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Understanding Public Awareness, Attitudes, Beliefs, and Perceptions About ChatGPT in Saudi Arabia: A Road Map for Digital Health

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEG 1 Norah M. Alyahya
BCFG 2 Falah Ali Alwadei
BCDFG 3 Hussam Abdullah Alshehri
BCDFG 4 Abeer Swailm Al-khaldi
BCDFG 4 Ghada Mohammed Al-Mubaraki
ABCDFG 5 Mohammed AlFaifi
ABCDEG 6 Abdullah M. Alobaid
ABCDEFG 7 Wajid Syed

1 Community and Psychiatric Mental Health Nursing, College of Nursing, King Saud University, Riyadh, Saudi Arabia
2 Department of Community and Mental Health Nursing, King Saud University, Riyadh, Saudi Arabia
3 Department of Administration at the College of Nursing, King Saud University, Riyadh, Saudi Arabia
4 Department of Business Unit, King Saud University, Riyadh, Saudi Arabia
5 Department of Health Administration, College of Nursing, King Saud University, Riyadh Saudi Arabia
6 Department of Accidents and Trauma, Prince Sultan bin Abdulaziz College for Emergency Medical Services, King Saud University, Riyadh, Saudi Arabia
7 Department of Clinical Pharmacy, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

Corresponding Author: Wajid Syed, e-mail: wali@ksu.edu.sa
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Background: Chat Generative Pre-Trained Transformer (ChatGPT) is an advanced artificial intelligence (AI) tool that has become increasingly integrated into daily life. In Saudi Arabia, government initiatives actively encourage the adoption of AI technologies, yet information on public perceptions of this technology remains insufficient. This study assessed public awareness, attitudes, beliefs, and perceptions about ChatGPT in Saudi Arabia.

Material/Methods: A cross-sectional survey was conducted among individuals living Saudi Arabia, from July to September 2025. Data were collected via an online questionnaire consisting of 25 items collecting information on demographic characteristics, their perceptions, awareness, and use of ChatGPT, and their attitudes and perceived obstacles regarding ChatGPT. Descriptive statistics were used for data analyzing using SPSS version 26.

Results: Of participants 1069, 56.7% were female and 76.5% held a university degree. While 48.7% were somewhat familiar with ChatGPT, over half (54.6%) of them reported positive attitudes toward ChatGPT. Perceived benefits included productivity and educational enhancement, but concerns centered on overdependence (61.3%), incorrect information (55.7%), job loss (54.2%), and biased content (53.5%). Key obstacles were lack of credibility (76%) and confidentiality concerns (68.5%). The findings indicate that gender (P=0.001), age (P=0.001), and educational attainment (P=0.001) are important factors influencing familiarity and comfort with ChatGPT in daily life.

Conclusions: The Saudi public demonstrates a balanced perspective toward ChatGPT, recognizing its potential to enhance productivity and education while expressing valid concerns about trust and accuracy. Targeted awareness and policy measures are needed to build confidence and responsible adoption.

Keywords: Awareness • Confidentiality • Education • Knowledge • Perception • Coconut Oil • Artificial Intelligence • Surgical Procedures, Operative • Pulmonary Alveolar Proteinosis • Sampling Studies • Cross-Sectional Studies

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Introduction

Over the years, technological innovations have expanded rapidly across the globe. Among these emerging technologies, ChatGPT – a large-language model–based chatbot – has attracted considerable attention for its versatile applications. It is increasingly used for quick information retrieval, educational purposes, healthcare support, entertainment, self-care, and even clinical decision-making [1-4]. As of August 2025, ChatGPT has reached an impressive milestone, attracting more than 122 million daily users and over 800 million active users each week. This remarkable growth has positioned ChatGPT among the world's most frequently visited websites, ranking eighth globally just behind major technology platforms such as Google, YouTube, and Facebook [5]. In Saudi Arabia, the integration of AI aligns closely with the goals of Vision 2030, which seeks to foster innovation, enhance digital infrastructure, and improve the quality and efficiency of public services [6,7]. The Saudi government has launched several initiatives promoting AI adoption to strengthen the digital economy and position the Kingdom as a global leader in technological advancement [6,7]. However, the success of such initiatives depends not only on technological readiness but also on public understanding, trust, and acceptance of these emerging tools.

The use of AI technologies varies among countries. In the United States (USA), 34% of adults have used ChatGPT, about double the share in 2023. Among these users, 58% were adults under 30 years old. About 20% of people in the USA had not heard of ChatGPT [8]. Another recent USA study on familiarity with using ChatGPT and expectations showed that comfort with ChatGPT is quite low [9]. Furthermore, comfort was highly associated with expecting benefit [9]. Similarly, another survey among USA adults in 2025 found that 26% used ChatGPT for learning and 22% used it for entertainment [10]. In Saudi Arabia, the literature shows increasing integration of AI technologies; for instance, the Saudi Center for Public Opinion Polls indicated that a majority of individuals in Saudi Arabia have used AI, with 49% using AI technologies, and ChatGPT is the most prevalent AI tool, used by 41% of users [11]. The poll also showed that most people had a positive view of AI; 94% of users said that AI had a positive effect on their life. Interestingly, Saudi society seems to be unconcerned about AI's possible impact on jobs, indicating quick adoption and acceptance of AI technology [11]. It is well established that public perceptions play a crucial role in influencing the adoption of emerging technologies [12]. For example, a large survey in 2022 revealed that shifts in public perceptions are based on sentiment and key areas of concern about ChatGPT use [12]. The trend analysis revealed that initial responses were largely positive; however, over time, there was a noticeable rise in negative attitudes among the public. Discussions frequently centered on issues such as potential impacts, errors, regret, ethical implications, and social inequality in using ChatGPT [12]. These insights contribute valuable perspectives for guiding the future development and responsible integration of ChatGPT [12].

