护理杂志
Journal of Nursing
Volume 72 Number 02
ISSN: 0047-262X
DOI: 10.5281/zenodo.14909852

Assessment of Knowledge, Attitude and Practices of Nursing and Lady Health Visitors Students Regarding Chat-GPT. A Cross Sectional Descriptive Study

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Abstract

The integration of artificial intelligence tools, including ChatGPT, is increasingly prevalent in nursing education. Within the healthcare sector, ChatGPT presents distinctive opportunities to improve both the learning experiences and clinical practices of nursing students. The aim of the study was to evaluate the level of awareness, attitude, and practices of undergraduate nursing students regarding ChatGPT in Pakistan. Methodology: A cross-sectional study design was adopted for the current study that was conducted in nursing institutes of Pakistan, while the participants were undergraduate nursing and lady health visitors students. The sample size of the study was 347 using a convenient sampling technique, while data were collected through a valid and reliable questionnaire. Data were analysed through SPSS 22 while goals and objectives of the study were explained to the participant to protect their ethical rights. Results: The maximum number of participants were male n = 237 (68.1%), the age group 21 to 25 was n = 132 (37.9%), and the qualification of 4 years BSN was n = 256 (73.6%). The maximum mean score regarding ChatGPT was an attitude of 1.50 ± 0.61, which indicates a positive attitude, followed by a moderate level of awareness of 1.28 ± 0.61 and an average practice of 1.25 ± 0.41. Conclusion: On the basis of findings, it showed that participants have a moderate level of awareness, attitude, and practices, which indicated that ChatGPT is perceived as a useful and beneficial tool that significantly improves students' academic performance and understanding, enriching the learning experience.

Keywords: *Chat-GPT, Knowledge, Attitude, Practices, Nursing, Undergraduate Students.*

INTRODUCTION

Complex medical treatments like cardio surgical surgeries have a high risk of serious consequences. Organ malfunction (such as cardiac failure, renal failure, and extended intubation), neurological disorders (such as postoperative psychosis, and perioperative stroke), and surgical complications (such as operational mortality, deep sternal wound infection, and reoperation) are all quite common after surgery. (1, 2).

Nursing may be perceived as an art and science, as the science requires observation and experimentation, which is done in the scope of nursing institutions in the form of disease processes, practical evidence, and theories.

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The art of nursing refers to skills and practice in caring and understanding the patients, their communication, and even extending love and compassion to the sick. It is the combination of science and art that differentiates nurses from other healthcare professionals [1]. In today's educational environment, the incorporation of technology plays a crucial role in influencing the learning experiences of nursing students. Notably, artificial intelligence (AI) tools, including ChatGPT, have surfaced as valuable resources that provide prompt support and enhance the process of knowledge acquisition [2].

The incorporation of artificial intelligence technologies, including ChatGPT, into nursing education signifies a notable transformation in teaching methodologies, mirroring a wider movement towards the modernisation of educational practices.

As nursing programs adapt to incorporate technological innovations, it is crucial to comprehend nursing students' perceptions of tools like ChatGPT to improve their educational experiences. Studies reveal that students regard ChatGPT as a moderately beneficial resource for facilitating research and completing assignments, indicating its potential to enhance time management and academic productivity [3].

Nevertheless, apprehensions regarding ethical issues, such as plagiarism, underscore the importance of nursing programs offering comprehensive training on the responsible utilisation of AI [3]. Furthermore, it is vital to strike a balance that allows students to leverage AI's capabilities without becoming overly reliant, as such dependence may impair their critical thinking and clinical judgement skills. Therefore, the successful integration of ChatGPT into nursing education must address both its practical uses and the ethical implications associated with its application [4].

The capabilities of ChatGPT are derived from its sophisticated architecture, which merges natural language processing with machine learning methodologies to enable interactive, text-based dialogue [5]. By examining extensive datasets, ChatGPT gains an understanding of linguistic patterns, which allows it to deliver contextually appropriate responses, thus increasing its effectiveness across various applications, especially in the healthcare sector [6]. For nursing students, grasping the operational mechanics of this technology can help bridge gaps in the application of medical knowledge [7].

