RESEARCH ARTICLE

Learning satisfaction on the use of chatgpt among nursing students in selected higher education institutions in Sulu

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*ABSTRACT***.** This study determined the levels of learning satisfaction of nursing students in selected higher education institutions (HEIs) in Sulu with the use of Chat Generative Pre-Trained Transformer (ChatGPT) during the academic year 2023-2024. Quota sampling (n=100) was used to sample the students from five different HEIs in Sulu each of them had equal 20 participants selected. An adapted five-point Likert-scale was used to elicit the responses from the participants. Findings indicated that the nursing students were highly satisfied on the usefulness and ease of use of ChatGPT in learning while moderately satisfied on its credibility, social influence, and privacy and security. Further analysis was conducted on the differences of satisfaction level of nursing students based on their demographic profile (*i.e.,* age, sex, and year level). Inferential analysis indicated that somehow, the satisfaction levels of nursing students in terms of their age, sex, and year level were relatively equal. However, female students significantly differed their level of satisfaction compared to male in terms of the usefulness of ChatGPT in learning. These findings emphasized the importance of considering gender-specific factors, as well as maintaining a proactive approach to technology integration and evaluation in nursing education. By addressing these, educators can optimize the use of ChatGPT as a valuable tool for enhancing learning outcomes and student satisfaction in nursing programs.

KEYWORDS: ChatGPT, credibility, ease of use, privacy and security, usefulness, satisfaction, social influence

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Introduction

The emergence of technology and innovation is constantly changing the landscape of the teaching-learning process. Diverse techniques have been delivered as a result of technological advancement to ensure that learning is not limited to the four ends of the classroom setting.

ChatGPT is widely recognized as a prominent AI-driven advancement that has garnered much interest due to its capacity to produce text responses that closely resemble those generated by humans in response to user inputs. These innovations have not only revolutionized the manner in which individuals engage with technology, but have also permeated the domain of education.

Presently, Chat GPT, an emerging artificial intelligence (AI) advancement developed by Open AI, reached a user base of one million inside a little five-day timeframe (Kalla, 2023)

In the educational context of the Philippines, AI is no longer a science fiction fantasy, but rather a reality that must be dealt with in a variety of ways. It is also accepted that educators do not want to be replaced by robots (Estrellado & Miranda, 2023).

ChatGPT has grown in popularity among Philippine educational institutions because to its adaptability and utility in academic activities. However, educators have expressed worries about the ethical issues, academic dishonesty, and technology dependence linked with its use. Even prior to the establishment of AI in education, academic dishonesty was a common practice especially in online and distance learning (Chavez, 2023). While the Philippines has made success in some areas, teachers and students still want more training and support to effectively integrate technology in their classrooms (Robledo et al., 2023).

Javier & Moorhouse (2023) investigated how to promote secondary school English language learners' critical and productive usage of ChatGPT. Findings indicated that by employing scaffolded experimental activities, teachers may assist students in developing the abilities required to use ChatGPT productively and critically, hence boosting the potential benefits ChatGPT can bring to language learners. They propose that teachers create activities to introduce their students to the use of ChatGPT. This research can serve as a starting point for teachers to determine how to implement the tool in their classrooms.

Nursing education stands as a dynamic and demanding discipline, requiring a blend of theoretical knowledge and practical skills to prepare students for the complexities of healthcare practice. With the increasing prevalence of technology in healthcare settings, understanding how nursing students perceive and engage with ChatGPT becomes essential for ensuring the seamless integration of technological advancements into their educational journey.

The Province of Sulu, located in the southern region of the Philippines, is home to a number of HEIs specializing in the field of Nursing. These institutions are committed to providing comprehensive and competitive training programs for aspiring nurses. These prestigious institutions are aware of the possible uses of Chat Generative Pre-trained Transformers in enhancing the nursing education landscape by providing students with innovative and customized educational settings. The advent of ChatGPT has brought about significant changes in nursing student learning.

Some students, for instance, opt to use ChatGPT instead of employing their own critical thinking skills, relying on this AI language, which is not inherently credible. It is within this premise that this study was conceived in order to explore the multifaceted aspects of learning satisfaction among nursing students on the use of ChatGPT, specifically, to evaluate the satisfaction levels of nursing students in HEIs in Sulu about the use of Chat Generative Pre-trained Transformer.

Research Questions

This study has determined the learning satisfaction of nursing students in the use of ChatGPT during the school year 2023-2024 among selected HEIs in Sulu. Specifically, it answered the following questions:

1. What is the demographic profile of Nursing Student - Respondents in selected HEIs in Sulu in terms of:
    a. Age
    b. Gender

   c. Year Level
2. What is the learning satisfaction of nursing students in using ChatGPT based on Usefulness, Ease of Use, Credibility, Social Influence, and Privacy and Security?
3. Did the learning satisfaction of nursing students differ according to their demographics?

