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PERCEPTIONS OF NURSING STUDENTS REGARDING THE USE OF CHATGPT IN ACADEMIC LEARNING AT HAYATABAD MEDICAL COMPLEX COLLEGE OF NURSING, PESHAWAR

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Abstract

Background:
The rapid advancement of artificial intelligence (AI), particularly generative AI tools such as ChatGPT, has transformed educational practices globally. In nursing education, these tools have the potential to enhance learning, improve conceptual understanding, and support academic performance. However, limited local evidence exists regarding nursing students' perceptions of ChatGPT as an academic learning aid in Pakistan.

Aims:
This study aimed to assess the perceptions of nursing students regarding the use of ChatGPT in academic learning at Hayatabad Medical Complex College of Nursing, Peshawar.

Methodology:
A descriptive cross-sectional study design was employed. Data were collected from nursing students using a structured, self-administered questionnaire consisting of demographic characteristics and ten perception-related items measured on a Likert scale. Perception scores were categorized into positive, neutral, and negative levels. Data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations.

Results:
Out of the total respondents, 88.7% (n = 118) demonstrated a positive perception toward the use of ChatGPT in academic learning, while 8.3% showed neutral perceptions and only 3.0% reported negative perceptions. Students reported that ChatGPT improved their understanding of course concepts, enhanced content comprehension, supported examination preparation, and facilitated efficient completion of academic assignments. Overall findings indicated high acceptance, perceived usefulness, and ease of use of ChatGPT as a learning support tool.

Conclusion:
The study concludes that nursing students at Hayatabad Medical Complex College of Nursing, Peshawar, hold overwhelmingly positive perceptions regarding the use of ChatGPT as an educational aid. Integrating ChatGPT into nursing education as a supplementary learning tool may enhance academic efficiency and learning outcomes. However, structured guidelines and training on ethical use and critical evaluation are essential to ensure responsible utilization.

INTRODUCTION

Artificial intelligence (AI) has emerged as a transformative force in modern education, significantly reshaping how students access information, complete academic tasks, and enhance learning efficiency. AI refers to a broad spectrum of digital systems capable of performing cognitive functions such as understanding, reasoning, problem-solving, and generating human-like responses, thereby positioning it as a powerful educational technology [1]. Among recent AI innovations, ChatGPT—a large language model—has gained notable attention for its ability to generate coherent, structured, and contextually relevant content. Its integration into academic environments, particularly nursing education, has expanded rapidly due to its capacity to support learning needs, provide instant access to information, and facilitate academic task completion.

Research evidence demonstrates a substantial shift in nursing education following the introduction of ChatGPT. Study [2] reported that ChatGPT positively influenced nursing students' learning engagement, comprehension, and management of academic tasks. Similarly, a systematic review by [3] highlighted the widespread integration of ChatGPT into nursing curricula and emphasized its role in improving learning outcomes and supporting evidence-based academic activities. Qualitative research further supports these findings, with [4] reporting that nursing faculty perceive ChatGPT as a valuable instructional aid that enhances educational effectiveness by simplifying complex topics and promoting student engagement.

An integrative review conducted by [5] emphasized that ChatGPT is commonly utilized in nursing education for content comprehension, assignment preparation, and practice-based learning. The review concluded that ChatGPT enhances learning efficiency by assisting students in understanding theoretical concepts and applying them to academic tasks. In the broader educational context, [6] demonstrated that AI-based learning tools positively affect students' learning interest, creativity, and critical thinking—competencies that are essential in nursing education.

The adoption of AI-based educational tools is also increasing in Pakistan. Study [7] reported that platforms such as ChatGPT have improved students' academic performance by supporting assignment completion and examination preparation. These findings closely align with key domains assessed in the present study, including comprehension support, assignment assistance, examination preparation, and information reliability. Likewise, a scoping review by [8] reported that AI-powered chatbots are increasingly integrated into nursing programs, improving accessibility, confidence, and academic support for students.

