Students' Anxiety during the COVID-19 Pandemic in Saudi Arabia: An Exploratory Study

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ABSTRACT

The sudden outbreak of the COVID-19 pandemic prompted educational institutions to close down worldwide. This unprecedented step led to a feeling of anxiety in the student community that encountered obstacles in shifting to an online education mode. Saudi Arabia also followed these steps to minimize the loss of life, but simultaneously, the administration also assured people that they had nothing to fear as the country was prepared to support them in every way. The current study was accordingly commissioned between April 21, 2020, and May 20, 2020, to assess the impact of the new developments on the anxiety of 119 students from the College of Medicine, University of Bisha, Saudi Arabia, using an adapted Generalized Anxiety Disorder Scale - 7 (GAD-7). The findings showed that 46.22% of respondents had minimal anxiety, 26.89% had mild anxiety, 12.60% had moderate anxiety, and 14.29% had severe anxiety. The findings indicate that Saudi University students had minimal anxiety issues concomitant to the pandemic. The results also significantly show that students' anxiety or its absence was a factor of gender and the students' current level of education in the university. **Context:** The sudden outbreak of the COVID-19 pandemic prompted educational institutions to close down worldwide. This unprecedented step led to a feeling of anxiety in the student community that encountered obstacles in shifting to an online education mode. Saudi Arabia also followed these steps to minimize the loss of life, but simultaneously, the administration also assured people that they had nothing to fear as the country was prepared to support them in every way. **Aim:** To assess the impact of the new developments on the anxiety. **Settings and Design:** An exploratory cross-sectional study was conducted between April 21, 2020, and May 20, 2020 at the College of Medicine, University of Bisha, Saudi Arabia. **Methods and Material:** The students were asked to complete a self-administered questionnaire form, using an adapted GAD-7. **Results:** The findings showed that 46.22% of respondents had minimal anxiety, 26.89% had mild anxiety, 12.60% had moderate anxiety, and 14.29% had severe anxiety. The findings indicate that Saudi University students had minimal anxiety issues concomitant to the pandemic.

Keywords: Anxiety level, COVID-19 pandemic, Saudi Arabia, students.

Introduction

COVID-19 is actually an infectious disease caused by a newly discovered coronavirus, which indicates that there have been previously discovered viruses of the same type. It is a respiratory disease that spreads primarily through saliva droplets or discharge from the nose. The pandemic began when it spread to all countries throughout the world and the WHO classified COVID-19 as a pandemic disease early in 2020 because of its high degree of infectiousness.[1]

This led to a massive global reaction; newspapers and TV channels have been continuously broadcasting across the continents to keep people up-to-date on the pandemic. These conditions have caused immense concern for people and have led to high levels of anxiety. Saudi Arabia announced the first case of coronavirus on March 2nd, 2020.[2] However, before the World Health Organization declared COVID-19 disease a pandemic on March 11th, 2020, Saudi Arabia took strict precautionary measures such as a partial curfew in the Jeddah governorate, the suspension

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of all schools and universities and implementing e-learning programs, the suspension of international and domestic flights, the suspension of the Umrah pilgrimage and the suspension of public attendance at sports events. The government did its best to assure the people that they were under the best care in the world including an announcement by King Salman for treatment of all patients with the disease (even visa violators) without facing any legal consequences.[3] Even with all these assurances, it was natural for people (in general) and young persons (in particular) to feel anxious with the unprecedented break in their routines. Indeed, this was a new situation for humankind, which prompted a deluge of global research on varied aspects of the pandemic, especially the anxiety caused by it.

Many empirical studies examined the relationship between the COVID-19 Pandemic and the anxiety of students in different countries.[2,4-7] Social media is a negative means that causes fear for people in general and for those who acquired COVID-19 or who thought that they received the virus. The suicidal ideation is one of the problems associated with COVID 19.[8] For example, a 50-year-old Indian committed suicide because of the fear of COVID- 19.[9] The risk of depression was also strong among non-Saudi men aged 50, married, single parents, university students and persons with incomes of approximately 2000–10.000 Saudi Riyal (SR). A higher risk of anxiety occurred in Saudi women, married, single and individuals with an income higher than 10,000 Saudi Riyal (SR).[5]

The Self-Rating Anxiety Scale (SAS) was employed in February two days before the start of the new term. For applicants engaged in the four-year graduation program, the overall outcome of SAS was significantly higher than national predictions.[10] For the COVID-19 pandemic in Saudi Arabia, pharmacists assisted the public through various services including health instruction and marketing, pharmacy materials, drug planning, emergency treatment, continued self-management and pandemic avoidance of COVID-19 disasters. The use of pharmacist skills strengthened the response of Saudi Arabia to the COVID-19 pandemic.[4]

Medical studies and findings have shown that certain individuals experience fear and anxieties, including fear of contamination, fear of interaction with possible infected items or structures, and fear of outsiders bearing pathogens (e.g., disease) far more than others. Social networking was dangerous for those who contracted or were suspected to have contracted a virus in general and those who contracted COVID-19. In a study of the psychological impact of COVID-19 on French students who stay in an area affected by COVID-19, it was found that 38.9% of the students felt normal anxiety, 36% felt mild anxiety, and 15.2% felt moderate anxiety and only 9.8% felt sever anxiety.[2,11-13]

Following the general research trend around the world, the current study also aimed to assess students' anxiety during the COVID-19 pandemic in Saudi Arabia to offer policy recommendations and interventions for the mental health program in Saudi Arabia.

