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Prevalence of Depression and Anxiety among Pharmacy Students in Libya

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ABSTRACT

Depression and anxiety are among the common mental health problems among medical students and are associated with poor academic performance. This study aimed to measure the prevalence of depression and anxiety among Libyan pharmacy students using Hospital Anxiety and Depression Scale (HADS). A cross-sectional descriptive study was conducted targeted pharmacy students in both public and private universities in Libya. A web-based self-reported survey was administered to students. The survey link was distributed online to a convenience sample of students at colleges of pharmacy between July and October 2023. Depression and anxiety were measured using the HADS questionnaires. Multiple linear regression was used to identify factors associated with depression and anxiety symptoms among the participants. In this study, the sample size was determined and found to be 1197 subjects which received surveys. Approximately 42.8% of the participants had depression symptoms and 44.5% had depression borderline symptoms. On the other hand, 39% of the participants had anxiety symptoms, while 33 % reported borderline anxiety symptoms. This study shows high prevalence of depression and anxiety among pharmacy students in Libya. Pharmacy students may be vulnerable to depression and anxiety because of long study hours. To reduce their levels of anxiety and depression, they need longer sleep hours, and a lower academic workload.

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INTRODUCTION

Depression and anxiety are serious health conditions affect increasing numbers of people globally [1]. The World Health Organization [1] estimates that 264 million people worldwide were suffering from an anxiety disorder and 322 million from a depressive disorder in 2015, corresponding to prevalence rates of 3.6% and 4.4%. While their prevalence varies slightly by age and gender [1], they are among the most common mental disorders in the general population [2– 6].

Psychological stress is a common psychiatric disorder in medical students and sometimes is associated with depression and anxiety. Psychiatric disorder is a disturbance in an individual's cognition, emotion regulation or behavior [7].

Psychological disorder among university students has been a concern for public health authorities around the globe. Among students, medical students are particularly prone to psychological disorder and morbidity [8,9]. University medical schools are stressful environments that can affect the well-being of students. Previous studies indicated that many medical students experience higher stress and more depression in comparison to other general populations and other non-medical university students [10].

In 2015, the prevalence of depression and anxiety in Eastern Mediterranean Region was 9% and 10%, respectively [1]. Depression affects nearly 10.9% of individuals aged 18-25 years, which is a key population segment in each society as it primarily constitutes college students [11]. It is noteworthy that depression can lead to suicide which is the second leading cause of death in young adults (15–29-year-old) globally [12].

In 2018 a WHO report that surveyed international college students at 19 colleges across 8 countries (Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, United States), about 35% of first-year college students reported mental

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health disorders [13]. A recent meta-analysis (2019) included 69 studies comprising 40,348 medical students found the highest prevalence of anxiety was in the Middle East (42%) [14]. Although there are many studies of medical students' mental health, there is little research evaluating mental health in pharmacy students [15]. One study in the United States (U.S.) including students of five healthcare colleges found that 19.4% of the participants had social isolation [15]. A study in Egypt found that 30.3% of 164 pharmacy students experienced moderate to severe anxiety symptoms [16]. Another Studies have shown that the prevalence of depression among pharmacy students ranges from as low as 22.6% in Malaysia, to as high as 51.5% in Egypt [16,17].

Factors accounting for a higher prevalence of depression in college students included age related factors, stressors specific to the educational environment, and daily life stressors. The potential consequences of these psychological problems on pharmacy students at the personal and professional levels include increased difficulty with classroom learning, deteriorating healthcare practice, increasing the likelihood of prescription errors, and lower quality of patient care [13,18].

The study aimed to measure the prevalence of depression and anxiety among students of the collage pharmacy at different Libyan universities using Hospital Anxiety and Depression Scale (HADS)

METHODS

Study design and area

This was a cross-sectional descriptive study that was conducted targeted pharmacy students in both public and private universities in Libya. A web-based self-reported survey was administered to students. The survey link was distributed electronically via Facebook groups (closed groups for academic purposes) to a convenience sample of students at colleges of pharmacy between July and October 2023.

Data collection

Depression and anxiety were measured using the HADS questionnaires, which is a valuable tool utilized by many studies for this purpose. The HADs four-point scales were used to answer the survey questionnaires (0- normal, 1-mild symptoms, 2-moderate symptoms, 3- severe symptoms). 0-7 = Normal, 8-10 = Borderline abnormal (borderline case) and 11-21 = Abnormal (case). The survey included 13 demographic characteristics of the participating students and 14 HADS items. At the end of the survey, sociodemographic information was collected from the students including age, gender, social status, year of study, type of the university, academic achievement, lost parent and having chronic disease/disability.

Data analysis

The analyses were conducted using the SPSS version 22, (IBM, New York, USA). Means, ranges, standard deviations (SD), frequencies and percentages of participant characteristics were calculated. The reliability analyses of both depression (7 items) and anxiety scales (7 items) were measured using Cronbach's alpha as indicator of internal consistency.

