

# Isolation insult during COVID-19 pandemic on the psychological status of medical students

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## Abstract

**Background:** COVID-19 is a newly discovered infectious disease that spread and caused a global health problem. Medical students, especially those in clinical stages are among groups exposed to the disease. The study aimed to show the impact of social distancing on the mental health of Iraqi medical students.

**Method:** A convenient sampling technique involved 105 participants was obtained through a questionnaire. The participants were from all stages of College Of Medicine. Questions were regarding the mental health status of the students, which included sleeping hours, nightmares, eating habits, weight problems, relationship with the family, starting to have bad habits, memory loss, attention problems, irritability, and study rank affect.

**Results:** Of about 105 participants, 64 (60.9%) of them were females and 41 (39.1%) were males. The mean age of the participants was  $(21.26 \pm 1.065)$  ranging from 19 to 24 years. Feeling stressful when hearing news about COVID-19" found in 82 (78.1%) of the participants. A high statistical significant difference ( $p = 0.035$ ) among feeling isolated. About 77 (73.3%) of the participants had become easily irritable and angry. About 82 (78.1%) student started for having calculation problems. The stress with sleeping hours ( $p = 0.019$ ), sleeping disturbance ( $p = 0.022$ ), eating habit ( $p = 0.015$ ), weight problems ( $p = 0.002$ ), fear of familiar places ( $p = 0.004$ ), recent memory loss ( $p = 0.034$ ) and being easily irritable or angry ( $p = 0.0001$ ), revealed a statistical significant association, respectively.

**Conclusion:** COVID-19 news and social distancing had made medical students more stressed and irritable, affecting their sleeping hours and pattern with a general tendency for weight gain and recent memory loss in stressful students.

## KEYWORDS

appetite, COVID-19, irritability, medical students, mental health, sleeping hours, stress

## 1 | INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus pathogen that began in China and spread throughout the world to cause a global health problem. Coronavirus disease cause respiratory tract infections range from mild illness to death. The spread of the COVID-19 virus is via salivary droplets nose discharged from an infected person when they cough or sneeze or through touching a contaminated surface with these discharge.<sup>1</sup>

When coronavirus spike protein interacts with its complementary cell receptor and this will determine the tissue tropism, infectivity, and species range of the released virus. The target of coronaviruses is mainly epithelial cells.<sup>2</sup>

The incubation period of the virus is from 5 to 14 days. The most common presented symptoms are fever, dry cough, tiredness, and shortness of breath. Chest pain or pressure, loss of taste and smell sensation, and microemboli throughout the body are serious signs. The WHO, CDC, and other local health communities have published several preventive measures to slow the transmission of COVID-19. The spread of the virus had major economic losses, decreased number of employees, reduced physical interaction and effect the mental health.<sup>3,4</sup> When people get satisfied via good relationships with friends and family, this will have a positive effect on the mental health.<sup>5</sup>

If abnormal situations face people like what happened during the COVID-19 pandemic, that let the countries introduce preventive measures such as quarantine, which mean staying at home for a prolonged period and doing less social interactions and exercise they will develop; fear, emotional reaction, and excessive behavioral disturbances and the anxiety can develop.<sup>6,7</sup>

As medical students, the fear of getting an infection with this virus from the hospital and their worry about infecting the people close to, the online learning, which is not sufficient, the lack of contact with other family members, friends and colleagues and the daily news about COVID-19 on TV and social media make them more anxious and distressed.<sup>8</sup> Beside, other issues have been reported such as sleeping disturbance, weight problems, and depression during this situation.<sup>9</sup>

A meta-analysis study that included 69 previous work done in 2019, which was studies consisting of 40,348 medical students stated that anxiety was of the highest prevalence in the Middle East (42%).<sup>10</sup>

An Egyptian study showed that among 164 pharmacy students; 30.3% of them developed moderate to severe anxiety symptoms.<sup>11</sup> A report by WHO was done on international students at 19 colleges in different countries (Australia, Belgium, Mexico, Germany, Northern Ireland, South Africa, Spain, and United States), this report showed that 35% of first-year students have mental health disorders.<sup>12</sup> Another study done in 195 countries for 27 years showed that depression was the dominant problem in male and female students worldwide.<sup>13</sup> In Iraq, fifty percent of persons suffering from depression do not have adequate care.<sup>14</sup>

This study aimed to show the effects of social distancing on the mental health of Iraqi medical students.

