

The Prevalence of Depression and Anxiety among Medical Students in Comparison with Non-Medical Students: A Cross-Sectional Study in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia, 2016

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ABSTRACT

Background: Depression and anxiety have been observed as a common issue among medical students. Medical students are often exposed to several stressors, thus making them more prone to depression than other students from different disciplines. This study aimed to measure and compare the prevalence of depression and anxiety among medical students and non-medical students, Madinah, Saudi Arabia.

Methods: A cross-sectional study was carried out in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia. The participants, who were both males and females, were composed of 238 final-year medical and computer science students. A simple stratified sample was used for sampling, and ethical approval was issued by Taibah University IRB committee. Data were collected using an electronic questionnaire written in Arabic. The questionnaire was categorized into three parts: demographic questions, Beck Depression Inventory II (BDI-II), and Penn State Worry Questionnaire (PSWQ).

Results: For the sample distribution, 44% was Medical student, and 56% was Computer Science students. Findings showed that of these percentage, 33% of medical students suffered moderately from depression, and only 4% of them underwent severe depression. On the other hand, results indicated that among the computer science students, 53% and 7% of them had higher rate of moderate depression and severe depression respectively. Computer science students 23% are also more susceptible to high anxiety than are medical students 14%. The significance relation between depression and specialty ($p= 0.001$) was found, including the non-significance relation between anxiety and specialty ($p= 0.077$).

Conclusion and Recommendation: Most medical students were not depressed, but they suffered moderately from anxiety. Moreover, both depression and anxiety were more prevalent among computer science students than among medical students.

Key-words: Anxiety, Depression, Medical students, Non-medical students, Al Madinah Al Munawwarah.

I. INTRODUCTION

Depression is one of the most prevalent mental disorders today, and it is characterized by episodes of low mood associated with loss of interest in daily activities. According to the World Health Organization (WHO), depression is the third most common disabling disorder, especially among females. (1)

Anxiety in people characterized as anything that upsets the usual individual's physical or mental well-being. Sometimes, anxiety occurs due to the inability of patients to achieve their goals and desires. (2)

Depression and anxiety have been reported universally among medical students as they are exposed to stressors. (3,4,5) This situation can lead to mental distress and have adverse effects on their cognitive functioning. (6,7)

Many authors mention that medical students have elevated levels of depression and anxiety compared to those who are not in the medical field. (6,8) However, numerous studies have been conducted about the factors related to depression and anxiety in medical students. Some of these factors include academic load, insomnia, watching patient's suffering, and financial concerns. (9)

Depression and anxiety have negative impacts on the academic performance, physical health, and psychological health of students. (10) Also, both of them may impair the cognitive system, affect work schedule negatively, discourage self-care, and hinder body growth. Furthermore, substance abuse and suicide attempts have reported in some severe situations of depression and anxiety. (9)

Many studies have measured the prevalence of anxiety among medical students. One of such study found that the prevalence of anxiety in British 31.2% (11), Malaysian 41.9% (12) and Thai 61.4% (13). Similarly in 2010, a cross-sectional study at Jeddah pointed out that the prevalence of borderline anxiety was 33.3% and morbid anxiety was 34.9%. (1) According to research conducted at the Faculty of Medicine, Riyadh, the percentage of female students 75.7% who experienced psychological stress was higher than that of male students 57%. (14)

In our study, we measured the prevalence of depression and anxiety in medical students in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia and compared them with non-medical students.

II. METHODS

A cross-sectional study was conducted between final-year medical and computer science students in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia. The participants, who were both males and females, were composed of 238 final-year medical and computer science students. This sample size was obtained from the total population of 346 students, and it was measured using OpenEpi. The technique of sample collection was a simple stratified sample.

The data were collected using an electronic questionnaire written in Arabic, and the questions were divided into three parts: demographic questions, an Arabic version of the Beck Depression

Inventory-II (BDI-II) (15) that was adapted by Ahmad Abdel-Khalek 1996 for depression assessment, and Penn State Worry Questionnaire (PSWQ) (16) for anxiety assessment.

To ensure that participants can comprehend the questionnaire, a pilot study comprising ten students was conducted, and some modifications were made accordingly. Students received a full explanation of the aims of the study; they were guaranteed, via a consent form, that their data will remain confidential and be used only for research purposes. The proposal of the study was approved by medical college, Taibah University.

