Degree of Anxiety among First and Final Year Pharmacy Students: Results from Mosul College of Pharmacy

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ORIGINAL STUDY

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ABSTRACT

Background and Objectives: Upgrading from schools to university is a pivotal stage for many students. however, the conversion of situation and appearance of new responsibilities will expose university students to extreme stress such as increased academic workloads and involvement in public speaking. The assessment of prevalence and its correlates of anxiety among students at the University of Mosul, College of Pharmacy was the aim in this study, involving 253 participants.

Methods: A cross-sectional survey was conducted for short period of time from 20th to 27th of January 2024 in online base. The data collection form consists of two parts: Socio-demographic assessment, and an anxiety questionnaire from Texas Tech University.

Results: The study revealed a mean total anxiety score of 23.89 ± 7.06. A significant gender difference was observed, with 28.5% of participants experiencing low anxiety and 71.5% experiencing high anxiety. Similarly, the mean anxiety score was 7.85 ± 3.56, with 82.6% showing no tendency toward anxiety and 17.4% having a tendency toward anxiety. Significant gender differences were also noted in anxiety scores. Furthermore, anxiety was positively correlated ($r = 0.563$, $p < 0.05$).

Conclusion: This study found high anxiety levels among pharmacy students, with most showing no anxiety tendency. Females exhibited higher anxiety levels than males. Education level did not correlate with anxiety, as shown in statistical analysis.

Keywords: Anxiety, Pharmacy students, Mosul

1. Introduction

The stress results due to upgrading from schools to university is a pivotal stage for many students. however, the conversion of situation and appearance of new responsibilities will expose university students to extreme stress such as increased academic workloads and involvement in public speaking. Also stress among the university students has examined by several studies to observe the risk of developing its symptom and mental health issues during this upgrading period (Chiu, 2014), exclusively first year students are considered to be more susceptible (Friedlander et al., 2007). The worry is used as a screening tool for anxiety disorder since the worry considered as cognitive complaint (Behar et al., 2003). Moreover, worry might be considered as a cognitive elements of anxiety ailments, it has been proposed to embrace the measures of worry as a tool for the screening the disorders. Fresco, Mennin, Heimberg and Turk (2003) found that worry measures identified around to 68% of generalised anxiety disorders (GAD) patients and 65% of anxiety ailments were correctly identified using a measure of worry (Fresco et al., 2003).

Variety of factors in education and learning setting could be contributed including, such as learning load to be educated in moderately shorter time as well as continuous exams and quizzes which expose health care students to extreme level of stress in daily activities (Bieling and Antony, 1998; Rahman et al., 2013). Continuous stress may provide risk for anxiety, and worry (Bieling and Antony, 1998; Rahman et al., 2013; Vitasari et al., 2010; Alzahrani et al., 2017).

Anxiety defined as "a mental condition as well as an emotive and interactive disorder characterized by excessive worrying, feeling of fear, nervousness, excessively complex responses, and harmful thinking" (Callahan, 2001; Garcia, 2016). Female gender, low economic status, ecological factors and mistreatment during childhood is considered as risk factor for developing of anxiety disorder (Vogel and Collins, 2006; Mazzone et al., 2007). Mental Health History: Presence of pre-existing psychological health conditions such as depression, anxiety, or trauma can be exacerbated by the stressors of college life. Sleep and Health Habits: Poor sleep quality, irregular eating habits, lack of exercise, and substance use can negatively impact mental well-being and contribute to anxiety. Social media and Comparison: Constant exposure to social media can lead to comparison with others, feelings of inadequacy, and heightened anxiety about one's own life and achievements. Support Systems: Availability of social support, including friends, family, and counseling services, can significantly influence how students cope with stress and anxiety during college. Previous study in 2020 in Saudi Arabia, found that half of the participants suffered from anxiety rate during their academics at the university. Although, mild to moderate symptoms were the results but may had a significant impact on performance (Samreen, Siddiqui and Mothana, 2020). During the pandemic of COVID-19, a study in Jordan found a high points of anxiety (Al-Qerem et al., 2021). Study in College of pharmacy consist of five years, where each stage consists of two courses, each course consists of the practical and theoretical aspect with midterm and a final exam for assessment and upgrading to the next level. The study was aimed to evaluate the prevalence and economic associates of anxiety between the pharmacy students/Mosul university. The authors would like to know that if there is an effect of level in the college as the curriculum being more specialized and more complex.

2. Material and methods

A cross-sectional survey was conducted in an online base for one week, from 20th to 27th of January 2024. The study was ethically approved by the scientific

Table 1. The basic demographic characteristics of the study participants (N = 253).