Literature

ChatGPT as a Universal Tool

ChatGPT, being a sophisticated language generating model, has had a significant influence on human culture (Duhaylungsod & Chavez, 2023). ChatGPT has become ubiquitous in diverse domains like as education, business, healthcare, and entertainment. It offers us a novel means of communication, education, employment, and amusement (Zhao, 2023).

The study conducted by Abdaljaleel, Barakat, and Sallam (2024) revealed that the utilization and positive perception of ChatGPT were influenced by various factors, including the ease of use, positive attitude towards technology, social influence, perceived usefulness, behavioral or cognitive influences, low perceived risks, and low anxiety.

ChatGPT is a cutting-edge system that utilizes advanced artificial intelligence methods to provide natural language responses based on a given prompt or input. It has been utilized in several sectors, such as natural language processing, customer service, and content generation (Kalla, 2023).

The primary prospects in this field encompass improved efficiency, decreased expenses, heightened safety, and enhanced sustainability. Nevertheless, there exist potential risks associated with privacy and security issues, the potential for biased suggestions, and ethical considerations (Bahrini, 2023).

ChatGPT in Academic Setting

Chat GPT, also known as Generative Pre-trained Transformer 3, was developed by OpenAI and is an advanced natural language processing (NLP) system. The ability to produce text that appears natural to humans makes it suitable for application in chatbots and other conversational interfaces. There has been considerable discussion in recent years on the utilization of AI systems and chatbots within educational contexts. For maximum efficacy, a discussion with the student can imitate feedback, inquiries, and help. It has the potential to enhance students' sense of involvement in their learning and sustain their interest with the topic matter of the course (Huallpa, 2023).

Chat GPT, a cutting-edge AI developed by Open AI, has rapidly garnered a user base of one million. This AI has the capacity to enhance self-directed learning. It is crucial to study Chat GPT's capacity to enhance self-directed learning in order to determine the most effective ways to deploy chatbots and AI in education, and to shape the future of education and technology-supported learning. By understanding the methods in which Chat GPT can facilitate self-directed learning, educators and students can utilize these technologies to augment their own learning of knowledge and personal growth (Biswas, 2023).

Despite its limitations, ChatGPT and other generative AI are here to stay and will continue to revolutionize the current educational system. Others have begun creating software to identify writings written by artificial intelligence, while several have demanded that ChatGPT be prohibited in classrooms (Baidoo-Anu & Ansah, 2023).

However, it is crucial to acknowledge that some students not only exhibit competence in accomplishing tasks using ChatGPT, but also achieve outstanding scores. Nevertheless, educators encounter difficulties in determining whether students are employing ChatGPT, which can have a

negative impact on students' excessive reliance on this technology. Consequently, this can gradually diminish their ability to engage in critical thinking, exploration, verification, and active summarization. If the prevailing pattern continues, it will exert a substantial influence on the scholastic accomplishments and holistic development of the children (Kasneci et al., 2023).

Perceived Usefulness of Chatbots

The usefulness of chatbots in the classroom is multifaceted as it enables students to engage in studying at their convenience and in any location. Apart from enhancing the effectiveness of self-directed learning, another advantage is the decrease in students' stress levels when engaging with chatbots and honing new abilities (Inoferio et al., 2024). Furthermore, it enables immediate user input through interactive discussions while learning and provides customized information in response to that feedback (Korngiebel & Mooney, 2021).

The reliability of ChatGPT can be ensured by utilising it as a scaffolding tool for the initial draft and subsequently enhancing the text through error correction and the inclusion of references in the final versions of written assignments (Lo, 2023).

Lozano, Molina, and Gijón (2021) found that men in Spain showed a greater inclination towards technical advancements than women, as indicated by their study on the perspective of Artificial Intelligence. The research findings indicated that men were 1.481 times more likely than women to have a good or extremely positive attitude towards AI and robots (Lozano et al., 2021).

Demir and Guraksin (2022) employed metaphors to examine the perceptions of AI among secondary school pupils. The study aimed to ascertain participants' attitudes about AI and determine if they were predominantly positive or negative. The findings revealed that the students held varied perspectives on AI, encompassing both favorable and unfavorable associations with the notion. The participants highlighted the interrelationships between AI and individuals, technology, and the human brain through the use of metaphors. It's interesting to note that most of the students' metaphors were positive, suggesting that they had a generally positive opinion about artificial intelligence (Demir & Güraksin, 2021).

Pedagogical Responsibilities in AI-assisted Learning

ChatGPT's capacity to generate responses based on user-entered keywords has the potential to have a beneficial impact on the realm of education and learning. However, it is important to acknowledge that not all of these facilities have a positive influence on the development of various student talents in learning, such as creative writing skills. It is imperative to develop a comprehensive approach for professors to incorporate learning methods outside internet-based platforms, as students may exploit these platforms to complete tasks inappropriately (Shidiq, 2023).