Despite these benefits, concerns related to ethics and reliability persist. Study [9] explored Pakistani university students' perceptions of ChatGPT and identified mixed views regarding academic integrity, misinformation, and responsible use. These concerns are particularly relevant, as the current study evaluates similar perceptual domains such as reliability, confidence, usefulness, learning enhancement, and ease of use.

Empirical studies further demonstrate ChatGPT's effectiveness in structured learning tasks. Study [10] found that ChatGPT improved case-creation efficiency and learning quality in case-based learning, a core instructional strategy in nursing education. A meta-analysis by [11] confirmed that ChatGPT enhances learning performance, higher-order thinking, and students' learning perceptions. These outcomes are directly associated with the perception dimensions assessed in the present research.

Moreover, [12] reported high levels of student satisfaction when using ChatGPT for understanding complex concepts and supporting independent study. Similarly, [13] found that nursing students perceive generative AI as beneficial for academic tasks, enhancing learning experiences and improving comprehension. A systematic review by [14] concluded that AI technologies are generally favorably perceived by

nursing students when examined through the Technology Acceptance Model.

Further evidence indicates that ChatGPT supports nursing students in academic writing [15], while health-profession students benefit from its application in both educational and clinical learning contexts [16]. Finally, [17] observed that students at the University of Jordan expressed positive attitudes toward ChatGPT, recognizing its role in supporting effective academic learning.

LITERATURE REVIEW

Introduction

The adoption of ChatGPT in higher education has expanded rapidly, generating increased interest in understanding students' perceptions of its academic use. Study [17] reported that university students generally perceive ChatGPT as a supportive learning tool due to its accessibility and ability to simplify complex concepts. Similarly, [18] found that nursing students viewed generative AI as beneficial for clarifying theoretical content and enhancing academic engagement, although concerns regarding overreliance and academic integrity remained.

Study [19] noted that nursing undergraduates approach ChatGPT with cautious optimism, acknowledging its usefulness for summarizing content and facilitating self-learning while expressing uncertainty regarding accuracy. Comparable findings were reported in medical education, where [20] demonstrated that students valued ChatGPT for rapid information retrieval but questioned its reliability without verification. Faculty perspectives align with these concerns; [21] reported that educators recognize ChatGPT's potential for personalized learning while remaining apprehensive about misinformation and ethical misuse.

Registered nurses also exhibit favorable attitudes toward ChatGPT. Study [22] found strong acceptance of AI tools for self-directed learning and professional development. However, ethical considerations remain prominent. Study [23] reported student concerns related to data privacy, automation dependence, and fairness in assessment. Graduate public health nursing students similarly perceived ChatGPT as beneficial for academic writing and conceptual understanding while emphasizing the need for regulatory guidelines [24].

A Danish case study by [25] revealed that nursing students primarily use ChatGPT for idea generation, rephrasing complex content, and assignment preparation, reporting improved learning satisfaction and reduced workload. Comparative studies indicate disciplinary variations; [26] found that medical students valued ChatGPT for exam preparation but expressed concerns regarding its clinical accuracy.

Globally, [27] reported that students generally experience improved comprehension, time efficiency, and self-directed learning through ChatGPT use, despite concerns about academic misconduct. Likewise, [28] found that students perceived enhanced learning motivation and task efficiency, particularly among those with limited academic support.

Collectively, the literature suggests that students hold predominantly positive perceptions of ChatGPT as an academic learning tool, while concerns regarding accuracy, ethics, and dependency persist.

Objective

To assess nursing students' perceptions regarding the use of ChatGPT as an educational tool in academic learning.

Research Question

What are the perceptions of nursing students at Hayatabad Medical Complex College of Nursing regarding the use of ChatGPT as an educational tool in academic learning?

Methodology

Study Design

A descriptive cross-sectional study design was adopted to assess nursing students' perceptions regarding the use of ChatGPT in academic learning. This design was selected because it allows the collection of data at a single point in time and is appropriate for describing attitudes,

opinions, and perceptions within a defined population without manipulating variables.