Most previous studies have used either quantitative or qualitative designs to capture general impressions of ChatGPT, often neglecting how public sentiment evolves over time. Furthermore, much of the existing research on AI, both within Saudi Arabia and globally, has predominantly examined the views of healthcare professionals or students [2,13,14], In contrast, limited attention has been given to the general public's awareness, experiences, and attitudes toward AI-driven applications such as ChatGPT [15]. Examining public perspectives is crucial, as they represent the primary end-users of these technologies in daily life and healthcare contexts. Their perceptions directly shape acceptance, trust, and the responsible use of AI. Public acceptance is particularly vital in advancing digital health initiatives, where systems like ChatGPT can support patient education, teleconsultations, and self-care services. Research has shown that societal perceptions can significantly influence the direction of AI development and policy frameworks. For instance, a multinational study found that most patients preferred physician-led decisions even when AI tools were involved, underscoring ongoing concerns about transparency and trust [16].

In Saudi Arabia, understanding population-wide attitudes toward AI has become increasingly important, especially as the country advances its Vision 2030 digital transformation agenda. Recent findings suggest that while many Saudis view AI in healthcare positively, reservations remain regarding safety, accuracy, and ethical use [15]. The present study explored public perceptions of ChatGPT in Saudi Arabia, a region previously underrepresented in AI adoption research. By investigating the attitudes and concerns of the public, this study bridges a critical knowledge gap, offering vital insights for informed AI policy-making aligned with Saudi Arabia's Vision 2030. By focusing on the public rather than specific professional groups, this study provides valuable insights to guide implementation strategies, policy development, and educational efforts in digital health. We investigated the perceptions, opinions, and insights of the Saudi Arabian public regarding the utilization of ChatGPT, and identified the factors that shape their attitudes toward this technology.

Material and Methods

Study Design

This cross-sectional study was designed to collect data from the general population residing in Saudi Arabia. The data collection period for this study spanned 3 months, from July to

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September 2025. The study included individuals who were 20 years or older, living currently in Saudi Arabia, both genders, and able to understand the local language (Arabic). The study excluded those who did not meet the inclusion criteria, were currently out of the country, and participants who did not complete the questionnaire or who provided inconsistent responses. The convenience sampling approach was used to recruit participants from all over Saudi Arabia. This approach was chosen to ensure adequate representation of the respondents within the target population. The data collection was carried out until the required sample was obtained. This study was approved by the Ethics Committee at King Saud University, human research (Ref No KSU-HE-25-962) Saudi Arabia, and conducted in accordance with the principles outlined in the Declaration of Helsinki for human research. Prior to completing the questionnaire, all participants provided informed consent, were assured of confidentiality and anonymity, and were informed that their participation was voluntary.

Sample Size Estimation

To determine the sample size for this study, we used an online calculator, considering the current Saudi Arabia population of 36 730 000 in 2026. The sample size was calculated with a 5% margin of error and a 95% confidence interval (CI), and the estimated sample size was 385. Although we initially estimated a final sample size of 424 participants after accounting for a 10% attrition rate, we successfully collected 1100 completed questionnaires by securing widespread cooperation from participants across the country. This larger sample size enhanced the study's statistical power, allowing for more precise estimates and detection of significant differences while minimizing sampling bias and error. As a result, we included all 1100 questionnaires in the final analysis.

Data Collection

A questionnaire was adopted from earlier literature and modified to suit the research objectives [14]. This study included 26-item questionnaire comprised multiple sections. Section 1 focused on gathering demographic information, encompassing 6 items: age, gender, region of residence within Saudi Arabia, highest educational attainment, professional classification, and computer skills/literacy. Section 2 asked participants about familiarity and comfort with ChatGPT and consisted of 2 items. The third section gathered information on whether respondents had ever used, assessed, or signed up for ChatGPT, and asked where they heard about it from. It also asked if they had ever asked ChatGPT a question, and asked about ChatGPT's impact on their career, with 5-itmes in total. The fourth section assessed perceived use (1 item), purpose of use (1 item), and perceived obstacles regarding ChatGPT (1 item). The last section assessed attitudes (1 item) and beliefs (9 items) about ChatGPT. All these are the open-ended questions, while perceived usage and purpose of use and perceived obstacles regarding ChatGPT were assessed using multiple-choice answers. Attitude was measured on 5-point scale ranging from very positive to very negative, while beliefs were measured on an agreement scale ranging from strongly agree to strongly disagree. The original instrument contained 36 items and was initially developed for academicians and researchers [14]. Ten items addressing perceived obstacles were originally formatted as binary (yes/no) questions. Based on feedback from an expert panel comprising 1 researcher from the College of Pharmacy and 2 academicians from the College of Nursing, these 10 items were consolidated into a single multiple-choice question to improve clarity and relevance for the target population, resulting in the final 26-item questionnaire. The expert panel evaluated item clarity, relevance, and appropriateness to establish content validity [14].

