

Evaluation of Depression among Medical Students of Gujarat during COVID-19 PandemicSaumya Joshi¹, Heer Patel¹, Nirmika Patel²¹ Second MBBS student, ² Tutor, Community Medicine Department, GMERS Medical College, Sola, Ahmedabad, Gujarat, India.**Correspondence** : Saumya Joshi, Email: joshisaumyaxr@gmail.com**Abstract:**

Introduction: The Covid-19 pandemic is a public health emergency with both physical and mental health risks. During this pandemic general medical complications have received the most attention, whereas only few studies address the potential direct effect on mental health of SARS-CoV-2 and the neurotropic potential. **Objectives:** To evaluate the depression score of an individual based on PHQ-9 scoring scale and to further classify the severity of depression among medical students. **Method:** It was a cross-sectional observational study, where primary quantitative data was collected using the PHQ-9 scale to assess the level of depression among the medical students of Gujarat through Google forms. **Results:** Most of the participants were from 1st year MBBS (>50%) and 2nd year MBBS (37%) and rest were from 3rd year. Around 29.4% students suffered from minimal depression, 34% has mild depression, 19% had moderate depression, 12% had moderately severe depression and 5.6% students suffered from severe depression. **Conclusion:** COVID-19 pandemic is having impact on mental health of the medical students. Early evaluation of depression may help to decide intervention to reduce further depression among the students.


Key words: COVID-19, Depression, Medical students, PHQ-9**Introduction:**

Covid-19, commonly known as the novel Coronavirus is believed to have originated from a wet market in Wuhan, China, and has spread all over the world, resulting in a large number of hospitalizations and deaths.^[1] As of 29th March, 2021 there were approximately 126.8 million cases worldwide and 12 million confirmed cases in India.^[2] For Indians, challenges in the medical sector, further deepens the worries that heighten psychological distress. Amidst the pandemic, people fear of getting infected with the virus/disease resulting in anxiety, stress, and depression, etc. Students are also facing other issues like not able to attend physical classes and delayed exams. Furthermore, the indirect effects of the pandemic on general mental health are of increasing

concern, particularly since the SARS-CoV-1 epidemic (2002–2003) which was also associated with psychiatric complications.^[3] Even the cases of depression and anxiety increased after the epidemic in China. At this moment of time it is very important to access the depression levels of Medical Students because they have to compromise their studies as well as have to report for COVID duty at various health facilities. Present study was conducted with objectives of evaluating the depression score of an individual based on PHQ-9 scoring scale among medical students and also to classify the severity of depression among them according to PHQ-9.

Method:

A cross-sectional observational study was conducted among medical students of different

Quick Response Code	Access this article online	How to cite this article :
	Website : www.healthlinejournal.org	Joshi, S., Patel, H. and Patel, N., 2021. Evaluation of Depression among Medical Students of Gujarat during COVID-19 Pandemic. Healthline, 12(1): 76-79.
	DOI : 10.51957/Healthline_183_2020	

medical colleges of Gujarat. MBBS students of different medical colleges were invited to participate in study through Google form link on social media. Those who agreed to participate in study had filled the PHQ-9 Questionnaire enlisted in the Google Form. Total 668 students participated in study from different medical colleges of Gujarat. Around 36 students failed to fill the name of belonging medical college. Total 632 students have filled up complete forms.

The PHQ-9 is based on the diagnostic criteria for depression from the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV).^[4] The response options were: 0 = "not at all", 1 = "several days", 2 = "more than half the days" and 3 = "nearly every day". A two-week recall period was used. The total score ranged from zero to 27, with a higher score indicating greater self-reported depression.

The collected data was then imported into Microsoft excel and analyzed by using Epi Info 7 software.