Variable	Frequency	Percent
Gender		
Male	101	39.9
Female	152	60.1
Residence		
Urban	228	90.1
Rural	25	9.9
Parents life		
Both are alive	220	87.0
Mother Only alive	30	11.9
Father only alive	3	1.2
Education level		
First level	124	49.0
Fifth level	129	51.0
Working		
Yes	125	49.4
No	128	50.6
Are you in an emotional relationship		
Yes	26	10.3
No	187	73.9
Private	40	15.8
Student share from Family income		
Less than 100	107	42.3
100–200	77	30.4
More than 200	69	27.3
Smoking		
Yes	27	10.7
No	226	89.3
College difficulty		
Acceptable	44	17.4
Somewhat difficult	142	56.1
Extremely difficult	67	26.5
Future vision		
Optimistic	125	49.4
Pessimistic	93	36.8
Neutral	35	13.8
College Interest		
Your choice	174	68.8
Family choice	79	31.2

committee in the department of clinical pharmacy at the Mosul college of Pharmacy. The target of this study was the students of first and fifth years. Being officially enrolled student in Mosul college of pharmacy were the only inclusion criteria for this study. The students from levels 2–4 were not included in the survey. The total number of these two levels were 680 students in which all were invited to participate via online specific group for each level. Only 253 responses were received and included in the final analysis (response rate was 37.2%). The online investigation was used because to quickly and appropriately reach the target sample deprived of breaking their daily timetable.

2.1. Questionnaire

Part one was used for assessing the demographic features of the participants. Part two was used to

Table 2. The distribution of anxiety answers among study participants.

Question	True	False
1. While taking an important exam, I perspire a great deal.	50(19.8%)	203(80.2%)
2. I get to feel very panicky when I have to take a surprise exam.	119(47%)	134(53%)
3. During tests, I find myself thinking of the consequences of failing.	120(47.4%)	133(52.6%)
4. After important tests, I am frequently so tense that my stomach gets upset.	130(51.4%)	123(48.6%)
5. While taking an important exam, I find myself thinking of how much brighter the other students are than I am.	132(52.2%)	121(47.8%)
6. I freeze up on things like intelligence tests and finals.	80(31.6%)	173(68.4%)
7. If I were to take an intelligence test, I would worry a great deal before taking it.	152(60.1%)	101(39.9%)
8. During course examinations, I find myself thinking of things unrelated to the course material.	172(68%)	81(32%)
9. During course examinations, I frequently get so nervous that I forget facts that I really know.	127(50.2%)	126(49.8%)
10. If I knew I was going to take an intelligence test, I would feel confident and relaxed beforehand.	136(53.8%)	117(46.2%)
11. I usually get depressed after taking a test.	96(37.9%)	157(62.1%)
12. I have an uneasy, upset feeling before taking a final/test.	197(77.9%)	56(22.1%)
13. When taking a test, I find my emotional feelings do not interfere with my performance.	89(35.3%)	163(64.7%)
14. Getting a good grade on one test doesn't seem to increase my confidence on the second test.	89(35.2%)	164(64.8%)
15. After taking a test, I always feel I have done better than I actually did.	145(57.3%)	108(42.7%)
16. I sometimes feel my heart beating very fast during important exams.	154(60.9%)	99(39.1%)

measure the anxiety score of the students participated using anxiety questionnaire from Texas Tech University (support Operation for Academic Retention). It was consisted of 16 questions with dichotomous answer (true and false) and total score 16, A score of 12 or higher specify a tendency to have test anxiety (Cassady, 2004). The questionnaire was used in its original language (English) and this may affect the response rate. No pilot survey was used to avoid interruption of students from their daily studying during the final exam of first term in the college. The study aimed to evaluate the anxiety among students and it was supposed that it will be a good time during the preparation for the exams.

2.2. Data analysis

IBM SPSS Statistics for Windows, version 26 (IBM Corp., Armonk, N.Y., USA) program was used to analyze the data (version 26) where the basic descriptive tests (mean $\pm$ SD, as well as frequencies with percents) used for describing the demographic features accordingly. While inferential statistics (students t-test) were used for the comparison purposes among variables. P-value of less than 0.05 was considered statistically significant.

3. Result

3.1. Basic demographic characteristics

The mean age was 21.55 $\pm$ 3.08 in addition to that, the mean number of family member was 6.97 $\pm$ 2.54. Moreover, only 125 out of 253 participants are working with the mean Working hours was 1.85 $\pm$ 0.35 and income was 389.29 $\pm$ 166.726 IQD. Further-

Table 3. Anxiety score differences among the two genders.

