

AI and Health Websites: Investigating Their Impact on Anxiety and Health-Seeking Behaviors Among Gulf Medical University Students in the UAE

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Abstract:

➤ Objectives:

This study sought to explore how often university students at Gulf Medical University (GMU), UAE, engage in online self-diagnosis and how this behavior relates to their anxiety levels. It also aimed to examine whether trust in artificial intelligence (AI) health tools influences or moderates this relationship.

➤ Methods:

A cross-sectional descriptive study was conducted among 427 Gulf Medical University students using a structured questionnaire. Sampling was done through volunteer sampling. Descriptive and inferential analyses (Spearman's correlation, ANOVA, and regression tests) were performed using IBM SPSS version 29 to identify relationships between self-diagnosis frequency and state-trait anxiety. Spearman's rank and Pearson's correlation tests were applied to examine the relationships between self-diagnosis frequency, trust in AI health tools, and anxiety dimensions. Multiple linear regression analysis was performed to identify predictive factors, with statistical significance set at $p < 0.05$.

➤ Results:

Participants in the study reported moderate levels of anxiety, with mean state anxiety scores of 21.46 ± 5.47 and trait anxiety scores of 23.53 ± 5.68 . The frequency of online self-diagnosis showed a weak but statistically significant correlation with trait anxiety ($r_s = 0.098$, $p = 0.043$) and a weaker, non-significant correlation with state anxiety ($r_s = 0.087$, $p = 0.073$). Regression analysis revealed that the frequency of self-diagnosis modestly predicted state anxiety ($\beta = 0.118$, $p = 0.026$, $R^2 = 1.8\%$). Students who reported lower levels of trust in AI-generated health information tended to experience higher anxiety. Additionally, female and postgraduate students exhibited slightly higher anxiety scores compared to their male and undergraduate counterparts.

➤ Conclusions:

Frequent online self-diagnosis was found to have a modest association with higher anxiety levels among medical students, indicating that repeated use of AI-based health tools may contribute to temporary emotional distress. Enhancing digital health literacy, fostering critical evaluation of AI-generated information, and incorporating education on the responsible use of such tools may help reduce these effects and support students' mental well-being.

Keywords: Cyberchondria; Anxiety; Self-Diagnosis; Artificial Intelligence; Digital-Health Literacy.

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I. INTRODUCTION

Artificial intelligence (AI) is rapidly transforming access to health information and shaping governance frameworks across the Middle East, particularly in Qatar,

Saudi Arabia, and the United Arab Emirates. This shift has prompted the development of new regulations focused on patient safety and ethical oversight. Recent research highlights the importance of transparent, human-centered

approaches to managing health-related AI systems to sustain public trust [1].

Globally, digital health literacy is increasingly recognized as an essential skill. It enables individuals to search for, assess, and apply online health information effectively while understanding the limitations of AI-generated content—helping to protect both mental well-being and decision quality [2]. Within clinical informatics, studies of AI chatbots have identified risks such as misinformation, overconfidence, and diagnostic errors associated with self-diagnosis [3,4].

Ensuring ethical integration of AI in healthcare remains crucial, with growing emphasis on fairness, transparency, and accountability in system design [5]. The UAE's national agenda reflects these values, prioritizing digital well-being and youth mental health while balancing innovation with safety and resilience [6,7]. However, frequent online symptom searching—often referred to as “cyberchondria”—has been linked to increased anxiety when individuals interpret ambiguous or alarming information without professional input [8,9]. Regional findings further suggest that young adults, as early users of AI health tools, may be more emotionally affected by digital health content, underscoring the need for culturally and contextually appropriate education [10,11].

This study utilized the Spielberger State–Trait Anxiety Inventory (STAI) to measure both situational (state) and enduring (trait) anxiety in relation to AI-assisted self-diagnosis [12,13]. Its objectives were to examine the relationship between the frequency of online and AI-based self-diagnosis and anxiety levels among students at Gulf Medical University (GMU), assess the influence of demographic factors such as gender, age, and education, explore the moderating role of trust in AI health tools, and identify implications for strengthening digital health literacy and promoting the safe, informed use of AI within university settings.

