

# Attitudes of university students in Sudan towards digital mental health

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## ABSTRACT

**Introduction:** University students are particularly vulnerable to mental health illnesses. Access to mental health services in Sudan is limited. Digital mental health presents a promising approach that young people widely accept. The study aimed to assess the attitude of university students in Sudan toward digital mental health.

**Method:** A cross-sectional survey was conducted among university students in Khartoum using a self-administered electronic questionnaire. Data were collected between June 19 and July 30, 2022.

**Results:** Four hundred and thirty-two responses to the questionnaire were received, with a mean age of 20.37 years. Overall, 95.1% of respondents were willing to search online for mental health information, and 71.1% were willing to try a mental health teleconsultation. The perceived barriers to digital mental health included a preference for traditional consultations (35.6%) and a lack of trust in online providers (18.8%).

**Conclusion:** Digital mental health has the potential to play a significant role in increasing access to mental health care for university students in Sudan.

**Keywords:** digital mental health, university students, Sudan, LMICs, barriers.

## Introduction

Living in a politically and economically disturbed context, Sudanese medical students suffer a higher prevalence of mental distress compared to their peers in other countries in the region.<sup>[1,2,3]</sup> Despite this high prevalence, most medical students remain untreated due to attitudinal barriers and a lack of mental health services and specialized personnel.<sup>[2,4,5,6]</sup>

There is strong evidence for the benefits of digital mental health interventions for both the general public and university students.<sup>[7,8,9]</sup> Research indicates that digital interventions for adolescents and young people are comparable to face-to-face care and better than no care.<sup>[9]</sup> The reported benefits of digital mental

health interventions are particularly significant in low and middle-income countries, where access to care is limited.<sup>[9,10,11]</sup> Although Africa is understudied, research has revealed encouraging results<sup>[11]</sup>

University students worldwide express a strong need for and interest in mental health information and tools, with a positive overall perception.<sup>[7]</sup> A wide range of digital interventions has been found effective or partially effective in reducing symptoms of mental health disorders in this population.<sup>[11,12,13]</sup>

It is crucial to test new and innovative approaches to mental health care, including digital mental health, to address the increasing prevalence of mental health issues and the challenges of limited accessibility.

This study investigates the attitudes and perceived barriers university students in Sudan have toward digital mental health.

### Method

This cross-sectional study was conducted among medical students in medical colleges in Khartoum, Sudan. Data were collected between June 19 and July 30, 2022. Undergraduate students currently enrolled in the academic program and aged 16 and up met the inclusion criteria. The researchers designed the self-administered electronic questionnaire, pretested it for validation, and shared it through various social media platforms, such as Facebook, Telegram, and WhatsApp, for voluntary and anonymous participation. Descriptive statistics in frequencies and percentages were used to represent socio-demographic data and mental health care-seeking behaviour. The attitude towards digital mental health was measured using a Likert scale. Chi-square and Fisher's exact tests were used to compare differences in proportions between groups. A p-value less than 0.05 was considered statistically significant.

The Khartoum State Ethical Committee approved the study.

### Results

A total of 432 valid responses were received. Females represented 72.7% of the sample. The students' mean age was 20.4 years. Nearly all respondents (99.1%) owned a smart device and used social media daily. (Table 1).

Overall, 95.1% of the respondents said they would look for online mental health information, and 71.1% said

they are willing to try a teleconsultation for mental health treatment (Table 1). About two-thirds of the respondents were willing to use a mental health mobile application (Table 2). Face-to-face consultations with a doctor were the preferred method of receiving mental health care (72.7%) (Table 1).

The most frequently perceived barrier to receiving mental health treatment was waiting for the symptoms to disappear by themselves (19.4%, 84). The most frequently reported barrier to digital mental health was a preference for face-to-face consultations (35.6%).

### Discussion

Digital mental health is developing rapidly, presenting an opportunity to improve mental health in countries with limited resources. This study aimed to understand the attitudes and perceived barriers that medical students in Sudan have regarding the emerging field of digital mental health.

Like their peers in other countries, respondents reported a high rate of owning a smart device and using social media.<sup>[14]</sup> This finding highlights the potential of digital mental health to reach university students in Sudan. University students' interest in online mental health information is common, regardless of their health situation.<sup>[7]</sup> Worldwide, a third of university students searched for mental health information at least once.<sup>[7]</sup>

Another benefit recognized by global mental health research is using digital health interventions such as online therapy, education, and support groups.<sup>[7,15]</sup> Two-thirds of this study's respondents agreed they would use these applications. Research shows that university students appreciate the confidentiality and flexible access digital mental health tools provide.<sup>[15]</sup>