Subsequently, a native, certified Arabic speaker translated the instrument into Arabic, using both forward and backward translation methods. A pilot study was conducted among 30 randomly selected participants to assess the questionnaire's internal consistency. Reliability analysis was carried out using Cronbach's alpha, which yielded a value of 0.76, for all items in the scale, confirming that the questionnaire would produce reliable results. As the instrument measured self-reported perceptions and beliefs, no formal psychometric validation (eg, factor analysis) was performed.

Data were collected using an online structured questionnaire, which was disseminated through the social media platforms WhatsApp, Facebook, and Instagram. Researcher from the College of Pharmacy and an academician from the College of Nursing carried out data collection. For data collection, E-questionnaires were prepared using Google Forms and sent to the targeted individuals. The questionnaire was designed to be user-friendly and accessible on both desktop and mobile devices, through electronic questionnaires created in Google Forms. Before starting the survey, an introductory statement outlined the study's purpose and assured confidentiality; participants who consented were then directed to the full questionnaire, and consent was considered given upon proceeding. To achieve the maximum number of responses, participants were sent follow-up reminders.

Statistical Analysis

Descriptive statistics were used to summarize the demographic characteristics of the participants and their responses to the questionnaire. Frequencies (n) and percentages (%) were calculated for categorical variables, while means and standard deviations were calculated for continuous variables. Associations between demographic variables and levels of familiarity and

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Table 1. Participants' demographic characteristics.

Variables	Frequency (n)	Percentage (%)
Gender		
Male	463	43.3%
Female	606	56.7%
Age (years)*		
20-25	373	34.9%
26-30	297	27.8%
31-35	125	11.7%
36-40	72	6.7%
<41	104	9.7%
Region		
Central	388	36.3%
Western	121	11.3%
Eastern	109	10.2%
Southern	229	21.4%
Northern	222	20.8%
Education		
Doctorate	31	2.9%
Secondary	220	20.6%
University	818	76.5%
Profession		
Business	47	4.4%
Engineer	15	1.4%
Government employee	246	23.0%
Housewife	58	5.4%
Private employee	170	15.9%
Student	503	47.1%
Technician	8	.7%
Working in information technology	22	2.1%
Computer skills/expertise		
Familiar to some degree	520	48.6%
Not so familiar	307	28.8%
Very familiar	242	22.6%

comfort with ChatGPT were assessed using the chi-square test of independence. When expected cell counts were <5, Fisher's exact test was applied as appropriate. To complement *P* values and provide information on the magnitude of associations, we used Cramér's V as an effect size measure for all chi-square analyses. Effect sizes were interpreted using conventional thresholds (small ≈0.10, moderate ≈0.30, large ≥0.50). All statistical analyses were performed using SPSS software.

Results

During the study period, a total of 1100 responses were collected. However, 31 responses were excluded as they did not meet the inclusion criteria, resulting in a final sample of eligible responses. A total of 1069 individuals were included in the final analysis, giving a response rate of 97.18%. Among the respondents, gender distribution showed a slight predominance of females, with 606 (56.7%) females and 463 (43.3%) males. The mean age was 28.65 years (SD=8.73) and 35% of them were young (age 20-25 years old). In terms of education, 818 participants (76.5%) held a university degree and 220 (20.6%) had secondary education. With regards to professional status, 503 (47.1%) were students, 246 (23.0%) were government employees, and 170 (15.9%) were private employees. Additionally, 520 participants (48.6%) reported being familiar with computers to some degree. A detailed overview of the participants' demographic characteristics is provided in **Table 1**.

Regarding familiarity with ChatGPT, more than a third of the participants (31.2%, n=333) reported being unfamiliar with the term, while 48.7% (n=521) were familiar, and 20.1% (n=215) were very familiar. In terms of comfort level with using ChatGPT in daily practice, 31.4% of the participants (n=336) expressed discomfort, whereas 48.4% (n=517) were comfortable to some extent, and 20.2% (n=216) were very comfortable, as shown

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Table 2. Assessing public perception of ChatGPT: A familiarity and comfort analysis.

Variables	Frequency (n)	Percentage (%)
How familiar are you with ChatGPT?		
Familiar to some degree	521	48.7%
Not so familiar	333	31.2%
Very familiar	215	20.1%
How comfortable would you be using ChatGPT in your daily life?		
Comfortable to some extent	517	48.4%
Not comfortable	336	31.4%
Very Comfortable	216	20.2%

Table 3. Participants' awareness and usage of ChatGPT.

