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Original Research

ChatGPT Usage for Academic Purposes and Influencing Factors Among Students at Hanoi Medical University, Vietnam

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ABSTRACT

Background: The advancement of artificial intelligence (AI) has unveiled numerous opportunities in medical education, with ChatGPT emerging as a prevalent learning support tool. However, the adoption rate and the determinants associated with the integration of ChatGPT among medical students remain under-researched. **Methods:** A cross-sectional study was conducted on 335 medical students at Hanoi Medical University. Data was collected using an online questionnaire in KoboToolbox, employing a convenience sampling method. The data was analyzed using Stata 17.0, employing descriptive statistics and multivariate logistic regression to examine the relationship between demographics, knowledge, and attitudes toward ChatGPT. **Results:** The results showed that 73.4% of students had used ChatGPT, with 68.7% using it to complete assignments and 61% believing that the tool helped save time and effort. However, only 17.9% were aware of ChatGPT's limitations. Positive knowledge and attitudes towards ChatGPT increased the likelihood of using the tool. Students with a good academic performance level were 3.25 times more likely to use ChatGPT than excellent students (OR=3.25; p=0.013), and the Dentistry department had the highest usage rate, 4.53 times higher than the General Medicine department. **Conclusion:** Medical students use GPT chat at a comparatively high rate. Integrating this tool into medical education requires specific guidelines to maximize benefits while ensuring accuracy and ethics.

Keywords: Generative artificial intelligence; medical students; ChatGPT; academic performance

1. INTRODUCTION

The extraordinary advancement of artificial intelligence (AI) has created various new educational opportunities, particularly in medical education. AI gives medical students access to a vast body of knowledge, helps them better understand complicated topics, and improves their learning efficiency.(1) A prominent application of AI is ChatGPT, a large language model developed by OpenAI and introduced on November 30, 2022. ChatGPT's capacity for synthesizing information and providing accurate, timely responses has positioned it as a valuable tool in educational settings.(2) ChatGPT has been widely adopted in higher education institutions globally, it is a versatile tool for students and instructors, aiding in information retrieval, query resolution, and academic writing. Research suggests that

ChatGPT can enhance learning efficiency and reduce workload.[3–5] However, there are different opinions regarding the use of ChatGPT in education. More than half of college students believe that using ChatGPT to do projects and tests is cheating, 43% of students have used AI tools before, and half acknowledge that they rely on them for assignments and tests, according to a BestColleges poll performed in the United States.[6] Moreover, according to Koli (2023), ChatGPT is highly susceptible to manipulation, potentially leading to unreliable or biased results.[7] As per Farhi et al., ChatGPT usage considerably impacts student concerns and ethical awareness, requiring a comprehensive understanding to effectively integrate ChatGPT into education without sparking controversy.[8]

In Vietnam, ChatGPT has gained popularity among medical students, but there is a dearth of detailed research examining its specific applications and impact on medical education. Especially in medical universities, where students require in-depth knowledge and continuous updates, ChatGPT can provide substantial benefits in facilitating student learning and research. Prior studies have highlighted the potential of AI to facilitate medical student learning by automating tasks like content summarization, question generation, and feedback analysis.[4] However, the widespread adoption and effective utilization of AI tools like ChatGPT in medical education are still limited. A study at a Ho Chi Minh City university, in Vietnam found that while a third of faculty and students have used ChatGPT, few have opted for the paid version, and overall proficiency and understanding of its features remain limited.[9] These findings highlight the need for further research to address the challenges and opportunities of AI in medical education. Hanoi Medical University, a leading medical training institution in Vietnam, trains thousands of medical students annually. Research on the current status of ChatGPT usage and related factors here not only helps to understand more about the level of AI technology application in students' learning but also provides valuable information to shape development strategies and implement AI tools in future medical education. This information is crucial for developing evidence-based strategies to enhance student learning outcomes and inform effective decision-making in medical education.

