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DIGITAL ANXIETY AND SLEEP DISORDERS: THE PREDICTIVE ROLE OF CYBERCHONDRIA AMONG UNIVERSITY STUDENTS IN JORDAN

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ABSTRACT
This study aimed to identify the relative contribution of Cyberchondria (digital anxiety) to Sleep Disorders among students of Jordanian universities. The descriptive, predictive approach was used; the study sample consisted of (506) male and female students. The results showed that Cyberchondria level among the sample was high, with a mean of (3.86), and that the level of Sleep Disorders among the sample was low, with a mean of (2.53). The results of the multiple linear regression model also showed that the correlation coefficient value between the independent variables (Cyberchondria (digital anxiety), faculty) and the dependent variable (Sleep Disorders) together reached (R=25.70), which indicates a negative and statistically significant correlation at the level of (α=0.05) between the variables.

Keywords: Cyberchondria (digital anxiety), Sleep Disorders, students of Jordanian universities.

INTRODUCTION

In recent years, societies have witnessed profound cognitive transformations that have effectively virtualized everyday life across all age groups from children to the elderly. The Internet has emerged as a central platform for acquiring information and exchanging ideas, particularly among university students who view it as a safe, accessible, and versatile tool for expanding their knowledge. Given that university students represent a vital component of societal progress and innovation, addressing their psychological and social well-being in the digital era has become increasingly important. Ensuring their mental stability is essential to prevent psychological disorders that may hinder their academic, professional, and personal development.

Huang et al. (2023) emphasize that the undergraduate stage is a critical phase in a student's life, marked by complex academic and social pressures that increase their susceptibility to psychological stress. With the acceleration of digitalization, the Internet has become a primary source for health-related information, which has contributed to the rise of **cyberchondria** a form of digital health anxiety. As Aulia et al. (2020) note, students frequently engage in excessive online searches for symptoms of diseases, which fuels anxiety and health-related distress. One of the significant consequences of cyberchondria is the disruption of sleep. According to Yalçın et al. (2024), persistent health anxiety and compulsive symptom-checking behaviors interfere with students' sleep patterns, leading to difficulties in initiating and maintaining restful sleep.

Cyberchondria (Digital Anxiety)

Healthcare websites have gained significant importance with the expansion of the Internet, providing easy access to medical information and influencing individuals' health-related attitudes and behaviors. While some individuals can effectively identify high-quality health information, others struggle to evaluate online health data accurately, leading to **Cyberchondria**—an excessive and compulsive search for health information that increases distress and anxiety (Hsu et al., 2025).

Typically, individuals search for health information online seeking reassurance. However, the available information is not always reliable or accurate. Consequently, self-diagnosis based on such information fosters excessive health fears, emotional burdens, and heightened risks of Cyberchondria (Mayukh, 2024).

Definitions of Cyberchondria

- **Gupta et al. (2025):** Frequent online health searches driven by anxiety, which further amplifies pre-existing health concerns.
- **Aslantas & Altuntas (2023):** Problematic and persistent online health information-seeking behavior, leading to psychological and physical harm.
- **Starcevic (2017):** An obsessive online search for health information associated with increased anxiety, stress, and unnecessary medical consultations.

Although Cyberchondria is prevalent, it is not explicitly listed in the *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)*. However, it is indirectly referenced under pathological anxiety disorder criteria, where excessive illness-related searches (e.g., online symptom checks) are noted (Kalayci et al., 2024).

Characteristics and Associated Behaviors

Research (Jungmen et al., 2024; Yalcin et al., 2024) highlights key features of Cyberchondria:

1. **Compulsive Behaviors:** Uncontrollable online searches that interfere with daily functioning.
2. **Psychological Distress:** Negative emotional states accompanied by physical symptoms such as insomnia, irritability, and appetite loss.
3. **Time-Consuming Reassurance-Seeking:** Repeated, futile attempts to alleviate anxiety through excessive searching.
4. **Distrust in Medical Professionals:** Preference for online information over professional medical advice.

Studies point to a range of factors contributing to the emergence of cyberchondria and digital anxiety. Among the most prominent are excessive smartphone use, poor digital literacy, low health awareness, and reliance on self-diagnosis, in addition to psychological insecurity and heightened health-related anxiety (Starcevic & Aboujaoude, 2015; Fang & Mushtaque, 2024).