Variables	Frequency (n)	Percentage (%)
How do you know about ChatGPT?		
Through online or use of web site	351	32.8%
Through friends or relatives	319	29.8%
Through social media	245	22.9%
Other	154	14.4%
Do you use ChatGPT in your daily life?		
Yes	608	56.9%
No, not yet	311	29.1%
Sometimes	150	14.0%
Have you accessed or signed up for ChatGPT?		
Yes	708	66.2%
No	361	33.8%
Have you asked a query of ChatGPT?		
Yes	717	67.1%
No	352	32.9%
How is ChatGPT likely to influence your career?		
Positively	574	53.7%
Negatively	250	23.4%
I don't know	245	22.9%

in **Table 2**. Participants knew about ChatGPT through online searches (32.8%, n=351), friends or relatives (29.8%, n=319), social media (22.9%, n=245), and other sources (14.4%, n=154). We found that 56.9%, (n=608) reported using ChatGPT or similar language models, and (66.2%, n=708) had accessed or signed up for ChatGPT. Additionally, 67.1% (n=717) of participants had asked questions of ChatGPT. Regarding the potential impact of ChatGPT on their careers, 53.7% (n=574) of participants believed it would have a positive influence, while 23.4% (n=250) thought it would have a negative impact, and 22.9% (n=245) were unsure (**Table 3**).

As shown in **Table 4**, participants had varied opinions about ChatGPT, with 30.2% having a very positive attitude and 21.8% having a positive attitude, while 31.8% were neutral. Most participants agreed that language models like ChatGPT can boost productivity (59.6% strongly or somewhat agree) and can have a positive impact on education (59.9% strongly or somewhat agree). However, concerns were raised about potential issues such as biased or discriminatory content (51.4% strongly or somewhat agree), incorrect or irrational content (54.1% strongly or somewhat agree), and overdependence on technology (58.2% strongly or somewhat agree). Participants also expressed worries about job losses (54.3% strongly or somewhat agree) and the potential threat of these systems becoming intelligent or sentient (51.2% strongly or somewhat agree). Overall, opinions were divided on whether the advantages of this technology outweigh the disadvantages, with 50.7% strongly or somewhat agreeing.

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Table 4. Attitude and believes about ChatGPT technology.

Variables	Frequency (n)	Percentage (%)
In general, do you have a positive or negative attitude towards this ChatGPT technology?		
Very positive	334	31.2%
Positive	250	23.4%
Neutral	302	28.3%
Negative	95	8.9%
Very negative	88	8.2%
I believe language models (ChatGPT) can boost productivity		
Strongly agree	368	34.4%
Somewhat agree	292	27.3%
Neutral opinion/no opinion	245	22.9%
Somewhat disagree	101	9.4%
Strongly disagree	63	5.9%
I believe language models can have a positive impact in education		
Strongly agree	345	32.3%
Somewhat agree	314	29.4%
Neutral opinion/no opinion	215	20.1%
Somewhat disagree	118	11.0%
Strongly disagree	77	7.2%
I would trust language models to handle customer service and act as an interface for governmental agencies		
Strongly agree	347	32.5%
Somewhat agree	258	24.1%
Neutral opinion/no opinion	279	26.1%
Somewhat disagree	118	11.0%
Strongly disagree	67	6.3%
I am concerned that language models might generate biased or discriminatory content		
Strongly agree	279	26.1%
Somewhat agree	293	27.4%
Neutral opinion/no opinion	303	28.3%
Somewhat disagree	108	10.1%
Strongly disagree	86	8.0%
I am concerned that language models might generate content that is erroneous or nonsensical		
Strongly agree	309	28.9%
Somewhat agree	287	26.8%
Neutral opinion/no opinion	272	25.4%
Somewhat disagree	102	9.5%
Strongly disagree	99	9.3%
I am worried that people might grow too dependent on these kinds of technologies		
Strongly agree	346	32.4%
Somewhat agree	309	28.4%
Neutral opinion/no opinion	205	19.2%
Somewhat disagree	127	11.9%
Strongly disagree	82	7.7%
It worries me that these systems might become intelligent or sentient and pose a threat to humans		
Strongly agree	322	30.1%
Somewhat agree	263	24.6%
Neutral opinion/no opinion	261	24.4%
Somewhat disagree	116	10.9%
Strongly disagree	107	10.0%

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Table 4 continued. Attitude and believes about ChatGPT technology.

Variables	Frequency (n)	Percentage (%)
I am worried about potential job losses due to these technologies		
Strongly agree	359	33.6%
Somewhat agree	220	20.6%
Neutral opinion/no opinion	245	22.9%
Somewhat disagree	141	13.2%
Strongly disagree	104	9.7%
I believe that the pros of this technology outweigh the cons		
Strongly agree	278	26.0%
Somewhat agree	272	25.4%
Neutral opinion/no opinion	304	28.4%
Somewhat disagree	128	12.0%
Strongly disagree	87	8.1%