## 2 | METHODS

### 2.1 | Study design

This is a cross-sectional study. It is based on observation of collected data by conducting a questionnaire form. The study population: included medical students of all stages mainly from College Of Medicine. A convenient sampling technique started by collecting data from October 2020 to January 2021. The questionnaire form was designed by a specialist psychiatrist, responses were obtained from 105 students.

### 2.2 | Data collection

The data was collected by students' self-report filling out the questionnaires. The demographic information included age, gender, and year of the study (grade) were collected. Other questions were regarding the mental health status of the students, which included sleeping hours, nightmares, eating habits, weight problems, relationship with the family, starting to have bad habits, memory loss, attention problems, irritability, and the effect on study rank. The question in the questionnaire form was either "Yes", "No", or other options questions to assess the effect of quarantine on their daily life. These questions regarding the mental state of students included all the following:

- Did you feel stressed when you hear news about COVID-19? (Yes/No)
- Do you have changes in hours of sleep? (Yes/No/Changes in timing, not amount)
- Do you have nightmares? (Yes/No)
- Was your sleep disturbed? (Yes/No)
- Do you have any changes in your eating habit? (Yes/No)
- Do you have any decrease in appetite? (Yes/No)
- Does your weight increase or decrease? (Increased/Decreased/None)
- Does your relationship with your family become bad during the pandemic? (Yes/No)
- Do you find yourself isolated from others during the pandemic? (Yes/No)
- Do you have repetitive behavior recently (like checking closing doors, windows ... etc.)? (Yes/No)
- Do you have any losses in recent memory? (Yes/No)
- Do you have any strange ideas (like suicidal ideas, extreme hating for people ... etc.)? (Yes/No)
- Do you have recent problems with the calculation? (Yes/No)
- Do you have problems with attention? (Yes/No)
- Do you have any new habits like smoking, alcohol drinking, or using self-prescribed?
- Sleeping pills? (Yes/No)
- Did the pandemic affect your study rank? How? (Better/Worse/None)
- Did you become irritable or very angry during some ordinary situations? (Yes/No)

## 2.3 | Data analysis

The collected data were put in tables and entered into the statistical package of social science (SPSS) version 21 (IBM Inc.). Frequencies and percentage for categorical data and for each question regarding the impact of social distancing on the mental health of Iraqi medical students. Mean, range and standard deviation were used for numerical data. Chi-square was used to showed the difference between groups for *t*-test and one-way ANOVA. Person coefficient test was used to described the association between stress and other variables in the study. *p*-value less than 0.05 (<0.05) was consider statistically significant difference.

## 3 | RESULTS

Of about 105 participants in our study, 64 (60.9%) of them were females and 41 (39.1%) were males (Table 1).

The participants were from all stages. Of which 39 (37.1%) of them were fourth-year students, 38 (36.2%) of them were third-year students, 13 (12.%) of them were second-year students, 6 (5.7%) of them were fifth-year students, 5 (4.8%) of them were sixth-year students and 4 (3.8%) of them were 1st-year students. The mean age of the participants was (21.26 ± 1.065) ranging from 19 to 24 years.

The changes in different psychological states are shown in (Table 2), regarding “feeling stressful when hearing news about COVID-19” has shown that 82 (78.1%) of the participants had felt stress, which 53 were females and 29 were males, while only 23 (21.9%) of the participants had no stress, without significant difference ( $p = 0.144$ ). Changes in sleeping hours during the pandemic occurred in 75 (71.4%), of which 44 were females and 31 were males, while 30 (28.5%) students did not have any changes in sleeping hours, without significant difference ( $p = 0.418$ ). The question regarding “starting to have nightmares” had shown that 59 (56.2%) of the participants had started to have nightmares, while 46 (43.8%) of the participants had not, without any significant difference ( $p = 0.987$ ). Regarding “sleeping disturbance” has been shown that 71 (67.6%) participants had sleep disturbed, of which 43 were females and 28 were males, whereas 34 (32.4%) participants had not, without significant difference ( $p = 0.905$ ). The feeling of fears from certain places presented in 75 (71.4%) participants, while 30 (28.5%) of the participants had not get fears, without significant difference ( $p = 0.145$ ). The question regarding “feeling isolated from the others during the pandemic” answered “Yes” by 87 (82.9%) participants, while 18 (17.1%) participants said “No,” with a high

statistical significant difference ( $p = 0.035$ ). The question regarding attention problems” has shown that 58 (55.2%) participants started to have attention problems, while 47 (44.8%) had not had any attention problems, with no significant difference ( $p = 0.88$ ). Regarding easy irritability or very anger during normal situations our result had shown that 77 (73.3%) of the participants had become easily irritable and angry, while 28 (26.7%) of the participants had not, without significant difference ( $p = 0.349$ ).