The relationship between cyberchondria and sleep disorders is explained through two main theoretical frameworks.

- First, Cognitive Behavioral Theory (CBT) posits that health anxiety stems from irrational beliefs that lead individuals to misinterpret minor physical symptoms as signs of serious illness, triggering compulsive behaviors such as repeated health information seeking (Tandoc & Zheng, 2022).
- Second, the Metacognitive Theory links health anxiety to beliefs about one's own thought processes; some individuals believe that searching for symptoms is beneficial, while others feel unable to stop such searches. This cognitive conflict fuels compulsive behavior and increases psychological distress (Brown et al., 2020).

Sleep Disorders

Sleep is a fundamental human necessity. As Abraham Maslow stated in his hierarchy of needs, sleep is categorized under physiological needs, forming the foundation of human functioning. Sleep disorders refer to a group of conditions that impair the ability to sleep well on a regular basis, varying in severity and impact. These disorders are characterized by disruptions in sleep patterns, duration, or quality, leading to significant daytime distress or functional impairment (Herawati & Gayatri, 2019).

Sleep disorders are a critical health issue that directly affects physical and psychological well-being, cognitive function, and academic performance particularly among university students (Masnan et al., 2025). Regular and sufficient sleep is essential for the secretion of growth hormones and the body's overall development. Conversely, the presence of sleep disorders can lead to a range of negative outcomes, such as chronic fatigue, difficulty concentrating, memory impairment, irritability, and cognitive dysfunction related to learning and attention (Hammad, 2024).

In many cases, the symptoms of sleep disorders manifest as chronic difficulty falling or staying asleep, frequent nighttime awakenings, or non-restorative sleep despite adequate time in bed. These disturbances are often exacerbated by psychological stress and emotional distress, which may further deteriorate students' physical and mental health, consequently affecting their academic performance (Amalanathan, 2025).

Ibrahim (2023) described the primary characteristics of sleep disorders as delayed sleep onset, shortened sleep duration, frequent awakenings, disrupted sleep architecture, and persistent tiredness upon waking. These symptoms indicate a sleep disorder when they are persistent and impair daily functioning.

While "poor Sleep Disorders" is often used to describe dissatisfaction with sleep, sleep disorders are medically recognized conditions that may require clinical diagnosis and intervention. Albqoor and Shaheen (2021) emphasized that sleep disorders are complex in nature and are typically diagnosed based on clinical evaluation of sleep patterns, such as latency, duration, and disruptions.

Wang and Biro (2021) noted that despite the widespread use of the term "Sleep Disorders," there is no universally accepted definition. Clinically, however, sleep disorders are defined by their measurable impact on health and performance. According to Seun-Fadipe and Mosaku (2017), sleep disorders are a major health concern because they impair an individual's ability to maintain physiological and psychological balance and to function effectively in daily life.

Several studies have sought to identify risk factors associated with sleep disorders among university students. Araujo et al. (2021) highlighted that excessive mobile phone use after 9 P.M. significantly contributes to the development of sleep disturbances. Similarly, Wang and Biro (2021) reported that heavy academic demands and poor lifestyle habits—such as smoking, excessive caffeine consumption, and energy drink intake—are predictors of sleep disorders. Additionally, Saat et al. (2020) linked low physical activity levels to a higher prevalence of sleep-related complaints.

Ibrahim (2023) argued that to distinguish healthy sleep from disordered sleep, one should consider sleep onset timing, continuity, minimal awakenings, proper sleep stage structure, and feeling refreshed upon waking. Abnormalities in any of these areas may indicate a potential sleep disorder.

According to Yin et al. (2025), factors such as physical activity, balanced nutrition, and psychological traits like self-control play important roles in reducing the risk of sleep disorders. Self-regulation enables individuals to resist unhealthy sleep behaviors and adhere to patterns that promote better sleep.

From a theoretical perspective, social cognitive theory provides a useful framework for understanding sleep disorders. It emphasizes the interaction between personal characteristics, learned behaviors, and environmental influences. Individuals with higher self-efficacy and access to supportive environments are better equipped to manage and prevent sleep-related problems (Zhai et al., 2023).