II. MATERIALS AND METHODS

➤ Study Design and Setting

This study employed a quantitative, observational, cross-sectional design to examine the relationship between online self-diagnosis frequency and anxiety levels among students of Gulf Medical University (GMU), Ajman, United Arab Emirates. The study was conducted within the GMU campus environment, allowing access to a diverse student population across different academic years and disciplines.

➤ Study Population

The study focused on young adults between 18 and 25 years of age who actively use digital or AI-based platforms—such as chatbots, health websites, and symptom checkers—for self-diagnosis. Eligible participants included students enrolled at Gulf Medical University (GMU) within the specified age range who had prior experience seeking health-related information online. The exclusion criteria included individuals who did not engage in online or AI-based self-

diagnosis and non-consenting participants. A total of 427 students were invited to take part, accounting for an anticipated 10% non-response rate above the minimum required sample size of 384, which was calculated using Cochran's formula with a 95% confidence level and a 5% margin of error.

➤ Sampling Method

A volunteer, non-probability sampling approach was used to recruit participants through the university's official email and social media platforms. Participation was entirely voluntary, and no incentives were offered to ensure that responses remained unbiased and authentic.

➤ Data Collection Instrument

Data for this study were collected using a structured (standardized) online questionnaire distributed through Google Forms. The survey was divided into four main sections. The first section collected demographic details such as age, gender, and academic level. The second section explored the frequency of online self-diagnosis, using a Likert scale to measure how often students used AI chatbots or health-related websites for this purpose. The third section examined trust in AI health tools, assessing participants' confidence in their accuracy, reliability, and safety. The final section measured anxiety levels using the Spielberger State–Trait Anxiety Inventory (STAI Form Y), a validated tool containing 20 items each for state (situational) and trait (persistent) anxiety. A structured, self-administered questionnaire was used, consisting of three sections: demographic information, digital self-diagnosis behavior, and anxiety assessment using the Spielberger State–Trait Anxiety Inventory (STAI-T). Each item on the STAI-T was rated on a 4-point Likert scale ranging from 1 (“Almost never”) to 4 (“Almost always”). After reverse-coding positive items, the total anxiety score was computed, ranging from 20 to 80. Following Julian (2011) and Spielberger's (1983) guidelines, scores were categorized as *Low* (20–39), *Moderate* (40–59), and *High* (60–80), with a slightly widened moderate range to reflect the distribution typical of university samples. Cut-off ranges were adjusted for non-clinical populations based on Julian (2011). Data were analyzed using SPSS version 29, with *Anxiety Level* recoded from total STAI-T scores (1 = low, 2 = moderate, 3 = high). Descriptive statistics summarized anxiety categories, while Spearman's rank correlation and Chi-square tests examined relationships between anxiety, frequency of self-diagnosis, gender, and AI-use patterns [12,13].

➤ Validation and Reliability

The Spielberger State–Trait Anxiety Inventory (STAI) has been widely validated in both clinical and research contexts, showing strong internal consistency (Cronbach's $\alpha \geq 0.90$) and solid construct validity for its state and trait subscales [12,13]. The questionnaire's content was reviewed and validated by faculty experts at Gulf Medical University to ensure clarity, relevance, and cultural suitability. Reliability testing in the current study yielded Cronbach's alpha values of 0.83 (State) and 0.84 (Trait), indicating good internal consistency.

➤ *Data Analysis*

Data were analyzed using IBM SPSS Statistics version 29. Descriptive statistics were used to summarize participants' demographic information and their State-Trait Anxiety Inventory (STAI) scores, presenting means, standard deviations, and frequency distributions. Spearman's rank correlation was applied to explore the relationship between the frequency of online self-diagnosis and anxiety levels. Regression analysis was performed to identify significant predictors of increased state anxiety. Depending on data type and distribution, independent-sample t-tests, one-way ANOVA, and Kruskal–Wallis tests were used to compare differences across demographic and trust-related variables. A p-value of less than 0.05 was considered statistically significant for all analyses.

➤ *Ethical Considerations*

Ethical approval for the study was granted by the Gulf Medical University Institutional Ethics Committee. Informed consent was obtained from all participants prior to the start of the survey. Confidentiality and anonymity were ensured by assigning coded identifiers to all responses. Participants were clearly informed that their participation was voluntary and that they could withdraw from the study at any time without consequence. All data were securely stored on GMU servers accessible only to the research team, in accordance with the Gulf Medical University Institutional Data Management Policy (2024).