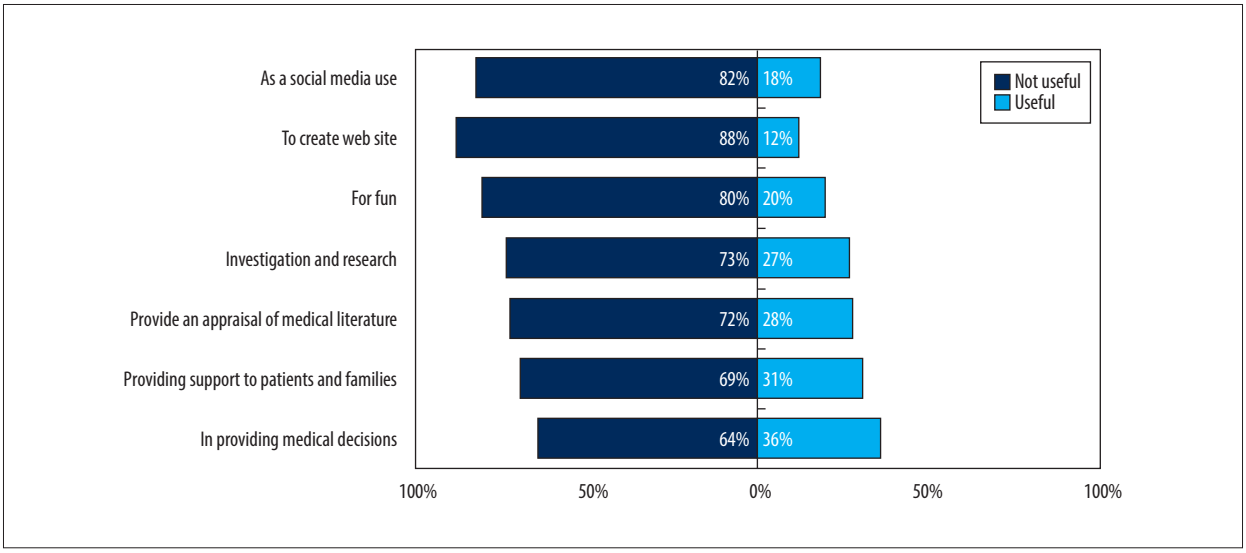

Figure 1. Perceived usefulness of ChatGPT in daily life.

Most participants perceived ChatGPT's usefulness across various domains: 88% believed it is mainly useful for creating websites, 82% for browsing social media and related content, and 80% for entertainment. Additionally, 73% of participants thought ChatGPT is primarily used for investigation and research purposes. The details are presented in **Figure 1**. In this study, 82% of participants used ChatGPT for assignments and academic activities, while 70% used it for generating various content, and 61% used it for gathering information (**Figure 2**).

A significant majority of participants identified several obstacles, including lack of credibility or unknown source of information in the AI model (74.3%), worry about harmful or wrong medical decision recommendations (69.8%), and concerns that AI chatbots are not yet well developed (70.6%). Additionally, unfamiliarity with using AI chatbots was identified as an obstacle by 65.6% of participants, and worry about confidentiality was a concern for 69% of participants (**Figure 3**).

Table 5 presents the association between the level of familiarity with ChatGPT and demographic characteristics among the Saudi population. Among males, 58% were familiar to some degree, 50.8% were not familiar, and 62.8% reported being very familiar. For females, 42% were familiar to some degree, 49.2% were not familiar, and 37.2% were very familiar. The association between gender and familiarity was statistically significant (P=0.015), although the effect size was small (Cramér's V=0.089). This suggests a slightly higher familiarity among male participants. Familiarity varied across age groups. The 20-to-25-year age group had the largest proportion reporting familiarity to some degree (45.9%) and very familiar (26.8%). Interestingly, participants over 41 years old had the highest proportion reporting familiarity to some degree (59.6%) but a lower percentage reporting high familiarity (12.5%). The differences across age groups were statistically significant (P<0.001), with a moderate effect size (Cramér's V=0.127). Most participants with university education reported they were familiar with Chat GPT

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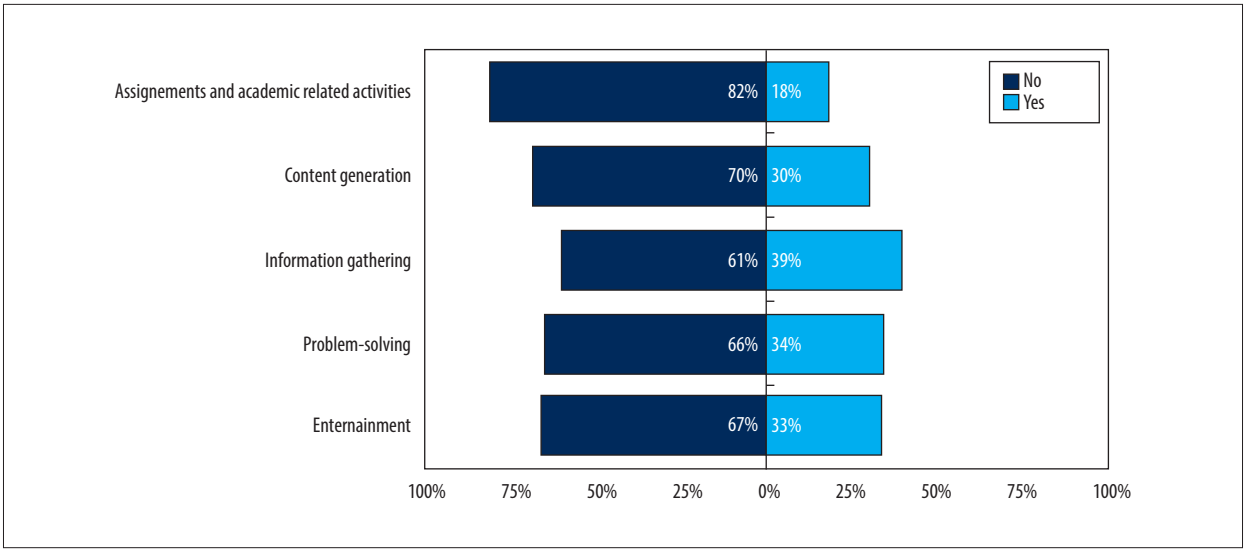

Figure 2. Purposes of utilization of ChatGPT among studied participants.