Study Problem and Questions

In today’s rapidly evolving digital landscape, university students particularly those in late adolescence are increasingly exposed to psychological stressors as they navigate crucial stages of emotional, cognitive, and identity development. The global shift toward digital education following the COVID-19 pandemic (WHO, 2020) has further compounded these pressures, contributing to the emergence of new psychological phenomena, most notably cyberchondria a condition characterized by compulsive and excessive searching for health-related information online. This behavior often leads to the misinterpretation of normal physical sensations as indicators of serious illness. As Zhu et al. (2023) indicate, such patterns of behavior amplify digital anxiety, which in turn disrupts sleep patterns and contributes to persistent sleep disorders.

In the Jordanian context, observations within university environments suggest a growing prevalence of cyberchondriac behaviors among students. These behaviors typically manifest as extended periods of online

self-diagnosis through unverified digital sources, frequently undermining academic focus and emotional regulation. Three recurring outcomes have been noted: (1) a decline in academic performance, (2) increased anxiety and obsessive health-related thoughts, and (3) noticeable sleep disturbances, particularly during periods of heightened academic demand such as when studying psychological or health-related topics.

Despite the growing relevance of this issue, current research remains limited in several key areas. First, there is a lack of empirical studies within Arab contexts that examine the predictive relationship between cyberchondria and sleep disorders. Second, the potential moderating roles of demographic and academic variables—such as gender, field of study, and year levelhave yet to be thoroughly investigated. Most critically, there is a significant absence of localized data that specifically addresses the scope and impact of this phenomenon within Jordanian universities.

Research Questions:

1. What is the level of Cyberchondria among Jordanian universities students?
2. What is the Sleep Disorders level among Jordanian universities students?
3. What is the relative contribution of Cyberchondria (digital anxiety), gender, and faculty to Sleep Disorders among Jordanian universities students?

IMPORTANCE OF THE STUDY

This study's importance is represented by its role of correlating the theoretical and practical aspects, making it highly valuable in accelerating digital transformation and its impact on university students.

Theoretical importance**:**

The theoretical importance lies in the addressed variables and the study goals, asit will provide theoretical knowledge on relatively recent psychological counseling variables by filling the Arabic literature gap on the impact of Cyberchondria on Sleep Disorders, especially in Jordan. Thus, the researchers hope that this study enriches psychological counseling and educational institutions.

Applied importance:

The applied importance lies in contributing to the preparation of programs of guidance and awareness to reduce the effects of Cyberchondria. Thisstudy's results can be used to provide preventive guidance services to university students by developing plans to confront the negative effects of Cyberchondria, improving Sleep Disorders, and supporting decision-makers in educational institutions to integrate digital health topics into the specified curricula.

STUDY OBJECTIVES

1- Identifying Cyberchondria levels among Jordanian universities students.
2- Identifying the Sleep Disorders level among Jordanian universities students.
3- Identifying the relative contribution of Cyberchondria, gender, and faculty to Sleep Disorders among Jordanian universities students.

Terms and operational definitions

- **Cyberchondria (digital anxiety)** refers to "an evident phenomenon in the digital age, and it refers to abnormal behavioral patterns and emotional states as a result of continuous online health-related searches" (Peng et al., 2021).
- **Operationally,** Cyberchondria is defined in this study based on the scores achieved by students on the used scale.
- **Sleep disorder** is a condition that affects an individual's natural ability to sleep adequately and regularly. It involves difficulties in initiating sleep, maintaining sleep, or experiencing early awakenings, which in turn leads to diminished daytime functioning and negatively impacts both psychological and physical health (American Academy of Sleep Medicine, 2014).
- **Operationally,** In this study, sleep disorder is operationally defined as the degree of disturbance experienced by students, as measured by a scale consisting of several items reflecting sleep difficulties, frequent awakenings, Sleep Disorders, and the effects of poor sleep on concentration, memory, and mood.

STUDY LIMITATIONS AND DELIMITATION

Subject boundaries: This study was limited to investigating the relationship between two main variables, Cyberchondria as a predicting variable and Sleep Disorders as a dependent variable, while the sample is Jordanian universities students without addressing other psychological or social variables.
Human boundaries: included students from Jordanian universities during the second semester of 2024-2025.
Spatial boundaries: conducted at Jordanian universities in Jordan.
Temporal boundaries: Data were collected in the second semester of 2024-2025.

