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Exploring anxiety and sleep disorders among Edna Adan university students in Somaliland: associated stressors and insights

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Abstract

Background 970 million people around the world are living with mental illness. Mental illness is also one of the chronic diseases prevalent in Somaliland. Anxiety and sleep disturbances are the major types of mental illness commonly observed in young adults. The purpose of this study is to explore the anxiety, sleep disturbances, and their factor associated with Edna Adan University bachelor's students in Hargeisa, Somaliland.

Methods This study has used a cross-sectional study with 307 bachelor students of Edna Adan University as its participants from May to July 2024. GAD-7 was used to evaluate anxiety; MPAI was used to measure mobile phone addiction; and GSDS was used to measure sleep disturbances. Pre-test for associated factors questionnaire was carried to assess the validity and reliability of questionnaire. The acquired data was then univariate and analyzed in SPSS version 26.

Results Most 71.30% of the students reported having a good sleep quality, 63.50% had no problem with mobile phone addiction, and 61.20% experienced minimal to no anxiety. Academic stressors, financial pressure, and interpersonal relationships are the most frequently (9.10%) experienced linked factors with a very serious frequency (all of the time), followed by several other factors, such as teaching and learning-related stressors, mental illness and use of psychoactive substances, language barrier, body mass index (BMI) or daily meal problem, having doubt regarding the future or gambling behavior, and travel time to university.

Conclusion This study shows that the students mainly have minimal to no anxiety, and no addiction to mobile phone while maintaining a good sleep quality. However, sleep disturbances and anxiety-associated factors such as academic stressors, financial pressure, and interpersonal relationships are commonly experienced in a very serious frequency (all of the time).

Keywords Anxiety, Sleep disorders, Associated stressors, University students, Edna Adan University, Somaliland

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Introduction

Mental illness is a health problem that significantly affects how a person feels, thinks, behaves, and interacts with other people [1]. Concepts of mental health include subjective well-being, perceived self-efficacy, autonomy, competence, intergenerational dependence, and recognition of the ability to realize intellectual and emotional potential [2]. Somaliland Health and Demographic Survey (SLHDS) reported around 5.1% of household members were diagnosed with mental illness [3]. In 2019, 1 in every 8 people, or roughly 970 million people around the world were living with mental illness [4].

The number of worried and depressed symptoms has increased significantly as a result of COVID-19's effects on mental health conditions, particularly psycho-emotional ones. Social isolation's impact on emotions of vulnerability, loneliness, and emergency anxiety may have led people to feel less capable of handling challenges, which have increased symptoms of anxiety. Fear and anxiety about their own and their loved one's health, difficulty focusing, sleep issues, a decline in social engagement as a result of social distancing, and worries about academic performance seemed to be linked to the endemic [5–7]. Compared to measurements made during the temporary lifting of lockdown restrictions, maladaptive coping strategies were significantly higher during lockdown periods. Young adults' levels of physical activity also considerably decreased, as did their propensity to eat less healthily, and psychopathological symptoms, primarily anxiety and depression, increased [8].

Medical undergraduates who knew more about the pandemic tended to have less emotional anguish. It was once thought that because medical students frequently deal with high expectations from patients, family members, and even themselves, they would experience more severe mental health issues than non-medical students [9]. Two years after the pandemic began, undergraduate nursing students reported moderate to severe levels of stress, anxiety, depression, insomnia, and fear of COVID-19 [10]. Students' incapacity to regularly attend class and engage in social activities during the pandemic had a major negative influence on their academic performance and caused emotional issues. Compared to their male colleagues, female students were more prone to negative emotions, more emotional and irritable, and more vulnerable to tension contagion. Additionally, the prevalence of depression among female students was much higher [11].

Finally, some of the major types of mental illness are depression, anxiety, schizophrenia, bipolar mood disorder, personality disorders, and eating disorders [1]. Anxiety disorders are identified when the fear response triggered is out of proportion to the reality and dangerous situation. Anxiety also includes feeling worried, tense, or afraid, particularly about current or future events. Those who suffer from anxiety also experience certain physical symptoms, such as sleep problems and panic attacks [12, 13]. In 2019, 301 million people were living with anxiety disorder including, 58 million children and adolescents [4]. According to preliminary research conducted in Somalia, 69.3% of workers had anxiety 46.5% had depression, and 15.2% had stress. A recent epidemiologic study conducted in three conflict-affected areas found that 76.9% of study participants had mental health issues, with the majority (68.1%) being under 35 years [14, 15]. A study at Hargeisa Neurology Hospital, Somaliland shows that from 752 patients who received care, 6% were diagnosed with anxiety disorders and 2.2% with insomnia, which mostly occur in males aged 21–30 years old (29.1%) [16]. Another study reveals interrelated factors of anxiety disorders, such as genetic factors, biochemical factors, temperament, learned response, and stress [1].