ChatGPT improves pedagogical approaches, productivity, and the educational encounter. Although it simplifies tasks and the creation of materials, ethical concerns highlight the importance of responsible incorporation, and achievement depends on resolving contextual factors and the competence of the instructor. ChatGPT is a context-dependent technology that provides crucial assistance to teachers who want to achieve a balance between efficiency and focused education (De Jesus, 2023).

Students can benefit from ChatGPT's capabilities such as code completion suggestions, error identification and repair, code optimization, and refactoring aid by integrating it into programming education. These features boost efficiency, eliminate errors, and increase code quality overall. ChatGPT can also be used as a programming assistant, explaining complex programming ideas,

providing code examples, answering queries, and assisting in problem detection and solutions. ChatGPT has the potential to revolutionize software development and maintenance. However, it is critical to maintain a balanced approach in which ChatGPT is used to supplement rather than replace human programmers (Padilla et al., 2023).

The broad implementation of Chat GPT in education, as an innovative artificial intelligence technology, has garnered significant interest and sparked discussions across several sectors of society. While ChatGPT offers substantial benefits in enhancing learning efficiency and facilitating communication, its applications also entail certain adverse effects and potential hazards. Anticipated to revolutionize the landscape of interpersonal communication, ChatGPT holds promise in terms of improving both the manner and efficacy of such interactions, but it is crucial to acknowledge and address the concerns surrounding its potential negative impact on interpersonal relationships. Conversely, the utilization of Chat GPT by students for assignment completion can result in academic dishonesty and cheating tendencies, hence eliciting disapproval and resistance from certain universities, journals, and scholars (Yu, 2023).

ChatGPT and Academic Outcomes

ChatGPT has demonstrated a positive influence on academic performance through the enhancement of learning motivation. Ensuring the proficient and morally sound utilization of ChatGPT is crucial for promoting educational progress and elevating academic achievement in pupils, hence cultivating their drive to acquire knowledge (Caratiquit & Caratiquit, 2023).

Boubker (2024) employed a mixed-method approach to examine the factors that influence learner attitudes towards ChatGPT-assisted language learning using an interdisciplinary approach, The study on ChatGPT-assisted language acquisition reveals that the quality of the information system and satisfaction play a more significant role in influencing performance expectations and felt satisfaction compared to self-regulation. Within the context of ChatGPT-assisted language acquisition, behavioral intention proves to be a more accurate indicator of learning effectiveness compared to reported satisfaction and performance expectancy. The findings encouraged future developers to focus more on hedonic motivation and information services provided by ChatGPT, as well as future academics to gain a more thorough understanding of the elements impacting learner attitudes toward ChatGPT-assisted language acquisition.

Similarly, Athanassopoulos (2023) conducted a study on the use of ChatGPT as a tool in learning foreign language writing within a multicultural and multilingual classroom. The study found that the revised version of their work had a higher overall number of words, unique words, and average word count per phrase. The study findings were encouraging, showing that ChatGPT may be used as a language learning aid and to complement the teaching process, particularly for students from refugee/migrant backgrounds.

Hamid et al. (2023) discovered that the implementation of ChatGPT learning resulted in enhanced group collaboration and involvement. Additionally, it increased motivation among students and stimulated a greater number of questions. However, a few of students encountered challenges in understanding the content of ChatGPT and raised doubts about its reliability and authenticity. Notwithstanding these challenges, the majority of pupils saw ChatGPT as having the capacity to eventually supplant conventional methods of seeking information.

Wu and Yu (2023) investigated the impact of AI chatbots on students' learning results. The results indicated that AI chatbots had a substantial influence on the educational achievements of students. Moreover, AI chatbots exerted a more pronounced influence on students in tertiary education compared to those in primary and secondary education.

Shen et al. (2023) reported that ChatGPT's credibility varied across areas, with law and science topics performing particularly poorly. The study also shows that system roles, which were originally developed by OpenAI to allow users to control ChatGPT's behavior, can have an unnoticeable impact on ChatGPT's reliability. The study also demonstrates that ChatGPT is subject to adversarial examples, and that even a single character alteration can reduce its trustworthiness in several cases. The researchers feel that their investigation provides vital insights into ChatGPT's reliability and highlights the need for large language models (LLMs) to be more reliable and secure.

Methods

A descriptive-comparative research design has been adapted in this study. Chavez and Lamorinas (2023) described descriptive-comparative design is used in research studies that aim to provide static pictures of situations as well as establish differences between different variables.

A descriptive-comparative design in research involves comparing two or more groups, variables, or conditions to understand differences or similarities. This design aims to describe characteristics or behaviors within each group (Chavez, 2020) while also comparing them to each other. By systematically comparing and contrasting, researchers can uncover patterns, trends, and relationships that contribute to a deeper understanding of the phenomena under investigation.

