

Original Research Article

Beyond Google: association between pre-consultation AI chatbot use and healthcare-seeking behaviour among adult outpatients in a cross-sectional study

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ABSTRACT

Background: Artificial intelligence (AI) chatbots are increasingly used by the public to obtain health-related information before consulting healthcare professionals. Although these tools have improved access to health information, their association with healthcare-seeking behaviour remains insufficiently explored, particularly in real-world outpatient settings. This study aimed to assess the association between pre-consultation AI chatbot use and healthcare-seeking behaviour among adult outpatients.

Methods: A quantitative observational cross-sectional study was conducted among 350 adult outpatients attending two selected healthcare facilities. Data were collected using a structured interviewer-administered questionnaire. Descriptive statistics were used to summarize participant characteristics and AI chatbot use. Associations between pre-consultation AI chatbot use and healthcare-seeking behaviour were analysed using the Chi-square test, and odds ratios (ORs) with 95% confidence intervals (95% CIs) were calculated.

Results: Of the 350 participants, 230 (65.7%) reported using an AI chatbot before consulting a doctor. ChatGPT was the most frequently used platform, and obtaining quick health information was the most common reason for AI chatbot use. AI chatbot users had significantly higher odds of practising self-medication than non-users (OR=5.01; 95% CI: 2.48-10.14; $p<0.001$). However, no statistically significant association was observed between AI chatbot use and delayed doctor consultation (OR=0.79; 95% CI: 0.50-1.23; $p=0.290$).

Conclusions: Pre-consultation AI chatbot use was common among adult outpatients and was significantly associated with self-medication but not with delayed medical consultation. These findings suggest that AI is increasingly influencing patients' healthcare decisions before professional consultation. Promoting digital health literacy and encouraging the responsible use of AI as a supportive information resource may help reduce inappropriate self-medication while supporting informed healthcare-seeking behaviour.

Keywords: Artificial intelligence, ChatGPT, Healthcare-seeking behaviour, Outpatients, Self-medication

INTRODUCTION

Artificial intelligence (AI) has rapidly emerged as an important source of health information, transforming the way individuals seek medical advice before consulting healthcare professionals.¹ Large language model (LLM)-

based AI chatbots, such as ChatGPT, Gemini, Microsoft Copilot, and Meta AI, enable users to obtain immediate responses regarding symptoms, possible diagnoses, treatment options, and general health information.² Their accessibility, convenience, and ability to provide real-time information have contributed to their increasing use among the general population.³

The widespread availability of AI chatbots has introduced a new dimension to healthcare-seeking behaviour.⁴ Before visiting a healthcare facility, many individuals now consult AI chatbots to understand their symptoms, assess disease severity, or explore possible treatment options.⁵ Although AI can improve access to health information and promote patient engagement, concerns remain regarding the reliability of AI-generated responses and the possibility that such information may influence healthcare decisions without professional medical consultation.⁶

Healthcare-seeking behaviour encompasses the decisions and actions individuals take after recognizing a health problem, including whether to seek professional medical care promptly, delay consultation, or practice self-medication.⁷ Delayed consultation may postpone appropriate diagnosis and treatment, while self-medication can lead to inappropriate drug use, adverse drug reactions, antimicrobial resistance, and masking of serious illnesses.⁸ As AI chatbots become increasingly integrated into everyday health information seeking, understanding their association with these behavioural outcomes has become an important public health concern.⁹

Several studies have evaluated the diagnostic performance, accuracy, and potential applications of AI chatbots in healthcare.¹⁰ But, relatively few have examined how AI chatbot use before consulting a doctor is associated with patients' healthcare-seeking behaviour in real-world clinical settings, particularly in low- and middle-income countries such as India.¹¹ Evidence comparing AI chatbot users and non-users with respect to self-medication practices and delay in doctor consultation remains limited.¹² Addressing this knowledge gap is important for informing the responsible integration of AI-assisted health information into routine patient care.¹³

Therefore, the present study aimed to assess the association between AI chatbot use before consulting a doctor and healthcare-seeking behaviour among adult outpatients attending selected healthcare facilities. The specific objectives were to determine the prevalence of AI chatbot use before doctor consultation, identify the common reasons for AI chatbot use, assess participants' perceptions regarding AI chatbots, and compare self-medication practices and delay in doctor consultation between AI chatbot users and non-users.

