The impact of the closure in the conditions of the COVID-19 virus on the mental health of higher education students in Egypt

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Abstract:

The Coronavirus (COVID-19) pandemic of 2019 has left pupils with a huge psychological burden. The goal of this study was to see if COVID-19 affected university students' mental health and how common anxiety and depression were. The online questionnaire was issued to students at Minia University's College of Education, Arts, Al-Alsun, Science, Medical, and Engineering for the cross-sectional descriptive study. The generalized anxiety and disorder scale, as well as the patient health questionnaire, were evaluated and expressed using statistics utilizing the statistical package for social sciences. Descriptive statistics and percentages The Pearson correlation test was used to analyze the relationship between these scores and age, while an independent t-test was utilized to determine differences between the sexes. There were 288 respondents, 58 percent males and 48 percent females, with an average age of 18-23, and there appeared to be no statistically significant differences in age and gender, with the average anxiety among students at 41 percent and the average depression at 28 percent. The prevalence of anxiety and depression owing to the pandemic is not related to age or gender, according to this study. This differs perhaps due to differences in sample size, resource preparation, study timing, and the nature of the Arab-Islamic environment.

Keywords: mental health, COVID-19, Egyptian students.

1.   Introduction :

In December 2019, the first case of the severe acute respiratory syndrome coronavirus (SARS-COV-2) was reported in Wuhan, China (Dubey et al., 2020). The World Health Organization classified the coronavirus disease (COVID-19) a Public Health Emergency of International Concern in 2019. (W.H.O) (Amerio et al., 2020).

For the first time in modern history, public life has been severely constrained as a result of the COVID-19 pandemic, including a complete ban on face-to-face learning and instruction at public schools and institutions. In a short amount of time, teaching and learning must be converted to digital and online media. (Aristovnik et al., 2020). (Rose, 2020). Regulations on social interactions and hygiene have had a significant impact on students' academic lives as well as their personal lives. (Zentari et al, 2020).

The cumulative number of illnesses and deaths was higher than that of SARS just weeks after the pandemic began. 3 There were more than 10 million confirmed illnesses and more than 500,000 deaths by the end of June 2020. 4 The impact of the COVID-19 outbreak on the mental health of the general public Clear. Traumatic stress disorder (7 percent to 53.8 percent), psychological distress (35.43 percent to 38 percent), and stress disorder (8.1 percent to 81.9 percent) were discovered in the general population in China, Spain, Italy, Iran, the United States, Turkey, Nepal, and Denmark.. (Xiong et al., 2020).

The rapid spread of this illness has created widespread concern and fear, notably among university students (Cullen et al., 2020). Despite

the importance of mental health in managing the crisis and rebuilding society after the epidemic, the priority of various agencies during the pandemic has been to save lives by spreading control, testing, and creating treatment and vaccination regimens. This has put off basic mental health needs that are necessary for survival (Silva et al., 2020). As a result, there is a large psychological and social burden as well as an economic impact (Ornell et al., 2020), and the worry produced by the disease's uncertainty and unpredictability leads to moderate to severe stress, anxiety, and depression (Ornell et al., 2020). (Grubic et al., 2020).

Mass hysteria, anxiety, despair, and terror have been fanned by the constant flow of information in the media about the rapid increase in new cases and deaths, as well as social media misinformation that is biased in a negative way (Dubey et al., 2020). Higher education leads to more discomfort because of increased self-awareness and a better comprehension of the pandemic's scope as portrayed by the media and public health officials (Qiu et al., 2020). Lockdown measures and travel restrictions have resulted in business closures, resulting in job losses and wage reduction (Shanmugam et al., 2020). All family members' mental health has been disturbed by the uncertainty of this severe economic consequence (Holmes et al., 2020). Fear, anxiety, melancholy, bad sleep patterns, despair, and suicidal thoughts have all been linked to maintaining social distance through limiting social events (Shanmugam et al., 2020).