ChatGPT can function as a virtual assistant, providing rapid access to medical information, supporting patient education, and even aiding healthcare professionals with administrative responsibilities, thereby enabling them to concentrate more on patient care [8]. Additionally, it offers opportunities for tailored content creation, which can greatly improve the user experience in healthcare environments. As the integration of artificial intelligence in healthcare progresses, it is essential to address potential ethical concerns to ensure its safe and effective application [9].

In the assessment of nursing students' awareness and perceptions regarding ChatGPT, it becomes clear that the incorporation of artificial intelligence into educational methodologies has prompted a range of reactions among students [10]. A considerable number of learners acknowledge the advantages of ChatGPT, perceiving it as a valuable tool for improving academic productivity, especially concerning time management and research activities, which aligns with previous studies highlighting its perceived utility [3].

Nonetheless, ethical issues related to its application—particularly those concerning plagiarism—require careful attention. Evidence suggests that while some nursing students exhibit confidence in utilising AI tools, a significant portion lacks a thorough understanding of their ethical ramifications, mirroring trends seen in wider educational settings [11].

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Therefore, it is essential to cultivate a more profound comprehension of both the opportunities and ethical dilemmas posed by AI technologies for nursing students as they navigate an increasingly intricate educational landscape [12]. To explore the importance of AI, this study was conducted with the aim of determining the level of knowledge, attitude, and practices regarding ChatGPT among nursing students.

METHODOLOGY

The study design is anticipated to utilise a descriptive cross-sectional design, which is effective for collecting data on nursing students' knowledge, attitude, and practices towards ChatGPT from October to December 2024.

Study Population The focus of this research will be nursing students from different institutes of Khyber Pakhtunkhwa and Punjab. The criteria for inclusion may encompass nursing students enrolled in either undergraduate or graduate programs. - Students who have internet access and are familiar with digital tools. - Participation in the study must be voluntary. Exclusion criteria may include students who are unwilling to participate or are unavailable during the data collection period.

Sampling Technique A convenience sampling approach was adopted for its practicality and ease of access to nursing students. The sample size was calculated through the online Raosoft calculator by using a 95% confidence level, a 5% margin of error, and 80% prevalence, which was 320; therefore, a 10% attrition rate was applied, and data was collected from 352 to make it sure in case of an incomplete questionnaire, where 4 checklists were incomplete, and the final sample size was 348.

Data Collection Methods Survey/Questionnaire: A structured adopted questionnaire was used in the current study for data collection. The questionnaire contains 20 items divided as knowledge, attitude, and perception towards AI.

The checklist was divided into socio-demographic data and assessment of knowledge, attitude, and perception towards AI. The socio-demographic data contain the gender, age, current year, living status, and use of the internet. The second section contains 5 questions regarding knowledge, 7 questions regarding attitude, and 8 questions about practices of ChatGPT having a 3-point scale as yes, no, and maybe [13].

Data Analysis: Descriptive statistics, including percentages, frequencies, and mean scores, were employed to evaluate the responses to closed-ended questions. To determine any significant differences among various groups, such as year of study, statistical tests like chi-square or t-tests may be utilized.

Ethical Considerations: Participants will receive comprehensive information regarding the study's objectives, methodologies, potential risks, and benefits. They will be required to sign informed consent forms. The personal information of participants will be treated with confidentiality, and data will be anonymised to protect their privacy. Participation in the study will be entirely voluntary, allowing participants the option to withdraw at any point without facing any repercussions.

RESULTS

The total number of participants was 348, where the maximum number of participants were male n-237 (68.1%), while the female were n-111 (31.9%). The age group 21 to 25 was n-132 (37.9%), the qualification of 4 years BSN was n-256 (73.6%), students from private sector institutes were n-255 (73.3%), and students who used the internet daily for 1 to 2 hours n-157 (45.1%) were in the majority (see table 1).