Likewise, sleep disturbances encompass disorders of initiating and maintaining sleep, disorders of excessive somnolence, disorders of sleep-awake schedule, and dysfunctions associated with sleep, sleep stages, or partial arousals [17]. Sleep disturbances manifest as problems related to falling asleep, disturbances occurring during sleep, and excessive daytime sleepiness [18]. Furthermore, the potential mechanisms of sleep disturbances are the elevation of cellular inflammation, biochemical pathways, genetic correlations, and circadian rhythm. The circadian system plays a vital role in sleep or wake cycle regulation, including sleep duration, continuity, and architecture [19].

Stressors of anxiety and sleep disturbances are described as "all the things that can be understood as any disrupting influence that leads an individual to feel unbalanced or overwhelmed". The stress reaction acts as an adaptive physiological response which occurs as the expression of anger, fear, or rage [20]. The long-term effects of stressors can damage health, cause stress-related disorders, and may influence the course of chronic diseases [21]. Academic stressors, teaching and learning-related stressors, mental illness and the use of psychoactive substances, financial pressure, language barrier, body mass index (BMI) or daily meal problems, having doubt regarding the future or gambling behavior, interpersonal relationships problems with student, lectures, lover, or live alone, travel time to university, and mobile addiction have also been investigated as stressors [22–28]. These factors are the most common in adolescents and young adults [19, 29].

The lack of published research about anxiety and sleep disturbances in the young adult age group is the driving factor for the authors to do this research and assess the problem. Hence, the aim of this study is to explore the

anxiety and sleep disorders among Edna Adan University Students in Somaliland. It is widely believed that anxiety and sleep disorders, along with the stressors that are linked to them, are going to develop.

Methods

Design and participants

This study took place at Edna Adan University, situated on Iftin Road, Hargeisa, Somaliland. Focusing on medical, nursing, midwifery, and dentistry, Edna Adan University is located in Somaliland and has a number of colleges, including the Faculty of Medical Laboratory, Public Health, Pharmacy, Anesthesia, Nutrition, IT, and Business Accounting [30].

This study used a cross-sectional analysis with 307 bachelor students (medical and non-medical) from Edna Adan University as its participants. Slovin's formula was used to determine the sample size, and the total number of sample population was 1.181. The ultimate number of samples be 307 students after the authors also took into account the additional 8 students who fit the requirements and were included in the study. 67 students were disqualified for failing to finish the study. Medical, nursing, midwifery, dentistry, medical laboratory, public health, pharmacy, anesthesia, nutrition, IT, and business accounting were among the fields in which they were enrolled. The interested participants needed to speak Somali and/or English fluently and be able to read, comprehend, and complete the questions. The data was collected from May 26th to July 30th, 2024, yielding a satisfactory sample of respondents. All participants had provided their informed consent prior to disclosing any information used for this study. Participants were invited to complete an informed consent and a questionnaire assessing anxiety, sleep disturbances, and sociodemographic factors. Then, a stratified sampling method was deployed to categorize the data based on stratified gender, type of students (medical or non-medical), and year in school (first, second, third, or fourth year).

Data quality control

One of the most important aspects of the data collection process was managing the quality of the collected data. This is achieved through data validation and data verification [31]. Data validation was incorporated into the data entry system using SPSS version 26. The validated data were then checked for accuracy and consistency. This check includes the totals for micro-data, data sources, consistency, and data auditing processes. The authors have designed the questionnaire in two languages (Somali and English) to minimize socio-economic and cultural misunderstanding. The questionnaire was formed with a clear structure, explanation and concise instructions, and presented both in online and offline form, based on validity and reliability tests. Each question was designed to be mandatory and followed up (via messages and/or phone calls for the online form and direct observation for the offline form) to avoid missing responses, out-of-range or invalid responses, and/or inconsistent responses.

Data variables

Demographic information

The demographic section was designed to collect the general characteristics of bachelor students, including gender, age (adolescent: 13–19 years and young adult age: 20–39 years), year in school, type of student, marital status, nationality, internet usage, smoking status, coffee consumption, Kath consumption, and living environment.