Interpretation of Total Score:

Total Score	Depression Severity
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

Results:

There were total 668 students participated in study from different medical colleges of Gujarat. 36 students failed to fill the name of belonging medical college so in this study final participants were 632. Students from almost all medical colleges of Gujarat like government medical colleges, GMERS medical colleges and private medical colleges have participated in the study. Around 51%(327) were participated from GMERS medical colleges followed by 10%(67) participants from Smt NHL medical college and rest 39% from all others medical colleges.

Figure 1: Gender-wise distribution of study participants(N=632)

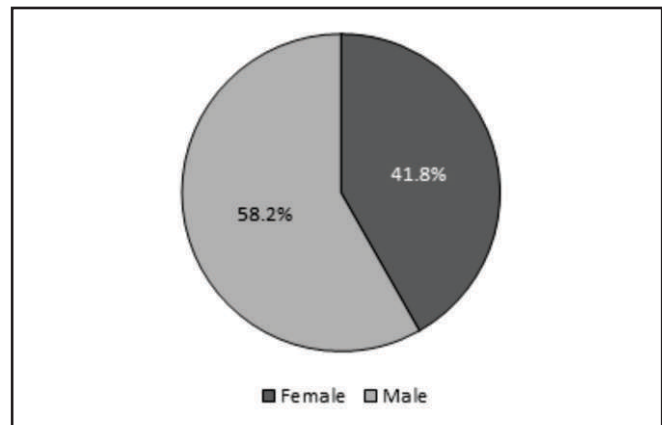


Figure 2: Distribution of study participants according to study year(N=632)

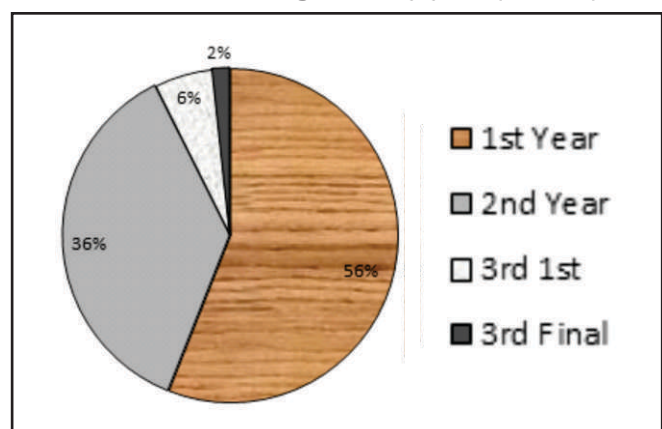


Table 1: Grading of depression among study participants based on PHQ-9 scores (N=632)

Type of Depression	n (%)
Minimal Depression (1-4)	186(29.4%)
Mild Depression (5-9)	215(34%)
Moderate depression (10-14)	119(19%)
Moderately severe depression (15-19)	76(12%)
Severe depression (20-27)	36(5.6%)

Figure 1 shows that out of total 632 students, 58.2% were male students and 41.8% were female students.

Figure 2 shows distribution of study participants according to their study year, more than half (56%) of students were from 1st year of M.B.B.S. followed by 37% from 2nd year.

Table 2: Association between study year and PHQ-9 score of depression (N=632)

Depression	Study Year			
	1st Year	2nd Year	3rd First	3rd Final
Minimal Depression (1-4)	88 (13.9%)	72(11.4%)	18(2.8%)	8(1.3%)
Mild Depression (5-9)	116(18.4%)	83(13.1%)	16(2.5%)	0(0.0%)
Moderate Depression (10-14)	77(12.2%)	38(6.0%)	1(0.2%)	3(0.5%)
Moderately Severe Depression (15-19)	43(6.8%)	32(5.1%)	1(0.2%)	0(0.0%)
Severe Depression (20-27)	30(4.7%)	6(0.9%)	0(0.0%)	0(0.0%)

Table 1 showed the grades of depression among study participants which were decided according to Patient Health Questionnaire (PHQ-9) scores. Around 29.4% students suffered from minimal depression, 34% has mild depression, 19% had moderate depression, 12% had moderately severe depression and 5.6% students suffered from severe depression

It was observed that Moderate depression was present among 8% females and 10.75% males, Moderately severe depression was noticed in 5.5% females and 6.5% of males while severe depression was remarkably low in both females (2.2%) and males (3.5%). There is no statistical significant difference between gender of participants and presence of depression.