1. Population and Sampling Design

The study has been conducted in selected higher education institutions in Sulu during the School Year 2023-2024. These nursing schools are under the direct supervision and administration of the Dean of Nursing, specifically Notre Dame of Jolo College, Sulu State College, Mindanao State University - Sulu, Sulu College of Technology and Southwestern Mindanao Islamic Institute, all of which are located within the province of Sulu.

This study employed a quota sampling to sample the participants. Quota sampling is a non-probability sampling method used in research to gather a representative sample from a population. Quota sampling involves dividing the population into subgroups based on certain characteristics such as age, gender, or socioeconomic status. Through uniform distribution, the researcher set quotas for each subgroup to ensure that the final sample reflects the diversity of the population on these characteristics. This study selected 20 from each of them, bringing the total number of participants to a hundred (n=100).

2. Research Instruments

A survey questionnaire was the main instrument to be employed to gather data on the learning satisfaction with the use of ChatGPT in nursing education. It was adapted and patterned from standardized questionnaire used in Yilmaz et al. (2023) which had already established validity and reliability.

The research instrument used in this study consisted of three parts. Part I of the questionnaire focused on obtaining the demographic profile of the respondents which include gender, age, and year level. Part II was geared toward obtaining data on the level of learning satisfaction with the use of ChatGPT in nursing education with the following dimensions such as Usefulness, Ease of use, Credibility, Social influence and Privacy and security. A 5-point Likert-Scale was used to measure the variables.

3. Data Gathering Procedure

To ensure a systematic and authorized data collection process, the researcher adhered to the established data gathering protocol of the graduate studies department at Sulu State College regarding the acquisition of permission to conduct the survey. Subsequently, to facilitate the implementation of the study's instrument in the designated research site in a proficient and recognized manner, the researcher obtained approval from the dean of the graduate studies department at Sulu State College and secured authorization from the dean of the of the College of Nursing.

Having obtained the necessary permissions to administer the questionnaire, the researcher proceeded with the survey at the predetermined research site. The process of collecting the desired data started with an orientation session outlining the proper procedures for distributing and collecting the research instrument. It was ensured that all respondents were provided with clear instructions to meticulously review and comprehend all items in the questionnaire and were encouraged to provide their honest response on each item.

4. Data Analysis Process

This research employed statistical analysis to conduct an in-depth examination leading to the logical interpretation and evaluation of empirical data. Specifically, the analysis was carried out utilizing the Jeffreys's Amazing Statistics Program (JASP) version 0.18.2. is a software tool designed for statistical analysis that is freely available and open-source, with backing from the University of Amsterdam. Notably user-friendly, JASP is crafted to be intuitive for those familiar with SPSS, offering a range of standard analysis procedures in both classical and Bayesian forms.

Percentage analysis was employed to facilitate comparisons across different groups or categories. This method was utilized to assess the proportions of respondents belonging to distinct demographic groups. Additionally, the weighted mean was calculated to determine the average of a dataset, with each value being multiplied by a corresponding weight. By considering the significance or relevance of each data point, the weighted mean enabled the derivation of composite means for all items or statements within the dataset.

For inferential analysis, this study employed the Student's t-test and Analysis of Variance (ANOVA) to ascertain the existence of significant differences in the responses of respondents based on their demographic characteristics. The Student's t-test was utilized to evaluate whether a significant difference existed between the means of two independent groups, particularly useful for smaller sample sizes. On the other hand, ANOVA was utilized to assess whether significant differences existed among the means of three or more independent groups. Unlike the pairwise comparisons facilitated by the t-test, ANOVA simultaneously explores variances within and between multiple groups, providing insights into the extent to which group means differ beyond what would be expected by chance alone.

Results

Question 1. What is the demographic profile of nursing students in selected HEIs in Sulu?

Analyzing the demographic profiles of nursing students provided valuable insights into the composition of student populations, allowing educators and policymakers to better understand the diversity within educational institutions. By examining factors such as age, sex, and year level, the researcher identified patterns and disparities that may exist among different demographic groups.

Table 1. Summary table of students' demographic profile

Demographics	Frequency	Percentage

		(N=100)	
Age	≤ 20 years old	28	28.0%
	≥ 21 years old	72	72.0%
Sex	Male	40	40%
	Female	60	60%
Year Level	First Year	15	15.0%
	Second Year	14	14.0%
	Third Year	54	54.0%
	Fourth Year	17	17.0%

Table 1 presented the demographic profile of nursing student-respondents in selected HEIs in Sulu in terms of their age. As presented, out of 100 student-respondents, 28 (28.0%) were of ages 20 and below while 72 (72.0%) were 21 years and above.

Additionally, out of 100 student-respondents, 40 (40.0%) were male, and 60 (60.0%) were female. In terms of their year level, 15 (15.0%) were first year, 14 (14.0%) were second year, 54 (54.0%) were third year, and 17 (17.0%) were fourth year.