Anxiety

Anxiety is a term used to describe a normal feeling people experience when faced with treat, danger, or stress. When people become anxious, they typically feel upset, uncomfortable, and tense [1]. Anxiety among participants was measured using a Generalized Anxiety Disorder 7-items (GAD-7) questionnaire. The Cronbach's alpha for this sample was 0.92 and categorized into four groups: 0–4 (no anxiety/minimal), 5–9 (mild anxiety), 10–14 (moderate anxiety), and a score equal to or above 15 (severe anxiety) [22, 32]. Cronbach's alpha, in comparison to our sample population is 0.81.

Sleep disturbances

Sleep disturbances encompass disorders of initiating and maintaining sleep, disorders of excessive somnolence, disorders of sleep-awake schedule, and dysfunctions associated with sleep, sleep stages, or partial arousals [17]. The overall Cronbach's alpha of the General Sleep Disturbance Scale (GSDS) was 0.88 with each item would be scored using an 8-point Likert scale ranging from 0 (never) to 7 (every day). This scale had a total possible score between 0 and 147. A general sleep disturbance is indicated by a total score of 43 or higher [33]. Cronbach's alpha, in comparison to our sample population is 0.66.

Stressors

The stressors of students were measured by modified questions comprising academic stressors, teaching and learning-related stressors, mental illness and use of psychoactive substances, financial pressure, language barrier, body mass index (BMI) or daily meal problem, having doubt regarding the future or gambling behavior, interpersonal relationships problem with student, lectures, lover, whether one lives alone, and travel time to university [22–28]. Pre-tests had been carried out in 5% (18 students) of sample size one week prior to the actual data collection period. The result of this pre-test

Table 1 Distribution of sociodemographic characteristics among Edna Adan university bachelor's students

Characteristics	Frequency (Percentage), *n* = 307
Gender	
Male	62 (20.20)
Female	245 (79.80)
Age	
13–19 years	39 (12.70)
20–39 years	268 (87.30)
Year in school	
1st year	36 (11.70)
2nd years	55 (17.90)
3rd years	89 (29.00)
4th years	127 (41.40)
Type of student	
Medical student	40 (13.00)
Non-medical student*	267 (87.00)
Marital status	
Married	2 (0.70)
Single	300 (97.70)
Divorced	5 (1.60)
Nationality	
Somaliland	298 (97.10)
Others	9 (2.90)
Internet use	
< 4 h	86 (28.00)
4–6 h	119 (38.80)
> 6–8 h	50 (16.30)
> 8 h	52 (16.90)
Characteristics	**Frequency (Percentage),, *n* = 307**
Smoking status	
Yes	3 (1.00)
No	304 (99.00)
Coffee consumption	
Yes	144 (46.90)
No	163 (53.10)
Khat consumption	
Yes	2 (0.70)
No	305 (99.30)
Living environment	
With extended family	65 (21.20)
With parents and sibling only	163 (53.10)
With single parent and sibling only	46 (15.00)
Alone	9 (2.90)
Others	24 (7.80)

*nursing, pharmacy, midwifery, dentistry, dental technology, public health, laboratory science, IT, anaesthesia, business management, and nutrition

was Cronbach's alpha was 0.83. Participants answered 1 (not at all/never) to 4 (very serious/all of the time) to each variable. Furthermore, participants filled the Mobile Phone Addiction Index (MPAI) which contains 17 items on a 5-points Likert scale ranging from 1 (not at all) to 5 (always). Greater mobile phone addiction is indicated by higher scores (> mean (42.5)), whereas have no addiction is indicated by scores between 0 and 42.5. All four dimensions yielded satisfactory reliability with Cronbach's alpha coefficient of 0.76, 0.81, 0.85, and 0.75 respectively [34].

Table 2 Prevalence of generalized anxiety disorder

Characteristics	Frequency (Percentage), *n* = 307
No anxiety/minimal	188 (61.20)
Mild anxiety	80 (26.10)
Moderate anxiety	30 (9.80)
Severe anxiety	9 (2.90)

Table 3 The participants' prevalence of nocturnal sleep disturbances

Characteristics	Frequency (Percentage), *n* = 307
Good sleep quality	219 (71.30)
General sleep disturbance	88 (28.70)

Cronbach's alpha, in comparison to our sample population is 0.74, 0.79, 0.73, and 0.83.