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Table 1: Socio-demographic data of the participants

	N-348	%
Gender		
male	237	68.1%
female	111	31.9%
Age		
20 and below	132	37.9%
21 to 25	157	45.1%
26 to 30	33	9.5%
31 and above years	26	7.5%
Qualification		
BSN 4 year	256	73.6%
Post RN	82	23.6%
LHV	10	2.9%
Institute Status		
Public	93	26.7%
Private	255	73.3%
Use of Internet		
1 to 2 hours	157	45.1%
3 to 5 years	137	39.4%
5 to 6 hours	27	7.8%
7 and above	27	7.8%

Knowledge of students regarding Chat-GPT

The maximum number of students mentioned Chat-GPT n-182 (52.3%), read articles about Chat-GPT n-227 (65.2%), and considered that Chat-GPT is accurate in understanding and responding to user questions. 227 (65.2%) and a higher number of students, n = 236 (67.8%), mentioned that there are any ethical or legal considerations related to using ChatGPT. On the other side, the majority of the students (170, 48.9%) do. Do you know how ChatGPT works? (see table 2).

The maximum number of students attitudes was positive n-146 (42%) regarding feeling comfortable using Chat-GPT, followed by a response of maybe n-145 (41.7%). The majority of the students (n=250, 71.8%) have trust regarding the accuracy and useful information and also feel comfortable using ChatGPT.

The higher number of students n-268 (78.7%) considered that Chat-GPT reduced workload, n-274 (78.7%) mentioned that interaction with Chat-GPT is better than human, and n-260 (74.7%) considered that Chat-GPT will replace human communication in the future. On the other hand, the majority of the students (n = 123, 35.3%) think that they will not recommend ChatGPT to others (see Table 2).

Eight questions were asked regarding the practices of ChatGPT. The majority of the students (n=178, 51.1%) use ChatGPT frequently; n=157 (45.1%) believe that ChatGPT is safe for children; n=161 (46.3%) consider that ChatGPT can perform multiple tasks; and a higher number of students (n=249, 71.6%) mentioned that it is also easy to use.

Moreover, a higher number of students (n = 289, 83%) also highlighted that they face difficulties and limitations during utilization; n = 194 (55.7%) noticed that no changes were detected in the utilization of ChatGPT; n = 137 (39.4%) didn't consider that it doesn't decrease thinking skills in use; and the maximum number of students (n = 185, 53.2%) also mentioned that they never face security or privacy concerns (see Table 2).

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Table 2: Knowledge, attitude and perception of students towards Chat-GPT

	Yes	Maybe	No	Mean score
Knowledge regarding Chat-GPT				
1-Have you heard of Chat-GPT before?	182 (52.3%)	47 (13.5%)	119 (34.2%)	1.18 ± 0.91
2-Have you read any articles or research papers about ChatGPT?	227 (65.2%)	23 (6.6%)	98 (28.2%)	1.37 ± 0.89
3-Do you know how ChatGPT works?	135 (38.8%)	43 (12.4%)	170 (48.9%)	0.89 ± 0.93
4- Do you think Chat-GPT is accurate in understanding and responding to user questions?	227 (65.2%)	23 (6.6%)	98 (28.2%)	1.37 ± 0.89
5- Do you think there are any ethical or legal considerations related to using Chat-GPT?	236 (67.8%)	83 (23.9%)	29 (8.3%)	1.59 ± 0.63
Attitude towards Chat-GPT				
1-Do you feel comfortable using Chat-GPT in your personal or professional life?	146 (42.0%)	145 (41.7%)	57 (16.4%)	1.25 ± 0.72
2-Do you trust Chat-GPT to provide accurate and useful information?	250 (71.8%)	61 (17.5%)	37 (10.6%)	1.61 ± 0.67
3-Do you feel comfortable interacting with ChatGPT?	250 (71.8%)	86 (24.7%)	12 (3.4%)	1.68 ± 0.53
4-Do you think that ChatGPT can reduce your workload?	268 (77.0%)	46 (13.2%)	34 (9.8%)	1.67 ± 0.64
5-Is ChatGPT better than human interaction?	274 (78.7%)	49 (14.1%)	25 (7.2%)	1.71 ± 0.59
6-Would you recommend Chat-GPT to others?	109 (31.3%)	116 (33.3%)	123 (35.3%)	0.95 ± 0.81
7- Do you think Chat-GPT will replace human communication in the future?	260 (74.7%)	61 (17.5%)	27 (7.8%)	1.66 ± 0.61
3:Practices regarding Chat-GPT				
1-Do you use Chat-GPT frequently?	178 (51.1%)	127 (36.5%)	43 (12.4%)	1.38 ± 0.69
2-Do you think it is safe for children to use Chat-GPT? (e.g. school work, assignments)	157 (45.1%)	54 (15.5%)	137 (39.4%)	1.05 ± 0.91
3-Do you think Chat-GPT can be used for performing multiple tasks?	161 (46.3%)	95 (27.3%)	92 (26.4%)	1.19 ± 0.83
4-Do you think that Chat-GPT is easy to use?	249 (71.6%)	66 (19.0%)	33 (9.5%)	1.62 ± 0.65
5-Have you faced any difficulties or limitations while using Chat-GPT?	289 (83.0%)	47 (13.5%)	12 (3.4%)	1.79 ± 0.48
6-Have you noticed any changes in your use of Chat-GPT over time?	104 (29.9%)	50 (14.4%)	194 (55.7%)	0.74 ± 0.88
7-Do you think that by using Chat-GPT, it can decrease your thinking skills as Chat-GPT does the work entirely?	128 (36.8%)	83 (23.9%)	137 (39.4%)	0.97 ± 0.87
8-When using Chat-GPT, have you ever had any privacy or security concerns?	185 (53.2%)	83 (23.9%)	80 (53.2%)	1.30 ± 0.81