The study is of particular significance within the context of digital transformation in education, as the rapid development of artificial intelligence (AI) tools is increasingly applied to support learning. The extent or effectiveness of their use among medical students – a specific group with high demands for accuracy and scientific reasoning – remains insufficiently and systematically evaluated. This study conducts a survey on how medical students at Hanoi Medical University are approaching and utilizing ChatGPT in their learning. The novelty of this research lies in its focus on the medical education environment in Vietnam, which emphasizes evidence-based medicine. Consequently, it provides initial information and data regarding the role of ChatGPT in Vietnamese medical education. The results obtained from this research can serve as a reference for developing academic strategies, innovating teaching methods, and fostering the "AI-enhanced learning" model, aimed at effectively harnessing the potential of AI tools in the medical field. Therefore, we conducted this study to describe the current status of ChatGPT usage among and analyze some factors related to ChatGPT usage among Hanoi Medical University students, in Vietnam, in 2024.

2. METHODS

2.1. Study Design

A cross-sectional study was employed to assess the current status of ChatGPT usage among medical students. Data were collected at a single point in time to provide a timely and accurate overview of usage patterns and associated factors. This methodological approach was selected for its efficiency and is widely used in education and behavioral research to examine prevalence, user perceptions, and relationships among relevant variables.

2.2. Time and Location

This study was conducted among medical students at Hanoi Medical University (HMU) from May to July 2024. Data were collected using a self-administered online questionnaire distributed through class representatives and club members to maxinize the response rate. HMU was chosen as the study site not only because it is one of the leading medical training institutions in Vietnam, but also due to its pioneering efforts in implementing digital transformation and integrating educational technologies. These factors may directly influence students' awareness, attitudes, and behaviors regarding the use of artificial intelligence applications in learning, such as ChatGPT.

2.3. Study Subjects

Inclusion criteria: Students who agreed to participate, provide informed consent in the study and used smartphones

Exclusion criteria: People who refused to participate in the survey.

2.4. Sample Size and Sampling

The sample size was determined using the following formula for proportions:

$$n=Z^2_{1-\alpha/2}\frac{p(1-p)}{d^2}$$

To ensure the reliability of the study, a minimum sample size of 303 participants was calculated based on a 95% confidence level, a margin of error (d) of 0.05, and an estimated proportion of 0.27 (p=0,27) derived from a pilot study of 50 medical students at Hanoi Medical University. To further enhance the sample's representativeness and accommodate potential data loss or refusals, the sample size was increased by 10% to 331. Ultimately, data was collected from over 335 research subjects. The sample size was selected by convenience method.

2.5. Data Collection

The survey questionnaire is designed on KoboToolbox. A questionnaire was referenced from the research by George Pallivathukal and colleagues in Malaysia, a questionnaire consisting of four sections: general information, knowledge, attitudes, and practices regarding ChatGPT.[4] This questionnaire was piloted in Hanoi Medical University, a questionnaire is evaluated as having a clear and easy-to-understand design, with consistent measurement across items, and a Cronbach's alpha coefficient of 0.89.

Knowledge about ChatGPT was measured using closed-ended yes/no questions, scoring one point for "yes" and no points for "no." Participants used a 5-point Likert scale to reflect their attitudes towards ChatGPT, with positive attitude questions scored from 5 ("strongly agree") to 1 ("strongly disagree"). In contrast, negative attitude questions were reverse scored (1 for "strongly agree" and 5 for "strongly disagree"). Practices regarding ChatGPT were also measured from 5 ("strongly agree") to 1 ("strongly disagree").

2.6. Data Analysis

The collected data were exported to an Excel file for cleaning and analyzed using Stata version 17.0. Descriptive statistics were expressed as frequencies and percentages. The Chi-square test (χ^2) was utilized to assess differences between two or more proportions. A multivariate logistic regression model was applied to identify factors associated with ChatGPT useage, with a significance level at $\alpha = 0.05$.