Anxiety, distress, frustration, melancholy, loneliness, denial, insomnia, despair, self-harm, and suicide ideation are all symptoms of group or self-quarantine (Lu et al., 2020). Deprivation of liberty, isolation from family, uncertainty about disease development, poor supply of basic necessities, and disturbance of normal daily life are all factors that contribute to it (Chtterjee et al., 2020). Individuals have been shown to experience severe anguish after a length of time as a result of financial loss, societal rejection, and prejudice (Dubey et al., 2020).

The infection of a friend or relative with the COVID-19 virus also generates worry and anxiety, according to (Dubey et al., 2020). Mohammed et al.,2014) also found that survivors of COVID-19 and contacts who care for critically sick patients, as well as those who have lost their jobs, are more prone to acquire mental diseases such sadness and anxiety than the general population (Wang&Zhao,2020).

The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) have issued public health advice, including wearing a mask and washing hands often, as well as more general suggestions for a healthy lifestyle., based on previous virus outbreaks (such as exercise, nutrition and sleep). For the current COVID-19 pandemic, these guidelines have been accepted globally (Lee et al., 2004). Adherence to the guidelines, on the other hand, revealed regional and group disparities (Chen et al., 2020). In terms of sleep, as an example of healthy lifestyle behavior, student surveys revealed that sleep issues were quite common, with an increased likelihood to occur (Jahrami et al., 2020). Such issues have been reported by a much smaller percentage of the general population and medical experts. Sleep issues, on the other hand, have been reported often in COVID-19 individuals (Jahrami et al., 2021).

From several nations, student's perceptions and reactions to such unexpected and hazardous life experiences were documented. According to a Chinese research, the COVID-19 outbreak scared a quarter of students. In an online survey of Turkish students regarding their feelings towards COVID-19 (Cao et al., 2020), 38 percent said they are concerned (Akdeniz et al., 2020). According to studies conducted inside the European Union, the COVID-19 pandemic has caused a spike in stress and anxiety in about 60% of students in France, Spain, and Poland. Around 40-60% of students at universities across Germany's federal states reported heightened psychological stress, loneliness, and worry of the future (Rogowska et al., 2020).

Furthermore, due to the uncertain reopening of schools, changes in daily routine, and changes in academic calendar, and influence on academic achievement, the closure of educational institutions has had a severe psychological impact on pupils. Furthermore, substituting online classes for classroom programs has made students more stressed because they have less motivation to study and are under more pressure to teach independently (Grubic et al., 2020). Programs for evaluation have also been impacted. This results in mental anguish, despair, anxiety, improper behavior,

and high dropout rates (Filho et al., 2020). Psychological issues caused by the epidemic have a detrimental impact on kids' academic performance, their quality of life, and may contribute to substance usage. In light of the progress, the goal of this study was to assess university students' mental health during the comprehensive COVID-19 and to determine the prevalence of anxiety and depression among students at Minia University, including the Faculty of Education, Arts, Al-Alsun, Sciences, Medical, and Engineering in Egypt.

2. Methodology

2.1. Study of the population and a sample

This was a quantitative cross-sectional study. This was accomplished through the use of an electronic platform and a link to a questionnaire that was distributed to the target sample by data collectors (volunteer university students) who employed the appropriate sampling technique to distribute the link to their college acquaintances. According to Cao et al., the sample size was estimated based on a prevalence of anxiety symptoms of 24.9 percent (2020). We assume a 5 percent accuracy, a 95 percent confidence interval, and a 5 percent estimated accuracy. The minimum intended sample size was 288 participants, assuming a 20% non-response rate. The criteria for inclusion were current college students who spoke Arabic and had access to the online survey.

2.2. Method of data collecting

The link to the online survey, which was provided by the data collectors, was emailed to the participants (no face-to-face interaction due to social distancing). The first component of the survey asked for demographic data such as the respondent's age, gender, college name, GPA, and medical questions. The second section of the questionnaire was an Arabic measure of psychological impact that was both valid and reliable.

2.3. The limits of the study:

This was a web-based survey with limited participation and participant coverage, with a focus on the Colleges of Education, Arts, Alsun, Sciences, Medical, and Engineering at Minia University.