Figure 1 showed changes in eating habits in which 72 (68.6%) of the participants had changes in their eating habits, whereas 33 (31.4%) of the participants had not. The changes in appetite observed that 87 (82.9%) of the participants had no decrease in appetite, while only 18 (17.1%) have a decrease in their appetite, (Figure 2).

The question regarding “any weight changes during the quarantine” has shown that 56 (53.3%) of the participants had gained weight, of which 29 were females and 27 were males, while 32 (30.5%) of the participants had no weight changes. Only 17 (16.2%) of the participants had lost weight during this quarantine, without significant difference ( $p = 0.119$ ). The question regarding the “impact of the pandemic on study rank” has shown that 41 (39.1%) of the participants, their study rank become worse, of which 27 were females and 14 were males, whereas 37 (35.2%) of the participants had their study rank become better, in which 19 were females and 18 were males. The remaining 27 (25.7%) of the participants had not any changes in their study rank, without significant difference ( $p = 0.33$ ), (Table 3).

Figure 3 showed that the relationship with the family was normal in 38 students (36.2%), while it was bad in 67 (63.8%) of the participants. Abnormal behaviors had shown that 72 (68.6%) of the participants had not had any repetitive changes, whereas 33 (31.4%) of the participant begun to have repetitive changes, (Figure 4).

Figure 5 showed that 63 (60%) of the participants had recent memory loss, while 42 (40%) of the participants had no changes.

About 82 (78.1%) student started for having calculation problems, whereas 23 (21.9%) of the participants had not any calculation problems (Figure 6).

Strange ideas” has shown that 62 (59.2%) had strange ideas, whereas 43 (40.8%) of the participants had no strange ideas. The development of new bad habits has shown that 65 (61.9%) of the participants had new bad habits 40 (38.1%) of the participants had not.

Pearson coefficient showed the association between stress and variables, (Table 4). The stress with sleeping hours ( $p = 0.019$ ), sleeping disturbance ( $p = 0.022$ ), eating habit ( $p = 0.015$ ), weight problems ( $p = 0.002$ ), fear of familiar places ( $p = 0.004$ ), recent memory loss ( $p = 0.034$ ) and being easily irritable or angry ( $p = 0.0001$ ), revealed a statistical significant association, respectively. Otherwise, the rest have no such association.

TABLE 1 Gender distribution of this study

	No.	%
Male	41	39.1
Female	64	60.9
Total	105	100

## 4 | DISCUSSION

A cross-sectional study was done on 105 students from Baghdad College of medicine. The results showed that 82 (78.1%) of the

Condition	Gender	Yes	No	$\chi^2$	p value <sup>a</sup>
		No. (%)	No. (%)		
Stressful	Male	29 (27.6)	12 (11.4)	2.13	0.144
	Female	53 (50.5)	11 (10.5)		
Total		82 (78.1)	23 (21.9)		
Hours of sleep	Male	31 (29.5)	10 (9.5)	0.65	0.418
	Female	44 (41.9)	20 (19)		
Total		75 (71.4)	30 (28.5)		
Night mares	Male	23 (21.9)	18 (17.1)	0.03	0.987
	Female	36 (34.3)	28 (26.7)		
Total		59 (56.2)	46 (43.8)		
Sleeping disturbance	Male	28 (26.7)	13 (12.4)	0.01	0.906
	Female	43 (41)	21 (20)		
Total		71 (67.6)	34 (32.4)		
Fear	Male	26 (24.8)	15 (14.3)	2.11	0.145
	Female	49 (46.7)	15 (14.2)		
Total		75 (71.4)	30 (28.5)		
Feeling of isolation	Male	30 (28.5)	11 (10.5)	4.44	0.035
	Female	57 (54.3)	7 (6.6)		
Total		87 (82.9)	18 (17.1)		
Attention problem	Male	23 (21.9)	18 (17.1)	0.02	0.88
	Female	35 (33.3)	29 (27.6)		
Total		58 (55.2)	47 (44.8)		
Irritability	Male	28 (26.7)	13 (12.4)	0.87	0.349
	Female	49 (46.6)	15 (14.3)		
Total		77 (73.3)	28 (26.7)		

<sup>a</sup>t-test.