Statistical analysis

All analyses were performed using IBM's SPSS version 26. Univariate statistic was applied to describe the participant characteristics (frequency and percentage) aside from the study's variables of interest, such as anxiety, sleep disturbances, sociodemographic, and their associated factors among bachelor students. At the end of the study, all participants received the results regarding their anxiety level, sleep disturbances level, and correlating factors.

Results

Women make up the majority of the participants in this study. The study mostly represents single young adults (20–39 years old) who work as non-medical students. 41.40% of the participants are in their fourth-year of higher study. Students with Somaliland citizenship make up most of the participants. Most of them used the internet for 4–6 h/day. Almost all of the participants did not smoke, nor had any experience of chewing khat. More than half of them did not drink coffee habitually. Generally, they lived with their parents and siblings (Table 1).

The features of severe anxiety, moderate anxiety, mild anxiety, and no anxiety/minimal were found in participants of this research. Most of the participants happened to have minimal or no anxiety (Table 2). This study found the prevalence of general sleep disturbance is as much as 28.70%. However, most of the participants had good sleep quality (Table 3).

Academic stressors, financial pressure, and interpersonal relationships are found to be the most common to have very serious (happens all of the time), followed by other associated factors. 20 participants constantly dealt with BMI problems or daily meals, 16 participants with gambling behavior and travel time to university. Meanwhile, 14 participants had recurring problems with mental illness and use psychoactive substances, 13 participants with language barriers, and 10 participants experienced frequent stress due to teaching and learning

Table 4 Associated factors of anxiety and sleep disturbances

Characteristics *Frequency (Percentage), n = 307*				
	Not at all/never	A little/sometimes	Moderate/most of the time	Very serious/all of the time
Academic stressors	101 (32.90)	113 (36.80)	65 (21.20)	28 (9.10)
Financial pressure	126 (41.00)	101 (32.90)	52 (17.00)	28 (9.10)
Language barrier	124 (40.40)	121 (39.40)	49 (16.00)	13 (4.20)
Interpersonal relationships	132 (43.00)	81 (26.40)	66 (21.50)	28 (9.10)
Mental illness and use of psychoactive substances	284 (92.50)	4 (1.30)	5 (1.60)	14 (4.60)
Teaching and learning stressors	163 (53.10)	96 (31.30)	38 (12.40)	10 (3.20)
BMI problem or daily meals	160 (52.10)	82 (26.70)	45 (14.70)	20 (6.50)
Gambling behavior	243 (79.10)	30 (9.80)	18 (5.90)	16 (5.20)
Travel time to university	162 (52.80)	91 (29.60)	38 (12.40)	16 (5.20)

Table 5 Prevalence of mobile phone addiction index

Characteristics	Frequency (Percentage), *n* = 307
Have no addiction	195 (63.50)
Addiction to mobile phone	112 (36.50)

(Table 4). In the study, the prevalence of mobile phone addiction problems was found in 112 participants. On the contrary, 195 participants were found to have no addiction to mobile phones — thus making the most prevalence (Table 5).

Discussion

This study examines anxiety, sleep disturbances, and factors associated with them among bachelor students of Edna Adan University in Hargeisa, Somaliland. A previous study discovered that mental illness is one of the threatening chronic diseases in Somaliland [3]. Another study in Hargeisa Neurology Hospital, Somaliland discovered that anxiety and sleep disturbances had happened across the young adult age group [16].

Anxiety disorders are identified when the fear response triggered is out of proportion to the reality and the danger situation. When people become anxious, they typically feel upset, uncomfortable, and tense [1, 12]. The presence of anxiety was found in this sample in several intensities: severe, moderate, mild, and no anxiety/minimal, with no anxiety/minimal being the majority finding. Sleep disturbances encompass disorders of initiating and maintaining sleep, disorders of excessive somnolence, disorders of sleep-awake schedule, and dysfunctions associated with sleep, sleep stages, or partial arousals [17]. Moreover, the prevalence of general sleep disturbance with problems and with good sleep quality was analyzed throughout the whole dataset. Good sleep quality was found to be the larger prevalence.

Stressors of anxiety and sleep disturbances are described as "all the things that can be understood as any disrupting influence that leads an individual to feel unbalanced or overwhelmed". The stress reaction as an adaptive physiological response occurs when the emotions of anger, fear, or rage are expressed [20]. Academic stressors, financial pressure, and interpersonal relationships happened to be the most commonly experienced in very serious frequency (all of the time) among participants. They are followed by other associated factors, such as BMI problems or daily meals, gambling behavior, travel time to university, mental illness and use of psychoactive substances, and language barrier, with teaching and learning stressors being the least common experienced in very serious frequency.