2.4. **Study style:**

This cross-sectional descriptive study comprised students from the Colleges of Education, Arts, Al-Alsun, Science, Medicine, and Engineering at Minia University. For this investigation, the sample size formula proposed by (Naing et al., 2006) for prevalence studies was used. With a 95 percent confidence interval, the accuracy value was 5%. Students between the ages of 18 and 23 were included in the study. Data collection began on December 12, 2021, and ended on December 28, 2021, when pupils were still staying at home due to Egyptian government directives. The questionnaire was created using a literature search to create an anonymous online questionnaire. The questions were asked in an anonymous manner. The study's aims and the purposes of the data collected were disclosed at the start of the questionnaire to ensure data confidentiality and reliability. The questionnaire was first tested on 54 people in a pilot study to confirm that it was understood and reliable. All of the items and response alternatives were reported to be simple to grasp by all of the participants. The online built google form link for the questionnaire was then shared with various groups of students from the College of Basic Medical Sciences on various social media platforms, and the students were asked to answer all of the questions in the questionnaire for research reasons.

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The last questionnaire had four sections: the first asked about demographic characteristics (age, gender, and school level), the second about the stay-at-home system, online education, and financial situation during the epidemic, and the third about the generalized anxiety disorder scale, which is a tool used to assess anxiety disorders. It consists of seven questions that assess generalized anxiety disorder by focusing on the existence of symptomatic episodes throughout the virus's life cycle. It's commonly used to diagnose, test, and assess the severity of anxiety disorders such panic disorder, post-traumatic stress disorder, and phobias. (Cao et al., 2020). Feeling tense, nervous, and unable to stop or manage anxiety, having problems relaxing, worrying a lot about different things, feeling very anxious, and having difficulties sitting still, or becoming easy. It also assesses participant discomfort by making them feel as if something bad might happen. For each view queried, the administrator will need about 3 minutes to use this scoring tool. 'Not at all,' 'Several days,' and "More than Half days," which were scored as (0, 1, 2, 3), and "nearly every day," which were rated as (0, 1, 2, 3), each participant was supposed to receive a total score of 0-21. For mild, moderate, and severe anxiety, the interval scores were 5, 10, and 15 respectively. As a result, scores ranging from 5 to 9 indicate mild anxiety, 10 indicates moderate anxiety, while 14 and beyond indicate severe anxiety (Salman, 2020).

This includes how agitated the participant is because he or she feels scared and has "little interest or joy in accomplishing things." Respondents ranked these observations on a scale of 0 (not at all) to 3 (nearly every day) as applicable to them throughout the lockdown period. The total score can vary from 0 to 27, with less than 4 denoting mild depression, 5-9 denoting light depression, 10-14 denoting moderate depression, 15-19 denoting moderate severe depression, and more than 20 denoting severe depression.

A patient health questionnaire was included in the fourth segment. This is a nine-item depression scale that aids in the diagnosis of depression and classifies the intensity of symptoms. It includes statements that quantify the severity of depressed symptoms. A spreadsheet was used to collect data, which was then linked to an online Google form quiz. A total of 288 responses were obtained, and the data was analyzed using the statistical software for the social sciences (SPSS). Continuous variables were reported as means, standard deviations, and percentages. The gender differences in mean scores were determined using an independent t-test, and the relationship was determined using a Pearson correlation test. The gender differences between the major types of anxiety and depression were determined using the Chi-square method. A p value of less than 0.05 was deemed significant. The information is presented in tables.

4. Results

Two hundred and eighty-eight students responded fully to the survey questions, with 167 (58%) males and 121 (42%) females among them (Table 1). The participants' average age ranged from 18 to 23 years old, and the majority of the participants were between the ages of (20-18), their percentage reached (58%), while the percentage of the age group was (21-23) years.