Question 2. What was the level of learning satisfaction of nursing students in using ChatGPT based on Usefulness, Ease of Use, Credibility, Social Influence, and Privacy and Security?

This study attempted to analyze the learning satisfaction of nursing students in using ChatGPT based several metrics—the usefulness, ease of use, credibility, social influence, and privacy and security. Assessing the usefulness of ChatGPT in nursing education helps educators understand its efficacy in facilitating learning processes, identifying areas where it enhances comprehension, and pinpointing aspects that may require improvement.

Table 2. Level of Learning Satisfaction based on Usefulness

Usefulness metric	$\bar{x}$	σ	Rating
Chat GPT can help me find the information I need quickly and easily.	4.22	0.938	High
Chat GPT is a valuable resource for answering my questions.	3.90	0.847	High
Chat GPT enhances my ability to learn.	3.84	1.012	High
I prefer using ChatGPT over other tools for my tasks.	3.51	1.141	High
ChatGPT is a valuable tool for learning new information.	3.92	0.950	High
Composite Mean	**3.878**	**0.755**	**High**

Remarks: 4.50-5.00 (Very High); 3.50–4.49 (High); 2.50–3.49 (Moderate); 1.50–2.49 (Low); 1.00 – 1.49 (Very Low)

Table 2 presented the level of learning satisfaction of nursing students in Sulu of using ChatGPT based on its usefulness. The nursing students revealed that ChatGPT was "highly useful" ($\bar{x}$=3.878; σ=0.755) when it comes to helping them understand basic information, answer questions, and find new ideas. Specifically, the students yielded the highest satisfaction mean on scale items *"Chat GPT can help me find the information I need quickly and easily"* ($\bar{x}$=4.22; σ=0.938) and *"ChatGPT is a valuable tool for learning new information"* ($\bar{x}$=3.92; σ=0.950).

Table 3. Level of Learning Satisfaction based on Ease of Use

Ease of Use Metric	$\bar{x}$	σ	Rating
Chat GPT is easy to use.	4.19	0.940	High
It is easy to get ChatGPT to do what I want it to do.	3.96	0.952	High
I find Chat GPT to be a user-friendly tool.	3.94	0.802	High
It is easy to start a conversation with ChatGPT.	3.98	0.864	High
The responses generated by ChatGPT are easy to understand.	4.11	0.815	High
Composite Mean	4.036	0.658	**High**

Remarks: 4.50-5.00 (Very High); 3.50–4.49 (High); 2.50–3.49 (Moderate); 1.50–2.49 (Low); 1.00 – 1.49 (Very Low)

Table 3 showed the level of learning satisfaction of nursing students in Sulu of using ChatGPT based on its ease of use. The nursing students revealed that ChatGPT was "highly easy to use" ($\bar{x}$=4.036; σ=0.658) when it comes to accessibility, comprehensibility of responses, and friendliness. Specifically, the students yielded the highest satisfaction mean on scale items *"Chat GPT is easy to use"* ($\bar{x}$=4.19; σ=0.940) and *"the responses generated by ChatGPT are easy to understand."* ($\bar{x}$=4.11; σ=0.815).

Table 4. Level of Learning Satisfaction based on Credibility

Credibility Metric	$\bar{x}$	σ	Rating
Chat GPT is a trustworthy source of information.	3.01	0.847	Moderate
I believe that Chat GPT provides accurate information.	3.20	0.725	Moderate
I perceive Chat GPT to be a reliable resource.	3.02	0.828	Moderate
The responses from ChatGPT are consistent and coherent.	3.28	0.817	Moderate
I am confident in the recommendations provided by ChatGPT.	3.17	0.805	Moderate
Composite Mean	3.136	0.669	**Moderate**

Remarks: 4.50-5.00 (Very High); 3.50–4.49 (High); 2.50–3.49 (Moderate); 1.50–2.49 (Low); 1.00 – 1.49 (Very Low)

Table 4 showed the level of learning satisfaction of nursing students in Sulu of using ChatGPT based on its credibility. The nursing students revealed that ChatGPT was "moderately credible" ($\bar{x}$=3.136; σ=0.669) when it comes to trustworthiness, accuracy, and reliability of the information it gives. Specifically, the students yielded the highest satisfaction mean on scale items *"The responses from ChatGPT are consistent and coherent"* ($\bar{x}$=3.28; σ=0.817) and *"I believe that Chat GPT provides accurate information".* ($\bar{x}$=3.17; σ=0.805).