2.7 Ethical Practices

This study was approved by the Ethical Committee of the Hanoi Medical University (Decision 1397/QĐ-ĐHYHN). Participants received a complete explanation of the study's aims and procedures. They were assured of the confidentiality of their data, which would be used only for this research. Their right to refuse to participate was also clearly communicated.

3. RESULTS

Table 1 illustrated that most students participating in the study are in the age group of 21-25 (58.8%), followed by those aged 18-20 (41.2%), and there were no students older than 25. The proportion of female students in the research is 1.7 times that of male students (63% compared to 37%). The percentage of individuals of Kinh ethnicity (a major ethnic group in Vietnam) took the lead (89%). The number of students who do not follow any religion (86.9%). The lowest proportions were fifth-year students (4.8%) and sixth-year students (4.2%) respectively, while third-year students constituted the largest group (38.2%). The highest percentage of students belong to the field of Preventive Medicine Doctor, accounting for 29.5%. Nearly half of the students have an average academic performance (43.3%).

Table 2 showed that the majority of participants learned about ChatGPT mainly through the Internet (95.5%). Most surveyed students recognize that ChatGPT can assist in paraphrasing text (91.3%) and generating different text formats (86.9%). However, its abilities to read table data, perform statistical tests, and diagnose based on symptoms are less well-known, with recognition rates of 78.5% and 69.6% respectively. The proportion of ability to create reference lists is 67.2%, and performing searches on specific websites is recognized by 73.4%. Only 20.3% of participants know about tools similar to ChatGPT for academic purposes, and just 17.9% understand the limitations of ChatGPT.

In Table 3, the majority of students participating in the study were unsure about the accuracy of the responses from ChatGPT (45.4%); nearly half of the

students believe that ChatGPT retrieves the most latest data on the Internet for answering questions (45.4%); regarding the use of ChatGPT in learning, 41.5% of students are uncertain whether ChatGPT can produce better results/responses than they can; 34.3% of students agree and 4.2% strongly agree that using ChatGPT contrary to educational aims; 39.7% of students disagree that teachers/subject experts cannot detect assignments written by ChatGPT and 40.6% of students are hesitant about the convenience of ChatGPT in completing academic tasks. The number of participating students

Table 1. Demographic characteristics of participants (N=335)

Demographic characteristics	Frequency (n)	Percentage (%)
Age		
18-20	138	41.2
21-25	197	58.8
>25	0	0
Gender		
Male	124	37
Female	211	63
Ethnicity		
Kinh	298	89
Others	37	11
Religion		
No Religion	291	86.9
Buddhism	44	13.1
Christianity	0	0
Others	0	0
Year of study		
First-year	59	17.6
Second year	66	19.7
Third year	128	38.2
Fourth-year	52	15.5
Fifth year	16	4.8
Sixth year	14	4.2
Field of study		
General Doctor	70	20.9
Dentistry	25	7.5
Traditional Medicine	22	6.6
Preventive Medicine	99	29.5
Public Health	57	17
Laboratory Testing	12	3.6
Nursing	6	1.8
Advanced nursing	10	3
Optometry	0	0
Nutrition	24	7.2
Rehabilitation	10	2.9
Grade point average (GPA)		
Excellent (≥8.0)	41	12.2
Good (7.0 – 7.9)	130	38.8
Medium (5.0 – 6.9)	145	43.3
Weak (<5.0)	19	5.7

Table 2. Knowledge about ChatGPT (n=335)