Table 2 showed the association between year of study and grading of depression. Statistical significant difference was noticed between study year of participants and presence of depression.

Discussion:

In present study, there were 632 participants from different medical colleges of Gujarat. Among total participants, more than half of students were from 1st year of M.B.B.S. followed by 37% from 2nd year and rest were from 3rd first and 3rd final year. Vala NH et al,^[5] study conducted among 250 1st-year MBBS students. In present study, out of total 632 students, 58.2% were male students and 41.8% were female students.

There are list of studies on depression evaluation among medical students. According to different

studies, there are various reasons for depression in medical students like examination fear, fear of failure, vast syllabus.^[5,6] Furthermore, socioeconomic impact of this current COVID-19 pandemic can be important stress factor among the students. During SARS and H1N1 pandemic few studies were conducted in china which shows obvious anxiety and stress among university students.^[7]

Based on Patient Health Questionnaire (PHQ-9) scores, around two thirds students were suffered from minimal or mild depression, only one third students were suffered from moderate or moderately severe depression and only a few students were suffered from severe depression. Current study showed that higher degree of depression was found in male compare to female. The percentage of male involvement was 58.2%. The cause of higher degree of depression in males be due to various factors like Genetic Factors - (With a history of Familial Depression), Reluctance to discuss depression symptoms Environmental Stresses (Financial condition, loss of loved ones etc), downplaying signs and symptoms ,Stress due to Social Isolation - It has affected the mental health at a great level in this ongoing COVID-19 pandemic, Social Stigma regarding male mental depression in Indian society etc. Vala NH et al ^[5] showed in their study gender based difference in depression [male (6.4%) and females (9.2%)]. Another study Halperin et al^[8], shows that Higher PHQ-9 scores were seen for participants who were female and in their pre-clinical phase of education and also shows statistically significant difference in gender, class year seen in the study.

The present study showed statistical significant difference among study year of participants and presence of depression. The students of 1st year went through more depression, primary reason being more participation from first year and secondary reason is that the 1st year university exam is scheduled early as compared to other years. Insufficiency of practical knowledge and hands on skills were deprived and are now to be tested in the examinations has led to a mental derangement. Second and third year students face difficulties like lack of exposure to test taking skills, practical skills, clinical skills in ward like history taking etc.. Moreover students from second year onwards have faced challenges regarding the COVID ward duty like not being provided enough sanitation, PPE kit being intolerable in the heat, risk of being COVID positive and no hotel isolation being provided and having to compensate the mental health of medical students in India. High anxiety during the pandemic is a problematic situation because a recent study found that coronavirus-related depression was strongly associated with functional impairments, alcohol or drug coping, negative religious coping, extreme hopelessness, and passive suicidal ideation.

Another possible explanation of the poorer mental health during the COVID-19 is related to COVID-19 information overload which has been characterized by contradictory information from different international and local authorities, experts, and scientists with different backgrounds, and mass media.^[9] Confinement, loss of usual routine, and reduced social and physical contact with others were frequently shown to cause boredom, frustration, and a sense of isolation from the rest of the world was faced by many, which turned out to be distressing for the participants and caused remoteness and a sense of depression. Lack of access to supplies in the lockdown also added on to this effect.^[10]

Conclusion:

COVID-19 pandemic is having impact on mental health of the medical students of Gujarat. In present study, depression among the medical students was

found because of online teaching method, appointed duty in COVID pandemic, COVID related stigma etc. Early evaluation of depression may help to decide intervention to reduce further depression among the students.

Limitation of Study:

Study was conducted by using online data collection platform. Other than COVID-19, various factors can play a role in depression among medical students.

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