Table 5. Level of Learning Satisfaction based on Social Influence

Social Influence Metric	$\bar{x}$	σ	Rating
My peers think I should use ChatGPT.	3.24	0.842	Moderate
I believe that using Chat GPT is socially acceptable.	3.41	0.818	Moderate
I am encouraged by others to use ChatGPT.	3.47	0.958	Moderate
The feedback and experiences shared by others in online communities influence my use of ChatGPT.	3.49	0.948	Moderate
The reactions of people in my schoolmates influence my continued use of ChatGPT.	3.45	0.925	Moderate
Composite Mean	3.41	0.675	**Moderate**

Remarks: 4.50-5.00 (Very High); 3.50–4.49 (High); 2.50–3.49 (Moderate); 1.50–2.49 (Low); 1.00 – 1.49 (Very Low)

Table 5 presented the level of learning satisfaction of nursing students in Sulu of using ChatGPT based on social influence. The nursing students revealed that ChatGPT was "moderately influential" ($\bar{x}$=3.41; σ=0.675) when it comes to repeated use, social acceptability, and satisfaction of other users. Specifically, the students yielded the highest satisfaction mean on scale items *"the feedback and experiences shared by others in online communities influence my use of ChatGPT"* ($\bar{x}$=3.49; σ=0.948) and *"I am encouraged by others to use ChatGPT".* ($\bar{x}$=3.47; σ=0.958).

Table 6. Level of Learning Satisfaction based on Privacy and Security

Privacy and Security Metric	$\bar{x}$	σ	Rating
I am concerned about the privacy of my information when using ChatGPT.	3.90	0.969	Moderate
I am confident that ChatGPT will keep my information secure.	3.24	0.866	Moderate
Chat GPT takes adequate measures to protect my privacy.	3.17	0.792	Moderate
I am concerned about the potential risks to my data security when using ChatGPT.	3.44	0.939	Moderate
I trust that ChatGPT anonymizes and protects my data adequately.	3.23	0.802	Moderate
Composite Mean	3.397	0.627	**Moderate**

Remarks: 4.50-5.00 (Very High); 3.50–4.49 (High); 2.50–3.49 (Moderate); 1.50–2.49 (Low); 1.00 – 1.49 (Very Low)

Table 6 presented the level of learning satisfaction of nursing students in Sulu of using ChatGPT based on privacy and security. The nursing students revealed that ChatGPT was "moderately safe" ($\bar{x}$=3.41; σ=0.675) when it comes to data security, protection, and privacy. Specifically, the students yielded the highest satisfaction mean on scale items *"I am concerned about the privacy of my information when using ChatGPT"* ($\bar{x}$=3.90; σ=0.969) and *"I am concerned about the potential risks to my data security when using ChatGPT"* ($\bar{x}$=3.44; σ=0.939).

Question 3. Did the learning satisfaction of nursing students differ according to their demographics?

This study wanted to determine differences in the level of satisfaction of nursing students on ChatGPT use based on the metrics the usefulness, ease of use, credibility, social influence, and privacy and security. Parametric tests, such as t-tests or ANOVA, were particularly useful when analyzing data, making them suitable for assessing differences between groups.

Table 7. Inferential Analysis according to Student's Age

VARIABLES		$\bar{x}$	σ	Mean Difference	*t*	Sig.	Description
Usefulness	≤20 years old	4.0214	0.66742	0.19921	0.187	0.238	Not Significant
	≥21 years old	3.8222	0.78403				
Ease of Use	≤20 years old	4.0857	0.71270	0.06905	0.469	0.640	Not Significant
	≥21 years old	4.0167	0.63932				
Credibility	≤20 years old	3.2929	0.75715	0.21786	0.471	0.145	Not Significant
	≥21 years old	3.0750	0.62658				
Social Influence	≤20 years old	3.5214	0.69992	0.15198	0.011	0.314	Not Significant
	≥21 years old	3.3694	0.66516				
Privacy and Security	≤20 years old	3.5286	0.63296	0.18274	0.314	0.192	Not Significant
	≥21 years old	3.3458	0.62121				

**Significant at alpha 0.05*

Table 7 revealed that no significant difference observed between the age groups of nursing students on their level of satisfaction based on the metrics usefulness (*t*=0.187; σ=0.283), ease of use (*t*=0.469; σ=0.640), credibility (*t*=0.471; σ=0.145), social influence (*t*=0.011; σ=0.314), and privacy and security (*t*=0.314; σ=0.192). Consequently, the level of satisfaction of nursing students in perceived usefulness, ease of use, credibility, social influence, and privacy and security was relatively equal across the age groups (*i.e.,* ≤20 years old; ≥21 years old).

