Original Research Article

Level of Anxiety among medical students of the preclinical and the clinical years in Saudi Arabia

Abstract

Background: Anxiety is one of the challenging problems among the general population. It may have a negative impact on the person productivity, also on his physical and mental health. Scientific studies indicate high prevalence of anxiety among medical students compared to the general population.

Aims:Level of anxiety among pre-clinical and clinical medical students in Saudi Arabia

Method: A cross-sectional study with A special Arabic language questionnaire form by using Beck Anxiety Inventory (BAI) scale. It was electronically distributed through the social media platforms using Beck Anxiety Inventory (BAI) scale.

Results: The study included 500 medical students from different colleges of medicine, Saudi Arabia. 319 (63.8%) students were females and 181 (36.2%) were males.High anxiety level was detected among 29 (5.8%)students, 88 (17.6%)students had moderate anxiety level while the majority 383 (76.6%)studentshad low anxiety level.

Keywords: Anxiety, Stress, Medical students, Saudi Arabia, Prevalence,

Introduction:

Anxiety is an emotion characterized by feelings of tension and worrying thoughts that are accompanied by psychological and physical responses. Continuation of these symptoms or when it occurs suddenly or excessively, it will have a significant and negative impact on person‘s ability to function, social life, quality of life, and physical health [1].

The prevalence of psychological stress and anxiety in college students is higher compared with the general population [2]due to the existence of many factors such as: Studying with a new or different language, difficulties of studying, exams, financial difficulties, the stress of the family, employment, discrimination, disabilities. These factors have a negative impact on their performances, achievement, and experience at university, quality of life, and social life [3-5].

Literature reported that medical students had the highest percentage of anxiety compared to other students [6-11]. In a European study, around 30% of medical students suffer from anxiety [12.] Moreover, two Brazilian studies showing 20% to 50% of medical students having mood disorders [13,14].Furthermore, a previous study demonstrated a higher prevalence of anxiety among first-year medical students compared with the final year [15.]

Medical education is long, and each stage of medical school has its own challenges and difficulties [15,16].Students use different coping strategies as a response to get rid of the stressors and survive in medical colleges and challenge these stressors and it is anticipated these coping strategies are predictive of depression and anxiety among medical students [17 .]

Educational institutions need to assess the students' psychological well-being so that appropriate measures can be taken to help students cope with unprecedented changes.

The current study aims to compare the level of anxiety among pre-clinical and clinical medical students in Saudi Arabia since there is no study has been conducted in Saudi Arabia.

Method:

A cross-sectional anonymous questionnaire-based survey conducted after being approved by the research ethics committee (REC). A special Arabic language questionnaire form by using Beck Anxiety Inventory (BAI) scale. The questionnaire involved the medical students in Saudi Arabia. It was electronically distributed through the social media platforms.

The questionnaire constituted four sections; the first was the participant demographical data such as age, sex, marital status, .etc.

The second section was concerned with study related data of medical students such as year, GPA, reason to study medicine, .etc.

The third section was concerned with risk factors of developing anxiety among medical students.

The fourth section was concerned with the level of anxiety by using Beck Anxiety Inventory items among medical students

The study involved 500 participants who fulfilled the inclusion criteria and fully Responded to the questionnaire.

Data analysis

The data were collected, reviewed and then fed to Statistical Package for Social Sciences version 21 (SPSS: An IBM Company). All statistical methods used were two tailed with alpha level of 0.05 considering significance if P value less than or equal to 0.05. Students stress level was assessed through summing up discrete scores (likert scale) for different Beck Anxiety Inventory (BAI) items. The total score is calculated by finding the sum of the 21 items. Score of 0-21 = low anxiety. Score of 22-35 = moderate anxiety and Score of 36 and above = potentially concerning levels of anxiety. Descriptive analysis was done by prescribing frequency distribution and percentage for study variables including students 'personal data, study data, risk factors of developing anxiety and BAI items. Cross tabulation for showing distribution of students 'anxiety level by their different factors to assess anxiety predictors was carried out with Pearson chi-square test for significance and exact probability test if there were small frequency distributions.

Results

The study included 500 medical students from different colleges of medicine, Saudi Arabia. 319 (63.8%) students were females and 181 (36.2%) were males. Also, 463 (92.6%) students were single while 24 (4.8%) were married and had children. 418 (83.6%) of the students live with their families and (table 1).

