Nursing Students' Attitude towards AI when Grouped According to Usage of AI in Learning or Study

Variable / Tried AI	N	Mean Rank	z	U-value	p
Cognitive					
No	53	143.40	−1.641	6169.000	.101
Yes	271	166.24			
Affective					
No	53	127.53	−2.976	5328.000	.003
Yes	271	169.34			
Behavioral					
No	53	143.08	−1.653	6152.000	.098
Yes	271	166.30			

Table 7 presents the outcomes of the Mann-Whitney U tests for the test of variances in the nursing students' attitude towards AI when grouped according to usage of AI in learning or study. The results revealed that there were no statistically significant differences between the groups for the cognitive variable (U = 6169.000, p = .101) and the behavioral variable (U = 6152.000, p = .098). However, for the affective variable, a significant difference was found (U = 5328.000, p = .003), indicating that nursing students who have tried AI in learning or study exhibit a significantly different affective attitude towards AI compared to those who have not. This result suggests that firsthand experience with AI in educational settings may influence nursing students' emotional responses towards AI. Table 8 presents the variances in nursing students' attitudes toward AI when grouped according to their year level.

Table 8
Variances in the Nursing Students' Attitude towards AI when Grouped According to Year Level

Variable / Year Level	N	Mean Rank	H-test	p
Cognitive Components				
First Year	154	170.06	11.276	.010
Second Year	90	136.11		
Third Year	69	173.91		
Fourth Year	11	201.05		
Affective Components				
First Year	154	160.77	5.795	.122
Second Year	90	148.31		
Third Year	69	183.94		
Fourth Year	11	168.41		
Behavioral Components				
First Year	154	155.07	12.280	.006
Second Year	90	147.84		
Third Year	69	190.57		
Fourth Year	11	210.45		

Note. df = 3.

In the analysis of the nursing students' attitudes towards artificial intelligence (AI) grouped by year level, Table 8 displays the results of the Kruskal Wallis H test for cognitive, affective, and behavioral components. The computation observed significant differences for the cognitive components ($H(3)$ = 11.276, p = .010) and the behavioral components ($H(3)$ = 12.280, p = .006) across the various year levels. Specifically, students in different year levels showed varying attitudes towards the cognitive and behavioral aspects of AI. Post hoc

analysis in the cognitive component of the nursing students further determined that the second-year nursing students had significantly lower mean ranks compared to first-year and fourth-year nursing students. Additionally, the second-year nursing students also yielded significantly lower mean rank values as compared to the third- and fourth-year level nursing students. However, no significant differences were found for the affective components ($H(3) = 5.795$, $p = .122$) among the different year levels. These findings suggest that there may be a developmental progression in nursing students' cognitive and behavioral attitudes towards AI as they advance through their academic years, while affective attitudes remain relatively consistent across different year levels. Table 9 presents the variances in nursing students' attitudes toward AI when grouped according to age.

Table 10
Variances in the Nursing Students' Attitude towards AI when Grouped According to GPA from Previous Semester or Year

Variable / GPA	N	Mean Rank	H-test	p
Cognitive Components				
75 – 79%	5	100.90	10.988	.012
80 – 84%	109	158.11		
85 – 89%	163	156.42		
90 – 94%	47	200.32		
Affective Components				
75 – 79%	5	103.70	2.722	.437
80 – 84%	109	159.48		
85 – 89%	163	163.22		
90 – 94%	47	173.27		
Behavioral Components				
75 – 79%	5	139.80	0.933	.817
80 – 84%	109	164.12		
85 – 89%	163	159.51		
90 – 94%	47	171.54		

Note. df = 3.

In the analysis of nursing students' attitudes towards artificial intelligence (AI) grouped by GPA from the previous semester or year, Table 10 presents the results of the Kruskal-Wallis H test. There was a significant difference observed for the cognitive components ($H(3) = 10.988$, $p = .012$) among the GPA groups, indicating that attitudes towards AI in terms of cognition vary significantly based on previous academic performance. Post hoc analysis revealed that nursing students with a GPA of 90-94% have a significantly higher mean rank score as compared to the other nursing students' GPA scores. However, no significant differences were found for the affective components ($H(3) = 2.722$, $p = .437$) and behavioral components ($H(3) = 0.933$, $p = .817$) across the different GPA ranges. These results suggest that nursing students' cognitive attitudes towards AI may be influenced by their academic achievement in the previous semester or year, while affective and behavioral attitudes towards AI may not show significant variations based on GPA. Table 11 presents the correlation matrix showing the relationships among the subcomponents of nursing students' attitudes toward artificial intelligence.

Table 11
Correlation Matrix between the Nursing Students' Attitude towards Artificial Intelligence

Variables	1	2	3
1. Cognitive Components	1	.609*	.531*
2. Affective Components		1	.711*
3. Behavioral Components			1

Note: *$p < .01$

Table 11 presents the correlation matrix, depicting the relationships among nursing students' attitudes towards artificial intelligence using Spearman's rho. The results reveal a high degree of interdependence among the cognitive, affective, and behavioral components. The cognitive components exhibit a significant positive correlation with both the affective components ($r = 0.609$, $p < .01$) and the behavioral components ($r = 0.531$, $p < .01$). Similarly, the affective components demonstrate a robust positive correlation with both the cognitive components ($r = 0.609$, $p = .000$) and the behavioral components ($r = 0.711$, $p < .01$). The

behavioral components also show a strong positive correlation with the cognitive components ($r = 0.531$, $p < .01$) and the affective components ($r = 0.711$, $p < .01$). These findings highlight the high degree of interdependence among nursing students' attitudes towards AI, implying a unified perspective that shapes their overall stance towards artificial intelligence.