Table 8. Inferential Analysis according to Student's Sex

VARIABLES		$\bar{x}$	σ	Mean Difference	*t*	Sig.	Description
Usefulness	Male	3.675	0.8578	-0.3383	2.239	0.027	Significant
	Female	4.013	0.6513				
Ease of Use	Male	4.040	0.4819	0.00667	0.049	0.961	Not Significant
	Female	4.033	0.7566				
Credibility	Male	3.180	0.019	0.07333	0.535	0.594	Not Significant
	Female	3.107	0.6913				
Social Influence	Male	3.350	0.6139	-0.10333	0.748	0.456	Not Significant
	Female	3.453	0.7148				
Privacy and Security	Male	3.265	0.6585	-0.22000	1.737	0.086	Not Significant
	Female	3.485	0.5940				

**Significant at alpha 0.05*

Table 8 indicated that no significant difference observed between male and female nursing students on their level of satisfaction based on the metrics ease of use (*t*=0.049; σ=0.960), credibility (*t*=0.535; σ=0.594), social influence (*t*=0.748; σ=0.456), and privacy and security (*t*=1.737; σ=0.086). The level of satisfaction of nursing students in perceived ease of use, credibility, social influence, and privacy and security was relatively equal across the sex groups (*i.e.,* male and female). However, in terms of usefulness, this study found out that female students were highly satisfied ($\bar{x}$=4.013) of the usefulness of ChatGPT in learning. This perception significantly differed (*t*=2.239; σ=0.027) compared to male students ($\bar{x}$=3.675).

Table 9. Inferential Analysis according to Student's Year Level

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Usefulness	Between Groups	1.715	4	0.429	0.744	0.564	Not Significant
	Within Groups	54.756	95	0.576			
	Total	56.472	99				
Ease of Use	Between Groups	1.065	4	0.266	0.606	0.659	Not Significant
	Within Groups	41.765	95	0.440			
	Total	42.830	99				
Credibility	Between Groups	2.628	4	0.657	1.497	0.209	Not Significant
	Within Groups	41.682	95	0.439			
	Total	44.310	99				
Social Influence	Between Groups	.697	4	0.174	0.373	0.827	Not Significant
	Within Groups	44.408	95	0.467			
	Total	45.106	99				
Privacy and Security	Between Groups	0.693	4	0.173	0.431	0.786	Not Significant
	Within Groups	38.196	95	0.402			
	Total	38.889	99				

**Significant at alpha 0.05*

Analysis indicated no significant difference observed between the age groups of nursing students on their level of satisfaction based on the metrics usefulness (*F*=0.744; σ=0.564), ease of use (*t*=0.606; σ=0.659), credibility (*t*=1.497; σ=0.209), social influence (*t*=0.373; σ=0.827), and privacy and security (*t*=0.431; σ=0.786). This means, the level of satisfaction of nursing students

in perceived usefulness, ease of use, credibility, social influence, and privacy and security was relatively equal across different year level.

Discussion

Findings of this study revealed that the nursing students from some selected HEIs in Sulu, Philippines had high satisfaction level on usefulness and ease of use of ChatGPT in learning. In contrast, they feel moderately satisfied on credibility, social influence, and privacy and security it gives to them.

Technology Acceptance Model proposes that the adoption of novel technological advancements is predominantly shaped by two key determinants: the perceived usefulness and ease of use (Albayati, 2024; Davis, 1989). It is widely acknowledged that perceived usefulness plays an essential part in shaping an individual's attitude and intention towards the adoption and usage of technology (Albayati, 2024; Keržič et al., 2019). Additionally, the use of ChatGPT can be generally influenced by perceived usefulness, behavioral and cognitive aspects, overall perceived dangers, perceived risks associated with usage, perceived ease of use, anxiety levels, attitude towards technology, and social influence (Menon & Shilpa, 2023; Sallam et al., 2023; Wulandari et al., 2024; Yilmaz et al., 2023).

Previous studies support the findings of this study regarding the level of satisfaction of nursing students in the use of ChatGPT in learning. The high level of satisfaction among nursing students in Sulu regarding the usefulness and ease of use of ChatGPT in learning can be attributed to several factors. For instance, its capacity to provide relevant information aligns well with the fast-paced nature of nursing education where students highly value the capacity of ChatGPT to promptly retrieve the information they need. Students also appreciate the simplicity and clarity of ChatGPT's responses, which enhances their ability to understand and utilize the information provided effectively. This functionality not only saves time but also enhances the efficiency of learning activities, enabling students to focus more on understanding and applying concepts rather than searching for resources.

In the context of privacy and security, the students were moderately satisfied about the use of ChatGPT. This finding was also consistent with the findings of previous studies. For instance, users typically evaluate the degree of risk by conducting a risk-benefit analysis to compare the anticipated risks with the perceived advantages which ultimately results in a decision and a certain level of confidence (Kim et al., 2023). Mostafa and Kasamani (2022) reported that there is a favorable relationship between confidence in AI chatbots and both usage intention and user engagement. Additional data suggests that a heightened level of trust has a beneficial impact on the intention to use AI technology (Ayoub et al., 2024; Choung et al., 2022). This implies that students' trust and confidence in the privacy and security measures implemented in ChatGPT could influence their willingness to engage with the tool for learning purposes. Satisfaction level regarding privacy and security features not only reflects students' perceptions of the tool's reliability and trustworthiness but also influences their willingness to embrace ChatGPT as a valuable resource in their academic pursuits. As such, addressing concerns and ensuring robust privacy and security measures in ChatGPT are essential for promoting user confidence and encouraging its adoption in nursing education.