METHODS

Study design

A quantitative, observational, cross-sectional study was conducted to assess the association between pre-consultation artificial intelligence (AI) chatbot use and healthcare-seeking behaviour among adult outpatients. The study employed a structured interviewer-administered questionnaire to collect information regarding participants' use of AI chatbots before consulting a healthcare professional for their current health problem.

Study setting

The study was conducted in the outpatient departments of two healthcare facilities. One is Aarogyom polyclinic center which is a private polyclinic and another one is Sankhapur Ayushman Arogya Mandir which is a government Health and Wellness Centre. These healthcare facilities provide outpatient services to individuals from diverse socioeconomic and educational backgrounds, enabling the inclusion of participants with varied healthcare experiences. The study was conducted from March 2025 to October 2025.

Study population

The study population comprised adult patients attending the outpatient departments of the selected healthcare facilities during the study period. Only individuals who were able to understand the study objectives and provide informed written consent were included.

Inclusion criteria

Participants fulfilling the following criteria were included: adults aged 18 years and above. Patients attending the outpatient departments of the selected healthcare facilities. Individuals able to communicate in the local language or English. Individuals willing to participate and provide written informed consent.

Exclusion criteria

The following participants were excluded: patients requiring immediate emergency medical care. Individuals with severe cognitive impairment or psychiatric illness affecting communication. Critically ill or medically unstable patients. Healthcare professionals and medical students attending the outpatient department as patients. Individuals unwilling to participate.

Sample size

A total of 350 adult participants were included in the study. Participants were recruited from two selected healthcare facilities during the study period. Of these, 168 participants were recruited from the private polyclinic and 182 from the Government Health and Wellness Centre.

Sampling technique

A consecutive convenience sampling technique was employed. All eligible patients attending the selected outpatient departments during the study period were approached consecutively and invited to participate until the required sample size was achieved.

Study instrument

Data were collected using a structured, researcher-developed questionnaire designed following an extensive

review of the literature on artificial intelligence, digital health, healthcare-seeking behaviour, and patient use of AI chatbots.⁶

The questionnaire consisted of five sections: Section A: Socio-demographic characteristics of the participants. Section B: AI chatbot use before doctor consultation, including awareness, usage status, type of AI chatbot used, reasons for use, and health-related information sought. Section C: Healthcare-seeking behaviour following AI chatbot use, including self-medication practices and delay in doctor consultation. Section D: Participants' perceptions regarding AI chatbots using a five-point Likert scale. Section E: Additional healthcare-related information relevant to the current illness.

The questionnaire was administered through face-to-face interviews to ensure uniformity of data collection and to facilitate participation irrespective of participants' educational background.

Content validity and pilot testing

The draft questionnaire was evaluated by a panel of experts from the fields of medical-surgical nursing, community health nursing, and nursing research to assess its relevance, clarity, simplicity, and comprehensiveness. A pilot study was subsequently conducted among 30 adult outpatients who fulfilled the eligibility criteria. Participants included in the pilot study were excluded from the final analysis. Necessary modifications were incorporated into the questionnaire based on expert recommendations and pilot study observations before commencement of the main study.

Data collection procedure

Eligible participants attending the outpatient departments during the study period were recruited using consecutive convenience sampling. After explaining the purpose and objectives of the study, written informed consent was obtained from each participant. Face-to-face interviews were conducted individually in a private and comfortable setting using the structured questionnaire. Each interview required approximately 10-15 minutes to complete. Participants were encouraged to respond honestly, and clarification was provided whenever required without influencing their responses. Completed questionnaires were reviewed immediately for completeness, consistency and missing data. Whenever feasible, incomplete responses were clarified with the participants before concluding the interview. Each questionnaire was assigned a unique identification number to maintain confidentiality and facilitate data management.

Data management

Completed questionnaires were checked daily for completeness, consistency, and legibility. Data were entered into Microsoft Excel using predefined variable

codes and subsequently exported to the Statistical Package for the Social Sciences (SPSS) version 26.0 for statistical analysis.