LITERATURE REVIEW

First: Studies on Cyberchondria and Mental Health
Recent studies have shown consistent findings regarding the effects of cyberchondria (digital health anxiety):
1. Gupta et al.'s study (2025) conducted on a sample of Indian university students (n=30) revealed a direct relationship between cyberchondria and health anxiety, where excessive searching for health information was associated with increased anxiety levels.
2. In the Arab context, Issa's study (2023) involving 300 students at Tanta University found a positive correlation between cyberchondria and both somatic symptom disorder and irrational health beliefs, with statistically significant differences favoring females.
3. Agrawal et al.'s study (2024) on a large sample (n=1033) of medical and non-medical students confirmed the stable relationship between cyberchondria severity, smartphone addiction, and personal well-being regardless of academic specialization.

Second: Studies on Digital Behaviors and Sleep Disorders
Studies have highlighted the relationship between technology use and Sleep Disorders:
1. Zhu et al.'s study (2023) involving 2744 students provided evidence of the negative impact of cyberchondria on Sleep Disorders among university students.
2. Rathakrishnan et al.'s study (2021) revealed the tripartite relationship between smartphone addiction, poor Sleep Disorders, and decreased academic performance in a sample of 323 students.
3. In the Egyptian context, Muhammad's study (2020) conducted on 400 students at Sohag University showed that 57% of the sample suffered from poor Sleep Disorders, with a positive correlation between practicing healthy sleep behaviors and Sleep Disorders.

Third: Studies on Psychological Factors and Sleep Disorders
Studies have reached important conclusions about mental health and sleep:
1. Alkaya-Dulger and Ayaz's study (2025) involving 704 Turkish youth showed strong correlations between stress, anxiety, depression and Sleep Disorders, without statistically significant demographic differences.
2. Shuwaikh's study (2020) involving 240 participants showed a negative correlation between certain personality traits and both Sleep Disordersand self-esteem.

Distinctiveness of the Current Study
This study differs from previous studies by:
1. Being the only study - to the researchers' knowledge - that combines the variables of cyberchondria (digital anxiety) and Sleep Disordersin the Arab world, with the exception of Zhu et al.'s study (2023) which addressed these variables in a non-Arab context.
2. Addressing the research gap in Arab studies on this topic.

Study procedures and methodology

STUDY METHODOLOGY

This study adopted the descriptive, predictive method as it suits the study's nature and objectives.
Study Community
This study community covered all students at Jordanian universities during the second semester of the academic year 2024/2025, with overall (11,000) students of both genders (male and female) based on dataavailable at the Admissions and Registration Department. Through the available sampling method, 506 students of both genders were selected as participants in this study. Table (1) illustrates the sample distribution by gender and faculty.

Table 1 Sample distribution by gender and faculty

Variable	Level	Frequency	Percentage %
Gender	Male	276	54.50
	Female	230	45.50
Faculty	Humanitarian	280	55.30
	Scientific	226	44.70
	Total	**506**	**100**

Study tools

First: Cyberchondria Scale (Digital Anxiety)

This scale was developed by Jokić-Begić et al. (2019). This study adopted this scale after being translated into Arabic, and its initial form consisted of 7 items.

Scale Validity Implications

Jokić-Begić et al. (2019) verified the scale validity implications by conducting Exploratory and confirmatory factor analysis (CFA and EFA). The analysis confirmed that the scale consisted of one factor.

In this study, the scale's apparent validity was verified by translating the scale into Arabic, then presented to a jury of (10) arbitrators specialized in psychological counseling and educational psychology at Jordanian universities.

In light of the arbitrators' comments, the suggested amendments were applied to the scale items, which relate to amending the linguistic formulation of some items. Thus, the scale remained after arbitration, consisting of (7) items.

The construct validity was also verified by applying the scale on a pilot sample of (30) students from both genders from outside the study sample; then, the item-total correlation coefficient was computed between the item score and the total scale score, as shown in Table (2).