Nursing students were also moderately satisfied about the credibility of the information the ChatGPT provides to them. Some students believed that the information it gives to them was *"not accurate"* or *"misleads them"*. This was not a new phenomenon as previous studies also noted negative perceptions about the use of ChatGPT in education. For instance, Iqbal (2022) reported

that faculty members were receptive to the idea of integrating ChatGPT into their lectures, but voiced concerns over its dependability as an educational resource. They also had challenges in accurately forecasting the potential interactions between students and the chatbot and expressed apprehension regarding the potential for system failures to result in misunderstandings or confusion. ChatGPT encounters obstacles in its integration into academic environments, mostly stemming from the perceived weakness in reliability and confidence that users associate with AI-driven solutions (Dwivedi et al., 2023; Mukred et al., 2023).

Social influence and acceptability were also an essential aspect of analyzing the satisfaction level of nursing students in the use of ChatGPT in learning. Social influence refers to the impact of peer interactions, feedback, and societal norms on individuals' attitudes, beliefs, and behaviors (Aguirre et al., 2023; Calaro et al., 2023). Positive peer feedback and endorsements can bolster students' confidence and trust in the tool, enhancing their satisfaction levels and willingness to engage with it (Nazir et al., 2023; Strzelecki, 2023; Sudirjo et al., 2023).

In the context of perceived usefulness, the findings of this study revealed that the satisfaction level of female nursing students was significantly higher compared to male students. This can be explained by several satisfaction mechanisms. Women tend to exhibit higher levels of enjoyment, tenderness, and fear, which they openly express these emotions (Dowthwaite-Walsh, 2018). Women exhibit a higher frequency of smiling compared to men, and empirical research suggests that women tend to amplify facial gestures to convey good emotions (May, 2017). It was possible that female students tend to amplify their emotions when asked about how useful the ChatGPT in learning was. Female students may also draw upon their emotional responses to the tool, such as feelings of enjoyment or engagement, when evaluating its usefulness, thus contributing to higher satisfaction ratings. Moreover, the tendency to amplify emotions may reflect deeper levels of engagement and connection with ChatGPT among female students, potentially stemming from their inclination towards social interaction and collaborative learning approaches. Recognizing the influence of gender-specific communication and emotional expression can provide valuable insights into understanding the drivers behind higher satisfaction levels among female students regarding ChatGPT's usefulness in learning. This understanding can inform educators and developers in optimizing the design and implementation of educational technologies to better meet the needs and preferences of all students, fostering a more inclusive and effective learning environment.

The findings were remarkable because no study was conducted in Sulu, Philippines the described the satisfaction of nursing students about the use of ChatGPT in education. These findings are particularly significant as they contribute to filling a gap in existing literature as this study not only provides valuable insights for educators and administrators in Sulu but also adds to the broader body of knowledge on the integration of AI-based tools in nursing education.

Conclusion

The analysis of learning satisfaction among nursing students in Sulu regarding the use of ChatGPT reveals several significant findings across various dimensions. Findings indicated that in terms of usefulness, the students expressed high levels of satisfaction, indicating that ChatGPT effectively aids in understanding basic information, answering questions, and generating new ideas. Particularly, students found the tool highly beneficial for quickly accessing needed information and facilitating learning. Nursing students perceived ChatGPT as highly accessible and user-friendly, with responses being comprehensible and easily understandable. While ChatGPT demonstrated moderate credibility, students expressed trust in the consistency and

accuracy of the information it provides, albeit with room for improvement in enhancing its reliability. Regarding social influence, the tool was perceived as moderately influential, with students being influenced by feedback and experiences shared by peers, indicating the significance of peer interactions in technology adoption. Concerning privacy and security, students expressed moderate concerns, particularly regarding the privacy of their information and potential risks to data security when using ChatGPT. These findings provide valuable insights into the strengths and areas for improvement in the integration of ChatGPT into nursing education, emphasizing the need for continued refinement to optimize its effectiveness and address concerns regarding credibility and data privacy.

The effectiveness in aiding comprehension and facilitating access to information suggests that integrating ChatGPT into the curriculum can contribute to more efficient and effective learning experiences for students. Secondly, the perception of ChatGPT as highly accessible and user-friendly highlights the importance of intuitive design and usability in educational technologies. Educators should prioritize selecting and designing tools that are accessbile and comprehensible to ensure effective integration into learning environments. Educators can leverage peer support and collaboration to promote the effective utilization of ChatGPT among students. Addressing concerns on data privacy and user security are crucial to fostering trust and ensuring the ethical use of technology in education. Nevertheless, these findings emphasize the need for continuous refinement and improvement in the integration of ChatGPT into nursing education to maximize its academic benefits.

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