Statistical Analysis

Data were analysed using appropriate methods. Descriptive statistics, including frequency and percentage, were used to summarize participants' socio-demographic characteristics, AI chatbot use, healthcare-seeking behaviour, and perception towards AI chatbots. The association between pre-consultation AI chatbot use (AI users versus non-users) and healthcare-seeking behaviour, particularly self-medication and delay in doctor consultation, was assessed using the Chi-square test or Fisher's exact test, where appropriate. Odds ratios (ORs) with 95% confidence intervals (95% CI) were calculated to estimate the strength of associations. A p value of <0.05 was considered statistically significant.

Ethical considerations

Ethical approval was obtained from the Institutional Ethics Committee before commencement of the study. Administrative permission was obtained from the concerned healthcare institutions prior to data collection. Participation in the study was entirely voluntary. Informed consent was obtained from all participants after explaining the purpose, procedures, potential benefits, and voluntary nature of participation. Confidentiality and anonymity were strictly maintained throughout the study. Personal identifiers such as names, addresses, and contact details were not recorded in the questionnaire. All collected data were used solely for research purposes and were accessible only to the investigator and research supervisor.

RESULTS

A total of 350 adult outpatients participated in the study. The majority of participants were female (58.6%) and married (60.6%). Regarding educational status, the largest proportion had completed higher secondary education (26.9%), followed by graduation (25.1%), secondary education (24.6%), primary education (12.0%), and postgraduate education (11.4%).

Among all participants, 300 (85.7%) had heard about AI chatbots, while 230 (65.7%) reported using an AI chatbot before their current medical consultation. Of these, 175 (50.0% of all participants) specifically used AI before deciding to consult a doctor. Among AI users, 202 (57.7%) reported that the chatbot advised them to consult a doctor, whereas 94 (26.9%) stated that such advice was not provided and 54 (15.4%) were uncertain. Most participants considered AI chatbots helpful for obtaining health-related information (65.1%), and 61.1% reported that they would recommend AI chatbots to others. Half of the participants (50.0%) were aged 46-55 years, making it the most common age group.

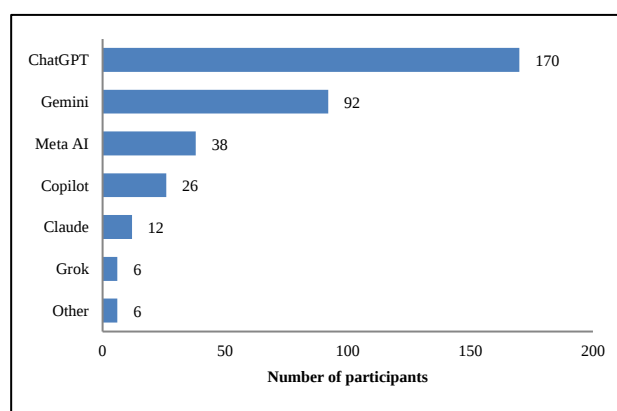
Table 1: Baseline characteristics of the study participants (n=350).

Characteristics	Category	Frequency	Percentage
Age group (years)	18-25	7	2.0
	26-35	22	6.3
	36-45	56	16.0
	46-55	175	50.0
	≥56	90	25.7
Gender	Male	145	41.4
	Female	205	58.6
Marital status	Married	212	60.6
	Single	138	39.4
Educational status	Primary	42	12.0
	Secondary	86	24.6
	Higher Secondary	94	26.9
	Graduate	88	25.1
	Post Graduate	40	11.4
Presence of chronic disease	Yes	108	30.9
	No	242	69.1

Table 2: Characteristics of AI chatbot use among the study participants (n=350).