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Overall Knowledge, Attitude and practices regarding Chat-GPT

The maximum mean score regarding Chat-GPT was of attitude 1.50 ± 0.61 that indicates positive attitude, followed by moderate level of awareness 1.28 ± 0.61, and average practice 1.25 ± 0.41 (see table 3).

Table 3: Overall score of knowledge, attitude and practices

	Minimum	Maximum	Mean	Std. Deviation
knowledge	0.00	2.00	1.2833	0.61062
Attitude	0.00	2.00	1.5099	0.38600
Practices	0.00	2.00	1.2597	0.41042

Correlation of knowledge, attitude and practices regarding demographic data

The knowledge is associated weak positively with age and mild positively with qualification while associated weak negatively with gender. Attitude is correlated mild positively with age and qualification while mild negative with gender. Practices of the undergraduate students was weak negatively associated with gender, age, and qualification (see table 4).

Table 4: Association of knowledge, attitude and practices with demographic variables

	1	2	3	4	5	6
1: Gender	-	.397**	.605**	-.092	-.044	-.093
2: Age		-	.487**	.054	.051	-.059
3: Qualification			-	.171**	.122*	-.031
4: knowledge				-	.430**	.379**
5: Attitude					-	.517**
6: Practices						-

DISCUSSION

ChatGPT represents the most recent advancement in artificial intelligence technology, which has recently become available to the public. Across the globe, millions of individuals have engaged with ChatGPT for a range of applications, including the composition of articles and reports and addressing diverse enquiries. The objective of this study was to assess the awareness, perceptions, and usage patterns of the general population regarding ChatGPT.

In the present study, the maximum number of participants were male n=237 (68.1%), age group 21 to 25 was n=132 (37.9%), qualification of 4 years BSN was n=256 (73.6%), students from private sector institutes were n=255 (73.3%), and students who used the internet daily for 1 to 2 hours n=157 (45.1%) were in the majority. A study conducted in Tunisia shows inline demographic data were the majority of the participants were male n=475 (55.6%), age group 18-22 n=446 (52.2%), and students of 1st year n=244 (28.5%) [14]. Another study completed in Spain revealed that among the total participants of 86, the average age of the participants was 23.01 ± 6.983, ranging from 20 to 52 years. The majority of participants were women (86.05%), which precisely reflects the current demographic characteristics of nursing students [2].

The study found moderate awareness among participants about ChatGPT, with most mentioning it (52.3%), reading articles (65.2%), and considering it accurate. However, 67.8% mentioned ethical or legal considerations. Most students (48.9%) didn't know how ChatGPT works.

A similar study conducted in Pakistan reported that approximately 75% of the participants were familiar with ChatGPT. The creators of ChatGPT employed various platforms to present their program to users, including multiple social media applications. Additionally, more than half of the participants expressed confidence in their ability to utilise ChatGPT effectively.