Study Setting
The study was conducted at Hayatabad Medical Complex College of Nursing, Peshawar, located in Khyber Pakhtunkhwa, Pakistan. The institution offers undergraduate nursing programs and provides a suitable academic environment for evaluating students' perceptions of emerging educational technologies such as artificial intelligence.

Study Duration
The study was carried out over a period of **six months**, which included tool development, data collection, data analysis, and report writing.

Sampling Technique
A convenience sampling technique was used to recruit participants. Nursing students who were available during the data collection period and met the inclusion criteria were invited to participate. This technique was chosen due to ease of access to participants and time constraints.

Sample Size
The sample size was calculated using the Raosoft sample size calculator. Assuming a 95% confidence level, 5% margin of error, and an estimated population of 200 undergraduate nursing students, the required sample size was 133 participants. This sample size was considered adequate to represent the study population and achieve reliable results.

Inclusion Criteria
Undergraduate nursing students
Students willing to participate in the study

Exclusion Criteria
Undergraduate nursing students absent during data collection

Study Variables
Independent Variable:
Use of ChatGPT in academic learning (frequency, ease of use, and purpose)
Dependent Variable:
Perception of nursing students regarding ChatGPT

Studying Tools
A structured, validated questionnaire was used to collect demographic and perceptual data. Section A included demographic variables such as age, gender, residence, and cumulative GPA. Section B consisted of ten perception-related statements (e.g., "ChatGPT helps me understand course concepts better"), rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The tool was designed using clear and simple language to ensure comprehension and reliability among nursing students.

Data Analysis
Data were coded, entered, and analyzed using SPSS. Descriptive statistics were applied. Categorical variables were presented as frequencies and percentages. Composite perception scores were calculated from the Likert-scale items and categorized as positive, neutral, or negative perceptions. The results revealed that 88.7% of participants demonstrated a positive perception toward ChatGPT.

Ethical Considerations
Ethical approval was obtained from the Post Graduate College of Nursing, Hayatabad Medical Complex, Peshawar. Written informed consent was obtained from all participants. Participation was voluntary, with the right to withdraw at any stage. Confidentiality and anonymity were strictly maintained.

Significance of the Study
This study provides valuable localized evidence on AI integration in nursing education. Understanding nursing students' perceptions of ChatGPT is essential for informed and responsible implementation of AI-based

educational tools. The findings will support educators and policymakers in developing context-specific guidelines that enhance academic support while addressing ethical and reliability concerns, ultimately contributing to improved nursing education practices in Pakistan.

RESULTS

Demographic Characteristics of Participants

A total of 133 undergraduate nursing students participated in the study. The majority of respondents were below 20 years of age (53.4%), while 45.9% were above 20 years, and only 0.8% were exactly 20 years old. The sample was predominantly female (90.2%), with males constituting 9.8%, reflecting the typical gender distribution in nursing education.

Regarding residence, more than half of the participants (54.9%) were from urban areas, followed by rural (25.6%) and suburban (19.5%) locations. In terms of academic performance, most students (82.7%) reported a cumulative GPA of 3.0, while 11.3% had a GPA of 2.0 and 6.0% achieved a GPA of 4.0.

Table 1: Demographic Characteristics of Nursing Students (N = 133)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	< 20 years	71	53.4
	> 20 years	61	45.9
	Exactly 20 years	1	0.8
Gender	Male	13	9.8
	Female	120	90.2
Residence	Urban	73	54.9
	Suburban	26	19.5
	Rural	34	25.6
Cumulative GPA	2.0	15	11.3
	3.0	110	82.7
	4.0	8	6.0

Perceptions of Nursing Students Regarding ChatGPT

Students' perceptions of ChatGPT were assessed using ten Likert-scale statements addressing comprehension, assignments, exam preparation, confidence, reliability, and ease of use.