Table 2 Values of item-total correlation coefficientofCyberchondria scale

No.	item–total correlation	No	item–total correlation	No	item–total correlation	No	item–total correlation
1	0.60	3	0.79	5	0.74	7	0.58
2	0.44	4	0.68	6	0.53		

Table (2) illustrates that the item–total correlation coefficient values were (0.44-0.79). All values were higher than (0.20), statistically significant at the significance level (α=0.05). These values are acceptable to keep the items within the scale based on the criterion of Awda (2010), which indicates keeping the items whose correlation with the total score of the scale exceeds (0.20); thus, the scale in its final form consists of (7) items.

Scale Reliability

Jokić-Begić et al. (2019) verified the scale reliability indicators by computing the internal consistency using Cronbach's Alpha method, which valued (0.77) for the scale.

In this study, the reliability of the internal consistency was verified using Cronbach's alpha method on the data of the first application of the pilot sample, which consisted of (30) students of both genders from outside the study sample, and it was valued (at 0.84) for the scale.

The scale re-test reliability was also verified by re-applying to the previous pilot sample two weeks after the first application and computing the Pearson correlation coefficient between the first and second applications and valued (0.87) for the scale.

Second: Sleep Disorders Scale

The study utilized the Sleep Disorders Scale developed by Ayyildiz and Kalafat (2022).The scale in its initial form consisted of (28) items.

SCALE VALIDITY IMPLICATIONS

Ayyildiz and Kalafat (2022) verified the scale's concurrent validity implications by studying the correlation between the Sleep Disorders Scale scores and the Pittsburgh Sleep Disorders Index scores. The results indicated a high correlation between the two scale scores.

In this study, the scale's apparent validity was verified by presenting it in its initial form to a jury of (10) arbitrators specialized in psychological counseling and educational psychology at Jordanian universities. In light of the arbitrators' comments, the suggested amendments were applied to the scale items, which relate to amending the linguistic formulation of some items; thus, the scale consisted of 28 items after arbitration.

The construct validity was also verified by applying the scale on a pilot sample of (30) students from both genders from outside the study sample; then, the item-total correlation coefficient was computed between the item score and the total scale score, as shown in Table (3).

Table 3 Values of item-total correlation coefficientof Sleep Disorders scale

No.	item–total correlation	No	item–total correlation	No	item–total correlation	No	item–total correlation
1	0.65	8	0.64	15	0.63	22	0.72
2	0.68	9	0.53	16	0.64	23	0.75
3	0.52	10	0.61	17	0.58	24	0.59
4	0.64	11	0.46	18	0.57	25	0.71
5	0.53	12	0.67	19	0.77	26	0.60
6	0.73	13	0.55	20	0.46	27	0.56
7	0.40	14	0.71	21	0.73	28	0.42

Table (3) shows the item-total scale correlation coefficients reached (0.40- 0.77), which is higher than (0.20) and statistically significant at the significance level (α=0.05). These values are acceptable to keep the items within the scale basedon the criterion set by Awda (2010), which indicates keeping the items whose item-total correlation exceeds (0.20). Therefore, the scale in its final form consists of (28) items.

Scale Reliability Implications

Ayyildiz and Kalafat (2022) verified the scale reliability by computing the scale internal consistency using Cronbach's Alpha method, which reached (0.92) for the scale, and by computing the re-test correlation coefficient, which reached (0.81) for the scale.

In this study, the internal consistency was verified using Cronbach's alpha method on the data of the first application on the pilot sample of (30) students of both genders from outside the study sample, which reached (0.80) on the scale. The re-test reliability was also verified by re-applying the scale to the previous pilot sample two weeks after the first application and then computing the Pearson correlation coefficient between the two applications, which reached a value of (0.85) for the scale.

The study tools' correction

The scales items were answered according to a five-point scale that takes the following weights on the items that have a positive direction: 5- (always), 4- (often), 3- (sometimes), 2- (rarely), 1- (never).In the case of items with a negative direction, the scale is reversed.To achieve a subjective judgment on response means,the range was computed by subtracting the lower limit from the upper limit of the grading categories (5-1=4), then dividing it over (5) (4/5=0.80), and then this value was added to the lowest value in the scale (1) to determine the higher limit of this category. Therefore, the levellength became:

Very high (4.21-5.00), high (3.41-4.20), medium (2.61-3.40), low (1.81-2.60), very low (1.00-1.80).