Variable	Frequency (n)	Percentage (%)
How did you come to know about ChatGPT?		
Internet	320	95.5
News	134	40
Family	21	6.3
Teachers	39	11.6
Others	22	6.6
Do you know that ChatGPT can paraphrase?		
Yes	306	91.3
No	29	8.7
Do you know that ChatGPT can produce answers to your questions in various formats? (Write an assignment, essay, or letter, structured research proposal, prepare a questionnaire, and the like)?		
Yes	291	86.9
No	44	13.1
Do you know that ChatGPT can interpret data in tables, perform statistical tests, interpret results, and write analyses?		
Yes	263	78.5
No	72	21.5
Do you know that ChatGPT can suggest a diagnosis based on the symptoms or solve complex mathematical problems?		
Yes	233	69.6
No	102	30.4
Do you know that ChatGPT can generate references in the desired format (Vancouver, Harvard, MLA, and the like)?		
Yes	225	67.2
No	110	32.8
Do you know that ChatGPT can do site-specific searches (PubMed, elicit, Google Scholar, and the like) to avoid fake citations?		
Yes	246	73.4
No	89	26.6
Do you know any other similar tools like ChatGPT that can be used for academic purposes?		
Yes	68	20.3
No	267	79.7
Do you know any limitations of ChatGPT?		
Yes	60	17.9
No	275	82.1

feel that using ChatGPT does not violate ethical concerns (56.7%), although 40.6% believe that its use could negatively impact their learning. A significant 60.6% believe that AI tools like ChatGPT will become the new standard tools in the future and 57.3% are willing to recommend ChatGPT to their friends for academic purposes.

In Table 4, most students who had used ChatGPT account for 73.4%, only 12.6% use it daily, and 45.9% rarely use it. The majority of students use ChatGPT to assist in completing their academic activities (68.7%) and 61% feel that the use of ChatGPT has significantly reduced time and effort for completing academic work/assignments. However, 49.2% of students disagree with the idea of instructors or schools prohibiting the use of ChatGPT for academic purposes and only 30.9% of students are guided on how to use this tool ethically. Notably, 55.3% frequently verify ChatGPT's information, and 66.7% intend to continue using it for academic purposes.

Table 3. Participant's attitudes toward using ChatGPT (n=335)

Question	Strongly agree n (%)	Agree n (%)	Not sure n (%)	Disagree n (%)	Strongly disagree n (%)
I believe that answers/ responses from ChatGPT are reliable and accurate.	19(5.7)	105(31.3)	152(45.4)	54(16.1)	5(1.5)
I believe that ChatGPT retrieves the most recent data for generating responses.	25(7.5)	152(45.4)	106(31.6)	47(14)	5(1.5)
I feel ChatGPT can produce better results/ responses than I can in examinations/assignments.	21(6.3)	118(35.2)	139(41.5)	53(15.8)	4(1.2)
I feel the use of ChatGPT by students for academic purposes defeats the purpose of education.	14(4.2)	115(34.3)	120(35.8)	68(20.3)	18(5.4)
I believe teachers/ subject experts cannot detect assignments written by ChatGPT.	15(4.5)	58(17.3)	110(32.8)	133(39.7)	19(5.7)
I believe that using ChatGPT has increased the convenience of completing my academic tasks, but it has harmed my education/ learning.	16(4.8)	108(32.2)	136(40.6)	66(19.7)	9(2.7)
I feel using ChatGPT for completing written assignments/ examinations is malpractice/ cheating.	10(3)	111(33.1)	114(34)	80(23.9)	20(6)
I feel it is possible to use ChatGPT to support academic activities without violating ethical concerns.	25(7.5)	190(56.7)	97(28.9)	19(5.7)	4(1.2)
I feel the institution should prohibit the use of ChatGPT for academic purposes.	39(11.6)	136(40.6)	89(26.6)	58(17.3)	13(3.9)
I believe AI tools like ChatGPT will become the new normal in the future.	41(12.2)	203(60.6)	71(21.2)	16(4.8)	4(1.2)
I will recommend ChatGPT to my friends for academic purposes.	38(11.3)	192(57.3)	85(25.4)	16(4.8)	4(1.2)

Table 4. Practice of using ChatGPT among the participants (n=335)