A large majority of students agreed or strongly agreed that ChatGPT helps them understand course concepts (82.7%) and improves content comprehension (78.2%). More than half of the respondents (57.1%) perceived ChatGPT as useful for practical case studies, while approximately 70.0% reported that it assists in exam preparation.

ChatGPT was widely perceived as an efficient academic aid, with 75.9% of students agreeing that it helps them complete assignments more efficiently. Additionally, 64.7% of respondents felt confident using ChatGPT for academic tasks.

Regarding reliability, 71.4% perceived ChatGPT as a reliable source of information, though 24.1% remained neutral.

Overall learning enhancement was strongly supported, as 73.7% agreed that ChatGPT enhances their learning experience. Opinions were mixed regarding replacement of traditional study methods: 51.1% believed ChatGPT could replace traditional methods, while 20.3% disagreed. Ease of use was highly rated, with 79.7% finding ChatGPT easy to use for academic purposes.

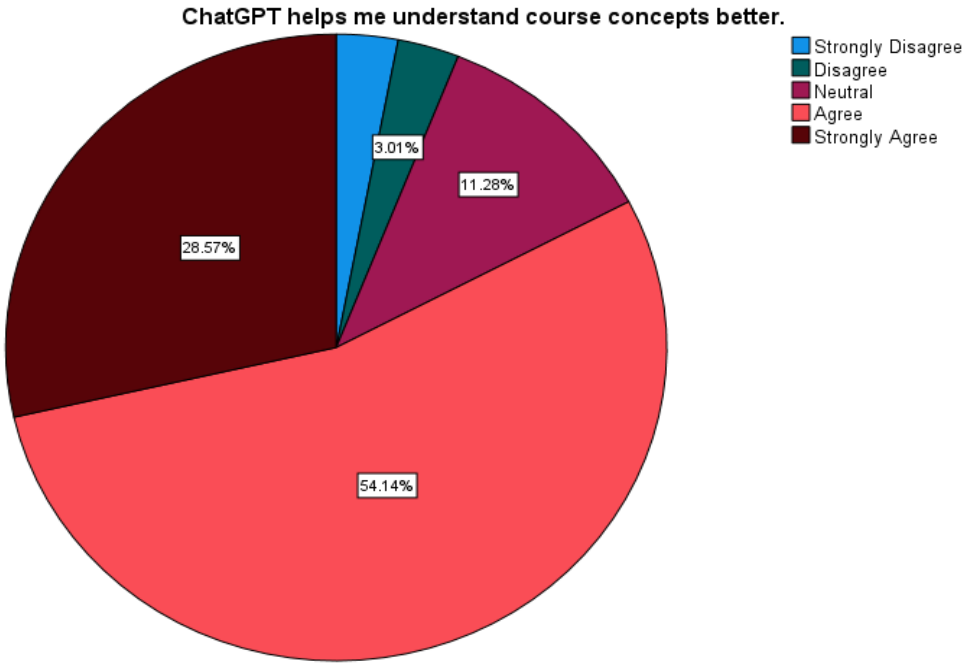


Table 2: Perceptions of Nursing Students Regarding ChatGPT in Academic Learning (N = 133)

S. No	Statement	Agree + Strongly Agree (%)	Mean ± SD
1	Helps understand course concepts	82.7	4.02 ± 0.92
2	Improves content comprehension	78.2	3.92 ± 0.95
3	Useful for practical case studies	57.1	3.64 ± 1.07
4	Assists in exam preparation	70.0	3.79 ± 1.12
5	Helps complete assignments efficiently	75.9	4.06 ± 1.00
6	Confidence in academic use	64.7	3.68 ± 1.10
7	Reliable source of information	71.4	3.91 ± 0.91
8	Enhances learning experience	73.7	3.78 ± 0.94
9	Can replace traditional study methods	51.1	3.43 ± 1.17
10	Easy to use for academics	79.7	3.98 ± 1.05