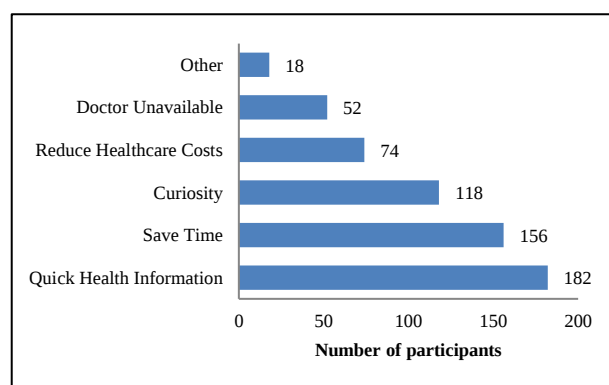
Characteristics	Category	Frequency	Percentage
Heard about AI chatbots	Yes	300	85.7
	No	50	14.3
Used AI before consulting a doctor	Yes	230	65.7
	No	120	34.3
AI advised consultation with doctor	Yes	133	57.7
	No	62	26.9
	Not Sure	35	15.4
Perceived AI as helpful	Yes	150	65.1
	No	28	12.0
	Not Sure	52	22.9

Among participants who used AI chatbots, ChatGPT was the most frequently used platform (170 users), followed by Gemini (92), Meta AI (38), Microsoft Copilot (26), Claude (12), Grok (6), and other AI tools (6).

**Figure 1: AI chatbots used by participants before consulting a doctor.**

Multiple responses were allowed.

The most frequently reported reason for using AI chatbots was obtaining quick health information (182 responses), followed by saving time (156), curiosity (118), reducing healthcare costs (74), doctor unavailability (52), and other reasons (18).

**Figure 2: Reasons for using AI chatbots before consulting a doctor among study participants.**

Multiple responses were allowed.

Comparison of healthcare-seeking behaviour between AI users and non-users demonstrated notable differences. Self-medication was reported by 72 (31.3%) AI users compared with 10 (8.3%) non-users. Similarly, 90 (39.1%) AI users delayed consulting a doctor, whereas 54 (45.0%) non-users reported delayed consultation. These associations were further evaluated using inferential statistical analysis.

Self-medication was significantly more common among AI users than non-users (31.3% versus 8.3%; $\chi^2=23.19$, OR=5.01, 95% CI: 2.48-10.14; $p<0.001$). Although delayed doctor consultation was reported by 39.1% of AI users and 45.0% of non-users, the association between AI use and delayed consultation was not statistically significant ($\chi^2=1.12$, OR=0.79, 95% CI: 0.50-1.23; $p=0.290$).

Table 3: Association between pre-consultation AI chatbot use and healthcare-seeking behaviour among study participants (n=350).

Outcomes	AI users (n=230) (%)	Non users (n=120) (%)	χ^2	OR (95% CI)	P value
Self medication	72 (31.3)	10 (8.3)	23.19	5.01 (2.48-10.14)	<0.001
No self medication	158 (68.7)	110 (91.7)			
Delay in consultation	90 (39.1)	54 (45.0)	1.12	0.79 (0.50-1.23)	0.290
Same day consultation	140 (60.9)	66 (55.0)			

DISCUSSION

The present study examined the use of artificial intelligence (AI) chatbots before medical consultation and its association with healthcare-seeking behaviour among adult outpatients attending two healthcare facilities. Approximately two-thirds of the participants reported using an AI chatbot before their current consultation, indicating that AI-assisted health information seeking has become increasingly common among patients. ChatGPT was the most frequently used platform, and obtaining quick health information emerged as the primary reason for AI use. The study further demonstrated a significant association between pre-consultation AI chatbot use and self-medication practices. However, no statistically significant association was observed between AI chatbot use and delayed medical consultation. These findings suggest that while AI chatbots may influence certain patient decisions before seeking professional care, their impact on healthcare-seeking behaviour is not uniform across different behavioural outcomes.

The present study found that nearly two-thirds of participants had used an AI chatbot before their current medical consultation, with ChatGPT being the most commonly used platform. This finding reflects the rapidly increasing adoption of generative AI tools for obtaining health-related information, a trend that has been reported globally since the widespread public availability of large language models. Recent studies have similarly observed that patients increasingly rely on AI chatbots to understand symptoms, explore possible diagnoses, and obtain preliminary health advice before consulting healthcare professionals. The predominance of ChatGPT in the present study is also consistent with recent international reports identifying it as the most frequently used AI platform for health information seeking. Unlike many previous studies that primarily evaluated users' perceptions, accuracy, or trust in AI-generated responses, the present study focused on the behavioural consequences

of AI use before medical consultation in a real-world outpatient population.¹⁴ This approach provides additional evidence regarding how AI is being integrated into patients' decision-making before seeking professional healthcare.