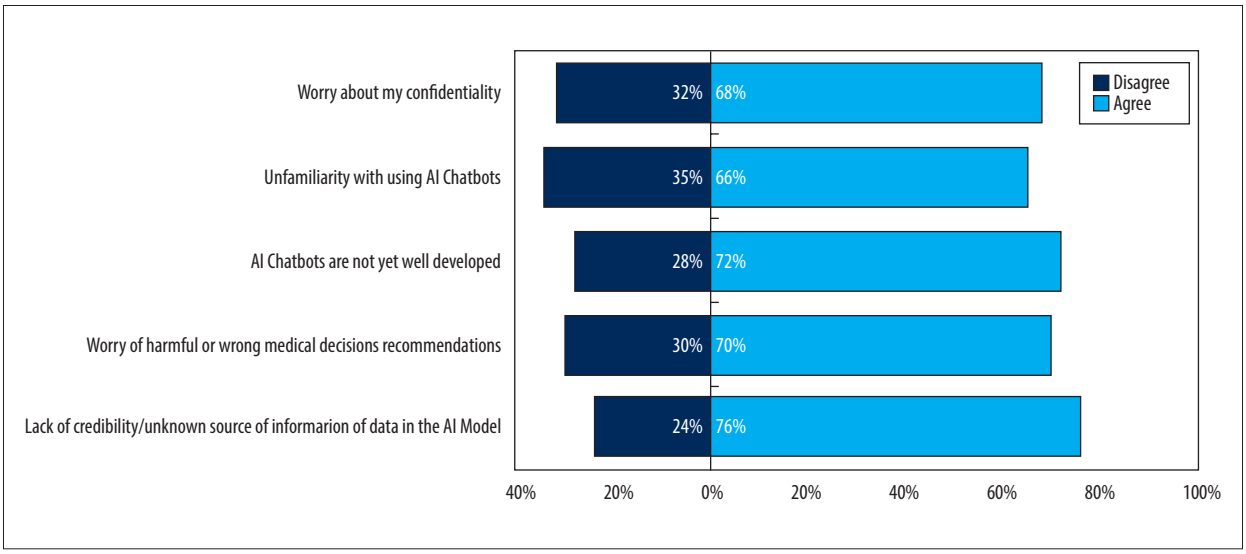

Figure 3. Obstacles to effective ChatGPT utilization.

to some degree (79.7%) and very familiar (82.3%). Those with secondary education showed lower familiarity (18.6% familiar to some degree; 14.9% very familiar). Doctorate holders were the smallest group and showed lower familiarity overall. The association between education and familiarity was significant ($P<0.001$). Participants from the central region had the highest familiarity to some degree (34.7%) and very familiar (40.5%). The other regions showed relatively similar distributions, with northern region participants reporting slightly higher percentages of being very familiar (24.2%). Differences across regions were not statistically significant ($P=0.471$).

Female participants reported higher comfort overall, with 61.6% being very comfortable compared to 38.4% of males. Males were more likely to be uncomfortable (51.8%). The difference in comfort levels by gender was significant ($P<0.001$). Younger participants (20-25 years) reported the highest comfort to some extent (47.6%) and very comfortable (42.6%). Older age groups generally reported lower comfort levels, with those above 41 years showing only 8.3% being very comfortable. The variation across age groups was significant ($P=0.003$). University graduates again formed the largest group reporting comfort to some extent (80.5%) and very comfortable (78.2%), whereas participants with only secondary education had lower comfort levels. Doctorate holders were a small group with modest comfort levels. The association was statistically significant ($P<0.001$). Comfort levels were similar across regions, with the central region showing the largest group reporting comfort to some extent (38.1%) and very comfortable (34.3%). Differences between regions were not statistically significant ($P=0.187$) (**Table 5**).

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Table 5 illustrates the relationship between participants' comfort level with using ChatGPT in daily life and selected demographic variables. A statistically significant association was observed between comfort level and gender ($P<0.001$). Among those who reported being comfortable to some extent, females constituted a larger proportion (311, 60.2%) compared to males (206, 39.8%). In contrast, males were more likely to be uncomfortable (174, 51.8%) than females (162, 48.2%). Similarly, among participants who reported being very comfortable, females again represented the majority (133, 61.6%), while only 83 (38.4%) males were very comfortable. Educational level was also significantly associated with comfort in using ChatGPT ($P<0.001$). Participants with a university education formed the largest proportion across all comfort categories, particularly among those who were very comfortable (177, 82.3%). Individuals with only secondary education were more likely to be uncomfortable (91, 27.3%) compared to those who were very comfortable (32, 14.9%). Participants holding a doctorate comprised a small percentage overall, with slightly higher representation among those who were not comfortable (16, 4.8%) than among those very comfortable (6, 2.8%). Regarding region of residence, no statistically significant association was found with comfort level ($P=0.187$). Participants from the central region accounted for 197 (38.1%) of those comfortable to some extent, 117 (34.8%) of those not comfortable, and 74 (34.3%) of those very comfortable. Comparable distributions were observed across the western, eastern, southern, and northern regions, indicating minimal regional variation in comfort with ChatGPT use (**Table 5**).