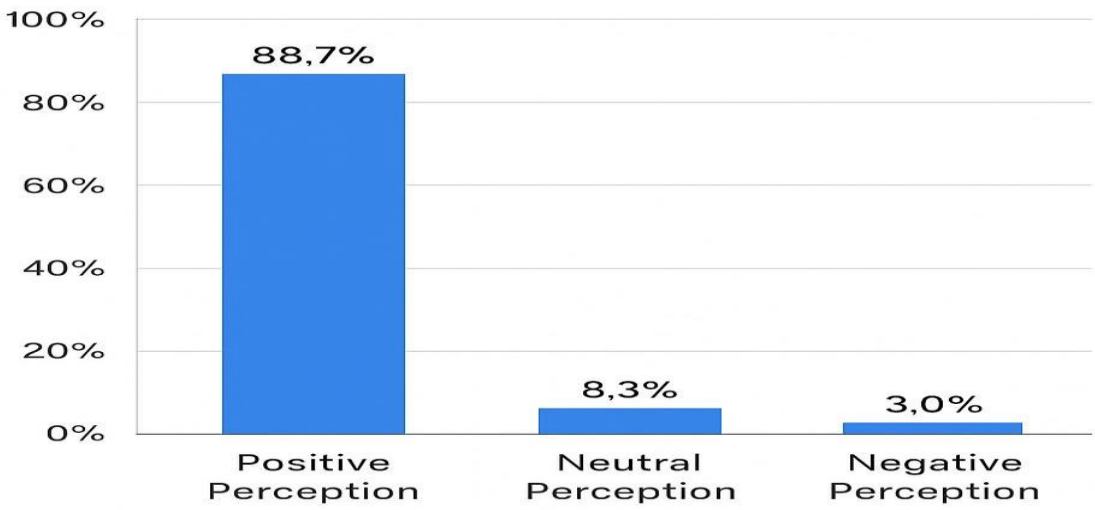
Overall Perception of Nursing Students

To satisfy the study objective, composite perception scores were calculated and categorized into **positive**, **neutral**, and **negative** perceptions.

Table 3: Overall Perception of Nursing Students Regarding ChatGPT (N = 133)

Perception Category	Frequency (n)	Percentage (%)
Positive	118	88.7
Neutral	11	8.3
Negative	4	3.0

The findings demonstrate that an overwhelming majority of nursing students (88.7%) held a positive perception of ChatGPT as an educational tool. Only a small proportion expressed neutral (8.3%) or negative (3.0%) perceptions.



The analysis of perception data clearly reveals an overwhelmingly positive stance among nursing students at HMC Nursing College towards ChatGPT as an educational tool. With 88.7% (n=118) of the 133 respondents holding a positive perception, it is evident that the vast majority recognize its utility in their academic journey. This strong positive skew suggests that students' knowledge of ChatGPT extends to its practical application, perceiving it as an effective aid for enhancing comprehension, completing assignments, and preparing for exams. The small proportion of neutral (8.3%) and negative (3.0%) perceptions indicates that reservations or a lack of conviction about its use are minimal within this cohort. This collective outlook implies that students are not only familiar with ChatGPT but also confidently integrate it into their learning strategies, viewing it as a reliable and experience-enhancing resource. Therefore, it can be concluded that the foundational knowledge regarding ChatGPT's use for learning is not only present but is also coupled with a highly favorable perception of its educational tool.

The results clearly indicate that nursing students at HMC College of Nursing hold a predominantly positive perception, particularly regarding comprehension, assignment efficiency, exam preparation, usability, and learning enhancement. These findings confirm that ChatGPT is widely accepted and perceived as a beneficial academic support tool among undergraduate nursing students.