4. Discussion

The primary objective of this study is to analyze the attitude of nursing students towards AI. By understanding the general perspectives of the respondents, this research can provide essential recommendations for the institution to regulate the use of AI in the students' learning experience. This idea will further enhance their knowledge of better patient care in the future.

In the study, the research found that from the three main variables of the student attitude towards AI, a moderate degree was found among them. One can perceive that this moderate level for the cognitive, affective, and behavioral components has something to do with minimal awareness that the nursing students were already using AI in their learning process in the school. At the same time, the knowledge that they gained through online platforms never mentioned that AI was the framework for it. Thus, in the study of Baigi et al. (2023), students needed more knowledge of AI. This finding is definitely parallel to what this study found. However, Hamedani et al. (2023) revealed a different result wherein the students' attitude toward AI was favourable. In contrast, depending on the setup and capabilities of the institution, such a finding is also plausible.

Additionally, Hamedani et al. (2023) found average student acceptance of AI. This finding may also favor the results of the current study, especially in terms of affective components. However, Hussain (2020) also demonstrated that there was a positive attitude of university students towards AI and its instructional role. This contrasting finding again falls under the notion regarding how students foresee the use of AI in their learning experience in their classroom settings. That is why another study by Baigi et al. (2023) mentioned that students had limited skills in working with AI. The availability and possibility of using AI in learning is a factor in order for nursing students to develop a keen sense of using AI in their learning process.

In terms of inferential analysis, the current study found some interesting results that future researchers may consider noteworthy. When the analysis grouped the nursing students according to their sex at birth and availability of gadgets at home, the computation using Analysis of Variance did not yield a significant result in order for the study to reject its null hypothesis. However, in the paper by Gillissen et al. (2022), they showed that male undergraduate students had a more positive view of AI in their study. Another study by Dai et al. (2020) also showed that male students reported higher confidence and readiness than their female counterparts.

However, when the study grouped the nursing students according to the Usage of AI in learning or study, there were significant differences in the case of affective components and behavioral components. However, Ajlouni et al. (2023) found that most participants confirmed a moderate affective, high behavioural, and cognitive component of attitudes towards using a particular AI tool. Nevertheless, many apps already use AI capabilities and are currently implemented on common devices such as smartphones.

Moreover, when the study grouped the nursing students according to their year level, significant differences were seen in terms of cognitive and behavioral components. In the study of Wang et al. (2022), they demonstrated in their test of difference that learners perceived higher social and cognitive presences when the students used AI and achieved higher learning outcomes. For the age group, the study also established a significant difference in the behavioral component of the survey, and lastly, for the GPA from the previous year computation, the computation found a significant difference in terms of the cognitive component of the study. Most student respondents also agreed that AI-related topics should be included in undergraduate education (Yuzbasioglu, 2020).

Lastly, in terms of interrelationships, all three variables of the study had moderate to strong positive relationships with one another, as observed from the result of the Spearman rho computation. Hamedani et al. (2023) revealed that the association between acceptance of AI and level of education, as well as participation in an AI training course, and their department. However, Dai et al. (2020) demonstrated that the enhancement of AI literacy did not influence the students' AI readiness. From these findings of the gathered data of the study, it can generate a general perspective of how nursing students perceived AI and its essential contribution towards their learning experience. These findings can then be used as a source of vital information necessary for AI regulation in the institution and to serve as a guideline in policy making and other school or institutional guidelines for the proper and ethical use of AI in education.

5. Conclusion

Reflecting on the outcomes of the present research endeavor, several key generalizations have emerged. Firstly, the demographic profile of the respondents predominantly comprised females in their initial year of study, aged below 20, possessing smartphones or tablets, maintaining a grade point average falling within the 85-89% range, and having yet to engage with Artificial Intelligence in their academic pursuits. Secondly, the nursing students exhibited a moderate level of perceived attitudes encompassing cognitive, affective, and behavioral dimensions towards AI. Moreover, notable statistical variances were discerned in the cognitive, affective, and behavioral facets of the nursing students' attitudes towards AI. Lastly, significant associations were uncovered between the cognitive, affective, and behavioral dimensions of student attitudes towards AI, underscoring the interconnected nature of these aspects within the realm of nursing education. These findings collectively provide valuable insights into the perceptions and attitudes of nursing students towards AI, shedding light on the nuances and complexities that characterize their cognitive, affective, and behavioral responses to this emerging technology.

6. Recommendations

Based on the findings and conclusions of the study, the researchers recommend several strategies to enhance nursing students' understanding and acceptance of artificial intelligence (AI) in healthcare. Firstly, it is essential to develop specialized education and training programs tailored specifically for nursing students. These programs should aim to deepen their knowledge of AI by emphasizing its practical applications in healthcare, while also addressing its benefits, limitations, and ethical considerations. Complementing this, the organization of interactive workshops and simulations can provide students with hands-on experience, thereby fostering a more positive emotional response toward AI and building confidence in its use within clinical settings.

In addition, promoting critical thinking and reflective practices is vital in shaping students' attitudes toward AI. Encouraging open discussions, debates, and reflective exercises can help students explore and evaluate their own beliefs, biases, and concerns, thus strengthening both the cognitive and affective dimensions of their understanding. To support the development of a positive behavioral component, it is also recommended to facilitate mentorship opportunities with healthcare professionals who actively use AI in clinical practice. Observing and learning from these mentors can provide students with practical insights and strategies for effectively integrating AI into their future professional roles.

Finally, the implementation of regular assessments and feedback mechanisms is crucial to monitor and understand students' evolving attitudes toward AI. By tracking changes across cognitive, affective, and behavioral domains, educators can identify emerging challenges and misconceptions, allowing for timely and targeted interventions to support students' ongoing development in this area.

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