Practice	Frequency (n)	Percentage (%)
Have you ever used ChatGPT?		
Used before	246	73.4
Never used	89	26.6
How frequently do you use ChatGPT?		
Daily	31	12.6

(*continued on next page*)

Table 4. (*continued*)

Practice	Frequency (n)	Percentage (%)
Weekly	52	21.2
Monthly	50	20.3
Rarely	113	45.9
I use or have used ChatGPT for non-academic purposes like personal projects for fun.		
Strongly agree	16	6.5
Agree	132	53.7
Not sure	33	13.4
Disagree	54	21.9
Strongly disagree	11	4.5
I use or have used ChatGPT to help complete my academic activities.		
Strongly agree	18	7.3
Agree	169	68.7
Not sure	40	16.3
Disagree	17	6.9
Strongly disagree	2	0.8
The use of ChatGPT has significantly reduced time and effort in completing academic work/assignments.		
Strongly agree	27	11
Agree	150	61
Not sure	54	21.9
Disagree	13	5.3
Strongly disagree	2	0.8
My teachers/institute have prohibited the use of ChatGPT for academic purposes.		
Strongly agree	11	4.5
Agree	29	11.8
Not sure	48	19.5
Disagree	121	49.2
Strongly disagree	37	15
My teachers/institutes have specified how to use AI tools like ChatGPT ethically or responsibly		
Strongly agree	14	5.7
Agree	76	30.9
Not sure	83	33.7
Disagree	61	24.8
Strongly disagree	12	4.9
I verify the accuracy of the information or answers given by ChatGPT		
Strongly agree	43	17.5
Agree	136	55.3
Not sure	51	20.7
Disagree	13	5.3
Strongly disagree	3	1.2
I will continue using ChatGPT for academic purposes in the future		
Strongly agree	34	13.8
Agree	164	66.7
Not sure	40	16.3
Disagree	5	2
Strongly disagree	3	1.2

Table 5 showed that the average academic performance is related to the use of ChatGPT. Students with an average academic performance rating of "good" use ChatGPT 3.25 times more than the figure fo

Table 5. Assessing the relationship between demographics, knowledge, attitude, and ChatGPT usage (multivariate logistic regression) (N=335)

Variable	ChatGPT usage		
	OR	**95% CI**	**p**
Age			
18-20	1		0.056
21-25	0.3	0.09 - 1.03	
>25			
Gender			
Male	1		0.668
Female	1.13	0.64 - 2.02	
Ethnicity			
Kinh	1		0.179
Others	0.56	0.24 - 1.3	
Religion			
No Religion	1.01	0.39 - 2.6	0.984
Buddhism	1		
Christianity			
Others			
GPA			
Excellent (≥8.0)	1		
Good (7.0 – 7.9)	3.25	1.29 - 8.18	0.013
Medium (5.0 – 6.9)	1.1	0.44 - 2.77	0.832
Weak (<5.0)	3.69	0.78 - 17.34	0.099
Field of study			
General Doctor	1		
Dentistry	4.53	1.1 - 18.61	0.036
Traditional Medicine	1.43	0.14 - 1.38	0.157
Preventive Medicine	1.08	0.45 - 2.58	0.865
Public Health	1.03	0.4 - 2.67	0.949
Laboratory Testing	4.38	0.46 - 42.07	0.201
Nursing	0.62	0.89 - 4.33	0.631
Advanced nursing	2.42	0.41 - 14.46	0.332
Optometry			
Nutrition	2.06	0.52 - 8.21	0.306
Rehabilitation	0.3	0.06 - 1.45	0.133
Year of study			
First-year	1		
Second year	0.42	0.17 - 1.05	0.064
Third year	2.66	0.67 - 10.62	0.167
Fourth-year	2.84	0.64 - 12.58	0.169
Fifth year	0.88	0.14 - 5.58	0.894
Sixth year	5.32	0.62 - 46.05	0.129
Knowledge	1.24	1.06 - 1.45	0.006
Attitude	1.12	1.04 - 1.2	0.003