Subjects and Methods

An exploratory cross-sectional study was conducted between April 21, 2020, and May 20, 2020 at the College of Medicine, University of Bisha, Saudi Arabia. Male and female medical students from different academic years were asked to participate in the survey. The ethical approval was obtained on 1-4-2020 and was valid till 31-3-2021

Data collection

The students were asked to complete a self-administered questionnaire form. The questionnaire comprised of two sections. The first section focused on participants' background information or the profile of the respondents. It elicited information from students such as: whether they came from the city or village, whether they lived with their parents or alone, and the effect of quarantine on their income. It also asked participants if they knew someone infected by coronavirus. The second section was GAD-7, which was designed to detect and assess anxiety symptoms of students during an outbreak of COVID-19 as previously described.[14] Due to social distancing norms, a questionnaire was sent to the participants via WhatsApp. Cover letters describing the purpose of the study was distributed along with the questionnaires. Participating in the survey was anonymous and voluntary. Ethical approval was obtained from the Research Ethics Local Committee at the College of Medicine, University of Bisha, Saudi Arabia.

Description of the GAD-7 instrument

The GAD-7 is a 7-item instrument used to briefly measure or assess one of the most common mental disorders. It analyses the 7-core symptoms and examines the frequency of these symptoms within the last two weeks.[15] The GAD-7 questionnaire was modified to test GAD and assess its severity in clinical study and practice. GAD was created to ask patients how much they were affected by each symptom in the last two weeks. GAD-7 is not only used for GAD but also for assessing anxiety and other general anxiety disorders.[16-18] GAD-7 included 7 items to measure worry and anxiety symptoms and was scored on a 4-point Likert-type scale of 0 (not at all) to 3 (nearly every day). The total scores of items ranged from 0 to 21 for different anxiety symptoms. The scores from 0 to 4 indicate "minimal anxiety," from 5 to 9 "mild anxiety," from 10 to 14 points "moderate anxiety," and from 15 to 21 shows "severe anxiety."

Statistical analysis

The collected data was analysed via the Statistical Package for the Social Sciences software (SPSS version 22) (Armonk, NY: IBM Corp.). The GAD-7 scale is considered acceptable if the Cronbach alpha is 0.70 or higher. The study displayed means and standard deviations on individual items. The profile of the respondents was analysed by using the description of each of the variables presented in the demographic variables. ANOVA test was used to find the differences between respondents based on demographics and experience of the virus. A post hoc Tukey

HSD test was used because the one-way ANOVA does not allow for specific comparisons with regard to changes in family income.

Results

Reliability of the instrument

The Cronbach's alpha for the GAD-7 scale was 0.898 and the split-half reliability with Spearman-Brown adjustment was 0.903. Both these figures are well above the minimum for an acceptable scale. **Checking for Normality**: A variable is considered normal when it has absolute values of both skewness and kurtosis less than one. As shown in Table 1, the anxiety score variable was normally distributed. The anxiety score measure represents the sum of the responses to seven questions from the GAD-7 questionnaire.

Demographic characteristics

Table 2 summarizes the demographic and general characteristics of the respondents. The majority of the respondents were first-year students (34.5%), followed by third-year (20.2%), fourth-year (18.5%), second year (14.3%) and fifth-year students & above (12.6%). Most of the respondents were male (84.9%), whereas female respondents were much less (15.1%). This is because the College of Medicine was founded seven years ago with only males. Females only joined the college last year (2019) and the female students from the College of Medicine are only from the first year. The respondents were mostly from cities (52.9%). The majority of the respondents did not know relatives or friends who acquired coronavirus (85.7%), while some of the respondents (14.3%) knew people who got coronavirus. Most (95%) of the respondents live with their family, while only 5% of the respondents stay away from their families.