A significant proportion (71.1%) expressed a willingness to try mental health teleconsultation. However, most respondents preferred traditional consultations, illustrating the need for human interaction. Young people and adolescents generally report a strong preference for face-to-face mental health interventions and a preference for digital interventions with a human element compared to those without.<sup>[9]</sup> A human component of internet-based mental health interventions increases their effectiveness and acceptability by young people.<sup>[9,15]</sup>

This study is subject to the limitations of a cross-sectional design. The small sample size and potential self-selection bias may affect the generalizability of the study

**Table 1. Socio-demographic characteristics and acceptance of digital mental health**

Variable	Category	(n= 432) n (%)	Willing to search for online mental health information n (%)	p-value	Willing to try a mental health teleconsultation n (%)	p-value
Overall		432 (100)	411 (95.1)		307 (71.1)	
Age groups	16-19	156 (36.1)	150 (96.2)	0.461	102 (65.4)	0.033
	20 -28	276 (63.9)	261 (94.6)		205 (74.3)	
Sex	Male	118 (27.3)	109 (92.4)	0.086	82 (69.5)	0.371
	Female	314 (72.7)	302 (96.2)		225 (71.7)	
Own a smart device	No	4 (.9)	408 (95.3)	0.181	305 (71.3)	0.329
	Yes	428 (99.1)	3 (75.0%)		2 (50.0)	
Use of social media	I use it rarely	9 (2.1)	9 (100.0)	0.301	5 (55.6)	0.155
	I use it every few days	13 (3.0)	11 (84.6)		6 (46.2)	
	I use it daily a few times	142 (32.9)	135 (95.1)		103 (72.5)	
	I use it every day all day	268 (62.0)	256 (95.5)		193 (72.0)	
Perceived need for mental health treatment	No	200 (46.3)	189 (94.5)	0.362	131 (65.5)	0.012
	Yes	232 (53.7)	222 (95.7)		176 (75.9)	
Preferred mental care provider	Face-to-face consultation with a doctor	314 (72.7)	296 (94.3)	0.057	222 (70.7)	
	A face-to-face meeting with a traditional or religious healer	17 (3.9)	17 (100.0)		10 (58.8)	
	A teleconsultation with a doctor or therapist	42 (9.7)	42 (100.0)		40 (95.2)	
	Internet-based treatment without a therapist	32 (7.4)	32 (100.0)		22 (68.8)	
	Family and friends	9 (2.1)	7 (77.8)		5 (55.6)	
	Ouran and prayer	9 (2.1)	9 (100.0%)		5 (55.6)	
	Myself	9 (2.1)	8 (88.9)		3 (33.3)	
Received mental health care in the last 12 months	No	393 (91)	374 (95.2)	0.583	280 (71.2)	0.460
	Yes	39 (9)	37 (94.9)		27 (69.2)	



**Table 2. Willingness to try digital mental health interventions**

Digital health service Willingness to:	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Join an online mental health support group	17 (3.9)	55 (12.7)	98 (22.7)	132 (30.6)	130 (30.1)
Use a mobile app for mental health treatment	22 (5.1)	60 (13.9)	89 (20.6)	134 (31.0)	127 (29.4)
Search for online mental health information	5 (1.2)	16 (3.7)	37 (8.6)	128 (29.6)	246 (56.9)
Receive a teleconsultation for mental health treatment (telepsychiatry)	30 (6.9)	95 (22.0)	84 (19.4)	125 (28.9)	98 (22.7)

**Table 3. Medical students’ self-reported barriers to mental health care**

Barriers to mental health care (n= 432)	Present n (%)
Unsure where to find mental health treatment	83 (19.2)
Waiting for the symptoms to disappear by themselves	84 (19.4)
Fear of stigma	25 (7.9)
Wanting to handle the problem alone	101 (23.4)
High cost of treatment	68 (15.7)
Afraid of mental illness medications	27 (6.3)
Preference to talk to a friend or family member	55 (12.7)
<b>Barriers to digital mental health (n= 432)</b>	
Preference for face-face consultation	154 (35.6)
Do not trust online mental health care providers	81 (18.8)
Do not know where to find digital mental health care	37 (8.6)
Not comfortable using technology	13 (3.0)
Confidentiality concerns	38 (8.8)
Internet is costly	12 (2.8)

results. The reliance on self-administered questionnaires introduces biases inherent in self-reporting, particularly with sensitive mental health issues. The study design did not verify claimed mental health statuses. Consequently, it was challenging to distinguish responses based on

actual mental health history, limiting the ability to draw definitive conclusions about its effects. Future research should employ more rigorous methods to authenticate respondents’ mental health statuses and refine data segmentation.

**Conclusion**

This study found high access to and use of technology, as well as a willingness to try digital mental health interventions. Digital mental health interventions could play a vital role in increasing access to mental health care services for university students in Sudan. Awareness-raising efforts to address the attitudinal barriers and more research are needed for successful implementation in Sudan.

**Competing interests:** None.

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