Original Research Article

Psychological evaluation of medical students under quarantine

Jaiswal Bhumika[1],*, Sushil Gawande[1], Abhijeet Faye[1], Vivek Kirpekar[1], Sudhir Bhave[1], Rahul Tadke[1]

[1]*Dept. of Psychiatry, N.K.P Salve institute of Medical Sciences & Research Centre and Lata Mangeshkar Hospital, Nagpur, Maharashtra, India*

A B S T R A C T

Background: The novel coronavirus disease (COVID-19) was firstly detected in Wuhan in December 2019 and began to spread rapidly throughout the world. India took the decision of national lockdown on March 25. Lockdown and social distancing are essential to break the cycle of infection. COVID 19 has caused severe threats to the lives and physical health of people around the globe, in addition psychological problems like anxiety, depression, panic disorder has been progressively increasing. Study aimed at assessment of psychological problems in medical students under quarantine and psychological problems among quarantine students with respect to age, gender and psychological symptoms in past

Materials and Methods: After the permission from Institutional ethics Committee, about 119 students who were quarantined before joining respective departments were taken for study. Each participant after informed consent has been individually interviewed telephonically along with the special semi-structured proforma prepared for the study. Clinical data collected. After application of rating scales HAM-A & HAM-D to each individual results are obtained.

Results: The survey is completed with total 119 students, belonged to NKPSIMS & LMH Nagpur. Out of total n=119, 62 were males (52.10%) and 57 were females (47.90%). Only 18 (15.13%) subjects had presenting complaints with mean age of 24.34 ± 1.12 years (Range 21 -27) with mean duration of quarantine 8.66 ± 2.59 days (Range 4 -14) with mean duration of complaints 9.34 months (Range 1 week -6 years). 61 students were of Medical (51.26%), 5 students were of Dental (4.20%), 19 of Physiotherapy (15.97%) and 34 were of Nursing (28.57%). % out of 119, 9 had Past history of psychiatric illness 9/119 = 7.56 %. Out of 119, total 18 students had anxiety symptoms (14.29%) (95% CI:8.55-21.88%) and total 9 students had depression symptoms (7.56%) (95% CI:3.52– 13.87%) with majority of students had milder form of anxiety and depression with 12.65% and 5.88% respectively whereas only 1.68% and 0.84% had moderate intensity respectively.

Conclusion: Mild form of both anxiety and depression is prevalent .Psychological symptoms are strongly correlated with the past history of psychiatric illness. Students who have past history of psychological illness are more prone for psychological distress during quarantine period of COVID lockdown. Age was not found to be significantly associated with either anxiety or depression. Prevalence of anxiety and depression is not affected gender and profession.

1. Introduction

The novel coronavirus disease (COVID-19) was firstly detected in Wuhan in Dec2019 and began to spread first in China, and soon afterwards throughout the world. More

* Corresponding author.
E-mail address: bhumikajaiswal3@gmail.com (J. Bhumika).

than a third of the world's population has been put under lockdown to prevent the widespread of the virus.[1] India also took the decision of national lockdown on March 25. Lockdown and social distancing are essential to break the cycle of infection. The COVID-19 pandemic has caused severe threats to the lives and physical health of people, in addition various psychological problems like anxiety, depression, panic disorder has been progressively increasing. Although isolation reduces infections, reduced access to family, friends, and other social support systems causes mental issues like anxiety and depression. For Indians, challenges in the medical sector, further deepens the worries[2] that heighten psychological distress. In epidemic, people have fear of getting infected with the virus/disease resulting in anxiety, stress, and depression, etc.[3] The fear of the unknown is termed as anxiety, that is the body's natural response to stress Depression is viewed as a state of disinterest in daily activities. People facing a pandemic with no vaccination would result in fear of the unknown making them anxious, stressed and depressed. Being social facilitates social interaction, and thus, when our movements are curtailed, psychological distress results.[4] It has suggested that issues of mental health should be considered and also addressed as anxiety, stress, fear, trauma, helplessness and other psychological issues are experienced during a pandemic[5,6] Studies have found that people who were quarantined during SARS reported a high level of psychological distress.[7] The World Health Organization[8] has also issued public interest guidelines to address psychological issues that may arise. The alarming heightened fear related to the coronavirus culminating in people committing suicides.[9] During this stressful situation when we were serving people to cope with mental conditions, we found one student who got admission in post graduate course of Radiology 2020 & was forced quarantined before joining the department for 14 days presented with depressive features with suicidal ideation. This led us up to think of doing this research. It is very important to assess these students for psychological problems.

2. Aims and Objectives

To assess psychological problems in medical, nursing, physiotherapy students under quarantine and to study the phenomenology of psychological symptoms and its severity among quarantine students with respect to gender, profession, psychological symptoms in past.