"excellent" (p=0.013). Regarding fields of study, the results indicated that students in Dentistry use ChatGPT 4.35 times more than those in General Doctors (p=0.036). Moreover, students who have positive knowledge and attitudes toward ChatGPT tend to use the tool more frequently (p=0.006, p=0.003). Additionally, no significant associations have been identified between age, gender, religion, ethnicity, year of study, average academic, and fields of study other than Dentistry concerning the usage of ChatGPT (p>0.05).

4. DISCUSSION

The study assessed the current usage of ChatGPT for academic purposes among medical students at Hanoi Medical University and identified factors influencing its adoption. The research findings indicate that medical students still have significant limitations in their knowledge of ChatGPT, with some remaining unclear about its advantages and disadvantages. This result is similar to the study by Nguyen Thi Phuong Thao at Hue University of Medicine and Pharmacy.[10] Most students are primarily aware of ChatGPT through the Internet, with only a few learning about it through media and teachers. This suggests that information about ChatGPT is mainly accessed through online channels and is not widely introduced in educational settings. Another study by Van Em et al. found that ChatGPT is perceived to effectively meet individual learning needs and objectives.[11]

Regarding medical students' attitudes toward using ChatGPT, Table 3 shows that the majority express agreement with ChatGPT's capabilities in various aspects, such as providing good responses to questions, updating new data, and demonstrating accuracy. This reflects a positive attitude among students toward using ChatGPT for exploration and learning. However, a small number of students disagreed on some educational purposes of ChatGPT, with 39.7% disagreeing that teachers cannot detect assignments created by ChatGPT and 34.3% agreeing that using ChatGPT for learning contradicts educational objectives. Notably, a significant proportion of students (40.6%) expressed the opinion that schools should prohibit the use of ChatGPT for educational purposes. This indicates that many students remain concerned and uncertain about its role in education. A similar study also suggests that students may become dependent on or misuse ChatGPT to find answers, thereby diminishing their exploration and analytical skills.[12] Furthermore, 60.6% of students believe that ChatGPT will become a common tool in the future. Kitamura's perspective also suggests that in the future, ChatGPT will be widely used and should be integrated into all educational programs.[13] This reflects optimism about ChatGPT's potential in the technological era, but there is a need for clear guidelines and direction regarding its use in education.[14]

The study indicates that 73.4% of students have used ChatGPT, but only 12.6% use it daily, 21.2% use it weekly, and 45.9% use it rarely. These results are consistent with research conducted among students at Manipal University College Malaysia, where 74.7% of participants reported using ChatGPT infrequently, highlighting its irregular use among students.[4] The majority of students (68.7%) utilize ChatGPT to assist with completing assignments, and 61% feel that it reduces the time and effort required for studying. Students primarily use ChatGPT for learning purposes, as it can help them seek knowledge, foster creativity, and develop new outcomes based on what ChatGPT generates. However, 49.2% of students disagree with the notion that instructors or educational institutions should prohibit the use of ChatGPT for academic purposes, and only 30.9% report being guided on how to use this tool ethically. In many instances, students use ChatGPT to find answers to test questions or to generate essays, assignments, or other coursework without properly citing or acknowledging sources, leading to plagiarism, which is a serious academic violation.[15] This underscores that using ChatGPT for various purposes has significant drawbacks, it is essential to verify and cross-check the accuracy of the information to avoid ethical violations. This is further illustrated by the fact that 72.8% of students frequently verify the accuracy of information or responses provided by ChatGPT. This percentage is significantly higher than in the study by George Pallivathukal R and colleagues, where only 47.6% of students agreed that it is necessary to check the answers provided by ChatGPT.[4]