The collected data were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Any result with a p-value of <0.05 was considered statistically significant for the purpose of this study.

III. RESULTS

This study included 239 surveys. The response rate for medical students was 100%, while that of computer science students was 63% with a total response rate of 81%. The mean age of students was 23.76 ± 1.65 . More than three-fourths of them were single 81%, and lived with their parents 83%. About 64% of them received their income from both family and university payment. Besides, nearly half of the students 48% performed excellently in their academic work (Table 1).

Table 1. Distribution of socio-demographic characteristics of participants among university students in Almadinah Almunawarah, 2016.

| | N (%) (N=193) |
|---|---|
| Age (Mean \pm SD) | 23.76 \pm 1.65 |
| Gender Female Male | 121 (63%) 72 (37%) |
| Specialty Medical students Computer science students | 84 (43.5%) 109 (56.5%) |
| Marital status Single Married Divorce Widow | 156 (81%) 34 (18%) 3 (2%) 0 (0%) |

| | |
|--|---|
| Living With parents With husband/wife With relatives Alone Residence With friends | 160 (83%) 30 (15.5%) 1 (0.5%) 2 (1%) 0 (0%) 0 (0%) |
| Income University payment only Family pocket money only Both Others | 40 (21%) 21 (11%) 124 (64%) 8 (4%) |
| Academic performance Excellent Good Average Poor | 31 (16%) 93 (48%) 54 (28%) 15 (8%) |

Two third of medical students 63% were non-depressed, and only 4% suffered from severe to extreme depression. Unlike the percentage of the medical students, 39% of computer science students were non-depressed and 7% suffered from severe to extreme depression. (fig. 1&2)

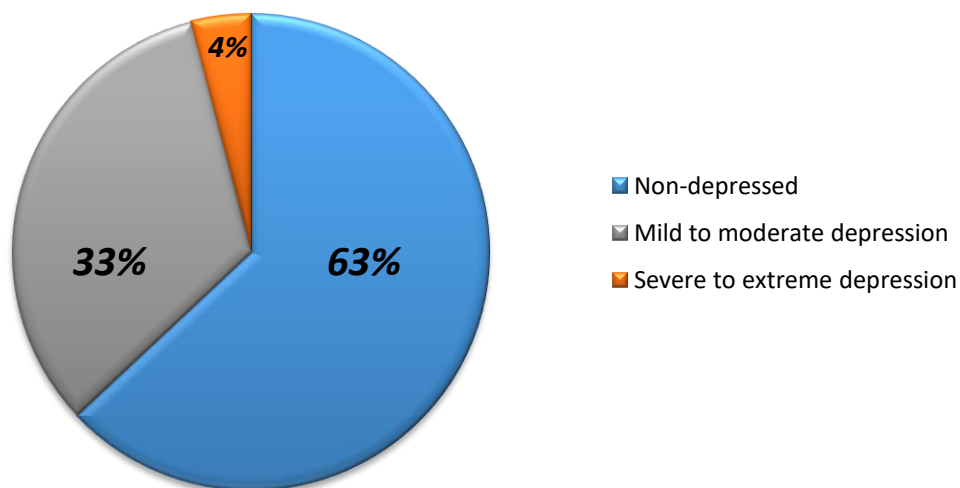


Figure 1. Prevalance of depression among medical studiens in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia, 2016