Study procedures

- Review the theoretical literature of the studied and research published and their tools to benefit from them in defining the problem statement, questions, objectives, variables, and tools.
- Preparing the study tools in their initial form.
- Verifying the apparent validity of the study tools in their initial form.
- Determining the study community and sample.
- Verifying the validity and reliability indications for the study tools in their final form.
- The study tools were distributed on paper to the sample,which included the study purpose and method of answering the scale items.
- Entering the responses into SPSS to utilize appropriate statistics based on the study questions, reach and interpret the results, and provide recommendations based on these results.

STUDY VARIABLES

First, independent variables (predictors) include gender (male, female), faculty (humanitarian, scientific), and Cyberchondria among students of Jordanian universities.
Second, the dependent variable (Predicted) is Sleep Disorders among students at Jordanian universities.

Statistical tests

To answer the study questions, SPSS was used to compute the means and standard deviations of Sleep Disordersand Cyberchondria among students of Jordanian universities and to conduct the stepwise multiple linear regression analysis to reveal the variance percentage explained by Cyberchondria, gender, and faculty on Sleep Disorders.

STUDY RESULTS

Results of Q1 "What is the level of Cyberchondria among Jordanian universities students?"

To answer this question, the means and standard deviations of the Cyberchondria scale items were computed, considering the scale items arrangement in descending order according to their means, as shown in Table (4).

Table 4 Means and S.D. of Cyberchondria items in a sample of students at Jordanian universities, arranged in descending order according to their means.

Rank	Item	Mean	S.D	Level
1	Once I start searching for health information, it is difficult for me to stop.	3.99	1.25	High
2	While searching for health information, I felt confused by the information I had found.	3.98	1.21	High
3	I believe that the health information I read on the Internet is correct.	3.96	1.25	High
4	While searching for health information, I felt reassured by theinformation I had found.	3.87	1.27	High
5	Searching for health information, I feel comfortable.	3.79	1.28	High
6	Searching for health information, I feel afraid.	3.72	1.36	High
7	Searching for health information, I feel frustrated.	3.68	1.39	High
	Cyberchondria (total)	**3.86**	**0.98**	

Table (4) reveals that the level of cyberchondria among the sample was high, with an overall mean of 3.86. The item means ranged from 3.68 for "Searching for health information, I feel frustrated" to 3.99 for "Once I start searching for health information, it is difficult for me to stop," with all items rated at a high level.

The researchers suggest that academic and emotional stressors at the undergraduate level significantly contribute to elevated anxiety, prompting students often lacking adequate medical knowledge to seek health information online. This behavior commonly results in misinterpreting minor psychological or physical symptoms as signs of serious illness. Szawloga et al. (2024) support this view, noting students' limited mental health literacy and their tendency to somaticize psychological distress. The COVID-19 pandemic further intensified these concerns, as widespread exposure to symptom-related information heightened health anxieties. According to the WHO (2020), this period marked a surge in cyberchondria, amplified by the shift to digital education and increased reliance on online sources.

Results of Q2, "What is the level of Sleep Disorders among Jordanian universities students?" To answer this question, the means and standard deviations of Sleep Disorders scale items were computed, as shown in Table (5).

Table 5 Means and S.D. of Sleep Disorders items among the sample of students of Jordanian universities, arranged in descending order according to their means.

Rank	Item	Mean	S.D.	Level
1.	Poor sleep makes me feel awake.	2.98	1.03	Moderate
2.	Lack of sleep makes me get headaches.	2.96	1.07	Moderate
3.	I have trouble getting back to sleep once I wake up in the middle of the night.	2.95	1.15	Moderate
4.	Poor sleep makes me lose interest in studying and other people.	2.92	0.97	Moderate
5.	I have trouble sleeping.	2.90	1.21	Moderate
6.	I toss and turn when I sleep.	2.88	1.06	Moderate
7.	Lack of sleep makes my life miserable.	2.83	1.15	Moderate
8.	I wake up during sleep.	2.82	1.14	Moderate