Table 2 illustrates study related data of medical students, Saudi Arabia. 311 students (62.2%) were at their pre-clinical years (preparatory up to 3rd year) while 148 (29.6%) were at their clinical years and 41 (8.2%) were medical intern. Regarding students GPA, 387 (77.4%) had GPA of 4-5 points while 105 (21%) had GPA of 3-3.99 points. The most reported reason for studying medicine among the study students was their own desire (74.6%), followed by their secondary school grades (9.2%), parents desire (8.6%), and 38 (7.6%) had no specific cause. Previous failure during medicine study was reported by 128 (25.6%) students and 210 (42%) study for 5-7 hours daily while 145 (29%) study for 2-4 hours.

Table 3 reveals distribution risk factors of developing anxiety among medical students, Saudi Arabia. Exact of 91.6% of the students reported feeling anxiety during study and before exams, 69.8% told that medicine study negatively affected your social and psychological life, 23.2% complained of medical anxiety, and 22% had economic difficulties but only 12.2% had health problems.

Table 4 shows distribution of Beck Anxiety Inventory items among medical students, Saudi Arabia. Exact of 92.4% of the students feel nervous by different grades (mild to severe), 79.4% have fear of worst happening, 76.6% were unable to relax, 60.8% feel heart racing, 60.4% had

fear of losing control and 56.2% had indigestion and 56% were terrified or afraid. Only 18% were faint / lightheaded. The total BAI score ranged from 0-59 points out of 63 with mean score of 16.3 ±11.4 points.

Figure 1 shows overall anxiety level among sampled medical students, Saudi Arabia. High anxiety level was detected among 29 (5.8%) students, 88 (17.6%) had moderate anxiety level while the majority (76.6%; 383) had low anxiety disorder.

Table 5 illustrates distribution of predictors of anxiety among medical students, Saudi Arabia. Exact of 30.4% of female students had moderate to high anxiety compared to 11% of males with recorded statiscal significance (P=.001). Also, 39.5% of students who study medicine due to parents desire had moderate to high anxiety level in comparison to 10.9% of those who selected medicine due to their secondary school grades (P=.016). Moderate to high anxiety was also detected among 41.9% of students who study for more than 10 hours daily in comparison to 7.7% of other who study for less than 2 hours (P=.012). Anxiety level was significantly higher among students who had economic difficulties (39.1% vs. 19%), students with family conflicts (44.4% vs. 17.6%), students with health problems (50.8% vs. 19.6%), students who feel anxiety during study and before exams (25.5% vs. 0.0%).

Table 1. Personal data of study medical students, Saudi Arabia

Personal data	**No**	**%**
Gender		
Male	181	36.2%
Female	319	63.8%
MS		
Single	463	92.6%
Married with no children	13	2.6%
Married and have children	24	4.8%
Live with your family		
Yes	418	83.6%
No	82	16.4%
If no, where you live?		
University housing	42	51.2%
Private housing	40	48.8%

Table 2. Study related data of medical students, Saudi Arabia

Study data	No	%
Year		
Preparatory	25	5.0%
1st year	99	19.8%
2nd year	82	16.4%
3rd year	105	21.0%
4th year	77	15.4%
5th year	71	14.2%
Intern	41	8.2%
GPA		
2-2.99	8	1.6%
3-3.99	105	21.0%
4-5	387	77.4%
Reason to study medicine		
My own desire	373	74.6%
Secondary school grades	46	9.2%
Parents desire	43	8.6%
Dont know	38	7.6%
Previously failed in study		
Yes	128	25.6%
No	372	74.4%
Study hours		
< 2	13	2.6%
2-4	145	29.0%
5-7	210	42.0%
8-10	101	20.2%
> 10	31	6.2%

Table 3. Distribution of risk factors of developing anxiety among medical students, Saudi Arabia

Risk factors for anxiety	**No**	**%**
Had family conflicts	108	21.6%
Had economic difficulties	110	22.0%
Had health problems	61	12.2%
Medicine study negatively affected your social and psychological life	349	69.8%
Complained of medical anxiety	116	23.2%
Feel anxiety during study and before exams	458	91.6%