Based on univariate analysis, several other works had samples consisting of female students [24, 35–38], in the young adult (20–39 years old) age group [39–41], who were mostly single [23, 26, 42–44], non-medical students (nursing) [45], never smoked [42, 45], drunk coffee [45], nor chewed khat [46]. However, this study complements those of which sample was mostly students who were enrolled in the first year of nursing course, which differs from the current findings [47, 48]. Khat was mostly found to be consumed by male participants (aged ≥ 35 years) [49]. Nonetheless, khat consumption was also found in the mean of age 17 years [50]. Another work showed that

its participants mostly had a history of khat chewing and the amount of chewing sessions was moderate [51].

Related studies have reported most of the participants were surfing the internet for ≥ 3 h/day [32, 52], or staying online internet for 4.6 h/day [53], and this was highest even in male and female participants [54]. Conversely, other research revealed that users typically spend less than four hours a day on the internet, and they frequently use smart gadgets to deal with stress or undesirable situations [24, 55].

This work aligns with other findings where no anxiety symptom was the most finding in different groups of students

[22, 37]. On top of that, studies that were carried out during the COVID-19 pandemic showed that most students did not suffer from anxiety [56–58]. Both medical and non-medical students mostly did not have anxiety problems [25]. Nevertheless, other works reported that most participants suffer from mild to moderate levels of anxiety problem, which requires further consultation when experienced [24, 26, 40, 59].

A preceding work showed that sleep disturbances mostly present at a none to mild rate [60]. Yet, that is not the case with a substantial number of respondents who presented the symptoms of insomnia, their sleep disturbance level is categorized as fair or moderate. Several works found that students' sleep quality at the start of the academic year was better on average, compared to the end of the academic year [37, 52, 61, 62]. Besides, other study yielded a different result compared to a preceding work which showed adolescents mostly had poor or very poor subjective sleep quality after the pandemic [63].

Lastly, mobile phone addiction was not found to be prevalent. Related works have shown that most participants (students) have no addiction to mobile phones, such as the use of social media, games, calls, and short message service (SMS). Likewise, other works reported that there were more students who never or rarely play online games before sleep than those who do [52]. Nonetheless, 79.3% of the 896 students with smartphone disorder self-reported as addicted to their phones [51]. The descriptive statistics showed that the scores of self-reported levels of mobile phone addiction were moderate [64].

Anxiety risk was substantially correlated with sleeping patterns [23, 36]. Strong positive and negative emotions, as well as the persistence of symptoms, are directly related to sleep and mood. Higher emotional intensity was also associated with reduced sleep duration and more nocturnal activity [65]. Interaction that disrupts the circadian rhythm balance between the parts of the brain the regulate sleep and arousal and those that process emotions [49]. Addiction to mobile phones was a serial mediating factor in the reduction of both the length and quality of sleep [66]. One factor that increased the likelihood of pupils experiencing poor sleep outcomes was a stimulation for brain-stimulating neurons. Additionally, prolonged nighttime screen time exposes students' eyes to intense light, and the blue spectrum of that light has a powerful and distinct effect on the retina, causing melatonin release that disrupts circadian rhythms and causes the desire to get up in order to postpone sleep [28, 65].

It was discovered that a number of participants had stress, including a history of mental disorders, substance use, and dissatisfaction with their academic performance. Worries about academic progress, especially in the time of closures have also been found. In addition, academic stress and relationships with classmates were present as factors associated with anxiety and sleep disturbances [39, 43, 54]. Anxiety would be exacerbated by students who were unhappy with their academic performance since they would be less satisfied with themselves. Students are more engaged and satisfied at the school where they live [67, 68].

Financial pressure and language barrier were the most prominent stressors in profoundly serious anxiety cases which affected some students. Earlier work shows that students who face monetary crises and language insufficiency may experience serious stress [22]. Regarding depressed adolescents specifically those who dropped out because of psychosocial problems, e.g., housing problems or financial issues. Financial difficulties and a lack of basic necessities, both of which could have an impact on their health [69, 70]. Financial losses are issues both during and after the quarantine period and are risk factors for the symptoms of psychological illnesses, according to review research [71]. Financial concerns have been linked to poor sleep quality. Young people, who are going through a transitional stage in their lives, have less social or financial stability. It makes sense that younger individuals could be more susceptible to the pandemic's possible effects on poor mental health and wellness [72, 73]. However, a preceding work shows that positive social support is an important aspect of psychological adjustment that can help buffer the pathogenic effects of stress [44].