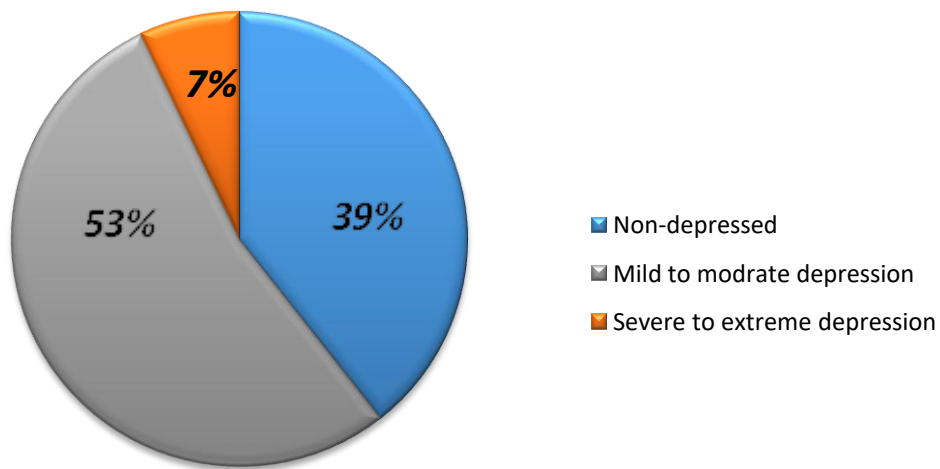


Figure 2. Prevalance of depression among computer science studiens in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia, 2016

In the prevalence of anxiety among medical and computer science students, we found more than half of them had moderate worry 56% and 60%, respectively. While one-fourth of computer science students suffered from high worry 23% which is more than medical students in the same concern 14%. (Fig. 3 & 4)

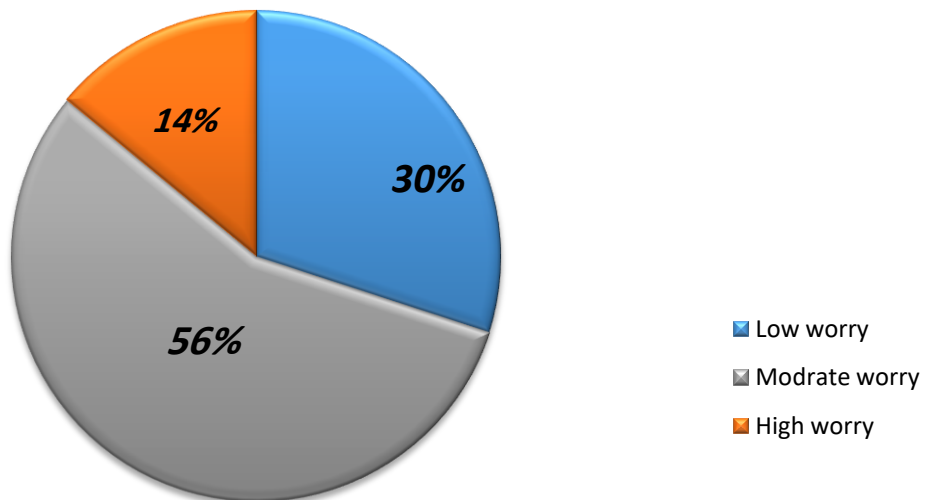


Figure 3. Prevalance of anxiety among medical studiens in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia, 2016

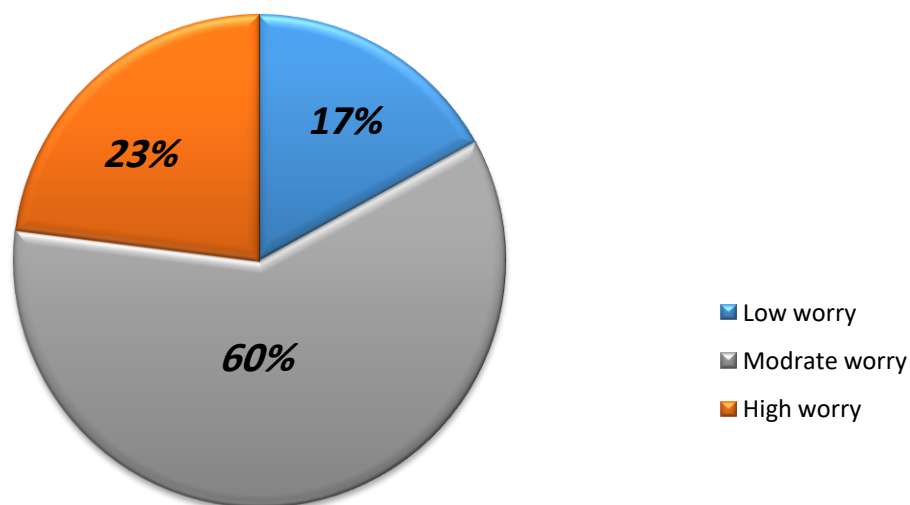


Figure 4. Prevalance of anxiety among computer science studiens in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia, 2016

Comparing depression and anxiety between medical students and computer science students, it was significant in depression ($p= 0.001$) but non-significant in anxiety ($p= 0.077$). (see Table 2).