Table 1. The Study Population's Age and Gender Composition					
Age-group	Male		Female		Total	
18-20 years	32.64%	94	25.35%	73	167	58%
21-23 years	25.35%	73	16.67%	48	121	42%

| Total | 57.99% | 167 | 42.01% | 121 | 288 | 100% |

Table (2) shows that (68.1%) agreed to stay at home an order from public health authorities. The rest (31.9%) did not agree with this matter, while the majority declared that they are in complete or almost complete isolation at home (66.3%). When asked if they were afraid of contracting the COVID-19 virus, (59.4%) answered sure while the rest (40.6%) were not afraid.

Most of the participants (86.8%) confirmed that they were not satisfied with online lessons, and (81.6%) emphasized that face-to-face lessons are preferred over e-learning, and

(56.6%) preferred to suspend educational activities on campus. (76.0%) agree to pursue education online if the compulsory stay at home continues, while (24.0%) oppose continuing their studies online, and (77.8%) confirm that staying at home has completely affected their financial situation, while (22.2%) Students stated that this had a partial impact on their financial condition, and that living at home had an impact on their ability to continue their studies (80.6 percent).

Table 2. In the questionnaire, there are some sample questions.			Male		Female		Total	
1	Do you agree with the public health authorities' order to stay at home?	No	14.2%	41	17.7%	51	31.9%	92
		Yes	43.8%	126	24.3%	70	68.1%	196
		total	58.0%	167	42.0%	121	100.0%	288
2	Do you live in complete or near-total isolation at home?	No	58.0%	167	42.0%	121	100.0%	288
		Yes	19.1%	55	14.6%	42	33.7%	97
		total	58.0%	167	42.0%	121	100.0%	288
3	Are you concerned about becoming infected with COVID-19?	No	24.0%	69	16.7%	48	40.6%	117
		Yes	34.0%	98	25.3%	73	59.4%	171
		total	58.0%	167	42.0%	121	100.0%	288
4	Are you satisfied with online classes?	No	49.7%	143	37.2%	107	86.8%	250
		Yes	8.3%	24	4.9%	14	13.2%	38
		total	58.0%	167	42.0%	121	100.0%	288
5	Is internet learning better or worse than in-person learning?	No	47.6%	137	34.0%	98	81.6%	235
		Yes	10.4%	30	8.0%	23	18.4%	53
		total	58.0%	167	42.0%	121	100.0%	288
6	I prefer suspending educational activities on campus	No	24.7%	71	18.8%	54	43.4%	125
		Yes	33.3%	96	23.3%	67	56.6%	163
		total	58.0%	167	42.0%	121	100.0%	288

7	Is internet learning better or worse than face-to-face learning?	No	12.5%	36	11.5%	33	24.0%	69
		Yes	45.5%	131	30.6%	88	76.0%	219
		total	58.0%	167	42.0%	121	100.0%	288
8	Your financial situation is impacted by stay-at-home order/social distancing.	No	12.5%	36	9.7%	28	22.2%	64
		Yes	45.5%	131	32.3%	93	77.8%	224
		total	58.0%	167	42.0%	121	100.0%	288
9	My ability to stay at home has an impact on my ability to stay on track with my studies.	No	11.1%	32	8.3%	24	19.4%	56
		Yes	46.9%	135	33.7%	97	80.6%	232
		total	58.0%	167	42.0%	121	100.0%	288

(Table 3) In the whole population studied, the average score for generalized anxiety disorder symptoms was 6.0 5.37. Males had a slightly lower mean score (6.27 vs. 6.82 for females), However, there was no statistically significant difference between the sexes. (P = 0.77).

Table 3. Gender-Based Average Scores					
	Gender	N	Mean	Std. Deviation	P value for an independent t-test.
anxiety Score	Male	167	6.27	5.4	0.77
	Female	121	6.82	5.3	
Depression Score	Male	167	7.7	6.3	0.81
	Female	121	8.3	6.8	

Table (5) shows that there is a significant linear positive association between age and the degree of statistical anxiety (r = 0.15), (p-value = 0.04)

Table 5. Pearson's association between anxiety, depression, and age		
The Pearson correlation coefficient is a measure of how well two variables are related.	coefficient of Pearson (r)	p-value
Age vs. anxiety Score	0.15	0.04
Age vs Depression Score	-0.19	0.03

Table (6) indicates that the majority of respondents were normal (38%) had a low level of anxiety (22% males and 16% females), (29.7%) students had mild anxiety symptoms (13.9% males and 15.8% females), while revealing (21%) had moderate anxiety symptoms, (17% male and 12% female), (12%) students (5% male and 7% female) appeared to have severe anxiety scores in this group. We used chi-square to show that there were no statistically significant gender differences in the different anxiety categories (p = 0.41).