BMI, the risk of anxiety in students without having a good friend in university, doubt regarding the future, problems with other students, and any lecture(s) have been identified [23, 38, 74]. Travel time from home to university, history of mental health problems, and family conflict at home were also associated with anxiety and sleep disturbances among participants [65]. Remote learning has impaired their personal relationships, including good family relationships. The existence of a learning environment and other variabilities lead to various definitions and degrees of dissatisfaction in the online learning experience. Earlier works have investigated the impact of self-reported learning burdens,

academic records, and the family economy as potential stressors [59, 60].

Eventually, there are at least three limitations of this work. First, the data points were collected from a single university (Edna Adan University only), so the findings may not be generalizable to other samples. Since data was collected at a single university, the finding may not be generally applicable to a wide range of people or situations, places, and times. Second, the sociodemographic of gender, type of students, and year in school were not fully stratified in the same proportion, because of (1) the different number of students across various faculties and (2) some students were unable to take part in this research due to distinct reasons. They signed the informed consent but didn't give back the questionnaires, have confirmed to refuse, were uncompleted filling out the questionnaires, and didn't meet the criteria. Third, all questionnaires were self-reported, and therefore the inherent limitations of self-reporting measures should be taken into consideration. Incorporating diagnostic questionnaires to assess the aims of the study should be prepared for future research to combine the limitations of self-report questionnaires. The focus of this study, however, is limited to evaluating the extent of investigating anxiety, sleep disturbances, and factors associated with them among bachelor students of Edna Adan University in Hargeisa, Somaliland. Associated factors such as stressors, internet, and mobile phone usage have also been considered and analyzed in this work.

Conclusion

This study has explored the anxiety, sleep disturbances, and factors associated with them among bachelor students of Edna Adan University in Hargeisa. The most common feature of anxiety lies in the no anxiety/minimal category, followed by good sleep quality status. This work also found the presence of certain stressors: academic stressors, financial pressure, and interpersonal relationships as the most commonly experienced in very serious frequency (all of the time). Among participants, largely were found without addiction to mobile phones. Confirmation of the study's finding required further interviews or observation tools in order to expand the diversity of the university types and larger populations to better capture the students from another part of the world, and ensure that understanding of research on anxiety, sleep disturbance, and their associated factors is enhanced. Additionally, encourages future researchers to employ qualitative research and strong designs. Therefore, to clarify the future study, multicenter investigations using a longitudinal follow-up design or in-person interviews are still needed. In order to positively channel university students' energy, academics and public health need to reassure students about the effectiveness of alternative or varied learning methods in order to minimize any anxiety or stress brought on by worries about academic stressors. They additionally need to promote academic activities, effective coping mechanisms, and environments that can boost psychological well-being and satisfaction. Helping young adults set boundaries for their own and other's mobile phone accessibility is necessary, as is raising public and adolescent awareness of the value of getting enough sleep and the negative effects of sleep deprivation through the promotion of sleep hygiene behaviors.

Abbreviations

BMI	Body mass index
GAD-7	Generalized anxiety disorder 7-items
GSDS	General sleep disturbance scale
MPAI	Mobile phone addiction index
SLHDS	Somaliland health and demographic survey
SMS	Short message services

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Author contributions

PG conceived and designed the study, undertook data collection, analysed, and reviewed the manuscript. AB took responsibility to supervise it. The authors read and approved the final manuscript.

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Data availability

The datasets used and analyzed during the current study are available from previous studies that analyzed GAD-7 items, GSDS, and MPAI. The research of Wang Y, et al. (2023) and Wang Q, et al. (2022) provided the GAD-7; Doyle NA, et al. (2021) provided the GSDS; and Shao R, et al. (2020) provided the MPAI. Validated questionnaire modification has been used to analyze their associated factors.

Declarations

Ethical considerations

Ethical clearance was provided by Edna Adan University's Ethics Review Committee (Ref: 8055/24). Furthermore, participants granted their informed consent. All participants and their response's confidentiality have been preserved using assigned code solely for study purposes. Participants did not receive any incentive or financial compensation for taking part in the study. All methods were carried out in accordance with the principles stated in the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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