A major finding of the present study was the significant association between AI chatbot use and self-medication practices. Participants who used AI chatbots before seeking professional care were substantially more likely to report self-medication than non-users. This observation is consistent with growing concerns regarding the increasing reliance on online and AI-generated health information for making personal treatment decisions. Recent studies have suggested that while AI chatbots can provide rapid and accessible health information, users may occasionally interpret chatbot responses as sufficient guidance for initiating self-care or medication use without professional consultation.¹⁵ The conversational nature of modern AI systems may further increase users' confidence in the information received, particularly when access to healthcare is limited or when individuals seek immediate solutions for minor symptoms.¹⁶ The present findings contribute to this emerging body of evidence by demonstrating a measurable behavioural association between AI use and self-medication in a real-world outpatient population. These results highlight the importance of improving public awareness regarding the appropriate use of AI-generated health information and reinforcing the need for professional medical consultation before initiating treatment decisions.

Although AI chatbot use was significantly associated with self-medication, no statistically significant association was observed between AI use and delayed medical consultation. This finding suggests that the influence of AI on healthcare-seeking behaviour may be more complex than simply replacing professional medical care. One possible explanation is that many AI chatbots, including widely used generative AI platforms, frequently advise

users to seek medical evaluation when symptoms are persistent, severe, or potentially serious. In the present study, more than half of the participants reported receiving advice from AI to consult a doctor, which may have encouraged timely healthcare seeking despite prior AI use. This observation is supported by recent evidence indicating that AI chatbots are increasingly designed to provide safety-oriented recommendations and encourage professional consultation when appropriate. Therefore, while AI may influence patients' immediate decisions, such as attempting self-management, it does not necessarily discourage or replace subsequent medical consultation. These findings highlight the complementary rather than substitutive role that AI chatbots may currently play in patients' healthcare-seeking pathways.

The findings of the present study have several implications for clinical practice and public health. As the use of AI chatbots for obtaining health information continues to increase, healthcare professionals should be aware that many patients may seek AI-generated advice before their first medical consultation.¹⁷ The significant association between AI chatbot use and self-medication observed in this study underscores the importance of educating patients about the appropriate interpretation and limitations of AI-generated health information. Healthcare providers, particularly those working in primary care settings, should routinely explore patients' use of AI during history taking and address any misconceptions that may influence treatment decisions.¹⁸ In addition, public health initiatives and digital health literacy programmes should encourage the responsible use of AI as a supportive information resource rather than a substitute for professional medical consultation.¹⁹ Such measures may help maximize the benefits of AI while minimizing the risks associated with inappropriate self-management.

The present study has several strengths. To our knowledge, this is among the few studies from India that specifically explored the association between pre-consultation AI chatbot use and healthcare-seeking behaviour in a real-world outpatient setting. Data were collected from two different healthcare facilities serving diverse patient populations, thereby improving the representativeness of the study sample. Furthermore, the study moved beyond assessing awareness or perceptions of AI by examining behavioural outcomes, particularly self-medication and consultation delay, providing clinically relevant evidence regarding the influence of AI chatbots on patients' healthcare decisions.

The present study has certain limitations that should be considered while interpreting the findings. Owing to its cross-sectional design, causal relationships between AI chatbot use and healthcare-seeking behaviour cannot be established. The study relied on self-reported information, which may be subject to recall bias and social desirability bias. Data were collected from only two healthcare facilities, which may limit the generalizability of the findings to other healthcare settings or populations. In

addition, the study did not assess the accuracy or quality of AI-generated responses, nor did it evaluate the severity of participants' illnesses, both of which may have influenced healthcare-seeking behaviour.

CONCLUSION

Pre-consultation use of AI chatbots was common among adult outpatients and was significantly associated with self-medication practices but not with delayed medical consultation. These findings suggest that AI is increasingly influencing patients' healthcare decisions before professional consultation. Strengthening digital health literacy and promoting the responsible use of AI as a supportive information resource may help reduce inappropriate self-medication while encouraging timely medical consultation.

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