105 responses

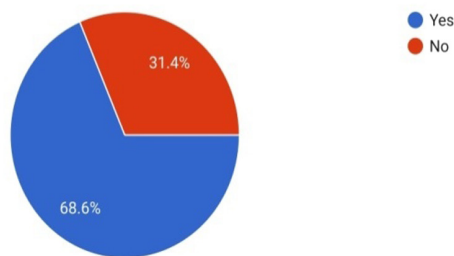


FIGURE 1 Changes in eating habits

participants had felt stress when hearing news about COVID-19. This was more in females than in males; however, statistically was not significant. A similar result was found in a study done in the United States, which involved 195 participants; 138 (71%) of them had stress and anxiety due to the COVID-19 pandemic.<sup>13</sup>

Approximately, 82 (78.1%) of the students felt stressed during the COVID-19 pandemic, 75 (71.4%) had experienced a significant change in their sleeping hours, 59 (56.2%) had night mares, 71 (67.6%) had sleeping disturbances, 75 (71.4%) fear from pandemic, and 58 (55.2%) felt with attention problems, without significant difference. Our results were nearly matched the same as the study on large sample of French

TABLE 2 Changes in psychological state during COVID -19 in relation to gender

105 responses

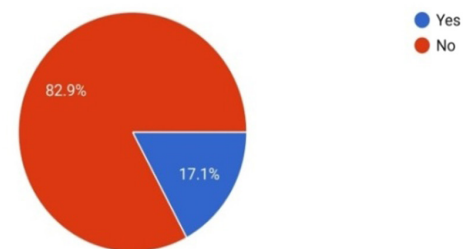


FIGURE 2 Changes in appetite

employees where the majority of participants (168/195, 86%) reported sleep pattern disturbance, and stressful due to the pandemic.<sup>13</sup>

In a study among undergraduate pharmacy students in Malaysia, they had experienced changes in their eating habits, which means a significant association between pandemic stress and eating habits.<sup>14</sup> According to AUS study done on college students showed that the COVID-19 pandemic harms a large number of participants concerning dietary habit changes.<sup>12</sup>

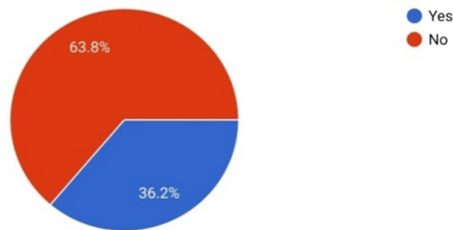
Weight changes had been experienced in 73 (69.5%) of the students who had felt stressed during the pandemic, in which 56 of them had gained weight and 17 of them lost weight;

**TABLE 3** Changes in weight and study rank in relation to gender

		Status			X <sup>2</sup>	p value <sup>a</sup>		
		Increased	Decreased	None				
		No. (%)						
Weight changes	Male	27 (25.7)	5 (4.8)	9 (8.6)	1.24	0.119		
	Female	29 (27.6)	12 (11.4)	23 (21.9)				
Total		56 (53.3)	17 (16.2)	32 (30.5)				
Study rank	Male	18 (17.1)	14 (13.3)	9 (8.6)			2.21	0.33
	Female	19 (18.1)	27 (25.7)	18 (17.1)				
Total		37 (35.2)	41 (39.1)	27 (25.7)				

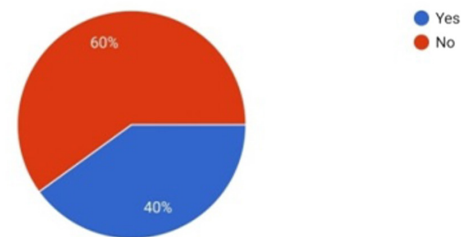
<sup>a</sup>One-way ANOVA.

105 responses



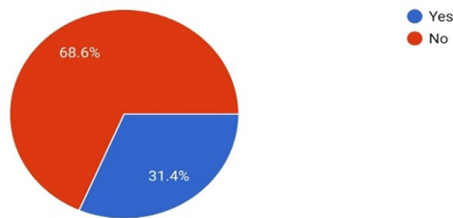
**FIGURE 3** Relationship with the family