Discussion

Few studies have explored public attitudes and perceptions of ChatGPT, and most primarily focused on specific professional

Table 5. Association between the level of familiarity and comfort with ChatGPT and demographic characteristics among the Saudi population.

Variables	Familiar to some degree n (%)	Not familiar n (%)	Very familiar n (%)	*P* value*	Effect size (Cramér's V)
Familiarity with ChatGPT					
Gender					
Male	302 (58%)	169 (50.8%)	135 (62.8%)	0.015	0.015
Female	219 (42%)	164 (49.2%)	80 (37.2%)		
Age					
20-25	216 (45.9%)	129 (27.4%)	126 (26.8%)	<0.001	0.127
26-30	146 (49.2%)	114 (38.4%)	37 (12.5%)		
31-35	66 (52.8%)	36 (28.8%)	23 (18.4%)		
36-40	31 (43.1%)	25 (34.7%)	16 (22.2%)		
>41	62 (59.6%)	29 (27.9%)	13 (12.5%)		
Education					
Secondary	97 (18.6%)	91 (27.3%)	32 (14.9%)	<0.001	0.104
University	415 (79.7%)	226 (67.9%)	177 (82.3%)		
Doctorate	9 (1.7%)	16 (4.8%)	6 (2.8%)		
Region					
Central	181 (34.7%)	120 (36%)	87 (40.5%)	0.471	0.060
Western	62 (11.9%)	39 (11.7%)	20 (9.3%)		
Eastern	54 (10.4%)	34 (10.2%)	21 (9.8%)		
Southern	122 (23.4%)	72 (21.6%)	35 (16.3%)		
Northern	102 (19.6%)	68 (20.4%)	52 (24.2%)		

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Table 5 continued. Association between the level of familiarity and comfort with ChatGPT and demographic characteristics among the Saudi population.

Variables	Comfortable to some extent n (%)	Not comfortable n (%)	Very comfortable n (%)	*P* value*	Effect size (Cramér's V)
B-Comfort with ChatGPT					
Gender					
Male	206 (39.8%)	174 (51.8%)	83 (38.4%)	<0.001	0.116
Female	311 (60.2%)	162 (48.2%)	133 (61.6%)		
Age					
20-25	246 (47.6%)	133 (39.6%)	92 (42.6%)	0.003	0.104
26-30	151 (29.2%)	94 (28%)	52 (24.1%)		
31-35	52 (10.1%)	35 (10.4%)	38 (17.6%)		
36-40	27 (5.2%)	29 (8.6%)	16 (7.4%)		
>41	41 (7.9%)	45 (13.4%)	18 (8.3%)		
Education					
Secondary	94 (18.2%)	88 (26.2%)	38 (17.6%)	<0.001	0.095
University	416 (80.5%)	233 (69.3%)	169 (78.2%)		
Doctorate	7 (1.4%)	15 (4.5%)	9 (4.2%)		
Region					
Central	197 (38.1%)	117 (34.8%)	74 (34.3%)	0.187	0.073
Western	60 (11.6%)	35 (10.4%)	26 (12%)		
Eastern	58 (11.2%)	23 (6.8%)	28 (13%)		
Southern	101 (19.5%)	84 (25%)	44 (20.4%)		
Northern	101 (19.5%)	77 (22.9%)	44 (20.4%)		

* Chi-square test of independence; Effect sizes are reported as Cramér's V. No formal adjustment for multiple comparisons was applied, as analyses were exploratory and hypothesis driven.

groups and students [13-15,17-19]. In contrast, the present study included individuals living in various regions of the country, allowing for a wider view of public perspectives. Although the sample cannot be considered fully representative of the entire population, the inclusion of participants from different geographic areas offers meaningful insight into societal attitudes. These findings may help inform future investigations and add to the evolving discussion surrounding this topic. We found that 48.7% of respondents were familiar with ChatGPT, while 20.2% were very comfortable. Awareness of ChatGPT varies among countries. In the USA 58% had heard of ChatGPT and 14% had used it [10], while 61% of Japanese were aware of it. The global awareness of ChatGPT was reported to be 63% [20]. In Pakistan 76.2% were familiar with ChatGPT but half of the participants did not use ChatGPT frequently, and 50.1% believed that using ChatGPT could potentially diminish their cognitive abilities [21].