Table 2: The comparison of depression and anxiety between medical students and computer science students in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia.

| | | Medical N (%) (N=193) | Computer Science N (%) (N=193) | P-value* |
|------------|----------------|-----------------------------|---|----------|
| Depression | Non-Depressed | 53 (27%) | 43 (22%) | .001* |
| | Depressed | 31 (16%) | 66 (34%) | |
| Anxiety | Low worry | 25 (13%) | 19 (70%) | .077 |
| | Moderate worry | 47 (24%) | 65 (34%) | |
| | High worry | 12 (6%) | 25 (13%) | |

* Level of significance at <0.05 . (Chi-square was used).

Academic performance was correlated with depression ($r=0.016$, $p=0.820$) and anxiety ($r= -0.103$, $p=0.155$), and it was non significant for both of them. (see Table 3 & 4).

Table 3: Non-Parametric Spearman correlation between depression and academic performance among university students in Taibah University, Al Madinah Al Munawwarah , Saudi Arabia.

| | Depression | Academic |
|--|------------|----------|
| | | |

| | | | | |
|----------------|----------------------|---|---------------------|---------------------|
| | | | | performance |
| Spearman's rho | Depression | Correlation coefficient Sig. (2-tailed) N | 1.000 - 193 | .016 .820 193 |
| | Academic performance | Correlation coefficient Sig. (2-tailed) N | .016 .820 193 | 1.000 - 193 |

Table 4: Non-parametric Spearman correlation between anxiety and academic performance among university students in Taibah University, Al Madinah Al Munawwarah, Saudi Arabia.

| | | | | |
|----------------|----------------------|---|----------------------|----------------------|
| | | | Anxiety | Academic performance |
| Spearman's rho | Anxiety | Correlation coefficient Sig. (2-tailed) N | 1.000 - 193 | -.103 .155 193 |
| | Academic performance | Correlation coefficient Sig. (2-tailed) N | -.103 .155 193 | 1.000 - 193 |

IV. Discussion

WHO estimates that one in five people are suffering from depression and anxiety. (17) Many studies reported significant distress in medical students (18,19,20); however, others reported little or no evidence of such level of stress. (21,22).

Based on the medical students in our study, the prevalence of depression was 37%, while 63% was non-depressed. Similar to our finding, a study conducted among female medical students at Taibah University noted that 60.3% of the participants did not experience depression, while 39.7% had depression. (1) Other studies for the prevalence of depression among medical students have similar findings. For instance, about 43% of medical students in Alfaisal University, Riyadh (23), and 35% in a private university in Malaysia suffered from depression. (12)

Regarding anxiety, we found that 70% of medical students suffered from anxiety, a percentage that is almost higher than that obtained in a study carried out in Alfaisal University 63% (23) and in another study conducted in Malaysian college 44%. (12)

According to research done in 2014, the prevalence of depression among non-medical 50% was higher than that of medical students 43.3%. (24) Our study produced similar results as the prevalence of depression among non-medical students 60% was higher than that among medical students 37% ($p= 0.001$).

Our results showed that a large percentage of medical students 70% had anxiety compared to that of computer science students 83% ($p= 0.077$). Furthermore, in the same study done in 2014, 56.6% of medical students had anxiety, compared to 76.6% of non-medical students. (24) Unlike a research done in Alexandria University which showed that the prevalence of anxiety is 44% and depression is 58% among medical students, while in pharmacy students the prevalence of anxiety was 29.3% and depression was 51.1%. (25)

V. Conclusion

Most medical students were not depressed but suffered moderately from anxiety. Moreover, both depression and anxiety were more prevalent among computer science students than among medical students. The researchers raised a very important issue in the selected part of the community representing the future doctors and engineers.

As the design used is cross-sectional, the result will describe only the current situation. Also, we did not consider family history of depression and anxiety among our participants.

Finally, we recommend that further studies on the same subject include larger groups of students in different fields. We also suggest future studies done on medical and computer science students who have spent different numbers of years in the university. In addition, we recommend further studies to take in consideration depression and anxiety causes and risk factors.

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