Our study revealed that factors such as age, gender, ethnicity, and religion were not associated with ChatGPT usage. GPA is a significant factor, with good students using ChatGPT more frequently than very good students (3,25 times, 95% CI = 1,29 - 8,18; p = 0,013). This might be attributed to very good students' tendency to delve deeper into subjects and seek comprehensive understanding, while good students may prioritize efficient problem-solving. Dental students exhibited the

highest usage (OR = 4,53; 95% CI = 1,1 - 18,61; p = 0,036), possibly due to the specialized nature of the field, requiring in-depth knowledge of complex procedures. Additionally, the dynamic nature of dentistry is innovation, which necessitates continuous adaptation to new technologies, making ChatGPT a valuable tool for quickly accessing information.[16-18] The year of study showed no significant influence, although final-year students demonstrated slightly higher usage. Notably, students with positive knowledge (OR = 1.24; 95% CI = 1.06-1.45, p = 0.006) and attitude (OR = 1.12; 95% CI = 1.04-1.2, p = 0.003) towards ChatGPT exhibited higher usage rates. This suggests that medical students recognize ChatGPT's potential for facilitating a deeper understanding of complex concepts and addressing clinical queries. Furthermore, given the demanding schedules of medical students, ChatGPT offers a time-efficient solution for staying updated on medical advancements. However, our findings diverge from Renjith George Pallivathukal's study, which indicated a relationship between the year of study and ChatGPT usage.[4] This discrepancy may be attributed to differences in study timing and context. No other significant factors were identified in our study.

While the utilization of ChatGPT in medical education offers numerous benefits, certain limitations warrant attention. Our survey results indicate that many students harbor doubts about ChatGPT's reliability, accuracy, and timeliness, particularly in the context of precision-demanding medical fields. A recent study by Jialin Liu et al. corroborates this concern, emphasizing the critical importance of accuracy in healthcare and the potential risks associated with misinformation.[19] To ensure the safe and reliable use of ChatGPT, rigorous human oversight is imperative. Our survey found that 73% of students agreed on the need to verify ChatGPT's information, while approximately 20% remained uncertain. However, given their limited ability to verify information, students may be susceptible to inaccuracies. The reliability and efficacy of ChatGPT in the medical field are paramount. Another study suggests that ChatGPT may not serve as a reliable source for medical educators and students, especially for complex queries requiring advanced knowledge and skills.[20] Nevertheless, only 3% of students opposed its continued use, and 17% remained undecided. The lack of specific citations or references in ChatGPT's responses raises concerns about the potential for disseminating inaccurate, misleading, or even plagiarized information.[21] While ChatGPT can be a valuable learning tool, students should use it judiciously, avoiding reliance on it as a primary knowledge source. Its limitations in terms of understanding and expertise in medical fields underscore the irreplaceable role of human experts.[22]

This study has several limitations. The present study was conducted with a limited sample size and within a single university. This may not accurately reflect the broader landscape of ChatGPT usage among medical students. Consequently, the findings cannot be generalized to all medical students in Vietnam. Further research with larger and more diverse samples is crucial to ensure the effective and safe integration of ChatGPT into education settings.

5. CONCLUSION

The findings indicate that while ChatGPT is widely recognized and used, its daily utilization remains low, and many students lack awareness of its limitations. The study also found that academic performance, knowledge, and attitudes significantly impact ChatGPT adoption, with students in Dentistry demonstrating the highest usage rates. These results underscore the growing role of AI in medical education and highlight the need for structured guidance on ethical and effective ChatGPT use. These findings indicate differences compared to previous studies. This suggests the need for further research into the factors influencing usage as well as the impact of this tool on the learning process, to provide specific recommendations for the application of ChatGPT in educational settings.

Ethical Approval

This study was approved by the Ethical Committee of the Hanoi Medical University (Decision 1397/QĐ-ĐHYHN).

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Competing Interests

All the authors declare that there are no conflicts of interest.

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Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

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