Discussion

The findings of the present study demonstrate an overwhelmingly positive perception of ChatGPT as an educational tool among nursing students, with 88.7% (n = 118) of respondents classified within the positive perception category based on their cumulative perception scores. This indicates that the vast majority of participants regard ChatGPT as a beneficial and supportive resource for their academic activities. The high composite scores derived from ten perception indicators suggest that students perceive ChatGPT as particularly effective in enhancing core learning processes, including conceptual understanding, content comprehension, assignment completion, and examination preparation. These findings reflect the perceived practical utility of ChatGPT within the demanding academic environment of nursing education.

The strong positive reception observed in this study is consistent with emerging international evidence on the use of generative artificial intelligence in nursing education. Similar findings were reported by Han et al. [13], who observed that nursing students actively utilized generative AI tools for academic support and perceived them as beneficial in managing academic workload. Furthermore, the high scores related to ease of use and confidence align closely with the constructs of the Technology Acceptance Model (TAM), which emphasizes perceived usefulness and perceived ease of use as key determinants of technology adoption [14]. These results also support the conclusions of Wang and Fan [11], whose meta-analysis highlighted the positive influence of ChatGPT on learning performance, perceptions, and higher-order thinking skills.

Despite the strong endorsement of ChatGPT's educational value, these findings must be interpreted within the critical context of nursing education. The high level of agreement with the statement that ChatGPT is a reliable source of information highlights the importance of strengthening students' digital literacy and critical appraisal skills. Given the potential risks associated with inaccurate or incomplete AI-generated information, it is essential that nursing curricula emphasize verification of sources and responsible AI use to ensure patient safety and sound clinical decision-making in future practice.

Although minimal, the presence of neutral (8.3%) and negative (3.0%) perceptions suggests that a small proportion of students remain cautious about ChatGPT's role in academic learning, particularly regarding its potential to replace traditional study methods. This indicates the need for balanced integration strategies that position ChatGPT as a supplementary rather than substitutive educational tool.

Overall, the findings underscore a strong acceptance of ChatGPT among nursing students and highlight its potential to enhance academic efficiency and learning experiences when used appropriately and ethically.

Recommendations

Based on the study findings, the following recommendations are proposed:

1. **Educational institutions** should integrate ChatGPT as a **supplementary learning tool**, given the overwhelmingly positive perceptions expressed by nursing students.
2. **Training workshops** should be conducted to enhance students' competencies in the effective and ethical use of AI tools, including critical evaluation of AI-generated content.
3. **Faculty members** should incorporate ChatGPT into teaching strategies for concept clarification, assignment guidance, and examination preparation, while maintaining academic rigor.
4. **Clear institutional guidelines and policies** should be developed to promote responsible AI use, prevent overreliance, and uphold academic integrity.
5. **Future research** should explore the long-term impact of ChatGPT on academic performance, clinical reasoning, and learning outcomes across different nursing programs and cohorts.

Conclusion

This study assessed the perceptions of nursing students at Hayatabad Medical Complex College of Nursing, Peshawar, regarding the use of ChatGPT as an educational tool in academic learning. The findings revealed overwhelmingly positive perceptions, with 88.7% of participants demonstrating favorable attitudes toward ChatGPT.

Students reported that ChatGPT improved their understanding of course concepts, enhanced content comprehension, supported examination preparation, and facilitated efficient completion of assignments. These findings are consistent with international literature highlighting the academic benefits of generative AI in nursing education.

Overall, the study concludes that ChatGPT is perceived as a reliable, user-friendly, and effective educational aid that meaningfully enhances nursing students' learning experiences. Thoughtful integration of ChatGPT into

academic activities, supported by ethical guidelines and faculty oversight, may contribute to improved learning outcomes in nursing education.

Limitations of the Study

This study has several limitations that should be acknowledged:

- The research was conducted at a single nursing college, which may limit the generalizability of the findings.
- The sample was predominantly female and urban-based, which may not fully represent the broader nursing student population.
- Data were collected using self-reported questionnaires, which may introduce response bias.
- The cross-sectional design captured perceptions at a single point in time and does not reflect changes over time.
- The perception scoring categories may not fully capture nuanced attitudes toward ChatGPT use.

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