9.	Poor sleep makes it hard for me to think.	2.81	1.04	Moderate
10.	I wake up quickly because of anxiety.	2.80	1.21	Moderate
11.	Poor sleep makes me unable to memorize.	2.79	1.06	Moderate
12.	Lack of sleep makes it hard to concentrate and pay attention.	2.78	1.01	Moderate
13.	Poor sleep makes me lose interest in everything.	2.75	0.97	Moderate
14.	I feel less likely to sleep after I sleep.	2.74	1.12	Moderate
15.	I can't get back to sleep after waking up.	2.73	1.16	Moderate
16.	I would like to sleep more after waking up.	2.72	1.16	Moderate
17.	I have difficulty getting out of bed.	2.69	1.05	Moderate
18.	Poor sleep makes me lose my appetite.	2.67	1.27	Moderate
19.	Feeling sleepy crosscutting doing daily tasks.	2.64	1.08	Moderate
20.	Poor sleep makes me make mistakes.	2.63	1.17	Moderate
21.	Poor sleep makes me quickly tired.	2.62	1.13	Moderate
22.	Fatigue goes away after sleep.	2.61	1.44	Moderate
23.	I am satisfied with my sleep.	2.42	1.39	Low
24.	I feel calm and relaxed after sleeping.	1.69	1.51	Very Low
25.	I feel strong after sleeping.	1.59	1.44	Very Low
26.	I feel refreshed after sleeping.	1.36	1.43	Very Low
27.	I fall into a deep sleep.	1.35	1.36	Very Low
28.	My sleeping hours are enough.	1.26	1.38	Very Low
	Sleep Disorders(total)	**2.53**	**0.44**	**Low**

Table (5) reveals that the overall level of sleep disorders among the sample was low, with a mean score of 2.53. The item means ranged from a low of 1.26 for "My sleeping hours are enough" to a high of 2.98 for "Poor sleep makes me awake." Based on these results, 22 items were rated at a moderate level, one item at a low level, and five items at a very low level.

The researchers attribute the findings to the adverse effects of prolonged screen exposure, as the blue light from electronic devices suppresses melatonin secretion, leading to delayed sleep onset, frequent awakenings, and disrupted sleep. Araujo et al. (2014) confirmed that excessive use of digital devices, particularly for social media and online searches, contributes to insomnia especially among university students who are often active at night and more sensitive to melatonin disruption. Additionally, from a behavioral perspective, unhealthy lifestyle habits such as high caffeine and energy drink consumption commonly believed to enhance focus further impair Sleep Disorders. Wang and Bíró (2021) also highlighted that the socially permissive environment of university life encourages behaviors like smoking and stimulant overuse, which are significant predictors of poor sleep.

Results of Q3: "What is the relative contribution of Cyberchondria (digital anxiety), gender, and faculty to Sleep Disorders among Jordanian universities students?"

To answer this question, linear correlation coefficients between the independent predicting variables (Cyberchondria, gender, and faculty) and the dependent predicted variable (Sleep Disorders) were computed among Jordanian universities students, as shown in Table (6).

Table 6 Matrix of inter-correlation coefficients between predictors and between the predictors and criterion

	Gender	**Faculty**	**Cyberchondria**
Faculty	0.122		
Cyberchondria	0.135	0.263*	
Sleep Disorders	0.117	0.321*	0.490-*

*Statistically Significant at (α=0.05)

Table (6) demonstrates that correlation coefficients between predictors reached (0.122 – 0.263), and one of these correlations is statistically significant at (**α=0.05).** The correlation coefficients between the predictors and the criterion ranged between 0.490 and 0.117; two correlations are statistically significant at (**α=0.05).**

To reveal the variance explained by the predictors, the multiple linear regression analysis was utilized through the stepwise method to enter the predictor variables into the regression equation in the predictive model, as shown in Table (7).

Table 7 Multiple linear regression for the impact of predictors on Sleep Disorders.