Table 4. Distribution of Beck Anxiety Inventory items among medical students, Saudi Arabia

Beck Anxiety Inventory	Not at all		Mildly, but it didn't bother me much		Moderately – it wasn't pleasant at times		Severely – it bothered me a lot	
	No	%	No	%	No	%	No	%
Numbness or tingling	321	64.2%	131	26.2%	28	5.6%	20	4.0%
Feeling hot	289	57.8%	152	30.4%	33	6.6%	26	5.2%
Wobbliness in legs	283	56.6%	131	26.2%	58	11.6%	28	5.6%
Unable to relax	117	23.4%	178	35.6%	132	26.4%	73	14.6%
Fear of worst happening	103	20.6%	166	33.2%	138	27.6%	93	18.6%
Dizzy or lightheaded	321	64.2%	128	25.6%	37	7.4%	14	2.8%
Heart pounding / racing	196	39.2%	174	34.8%	84	16.8%	46	9.2%
Unsteady	261	52.2%	154	30.8%	52	10.4%	33	6.6%
Terrified or afraid	220	44.0%	156	31.2%	76	15.2%	48	9.6%
Nervous	38	7.6%	173	34.6%	154	30.8%	135	27.0%
Feeling of choking	309	61.8%	126	25.2%	39	7.8%	26	5.2%
Hands trembling	278	55.6%	143	28.6%	47	9.4%	32	6.4%
Shaky / unsteady	303	60.6%	133	26.6%	36	7.2%	28	5.6%
Fear of losing control	198	39.6%	162	32.4%	99	19.8%	41	8.2%
Difficulty in breathing	312	62.4%	139	27.8%	27	5.4%	22	4.4%
Fear of dying	278	55.6%	132	26.4%	56	11.2%	34	6.8%
Scared	269	53.8%	158	31.6%	42	8.4%	31	6.2%
Indigestion	219	43.8%	145	29.0%	70	14.0%	66	13.2%
Faint / lightheaded	410	82.0%	73	14.6%	11	2.2%	6	1.2%
Face flushed	357	71.4%	103	20.6%	23	4.6%	17	3.4%
Hot / cold sweats	286	57.2%	135	27.0%	45	9.0%	34	6.8%

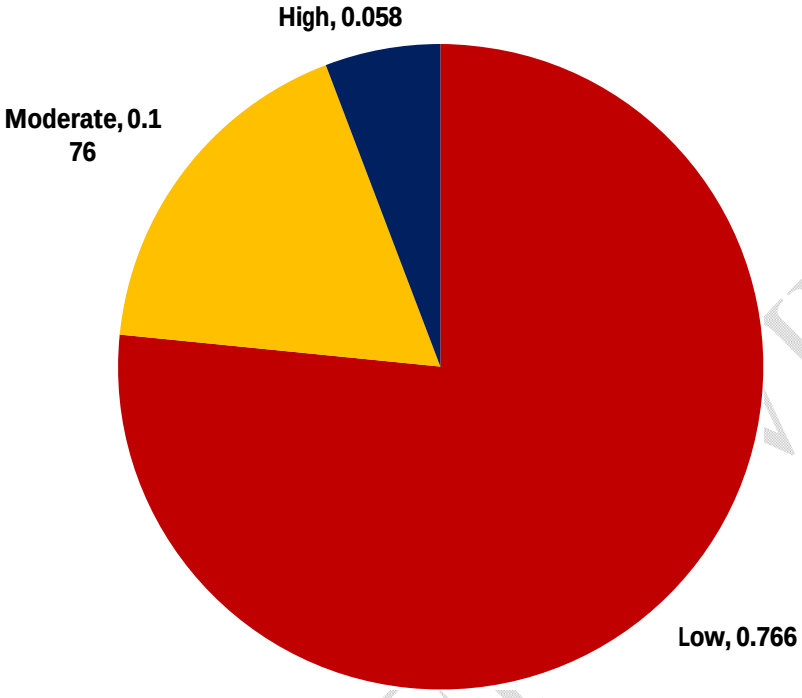

Figure 1. Overall anxiety level among sampled medical students, Saudi Arabia

Table 5. Distribution of predictors of anxiety among medical students, Saudi Arabia