105 responses



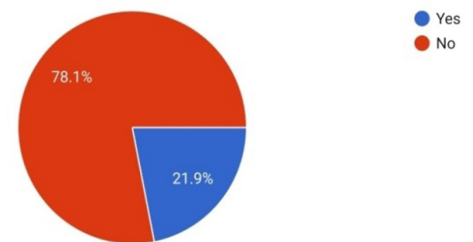
**FIGURE 5** Memory changes

105 responses



**FIGURE 4** Behavioral changes

105 responses



**FIGURE 6** Calculation problem

without significant association between stress and weight changes ( $p = 0.119$ ). According to a WHO study on the impact of pandemic stress on weight, they found that stress was associated with greater weight gain among both men and women, especially with a long stay at home.<sup>12</sup> These changes in eating habits harm the quality as well as the amount of food taken,<sup>15</sup> some of those suffering from stress due to COVID-19 can have a positive eating behavior; as preparing food and cooking works as an activity to relieve stress.<sup>16</sup>

An agreement with Yusof et al.<sup>14</sup> was found in relation to the far from certain things or places that was previously they are familiar with, however, no significant difference was seen.

Feeling of isolation in this study showed a significant difference between categories ( $p = 0.035$ ). Similarly data were reported by Yusof et al.,<sup>14</sup> Mosko et al.,<sup>16</sup> Kathem et al.<sup>17</sup> and De Sousa et al.<sup>18</sup>

About 77 (73.3%) of the stressful students had been easily irritable or become angry from normal daily situations. This result was matched to an article on the impact of stress on personality in Iraq. They found some people experience personality changes in

response to stress, which may be observed as becoming more irritable, frustrated, angry, or even aggressive these changes were observed by Kathem et al.<sup>17</sup>

The pandemic insult affect memory, particularly recent memory loss in 40% of subjects in this study, which could be attributed to a decrease in sleeping hours. Less sleeping hours could explain the decrease in attention and the ability to calculate, which was decreased in those students as a result some of them had bad study ranks. In addition, to decrease sleeping hours other had nightmares, a study done by De Sousa et al.<sup>18</sup> had shown similar findings.

Although, 18 (17.1%) of the participants had a reduction in their appetite. It was not significant statistically. The same applied to the bad relationship of 38 (36.2%) of the participants with their families, which are agree with.<sup>14,16</sup>

About 33 (31.4%) of the participant had begun to have repetitive behaviors such as checking closing doors, and windows, and this supporting by Fiorillo and Gorwood work.<sup>19</sup>

TABLE 4 Association between stress and other variables

Association between	p value <sup>a</sup>
Stress and gender	0.147
Stress and sleeping hours	0.019
Stress and nightmares	0.365
Stress and sleeping disturbance	0.022
Stress and eating habit	0.015
Stress and decreased appetite	0.559
Stress and weight problems	0.002
Stress and bad family relationship	0.105
Stress and fear of familiar places	0.004
Stress and feeling isolated	0.201
Stress and repetitive behaviors	0.909
Stress and recent memory loss	0.034
Stress and strange ideas	0.211
Stress and attention problems	0.203
Stress and calculation problems	0.639
Stress and start having new bad habits	0.843
Stress and impact on study rank	0.720
Stress and being easily irritable or angry	0.0001

<sup>a</sup>Person coefficient test.

A study in China had shown many psychological changes in the general population,<sup>20</sup> which simulate our findings. Some of the participants had started to have strange ideas during the pandemic such as suicidal ideas, and extreme hating for people. Although 40 (38.1%) of the participants had started to have new bad habits such as smoking or alcohol consumption, with no significant relation.

The limitation of the study is the psychological status in participants in Iraqi population is a sensitive aspect, most people deny any psychological problem, that is why we talked to each individual personally and convinces them to fill the questionnaire honestly. In addition to small sampling size and short period of study time, the socioeconomic situation is could be consider one of the most limitations.

The clinical benefits of the study are helping medical students in particular from strange ideas or thoughts. Also, help them to overcome depression by online programs with a psychologist, since depression may lead to mental disorders or suicidal attempts in future. Those with concentration problems and weight gain were advised for regular exercise programs, in addition to some relaxing exercise to help them for preventing disturbance sleep and to get better quality of life.

## 5 | CONCLUSION

The social distancing had made the medical students more stressed and irritable, their sleeping hours decreased, some of them had nightmares with a general tendency for weight gain and recent memory loss. Also, they have new bad habits, fear, and strange ideas, in addition to decrease their study rank. There is a requirement to

support medical students for giving more hours for exercise to improve their mood.

## DATA AVAILABILITY STATEMENT

Israa Faeck Jaafar, Sahar Ahmed Mehdi, & Al-Hasan M. Fawzi. (2022). COVID19 and Student stressful [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.7020321>

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