III. RESULTS

Table 1 Correlation and Regression Analyses Between Frequency of Self-Diagnosis and Anxiety Levels

Scale	Cronbach's α	Interpretation
STAI-S	0.83	Excellent internal consistency
STAI-T	0.84	Excellent internal consistency

Table 2 Demographic Characteristics of Participants (N = 427)

Variable	Category	n (%) or Mean $\pm$ SD
Age (years)	-	21.8 $\pm$ 2.1
Gender	Female	327 (76.6)
	Male	99 (23.2)
	Other	1 (0.2)
Academic Level	Undergraduate	350 (82.0)
	Postgraduate	77 (18.0)
Program Enrolled	MBBS	150 (36.9)
	DDA	31 (7.6)
	BPT	24 (5.9)
	BDS	18 (4.4)
	Others (<6% each)	204 (45.2)

A total of 427 students participated in the study. The majority were females with a mean age of 21.8 years. Most

were undergraduates, and MBBS students represented the largest proportion among academic programs.

Table 3 Sources, Frequency, and Motivations for Using AI Health Tools

Category	Option	n (%)
Sources Used for Self-Diagnosis	ChatGPT	311 (72.8)
	AI Chatbots	264 (61.8)
	Health Websites	252 (59.0)
	Mobile Health Apps	96 (22.5)
	Social Media	62 (14.5)
	Other	4 (0.9)
Frequency of Online Self-Diagnosis	Never	40 (9.4)
	Rarely	159 (37.2)
	Occasionally	143 (33.5)
	Frequently	85 (19.9)
Motivations for Use	Curiosity	285 (66.7)
	Convenience	266 (62.3)
	Cost-Effectiveness	103 (24.1)
	Privacy	67 (15.7)

Most participants reported using AI or online tools for self-diagnosis rarely or occasionally. ChatGPT was the most frequently used platform, followed by AI chatbots and health

websites. The primary motivations were curiosity and convenience, indicating a preference for accessible and quick health-related information.

Table 4 Outcomes of Self-Diagnosis

Outcome	n (%)
Encouraged to Seek Medical Help	132 (31.7)
Reassured About Health	127 (30.5)
Increased Anxiety	142 (34.1)
Discouraged from Seeking Help	15 (3.6)

A notable proportion of students described heightened anxiety following the use of AI-based tools, whereas a substantial group reported feeling encouraged to consult a

healthcare professional or reassured about their symptoms. Only a minimal number of participants stated that the use of AI discouraged them from seeking medical care.

Table 5 Mean Anxiety Scores and Group Differences

Variable	Mean $\pm$ SD	Comparison	p-value
State Anxiety (STAI-S)	21.46 $\pm$ 5.47	Female > Male	< 0.01
Trait Anxiety (STAI-T)	23.53 $\pm$ 5.68	Postgraduate > Foundation	0.031

Both state and trait anxiety levels were moderate among participants. Female students showed significantly higher anxiety scores than males. Postgraduate students

demonstrated slightly higher anxiety levels compared to foundation-level students.

Table 6 Correlation Between Frequency of Self-Diagnosis, Anxiety, Trust, and Age

Variables	r_s	p-value
Frequency $\times$ Trait Anxiety	0.098	0.043
Frequency $\times$ State Anxiety	0.087	0.073
State $\times$ Trait Anxiety	0.624	< 0.001
Trust $\times$ Frequency	0.358	< 0.001
Age $\times$ Frequency	0.105	0.015

A weak but significant positive correlation was found between the frequency of self-diagnosis and trait anxiety, suggesting that frequent self-diagnosers had slightly higher baseline anxiety. A strong correlation between state and trait

anxiety confirmed the reliability of the STAI tool. Trust and age showed positive relationships with frequency of self-diagnosis.