Students' scores on GAD-7 items

Table 3 shows the rating scores (mean, SD) of students on GAD-7 items. As shown in Table 3, item means (measured on a scale of 0 = Not at all, 1 = Several days, 2 = More than half the days, and 3 = Nearly every day) range from 0.706 to 1.17. The mean for the total was 6.64, which falls into the category of mild anxiety (0-4 = Minimal/Normal anxiety, 5-9 = Mild anxiety, 10-14 = Moderate anxiety, and 15-21 = Severe anxiety). The lowest item scores were for "Feeling nervous, anxious or on edge," "Not being able to stop or control worrying, "trouble relaxing," and "being so restless that it is hard to sit still." All of these were reported, and on average as occurring "several days" or less. "Worrying too much about different things," "becoming easily annoyed or irritable," and "feeling afraid that something awful might happen" were reported as occurring somewhat more often.

Differences between respondents based on demographics

Based on the results gained by the analysis of the respondents' answers to various demographic questions shown in Table 4, there is no significant difference between the respondents'

Table 1: Normality check for the anxiety score variable

Variable	Anxiety Score
Mean	6.64
Standard Deviation	5.85
Kurtosis	-0.09
Skew	0.92
n	119

Table 2: Demographics and General Information of Students

Respondent profile	Items	Frequency	Percent
Academic Year	First year	41	34.5
	Second year	17	14.3
	Third year	24	20.2
	Fourth year	22	18.5
	Fifth year and above (medicine)	15	12.6
Gender	Male	101	84.9
	Female	18	15.1
Place of residence	City	63	52.9
	Village	56	47.1
Relative or acquaintance got COVID-19	Yes	17	14.3
	No	102	85.7
Live with parents	Yes	113	95
	No	6	5

Table 3: Scores Ratesn (Mean, SD) of Medical Students (*n*=119) on the Different Items of GAD-7 Scale

Items	Mean	Standard Deviation
1. Feeling nervous, anxious or on edge	0.87	0.09
2. Not being able to stop or control worrying	0.79	0.09
3. Worrying too much about different things	1.22	0.11
4. Trouble relaxing	0.85	0.10
5. Being so restless that it is hard to sit still	0.70	0.09
6. Becoming easily annoyed or irritable	1.02	0.10
7 Feeling afraid as if something awful might happen	1.17	0.09
Total	6.64	5.85

anxiety across the level of study, place of living, and living with family or alone. Though there is no statistically significant difference, there is a tendency for higher anxiety in the first three years of university education and lower anxiety in the following 4th and 5th years. Urban or rural setting did not show any significant differences. The stability of family background, i.e., living with parents, was another favourable factor against feeling anxious, which could be explained by decreased psychological and economic pressure. These insignificant differences indicate that due to the pandemic, respondents were met with similar pressures and despair. Anxiety was significantly found only between males and females (N = 119, F = 14.05, $P < .001$) with an average score for females falling in the category of "moderate anxiety" and the average score for males falling into the category of "mild anxiety." This significant difference between males and females could be caused by biological differences.

Differences between respondents based on knowledge of COVID-19

Table 5 presents the ANOVA results for a series of questions regarding participants' experiences with COVID-19. Social Media Frequency and Official News Frequency refer to the number of times per week that the participant used social media or official news sources for information about the virus. Participants who knew someone who had contracted the virus displayed higher levels of anxiety than those who did not (N = 119, F = 5.67, $P = 0.018$). Participants who viewed social media as a source of information about the virus most frequently (3) displayed higher anxiety levels than those who viewed social media as a source of information fewer times per week (N = 119, F = 6.16, $P = 001$). There was no significant effect for the frequency with which participants viewed official news sources for information on the virus.

Post hoc contrasts for change in family income using the Tukey HSD test

Because the one-way ANOVA does not permit specific comparisons with regard to Change in Family Income, a post hoc Tukey HSD test was used. It showed the following results:
(1) Anxiety scores are greater for participants whose families experienced a loss of income as a result of the virus compared to those whose income did not change ($p < 0.05$);
(2) Anxiety scores for participants whose families experienced an

increase in income as a result of the virus displayed a higher level of anxiety than those whose income did not change, but neither the difference between lower and higher or between unchanged and higher was significant ($p = 0.90$ and $P = 0.08$), respectively.

Levels of students' anxiety during the COVID-19 outbreak

Table 6 demonstrates how students' anxiety during COVID-19 was impacted at different degrees. For the 119 students of the College of Medicine, there was no indication of anxiety in approximately half of the students (46.22%) with minimal anxiety, while the percentage of students with mild, severe and moderate anxiety were 26.89%, 14.29% and 12.60%, respectively.

Discussion

The study showed that 85.71% of respondents did not feel severe anxiety. They felt either minimal, mild or moderate anxiety. The study also showed that only 14.29% felt severe anxiety. This indicated that Saudi students' anxiety was low as only 14.29% felt severe anxiety and 85.71% felt minimal, mild or moderate anxiety. The study also showed that anxiety was under control in Saudi Arabia as only 14.29% felt severe anxiety, although the questionnaire was conducted in the last week of March 2020 and this was after three weeks of announcing the first case of coronavirus in Saudi Arabia. The small number of respondents who were experiencing severe anxiety could be attributed to the strict precautionary measures followed by the Saudi government.