Table 6. The Prevalence of Anxiety and Depression at Various Levels				
score (Anxiety)	Male	Female	Total	Chi square P-value
4 Minimal anxiety	22%	16%	38%	0.41
5-9 Mild anxiety	17%	12%	29%	
10 - 14 Mod anxiety	12%	9%	21%	
15 Severe anxiety	5%	7%	12%	
Total	56%	44%	100%	
score (Depression)	Male	Female	Total	Chi square P-value
4 Minimal anxiety	21%	20%	41%	0.32
5-9 Mild anxiety	14%	12%	26%	
10 - 14 Mod anxiety	12%	11%	23%	
15 Severe anxiety	6%	4%	10%	
Total	53%	47%	100%	

The mean depression score in the study population was (8.0), females had a higher mean (8.3)) compared to their male counterparts (7.7), however, the difference was not statistically significant (p = 0.81). There was a weak negative linear association between age and depression scores (r = -0.19), and it was (p-value = 0.03).

The table (Table 5) shows that (44.4%) of the students (21% male and 20% female) suffer from minor depressive symptoms. Mild depression was diagnosed in (26%) students (14% male and 12% female), while moderate depression was detected in (23%) students (12% male and 11% female), and (10%) had severe depression (6%). Males and 4% females. There were no statistically significant gender differences in depression categories (p = 0.32).

5. Discuss the results:

This online survey included 288 students, 58% male, and 48% female with an average age of (18-23) years. Our study participants were mostly between 18 and 23 years old. Eighty-six (58%) were in the age group 18-20 years, while the rest (42%) were between 21-23 years old. The majority of students, 68.1%, agreed to stay at home by order of public health authorities. Slightly more than half of the participants (66.3%) declared that they are completely or almost completely isolated at home. Because people are social beings who rely on social relationships for optimal mental health, this could have a negative impact on their mental health. Fear, worry, depression, and poor sleeping patterns have all been linked to social separation (Shanmugam et al., 2020). Social isolation/loneliness can lead to depression and suicide ideation. (Bhatti et al., 2017). Severe acute respiratory syndrome (SARS) and Ebola outbreaks in the past have been linked to

anxiety, sadness, and post-traumatic stress disorder (PTSD). (Robertson et al. ., 2004).

In our survey, roughly 59.4 percent of pupils were concerned about catching the COVID-19 virus. The widespread dread may be owing to the virus's rapid rate of transmission, for which no effective treatment or vaccine is yet available, as well as a lack of information about the epidemic's risks and severity. Loneliness, sadness, and stigma are all psychological impacts of isolation or quarantine that contribute to the pain (Chatterjee, 2020). Quarantine was considered as a personal trauma independent of exposure to the disease during the SARS outbreak in Toronto, Canada said. These researchers also discovered that a protracted quarantine period was linked to severe PTSD symptoms, which can last long after the pathogen has been eradicated. (Hawryluck, 2004), additionally, more than half of the responders (77.8%) Distancing and the stay-at-home regime financial insecurity linked to the ongoing COVID-19 pandemic has been linked to depression, self-harm, and suicide (Kumar, 2020). Approximately 80.6 percent of respondents believed that the request to stay at home jeopardizes their stability and will cause them to miss out on graduation. Due to ambiguity regarding their academic achievement, this can lead to mental discomfort, depression, anxiety, maladaptive behavior, and high dropout rates (Grubic et al., 2020).