Participants recognized clear benefits, such as enhancing productivity and supporting education, yet expressed concerns regarding biased or incorrect information, overdependence on technology, job displacement, and confidentiality. The most common barriers identified were lack of credibility of information sources, worries about harmful recommendations, and the perception that AI chatbots are still underdeveloped. A study by Sobaih et al (2024) explored students' acceptance and use of ChatGPT in Saudi Arabian higher education, highlighting the significance of performance expectancy, social influence, and effort expectancy

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in shaping behavioral intentions [13]. This aligns with our results showing 53.7% of respondents believed ChatGPT would positively influence their careers, and 34.4% strongly agreed that large-language models could boost productivity. However, Sobaih et al found that facilitating conditions had a negative effect on behavioral intention, which contrasts with the present study in which 66.2% of respondents had accessed or signed up for ChatGPT, indicating a relatively high level of facilitating conditions [13]. Al-kfairy (2024) conducted a narrative review of empirical studies on ChatGPT adoption and acceptance in educational settings, identifying confirmed, unconfirmed, and debatable factors influencing adoption and showed the importance of perceived usefulness, ease of use, trust, and risk in determining adoption intentions [22]. This is consistent with our results showing 32.5% of respondents strongly agreed that they would trust AI to handle customer service.

Balaskas et al (2025) investigated the determinants of ChatGPT adoption intentions in higher education, extending the Technology Acceptance Model (TAM) with the mediating roles of trust and risk. They found that perceived ease of use and perceived intelligence significantly drove adoption intentions, while perceived trust and risk played mediating roles [23]. This aligns with our findings that 32.4% of respondents were worried about people growing too dependent on AI, and 30.1% were worried about potential threats to humans. We found that 54.2% of participants expressed worries about job losses due to ChatGPT, which aligns with a similar study by Wajid et al (2024) conducted among academicians and research professionals in Riyadh, Saudi Arabia, showing a slightly higher concern rate, with 62.7% of respondents fearing potential job losses as a result of AI [14]. A recent survey conducted by YouGov on behalf of Acas on 1023 employees in British businesses found that 26% of employees were concerned that artificial intelligence will lead to job losses [24]. This similarity in findings suggests that concerns about job displacement are prevalent among both general participants and professionals.

Interestingly, while 40% of Karachi participants expressed no worries about privacy or security [21], whereas 76% of respondents identified "lack of credibility or unknown source of information" as an obstacle, and 68.5% were concerned about confidentiality. These contrasts suggest that although public awareness of ChatGPT is high in both contexts, Saudis in the current sample appear more open to using it and more attuned to privacy and trust issues, perhaps reflecting regional differences in digital literacy, trust in institutions, or exposure to AI discourse. A major strength of this study is its focus on the public, rather than on specific professional or academic groups, which allows for a broader understanding of societal attitudes. Additionally, the use of a sample from different regions of Saudi Arabia improves the representativeness of our findings.

This study has several limitations that should be considered when interpreting the findings. First, due to the cross-sectional design, the study did not capture changes in attitudes, perceptions, or patterns of ChatGPT use over time, particularly as familiarity with generative AI technologies continues to increase. Second, the survey was conducted online using voluntary participation, which may have introduced selection bias. The sample included a relatively high proportion of young, educated respondents and students, suggesting that individuals who are more technologically proficient and digitally literate were more likely to participate. As a result, the findings may overrepresent perspectives of digitally engaged populations while underrepresenting older adults or individuals with limited internet access. Although the survey link was distributed across multiple online platforms and social media channels to reach participants from different regions of Saudi Arabia, this approach does not fully eliminate sampling bias inherent in online data collection. Additionally, the sample size may be insufficient to fully reflect the diversity of views within the Saudi population, which may limit the generalizability of the results. The survey was anonymous, and no personal identifying information was collected, which may have reduced social desirability bias and encouraged honest responses. Nevertheless, the study may not capture the perspectives of individuals who are less digitally engaged, which should be acknowledged as an important limitation.

Our findings have important implications for policymakers, educators, and AI developers. Strengthening public trust in generative AI will require the establishment of clear governance frameworks, greater transparency regarding data sources and model development, and robust mechanisms to ensure accuracy, fairness, and accountability. Additionally, focused education and awareness campaigns could help close current knowledge gaps and encourage the appropriate and safe use of AI technologies, especially among those with little exposure to the internet. By incorporating AI literacy into official education programs, people may be better prepared to access, utilize, and interact with ChatGPT and related products in an ethical manner. Lastly, as Saudi Arabia advances its Vision 2030 digital transformation agenda, it will be crucial to proactively comprehend and address public perceptions and concerns to guarantee that the adoption of AI yields long-term social and economic benefits while upholding moral principles and public trust.

Conclusions

This study provides a snapshot of how participants from different regions of Saudi Arabia perceive and use ChatGPT. Overall, respondents expressed generally positive attitudes, particularly regarding the perceived usefulness of ChatGPT for productivity,

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learning, and accessing information. At the same time, participants reported notable concerns related to accuracy of content, potential bias, overreliance on the technology, job security, and data confidentiality. The findings also indicate that issues such as limited familiarity with AI tools, doubts about credibility, and perceptions of technological immaturity may influence how individuals engage with ChatGPT. Given the cross-sectional and descriptive nature of this study, these results should be interpreted as reflecting current perceptions rather than predictors of future behavior or outcomes. Further research using qualitative approaches, such as interviews or focus groups, as well as longitudinal designs, could offer deeper insight into how public attitudes toward generative AI develop over time. Such studies may help clarify how technological advancement can be considered alongside ethical, cultural, and societal factors within the Saudi context.

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Department and Institution Where Work Was Done

Department of Clinical Pharmacy, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia.

Patient Consent

Informed consent was obtained from all the participants.

Data Availability

The data presented in this study are available upon request from the corresponding author.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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