Factors		Anxiety level				p-value
		Low		Moderate / high		
		No	%	No	%	
Gender	Male	161	89.0%	20	11.0%	.001*
	Female	222	69.6%	97	30.4%	
MS	Single	354	76.5%	109	23.5%	.791
	Married with no children	29	78.4%	8	21.6%	
Live with your family	Yes	326	78.0%	92	22.0%	.097
	No	57	69.5%	25	30.5%	
Academic year	Pre-clinical	235	75.6%	76	24.4%	.209
	Clinical	112	75.7%	36	24.3%	
	Intern	36	87.8%	5	12.2%	
GPA	2-2.99	5	62.5%	3	37.5%	.635
	3-3.99	81	77.1%	24	22.9%	
	4-5	297	76.7%	90	23.3%	
Reason to study medicine	My own desire	286	76.7%	87	23.3%	.016*
	Secondary school grades	41	89.1%	5	10.9%	
	Parents desire	26	60.5%	17	39.5%	
	Don’t know	30	78.9%	8	21.1%	
Previously failed in study	Yes	91	71.1%	37	28.9%	.088
	No	292	78.5%	80	21.5%	
Study hours	< 2	12	92.3%	1	7.7%	.012*
	2-4	117	80.7%	28	19.3%	
	5-7	166	79.0%	44	21.0%	
	8-10	70	69.3%	31	30.7%	

	> 10	18	58.1%	13	41.9%	
Had family conflicts	Yes	60	55.6%	48	44.4%	.001*
	No	323	82.4%	69	17.6%	
Had economic difficulties	Yes	67	60.9%	43	39.1%	.001*
	No	316	81.0%	74	19.0%	
Had health problems	Yes	30	49.2%	31	50.8%	.001*
	No	353	80.4%	86	19.6%	
Medicine study negatively affected your social and psychological life	Yes	248	71.1%	101	28.9%	.001*
	No	135	89.4%	16	10.6%	
Complained of medical anxiety	Yes	52	44.8%	64	55.2%	.001*
	No	331	86.2%	53	13.8%	
Feel anxiety during study and before exams	Yes	341	74.5%	117	25.5%	.001*$^{\$}$
	No	42	100.0%	0	0.0%	

P: Pearson X^2 test ** P < 0.05 (significant)* *$: Exact probability test*

Discussion and Conclusion:

Anxiety is one of the challenging problems among the general population. It may have a negative impact on the person productivity, also on his physical and mental health. It is more common among college students and many factors may influence its presence, these include previous experiences, financial difficulties, health problems. [1-3-18]
The current study include five hundred students with three hundred and nineteen (63.8%) female and one hundred and eighty one (36.2%) male, with female to male ratio 1.8 to 1

In this study which we have conducted, we found that ninety seven female students (30.4%) had moderate to severe anxiety compared to twentymale students (11%) who had moderate to severe anxiety.
This is consistent with the previous studies which show a high rate and intensity of anxiety in women compared to men by about two to three times, where the percentage of women with anxiety is 33%.[18-19]
The reason for the high rate of moderate to severe anxiety among female students may be due to the participation of female students more than male students in this study.

In this study which we have conducted, we found that the anxiety rate is higher among singles than married couples, where one hundred and nine (23.5%) of singles have anxiety.
This is consistent with the previous studies which show a high rate of anxiety among singles.
It can be explained that the psychological and emotional support of married couples is greater than those who are singles.[20]

In this study which we have conducted, we found that the students in the preclinical years who had anxiety were 76 (24.4%) students and about the students in clinical years who had anxiety were 36 (24.3%) students.
This is inconsistent with previous studies that show increase of anxiety among pre-clinical years students by 30.8%, compared to clinical years students. [21]
It can be explained by the low participation of students from clinical years in this research.

In this study which we have conducted, we found that the anxiety rate is high among low-income earners, where 43 (39.1%) of low-income earners have anxiety.
This is consistent with previous studies which show that anxiety among low-income earners is about two times higher than those of high-income earners.[22]
This can be explained by lack of basic support for the students.

High anxiety level and high prevalenceof anxiety among medical students it will have a significant and negative impact on person's ability to function, social life, quality of life, and physical health, Also academic performance, education outcomes.Educational institutions need to assess the students' psychological well-being so that appropriate measures can be taken to help students cope with unprecedented changes.

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