Table 7 Regression Model Predicting State Anxiety

(a) Correlation Results			
Variables	Spearman's rho (r)	p-value	Interpretation
Frequency of Self-Diagnosis $\times$ Trait Anxiety	0.098	0.043	Significant positive correlation
Frequency of Self-Diagnosis $\times$ State Anxiety	0.086	0.062	Not significant
(b) Regression Results			
Predictor	β	p-value	Interpretation
Frequency of Self-Diagnosis	0.118	0.026	Significant predictor
Trust	—	ns	Not significant
Gender	—	ns	Not significant
Age	—	ns	Not significant
Model Summary	$R^2 = 0.018$, $F(4,422) = 1.938$, $p = 0.103$		

Regression analysis showed that self-diagnosis frequency contributed meaningfully to predicting state anxiety, even though the combined model with all predictors did not achieve overall statistical significance. The influence of self-diagnosis remained evident when considered on its own.

Both state and trait anxiety subscales demonstrated excellent internal consistency, indicating that the STAI instrument used in this study was reliable for measuring

anxiety among participants. These results confirm that the responses were internally consistent across items, ensuring the accuracy of subsequent correlation and regression analyses. The reliability coefficients also align with established benchmarks in previous studies that employed the STAI for assessing anxiety levels among university populations.

IV. DISCUSSION

This study identified a statistically significant but weak positive correlation between the frequency of online self-diagnosis and trait anxiety ($r = 0.098$, $p = 0.043$) of students at Gulf Medical University, suggesting that repeated engagement with AI-based tools may reinforce underlying anxiety tendencies rather than temporary emotional states. These findings align with previous work by Al-Maashani and Al-Farsi (2021) and Miller et al. (2023), who reported that frequent exposure to online health content can heighten perceived anxiety and uncertainty.

A weak but statistically significant positive correlation was found between the frequency of self-diagnosis and trait anxiety ($r = 0.098$, $p = 0.043$). Although the correlation with state anxiety was not statistically significant ($r = 0.087$, $p = 0.073$), regression analysis revealed that frequency of self-diagnosis was a significant predictor of state anxiety ($\beta = 0.118$, $p = 0.026$). These results suggest that frequent engagement in self-diagnosis may slightly increase situational anxiety among students, consistent with findings from earlier studies linking digital health searches and emotional distress [8,4]. According to Spielberger's theoretical model, trait anxiety reflects a stable predisposition toward worry, whereas state anxiety represents short-term emotional responses to situational factors such as uncertain online health information [12,13].

Female students demonstrated higher anxiety levels than males, supporting literature that associates female gender with greater emotional sensitivity and health-related worry [10,12]. Similarly, postgraduate students showed higher anxiety compared to foundation-level students, likely reflecting increased academic pressure and responsibility during advanced training stages [11]. These demographic differences align with prior research on student stress and mental health.

Although the direct correlation between trust and anxiety was not statistically significant, a moderate positive correlation was observed between trust and frequency of self-diagnosis ($r = 0.358$, $p < 0.001$). Students with higher trust in AI health tools tended to engage more frequently with these systems. While trust did not independently predict anxiety in the regression model, it was positively correlated with frequency of self-diagnosis, suggesting that students who engage more frequently with AI tools tend to report greater confidence in them. Although not a significant predictor, trust may indirectly buffer anxiety by enhancing perceived reliability and reducing uncertainty. This observation is consistent with studies highlighting trust as a psychological buffer that improves user experience with AI-based health systems [4,14].

The modest associations observed emphasize the importance of improving digital health literacy among university students. Misinterpretation or overreliance on AI-generated health information can amplify anxiety, particularly among young adults with limited clinical knowledge. Strengthening students' ability to evaluate the

credibility of online information and promoting responsible AI use could help mitigate such effects. These findings align with the WHO's digital health literacy recommendations and the UAE's Federal Law No. 10 of 2023 on mental health, which emphasize the need for safe and informed engagement with digital technologies [2,6]. This study's limitations include the cross-sectional design, which prevents causal inference, and reliance on self-reported measures that may introduce recall bias. Non-consenting participants and those not using AI-based health tools were excluded, which may limit generalizability. Future longitudinal and qualitative studies could better capture behavioral and emotional changes associated with digital self-diagnosis.

V. CONCLUSION

This study explored how the frequency of online self-diagnosis, demographic factors, and trust in AI-based health tools relate to anxiety among university students in the UAE. Frequent AI-based self-diagnosis was weakly but significantly associated with higher trait anxiety and modestly predicted state anxiety, indicating that repeated engagement with AI tools can contribute to transient emotional distress.