Variable	Mean $\pm$ SD	P value
Gender		
Male	7 $\pm$ 3.47	0.02
Female	8.42 $\pm$ 3.52	

Student t-test.

more only 27 participants are smokers with the mean packs/day was 1.41 $\pm$ 0.58 as shown in Table 1.

3.2. Anxiety scores

The mean anxiety score was 7.85 $\pm$ 3.56, with 209 (82.6%) having no tendency toward anxiety, and 44 (17.4%) having a tendency toward anxiety as shown in Table 2. A significant difference in anxiety score among male and female as shown in the Table 3. No significant difference in anxiety score regarding education level, residence, working, smoking, hearing about college and college interest. The anxiety score was not significantly correlated with age of the participants.

4. Discussions

This work examined the occurrence of anxiety between college students at pharmacy who enrolled at the University of Mosul, College of Pharmacy. The whole occurrence of anxiety was identified in 17.4% of the students. Numerous previous studies conducted across different nations, involving varied study populations comprising students in either medicine and pharmacy, have investigated the frequency of anxiety (Vitasari et al., 2010; Callahan, 2001; Hakami et al., 2017). The occurrence of anxiety in this study was discovered to be lower when compared to another

research. For instance, a recent study conducted by Ibrahim and Abdulrahim, which involved medical and pharmaceutical students from Alexandria University (n = 164), reported a prevalence of 29.3% (Ibrahim and Abdelreheem, 2015).

In a study conducted by Bayram and Bilgel in 2008, involving Turkish university students (n = 1617), a prevalence of 47.1% for anxiety was reported (Bayram and Bilgel, 2008). Similarly, study by Shamsuddin et al. among Malaysian students reported 34% of anxiety (Shamsuddin et al., 2013).

The discoveries of this study were also found to be lower compared to a preceding study conducted by Yusoff et al. (n = 442), which reported a high prevalence of anxiety at 64.3% (Wahed and Hassan, 2017). Despite this, earlier research indicated that American and European undergraduates exhibited a high prevalence of anxiety, ranging from 7.7% to 65.5% (Tian-Ci Quek et al., 2019). Females consistently reported significantly higher levels of anxiety compared to males, in line with previous research on gender effects on test anxiety (Rezazadeh and Tavakoli, 2009; Mousavi, Haghshenas and Alishahi, 2008; Mehregan, Najjarian and Ahmadi, 2001). However, some studies have not found evidence supporting this difference (Mousavi, Haghshenas and Alishahi, 2008; Mehregan, Najjarian and Ahmadi, 2001; Mwamwenda, 1993).

The variation on the activity of mixing socially patterns between both genders has been the main factor explaining this distinction. Females experience greater pressure to excel academically compared to males, resulting in elevated levels of test anxiety, as girls often fear failure and view each testing instance as a potential opportunity for it. Another potential rationale is that males may be more hesitant to acknowledge anxiety due to concerns about it being perceived as a threat to their maleness. They are conditioned to handle anxiety by either rejecting it or devising strategies to overcome it (Mousavi, Haghshenas and Alishahi, 2008). This study did not reveal a significant difference in anxiety levels between students who smoke and those who do not. However, other studies have highlighted a strong association between smoking and mental health (Radeef and Faisal, 2020; Kulsoom and Afsar, 2015; Wade, Cairney and Pevalin, 2002). Conversely, it has been noted that heightened episodes of anxiety are important factors contributing to an increased prevalence of smoking (Whalen et al., 2001; Trosclair and Dube, 2010).

This study did not find a significant difference in anxiety levels between urban and rural students. However, other research has indicated that students' backgrounds, whether from urban or rural areas, are linked to stress levels. Some studies suggest that students from rural areas experience higher levels of stress compared to their urban counterparts due to factors such as limited services, economic susceptibilities, and poor living conditions (Pesko, 2014). Conversely, another study suggests that students living in cities experience higher stress levels than those in rural areas (Christie, Munro and Rettig, 2002). However, a separate study pointy out that there is no significant difference in the development of symptoms related to depression, anxiety, and stress among urban and rural students (Alam et al., 2021). The study have some limitations including the short time for distribution of the survey tool, however, a reminder was sent to all invited students to improve the response rate. In addition to that, students from other level in the college were not included and the inclusion of them may reflect a clear picture about the anxiety level to all pharmacy students.

5. Conclusions

High level of worry was observed in this sample of pharmacy students, while most of the participants have no tendency toward anxiety. The study concluded that female students were more prone to anxiety and worry comparing with male students. According to the inferential statistical analysis, level of education was not a factor that may contribute to worry and anxiety.

Conflicts of interest

None to be declared

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