RESULTS

The demographic characteristics of the participating students

Descriptive data and demographic characteristics of the studied sample are presented in Table 1. In this study, the sample size was determined and found to be 1197 subjects which received surveys

Table 1. The demographic characteristics of the participating students

Characteristics		Freq.	%	Item		freq.	%
1. Age (years)	18 -20	319	26.6	8. Sleep hours during night	1 - 4.5	146	12.2
	21- 23	499	41.7		5- 6	370	31
	24-30	268	22.4		7-8	479	40
	31-40	64	5.3		9 -12	202	16.8
	41-50	39	3.3				
	51 and more	8	0.7				
2. Gender	Male	334	27.9	9. Sleep time	10-10:45 PM	125	10.4
	female	863	72.1		11-11:45 PM	205	17.1
					12-1 AM	446	37.3
					After 1 AM	421	35.2
3. College year (2 semesters)	1st	188	15.7	10.Study Schedule	Daily	364	30.4
	2nd	160	13.4		Weekly	415	34.7
	3rd	322	26.9		Before exam only	418	34.9
	4th	259	21.6				
	5th	268	22.4				
4. Type of university education	public	392	32.7				
	Private	805	67.3				
5. Marital status	Single	863	72.1	11.Study hours weekly	0-5	340	28.4
	Married	194	16.2		6-10.0	322	26.9
					11-15.0	286	23.9
					16-20	153	12.8
	Engaged	140	11.7		21-28	80	6.7
					30.-100	16	1.3
6. Paid job	Yes	551	46	12. Academic achievement	Fair	158	13.2
					Medium	454	37.9
	No	646	54		Good	347	29
					Very Good	238	19.9
7. Chronic disease / disability	Yes	239	20	13.Missed classes	Daily	153	12.8
					Weekly	305	25.5
	No	958	80		Rare	328	27.4
					Never	411	34.3

Of the public and private colleges, the college of pharmacy (private) had the highest percentage of participants (67.3%). Approximately (72.1%) of the participants were female students and 68.3 % were between 18 and 23years of age. The vast majority of the participants were single (72.1 %), while only 27.9 % were married or engaged.

Only 46% of the participating students had a paid job. About 80 % of the participants did not report any chronic diseases and (66.4 %) had not lost a parent. (48.9 %) percent reported good or very good levels in their academic performance. (35.2%) of the participants reported going to bed after1 AM and 43.2 % reported sleeping less than 7 hours each night. 35.2 percent of the students reported going to bed after 1:00 AM with an average of 6.5 hours of sleep per night (Figure 1).

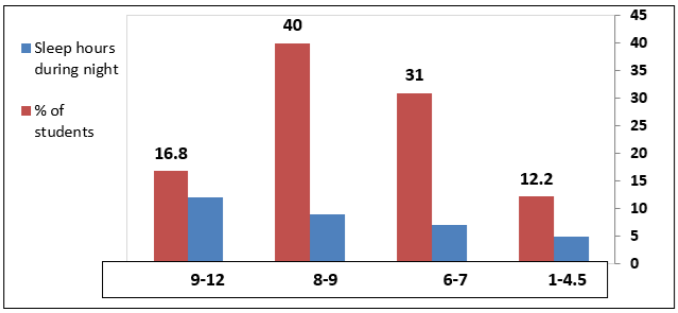

Figure 1. The distribution of students' sleep hours during night

Hospital Anxiety and Depression Scale (HADS)

Depressive symptoms were quite prevalent among students (42.8% %) and 44.5% reported borderline symptoms of depression (Table 2).

Table 2. Distribution of depression among pharmacy students according HAD score

Total HADs depression score	% of students
Abnormal	42.8
Borderline	44.5
Normal	12.7

The seven items of HADS relating to evaluating depression among the students are shown in Table 12 with the prevalence for each symptom. 42.8% of the participants, the depression symptom with highest score was reported hardly at all they enjoy things they used to enjoy, then not at all they laugh and see the funny side of things (42%), feel cheerful (44.9%) and 42.7% of the participants definitely lost interest in their appearance (table 3).

On the other hand, 39% of the participants had scores consistent with anxiety symptoms, while 33 % reported borderline anxiety symptoms (Table 4).