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The artificial intelligence-driven program offers a streamlined user experience, enhancing its accessibility. Regarding the accuracy and comprehension of user enquiries by ChatGPT, half of the participants believed in its capabilities [13]. Numerous studies have corroborated these findings, demonstrating that ChatGPT has excelled in various challenging assessments and achieved commendable results. This evidence sheds light on ChatGPT's proficiency in interpreting the input it receives [16]. A Tunisian study demonstrated that faculty members exhibited a greater level of knowledge compared to students [15]. However, over 40% of both students and faculty surveyed expressed strong confidence in the reliability of ChatGPT responses, a belief that does not correspond with the actual situation [14, 17].

The students surveyed displayed a moderately positive attitude towards ChatGPT. On the positive side, a significant majority regarded it as beneficial (for instance, in enhancing the quality of knowledge), user-friendly, and dependable. Conversely, the fact that 46.8% of the surveyed students believed that ChatGPT encourages plagiarism emphasised the role of information technology in tempting students to commit plagiarism [18]. A Chinese study showed there were no significant differences in knowledge and attitudes towards artificial intelligence (AI) in nursing among nurses with varying job titles. Overall, there was a general lack of understanding of AI, although attitudes remained positive. Several factors may contribute to the limited comprehension of AI among nurses [19].

Firstly, the integration of AI within the nursing sector in China is still in its nascent phase, and the practical application of AI technologies in nursing remains poorly understood. Secondly, the knowledge required for AI technology often encompasses intricate computer science concepts, and certain AI algorithms are characterised by the "black box" phenomenon, which complicates understanding [20]. Lastly, the nursing shortage in China results in many nurses experiencing physical and mental fatigue due to demanding workloads, leaving them with insufficient time to engage in learning about AI [21].

The study found a positive attitude and moderate practices among students towards ChatGPT, with 42% feeling comfortable using it. Most trust its accuracy and usefulness. Most frequently use it, with 45.1% deeming it safe for children and 46.3% stating it can perform multiple tasks. It is due to the availability of the software for the students that used it easily through their laptops in the preparation of guidelines, assignments, and presentations. ChatGPT possesses a vast repository of data and continues to enhance its knowledge base through user interactions. It provides responses based on the information it has at its disposal [13]. Regarding the trustworthiness of the information generated by ChatGPT, fewer than half of the respondents expressed confidence in its accuracy, with many remaining uncertain.

This scepticism may stem from the program's relative novelty [22]. In terms of alleviating workload, a significant number of participants in our research indicated that ChatGPT has indeed lessened their workload. Another study revealed that artificial intelligence contributes to workload reduction and enhances overall organisational productivity [23]. Additionally, our study revealed that participants do not perceive ChatGPT as superior to human interaction. Although ChatGPT is designed to emulate human responses and address enquiries effectively, it has not surpassed the value of direct human engagement [24]. Another study illustrated that the academic application of ChatGPT is predominant, accounting for 80.4%.

This significant prevalence indicates that students regard this tool as a dependable and effective asset for their educational pursuits [25]. Presently, there is an increasing incorporation of ChatGPT into academic training, as students perceive it to be a multifaceted resource that enhances both learning and the generation and retrieval of pertinent information [26].

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ISSN: 0047-262X
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The research was limited to assessing the responses from two cities, while a broader, nationwide approach could enhance the study's comprehensiveness. Additionally, as a cross-sectional study, it offers a momentary view of data at a particular time, thereby constraining the capacity to determine causal relationships or to observe changes over time.

CONCLUSION

This study evaluated the level of awareness, attitude, and practices regarding ChatGPT. On the basis of findings, it showed that participants have a moderate level of awareness, attitude, and practices, which indicated that ChatGPT is perceived as a useful and beneficial tool that significantly improves students' academic performance and understanding, enriching the learning experience. A significant group of students reported substantial improvements in their academic performance by using ChatGPT. Furthermore, it was observed that students with better academic records take more effective advantage of ChatGPT for their learning. These findings highlight the need to integrate tools such as ChatGPT into educational programs. To optimise the impact of these tools, educational institutions should consider policies that ensure equitable access, training in their use, and the development of complementary resources to support both student learning and well-being.

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