Sub-model	R	R^2	Amended R^2	Standard error	Change statistics				
					R^2 change	Change F	Numerator degree of freedom	Denominator degree of freedom	Statistical significance of F
1	0.490	0.241	0.239	0.218	0.241	159.612	1	504	0.000*
2	0.507	0.257	0.254	0.216	0.017	11.194	1	503	0.001*

1: Predictors: (constant regression), Cyberchondria

2: Predictors: (constant regression), Cyberchondria, Faculty

*Statistically Significant at (α=0.05)

Table (7) shows that the predictive model for the independent variables on the dependent variable (Sleep Disorders) was statistically significant at the significance level (α=0.05), with the independent variables collectively explaining 25.70% of the variance in Sleep Disorders. Cyberchondria had the largest relative contribution, explaining 24.10% of the total explained variance in the model, followed by the faculty variable, which accounted for 1.70%. Additionally, the unstandardized and standardized regression weights, along with the computed t-test values for the independent variables (predictors) of the dependent variable, were calculated in the predictive model, as shown in Table (8).

Table 8

Non-standard and standard weights of the variables predicting Sleep Disorders in a sample of Jordanian universities students

Predictors	Non-standard weights		standard weights	t	Sig.
	B	Standard error	B		
Constant	0.202	0.04		5.05	**0.000***
Cyberchondria	0.096-	0.013	0.377-	7.339-	**0.000***
Faculty	0.086	0.026	0.172	3.346	**0.001***

*Statistically Significant at (**α=0.05)**

Table (8) shows that the level of Sleep Disorders decreases by 0.377 standard units for every one standard unit increase in Cyberchondria. Additionally, Sleep Disorders increase by 0.172 standard units when moving from the faculty category of Humanities to the Scientific faculty. Accordingly, the regression equation to predict Sleep Disorders is as follows: **Sleep Disorders = 0.086 (Faculty) + 0.096 (Cyberchondria) – 0.202**

The findings of the study indicated the presence of **a** negative correlation between the key variables, namely cyberchondria and sleep disorders. The researchers interpret this inverse relationship by suggesting that heightened health anxiety, resulting from prolonged and repeated online searching for medical symptoms, may interfere with students' ability to relax, ultimately contributing to reduced Sleep Disorders and increased sleep disturbances**.** One of the most significant consequences of cyberchondria, as noted by the authors, is the emergence of obsessive thoughts about personal health, particularly before bedtime, which disrupts mental rest and leads to psychological distress such as anxiety and depressive symptoms**,** thereby exacerbating sleep-related issues.

In alignment with these findings, Yalçın et al. (2024) affirmed that health anxiety associated with cyberchondria can trigger a range of psychological difficulties, including generalized anxiety, depressive symptoms, obsessive-compulsive tendencies**,** and poor Sleep Disorders**.**

The researchers further highlight that students in health-related disciplines such as medicine, nursing, and pharmacy may be particularly vulnerable to the effects of cyberchondria. This heightened susceptibility stems from their frequent reliance on online medical sources for both academic and personal purposes, which increases their exposure to unverified or alarming health information. Coupled with the heavy academic demands and prolonged study hours characteristic of these fields, students may begin to associate the medical symptoms they learn about with their own health, thereby amplifying their anxiety and stress levels. This vulnerability is further compounded by personality traits often prevalent among science students, such as analytical thinking, perfectionism, and heightened attention to detail all of which may exacerbate health-related concerns and negatively affect their sleep patterns and hygiene.

Based on the results, the researchers recommend the following:

1. Conducting experimental studies on Cyberchondria (digital anxiety) and Sleep Disorders and applying them to university students.
2. Pay attention to raising students' awareness of the adverse effects of cyberchondria by holding seminars and workshops at the Psychological Counseling Center inside the universities.
3. Conducting studies on the Cyberchondria variable and studying it with other variables, such associal anxiety disorder and obsessive-compulsive disorder, and on different samples.
4. Integrating digital health issues into students' curricula.

CONCLUSION

This study's results revealed that the Cyberchondria variable washigh as an independent variable. In contrast, the Sleep Disorders variable was low as a dependent variable, with an inverse relationship and statistically significant differences in favor of scientific colleges. These results emphasize the need to design intervention programs to reduce cyberchondria, especially within academic environments.

Theoretically, this study contributes to the expanding body of research on cyberchondria by linking it empirically to Sleep Disorders, a critical but underexplored area in the context of student well-being. Practically, the findings underline the urgency of integrating mental health awareness into university support services, particularly targeting digital health anxieties. For future research, it is recommended to explore longitudinal and cross-cultural analyses of cyberchondria and its psychological correlates, and to assess the efficacy of digital literacy and coping-based intervention programs across different academic disciplines.

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