Table 3. Data for HADs depression score of pharmacy students (n=1197)

Depression measures	Severity score %			
	normal	mild symptoms	moderate symptoms	severe symptoms
1. I still enjoy the things I used to enjoy	8.9	10.2	38.1	42.8
2. I can laugh and see the funny side of things	9.4	9.6	38	42
3. I feel cheerful	12	14.7	29.6	44.9
4. I feel as if I am slowed down	9.9	44.7	21.3	24.1
5. I have lost interest in my appearance	19	16.4	21.9	42.7
6. I look forward with enjoyment to things	19	26.4	27	27.6
7. I can enjoy a good book or radio or TV program	36	22.1	16.7	25.2
0- normal, 1-mild symptoms, 2- moderate symptoms, 3- severe symptoms				

Table 4. Distribution of anxiety among pharmacy students according HAD score (n=1197)

Total HADs anxiety score	% of students
Abnormal	39%
Borderline	33%
Normal	28%

The seven items of HADS relating to evaluating anxiety among the students are shown in Table 14 with the prevalence for each symptom. 39.1% of the students reported they get sudden feelings of panic very often indeed and 39% of the students reported they "feel tense" most of the time and "Worrying thoughts go through their mind" a great deal of the time. 35.9% of the students reported they never can sit at ease and feel relaxed and also 34.3% of students reported they get a sort of frightened feeling as if something awful is about to happen very definitely and quite badly (score 3) (table 5).

Table 5. Data for HADs anxiety score of pharmacy students (n=1197)

Anxiety measures	Severity score %			
	Normal	Mild symptoms	Moderate symptoms	Severe symptoms
1.I feel tense or 'wound up'	14.3	33	13.7	39
2.I get a sort of frightened feeling as if something awful is about to happen	4.7	28	33	34.3
3.Worrying thoughts go through my mind:	28	14.7	18.3	39
4.I can sit at ease and feel relaxed	18.3	31.3	14.5	35.9
5.I get a sort of frightened feeling like 'butterflies' in the stomach	29.4	31.6	13	26
6.I feel restless as I have to be on the move:	7.1	30	31	31.9
7.I get sudden feelings of panic	8.5	19.4	33	39.1
0- normal, 1-mild symptoms, 2- moderate symptoms, 3- severe symptoms				

DISCUSSION

In this project, evaluation of depression and anxiety among pharmacy students is crucial as it may consequently influence healthcare services after their graduation. When healthcare providers suffer from psychological/mental disorder like depression or anxiety, this will influence their learning and eventually may have a negatively impact on patients and healthcare system [19].

In the present study, the HADS scale was used to measure the depression and anxiety prevalence and their associated factors among students of pharmacy. Although the HADS report is not intended for diagnostic purposes, its epidemiological value has been evaluated in several studies which concluded that it is a reliable indicator of depression and anxiety [20-21]. It is important to indicate that actual diagnosis of mental illness requires a full assessment by a physician [22].

The study findings showed that most of the participants (about 72.1%) were female students. The majority of pharmacy college students in Libya are women because they usually score higher in Baccalaureate exam of high school. Additionally, they will be registered in the private sector during studies or after completing their studies in other medical collages in the public sector in order to get work, in the field of pharmacy is more available compared to other medical fields.

Analysis of the data revealed a high prevalence of depression and anxiety among pharmacy students. More than half (39%) of the students reported anxiety symptoms and 42.8 % of the students had depression symptoms. This high rate of depression and anxiety might be contributed to the war environment, economic crisis, lack of financial liquidity, study in universities has suspended more than once due to war or work strikes by faculty members and frequent power outages that Libyan people had experience during the past years. Although there are many studies of medical students' mental health, there is little research evaluating mental health in pharmacy students. One study in the United States (U.S.) including students of five healthcare colleges found that 19.4% of the participants had social isolation [23]. A study in Egypt found that 30.3% of 164 pharmacy students experienced moderate to severe anxiety symptoms [19]. Another Studies have shown that the prevalence of depression among pharmacy students ranges from as low as 22.6% (in Malaysia) to as high as 51.5% (in Egypt) [19,20]. All of these Studies were incompatible with our results. Overall, these discrepancies between the published finding rates of depression in different nations could be explained by utilization of different methods for assessments for depression, in addition to different population characteristic.

For pharmacy students with depression, we found a significant negative association between their depressive status and sleeping hours. The students who had less sleep hours were more likely to experience depression symptoms. We reported that the average night sleeping time of all participants was 6.5 hrs, and the majority (43.2 %) reported sleeping less than 7 hours per night (Table 1).

In addition, we also found that about 35.2 % of participants got to sleep after 1:00 AM. This may consequently lead to reduced sleep hours as students have to wake up early morning to go to college. Similarly, a previous study has revealed a relationship between inadequate sleep hours and depression occurrence [24]. A study in Singapore found that depression and anxiety are correlated with sleep disturbances [25]. Similarly, a meta-analysis including seven prospective studies and 25,271 patients found a significant positive association between short sleep duration and depression [26].

CONCLUSION

This study shows high prevalence of depression (87%) and anxiety (72%) among pharmacy students in Libya. The mental and psychological problems of medical university students are a major health issue. The students at pharmacy colleges are vulnerable to depression and anxiety because of study workload and sleep deprivation. To reduce their levels of anxiety and depression, they need longer sleep hours, and a lower academic workload. The study findings give us a warning about the emotional / mental health of medical students. The universities might need to enhance their mental health counseling services for their students and work to engage them into regular social and sport activities. Thus, a program of university mental health services is highly suggestive for such group.

Conflict of interest. Nil

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