In the past, epidemics of infectious diseases like SARS and influenza have been connected to the harmful psychological effects of obsessions in numerous areas of life (Shanmugam et al., 2020), In order to address the gaps produced by the most recent epidemic, fresh information technology and management methods for learning, teaching, and assessment have been developed. Online distance learning, often known as e-learning or virtual learning, is a sort of distance learning that takes place over the internet using a laptop or a smartphone. Provide a learning approach that does not necessitate physical interaction between students (Allam et al., 2020). Virtual learning, while adaptable, is constrained by a lack of student-teacher interaction, which leads to a lack of self-confidence. The majority of the students in our study believed that online education was of poorer quality than traditional face-to-face classes. Students experience dread and terror as a result of the lack of balance in the new learning method, which has a negative impact on their academic performance.

In this environment, only 24.0 percent of students desired to continue their education online, while more students (56.6 percent) preferred to postpone their courses since they weren't sure if they wanted to continue their studies. 24.0 percent of students chose online lessons to finish their studies, whether they stayed at home or not. We attribute our students' negative attitudes toward e-learning to a lack of internet connection and speed in Egypt, as well as a lack of economic power and digital means, a lack of self-discipline and desire, and limited student participation and teacher-student interaction. These issues may create frustration, anxiety, or panic in children, and these mental health symptoms may have a poor impact on their academic achievement (Allam et al., 2020).

Only 24.0 percent of students preferred to continue their education online in this setting, while more students (56.6 percent) preferred to postpone their courses because they were undecided about continuing their studies. Whether they stayed at home or not, 24.0 percent of students preferred online lessons to complete their studies. We ascribe our students' unfavorable attitudes and discontent with e-learning to a lack of internet connection and speed in Egypt, a lack of economic power and digital means, a lack of self-discipline and drive, as well as limited student participation and teacher-student interaction. These factors may cause children to become frustrated, anxious, or panicked, and these mental health symptoms may negatively impact their academic performance (Allam et al., 2020).

We looked at the symptoms of generalized anxiety disorder among respondents and discovered a mean anxiety score of 6.0, with males scoring somewhat higher than females. Although the gender difference in our study was not statistically significant, the average anxiety score increased with age, with the oldest students having the highest anxiety level. (23-21 years) having the highest score, followed by the youngest students (18-20 years). This suggests that the severity of worry grows with age, which could be due to a better comprehension of the epidemic's negative repercussions among older students. However, we discovered a statistically significant weak positive relationship between

age and anxiety level. In the current study, the majority of the participants were normal with some anxiousness. Our study sample had a mean depression score of 7.07 6.36.Females had a lower mean compared to their male counterparts, but the difference was not statistically significant (p = 0.32). It is noticeable that it is significantly lower in males compared to females (Table 7).

Although there was a weak negative linear correlation between depression score and age, indicating that depression severity decreases with age, the older age group (above 23) had significantly lower depression scores than the younger population. According to the findings of this study, there is a lower prevalence of mild depression. In the current study, however, gender variations in different levels of depression were not statistically significant (p = 0.32). As a result, the majority of our study population suffers from mild to mild depression, which accounts for more than 55% of the population, and the findings show that the epidemic did not cause adverse depressive effects in the vast majority of our students, indicating that effective treatment is not necessary in this group. However, to avoid a worsening of symptoms, psychotherapy is recommended.

6. Conclusion

Anxiety and depression were shown to be higher in male students than in female pupils. Only about a third of our participants experienced moderate to severe anxiety and depression, which necessitated frequent monitoring and active management. To avoid symptoms worsening, the majority (>70 percent) of those with mild and mild symptoms required psychiatric counseling. Because of changes in sample size, resource preparation, study timing, and student courses, the findings of this study differ from earlier reports published by other researchers.

7. Recommendations

In order to help ease the overall burden of global mental health, we urge that higher education institutions give virtual psychological counseling to students during an outbreak. It's also crucial to investigate Egyptian university and college students' attitudes toward e-learning and e-learning during the lockdown in order to improve virtual learning and ensure its full adoption, regardless of whether the epidemic continues.

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