The study found that Saudi students' anxiety was not severe as 85.71% of respondents had normal anxiety. They felt either minimal, mild or moderate pressure. Only 14.29 felt severe anxiety, although the questionnaire was conducted in the last week of March 2020 and that was after three weeks of announcing the first case of coronavirus in Saudi Arabia. That only 14.29% of participants felt severe anxiety is a good indication of controlling anxiety during a worldwide pandemic in which everyone in the world was very anxious. This could be because of the strict precautionary measures followed by the Saudi government, which made people feel safe for all aspects of life such as the

Table 4: Differences between Respondents Based on Demographics (ANOVA, *n*=119)

Variable		n	Mean	Variance	F	P
Year in College	1	41	7.68	41.82	1.22	0.304
	2	17	6.59	29.01		
	3	24	7.17	43.19		
	4	22	5.95	27.57		
	5+	15	4.00	11.28		
Gender	Female	18	12.33	45.65	24.05	<.001
	Male	101	5.62	45.70		
Home	City	63	6.73	37.68		
	Village	56	6.34	30.84	0.03	0.857
Live with Family	No	6	6.17	14.97		
	Yes	113	6.66	35.33	0.04	0.840

Table 5: Differences between Respondents Based on Experience with COVID-19 (ANOVA, *n*=119)

Variable		n	Mean	Variance	F	P
Know Someone with the Virus	No	102	6.13	31.06	5.67	0.018
	Yes	17	9.70	44.34		
Social Media Frequency	0	10	5.00	19.56	6.16	0.001
	1	22	5.59	22.06		
	2	30	5.50	32.95		
	3	57	11.79	104.24		
Official News Frequency	0	11	6.09	17.69	0.80	0.493
	1	18	5.06	33.23		
	2	21	7.90	56.09		
Family Income Change	3	69	6.75	30.69		
	Decreased	30	8.77	42.87	5.26	0.006
	Stayed the Same	77	5.40	26.35		
	Increased	12	9.25	41.11		

Table 6: Levels of Students' Anxiety During the COVID-19 Outbreak (*n*=119)		
Levels of Anxiety	Frequency	Percentage
Minimal	55	46.22
Mild	32	26.89
Moderate	15	12.60
Severe	17	14.29
Total	119	100%

economic field, medical support, and supporting everything that assured a good life for Saudis and non-Saudis during the COVID-19 outbreak.

The results of this study corroborate with medical studies, and findings have shown that certain individuals experience fear and anxiety-related anxieties including fear of contamination, fear of interaction with possible infected items or structures, and fear of outsiders bearing pathogens (far more than the others).[2,11-13] Hence, social networking is dangerous for those who contracted or are suspected to have contracted a virus in general and those who contracted COVID-19. In comparison, mass assemblies and school closures have limited interaction and have students sit mostly at home and not physically active; these phenomena have been shown to have psychological effects on public health during the pandemic.[19,20] An important effect of virus on students' studies is reflected in anxieties experienced by students regarding COVID -19 as suggested by different studies. Study anxiety and worries regarding academic delays are also observed as coexistent. Owing to social distancing and lockdown, interpersonal communication nearly came to a naught resulting in the deterioration of anxiety disorders.[21,22] Besides, levels of anxiety and fear moved up due to the lack of personal protective equipment like disinfectants, masks and gloves and the immature news reports and burning news headlines also helped in the augmentation of fear psychosis. In fact, WHO prudential advice necessitates keeping distance from too much news related to COVID - 19 and also banking on trusted news agencies about the outbreak of virus that may leave us worried to an alarming level.[22-25]

Conclusion

This study examined the anxiety of students from the COVID-19 outbreak. The study found that most students' anxieties substantially varied with gender and college level. The small percentage of students who had severe anxiety could be attributed to strict precautionary measures that the Saudi government had taken to make people feel comfortable. It is recommended that during pandemics, the mental and physical health of students should be consistently monitored. It is also highly recommended that the government and schools closely collaborate to rule out all anxiety causing factors to ensure the physical and mental hygiene of students who are the foundation of the nation's future.

Key Points

- The study found that only 14.29 of the respondents felt severe anxiety though the questionnaire was conducted during the first weeks of lockdown in Saudi Arabia. This could be due the strict precautionary measures followed by the Saudi government.
- It is highly recommended that the government and universities collaborate to reduce students' anxiety to ensure the physical and mental hygiene of students who are the foundation of the nation's future.

Declaration of student consent

The author certifies that he has obtained all appropriate students consent forms. In the form, the student(s) has/have given his/her/their consent for his/her/their information to be reported in the journal. The students understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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