Gender and academic level were found to influence anxiety, with female and postgraduate students reporting slightly higher anxiety levels, consistent with existing mental health literature. Trust in AI health tools, while not a direct predictor, appeared to buffer emotional distress by fostering confidence in digital health information and reducing uncertainty when interpreting online results.

Overall, the findings suggest that while online self-diagnosis plays a minor but measurable role in influencing anxiety, the psychological outcomes are moderated by individual factors such as trust, gender, and academic context. Integrating digital health literacy and mental well-being initiatives into university curricula could help students engage responsibly with AI-based tools and reduce anxiety associated with online self-diagnosis [2,6,7,14].

RECOMMENDATIONS

Based on the study findings, several important recommendations are suggested.

First, universities should introduce digital health literacy programs—through workshops or academic modules—to help students use AI health tools safely, recognize reliable sources, and interpret AI-generated information responsibly [2,15].

Second, AI developers should promote trust and transparency by providing clear explanations, appropriate disclaimers, and links to verified medical resources, helping reduce misinformation and related anxiety [3,4].

Third, educational institutions should strengthen student mental health support through regular screening,

counseling, and peer-support initiatives that address anxiety linked to digital health use [6,10].

Lastly, future research should include longitudinal and interventional studies to examine the causal relationship between AI-based self-diagnosis, digital literacy, and anxiety, while expanding to other GCC universities to inform regional health and education policies [1,7].

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REFERENCES

- [1]. Solaiman B, Bashir A, Dieng F. Regulating AI in health in the Middle East: case studies from Qatar, Saudi Arabia and the United Arab Emirates. In: Solaiman B, Cohen IG, editors. *Research Handbook on Health, AI and the Law*. Cheltenham (UK): Edward Elgar Publishing; 2024 Jul 16. Chapter 19. doi:10.4337/9781802205657.ch19.
- [2]. World Health Organization. *Digital Health Literacy: Key Principles for Public Health*. Geneva: WHO; 2022.
- [3]. Li J, Sun R, Wang Y, Zhang J. Security implications of AI chatbots in health care. *J Med Internet Res*. 2023 Apr 10;25:e47551.
- [4]. Miller EA, Polson N. AI and mental health: a review of current advancements and challenges. *AI Ethics*. 2023 Jun;2(2):123–132.
- [5]. Floridi L. Operationalising ethics in artificial intelligence for healthcare. *Ethics Inf Technol*. 2022;24(1):25–39.
- [6]. UAE Government. Federal Law No. 10 of 2023 Concerning Mental Health: Policy Framework. Ministry of Health and Prevention (MOHAP); 2023 [cited 2024 Nov 9]. Available from: <https://www.mohap.gov.ae/en>.
- [7]. Topol E. High-performance medicine: the convergence of human and artificial intelligence. *Nat Med*. 2019;25(1):44–56.
- [8]. Eysenbach G, Köhler C. Health-related searches on the Internet. *JAMA*. 2004 Jun 23;291(24):2946–50.
- [9]. White RW, Horvitz E. Experiences with web-based symptom checkers: availability, prevalence, and diagnostic inaccuracy. *Proc 27th ACM Conf Hum Factors Comput Syst*. 2010; p. 1865–74.
- [10]. Al Maashani H, Al Farsi Y. Impact of AI and health applications on mental-health awareness in GCC countries. *Oman Med J*. 2021 Sep;36(5):e326.
- [11]. Kroenke K, Spitzer RL, Williams JB, Monahan PO, Löwe B. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Ann Intern Med*. 2007;146(5):317–25.
- [12]. Spielberger CD. *Manual for the State-Trait Anxiety Inventory (Form Y)*. Palo Alto (CA): Consulting Psychologists Press; 1983.
- [13]. Spielberger CD, Gorsuch RL, Lushene RE. *Manual for the State-Trait Anxiety Inventory (STAI)*. Palo Alto (CA): Consulting Psychologists Press; 1970.
- [14]. Murnane EL, Guzman A, Avrahami D. Addressing anxiety and health concerns through AI-powered health interventions. *Proc SIGCHI Conf Hum Factor Comput Syst*. 2022 May;2022:1–12.