3. Materials and Methods

The study design is observational cross-sectional study with study duration of 2 months. This study is conducted with total 119 Students (number of students who were quarantined during the month of July & August 2020 at LMH, Nagpur) under quarantine at tertiary care teaching institute. It includes students of medical college, Nursing college and physiotherapy college students travelled from other cities and kept under institutional quarantine and students who willing to participate and excludes those who are detected COVID-19 positive during the period under quarantine and students with other major medical or surgical illness. Semi-structured proforma is used to collect socio-demographic data, presenting complaints, past history of psychiatric symptoms and symptoms during lockdown. After the permission from Institutional Ethics Committee, about 119 students who were quarantined before joining respective departments were taken for study. Informed consent was taken from all the participants before they answered the questions. Each student has been individually interviewed telephonically along with the special semi – structured proforma prepared for the study. The survey took approximately 10 minutes to complete, and included questions referred to demographical data, personal situation during the confinement, present and/or past psychological/psychiatric treatment, present intake of psychoactive medication, perceived impact of the confinement on personal and social relationships, self-reported concern about the social and economic situation caused by the crisis and its impact on the health of oneself. The psychological symptoms associated with quarantine due to the COVID-19 crisis were evaluated using two scales: HARS& HDRS. HARS (HAM-A) the Hamilton Anxiety Rating Scale (HAM-A) is a psychological questionnaire used by psychiatrists to rate the severity of a patient's anxiety. The scale consists of 14 items made to assess the severity of a patient's anxiety. Each of the 14 items contains a number of symptoms, and each group of symptoms is rated on a scale of zero to four, with four being the most severe. All of these scores are used to compute a score that indicates a person's anxiety severity.[10] HDRS (HAM-D) The Hamilton Rating Scale for Depression (HRSD), also called the Hamilton Depression Rating Scale (HDRS), abbreviated HAM-D, is a multiple item questionnaire used to assess depression. The original 1960 version contained 17 items (HDRS-17). Each item on the questionnaire is scored on a 3 or 5point scale, depending on the item, and the total score is compared to the corresponding descriptor. Assessment time is about 20 minutes.[11] After application of rating scales HAM-A & HAM-D to each individual results are obtained. Clinical data collected, tabulated and analysed.

4. Results

The survey is completed with total 119 students, belonged to NKPSIMS & LMH Nagpur. Out of total n=119, 62 were males (52.10%) and 57 were females (47.90%). Only 18 (15.13%) subjects had presenting complaints with mean age of 24.34 ± 1.12 years (Range 21 -27) with mean duration of quarantine 8.66 ± 2.59 days (Range 4 -14) with mean

duration of complaints 9.34 months (Range 1 week -6 years). 61 students were of Medical (51.26%), 5 students were of Dental (4.20%), 19 of Physiotherapy (15.97%) and 34 were of Nursing (28.57%). % out of 119, 9 had Past history of psychiatric illness 9/119 = 7.56 %. Out of 119, total 18 students had anxiety symptoms (14.29%) (95% CI:8.55- 21.88%) and total 9 students had depression symptoms (7.56%) (95% CI:3. 52–13.87%) with majority of students had milder form of anxiety and depression with 12.65% and 5.88% respectively whereas only 1.68% and 0.84% had moderate intensity respectively.

4.1. Correlation of age with total scores for anxiety (HARSHMA) and depression (HDRS)

Pearson's correlation coefficient analysis revealed that Depression scores were found significantly and inversely correlated with Age (r= -0.2153, P= 0.0187). Though anxiety was also found to be inversely correlated with age but this correlation was very weak and was borderline significant (r= -0.1791, P=0.0514). However Spearman rank order correlation coefficient suggested no significant correlation of Age with Anxiety and Depression. Since distributions of total scores for anxiety & depression were found significantly skewed by (above Shapiro-Wills) skewness-kurtosis test, we prefer to go with the results from non-parametric Spearman correlation coefficient and conclude that Anxiety &Depression are not significantly correlated with age, though inverse relationship is indicated.

Out of 119, total 18 students had anxiety symptoms (14.29%) (95% CI:8.55-21.88%) and total 9 students had depression symptoms (7.56%) (95% CI:3.52–13.87%) with majority of students had milder form of anxiety and depression with 12.65% and 5.88% respectively whereas only 1.68% and 0.84% had moderate intensity respectively.
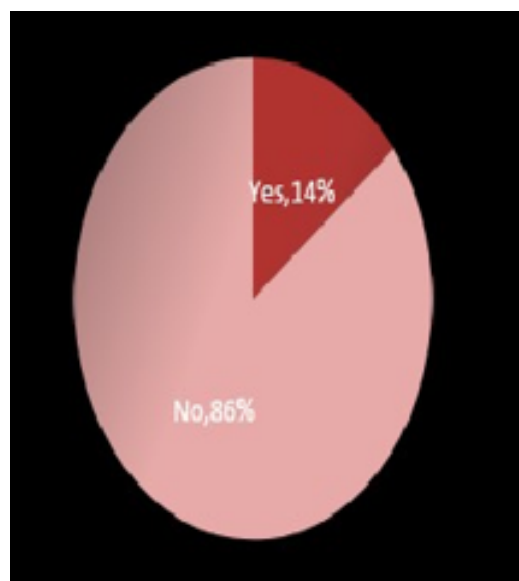
Anxiety	No.	%
None (Total score between1- 17)	102	85.71
Mild (Total score between18- 24)	15	12.61
Moderate (Total score between 25- 52)	2	1.68
Total	119	100.0

Depression	No.	%
None (Total score between1- 7)	110	92.44
Mild (Total score between 8- 16)	7	5.88
Moderate (Total score between 17- 23)	1	0.84
Severe (Total score between 24- 56)	1	0.84
Total	119	100.0

Total 15 students (12.61%) had mild anxiety and 2 students (1.68%) had moderate anxiety. Whereas in 7

Fig. 1: Anxiety in respondents (Proportion = 14.29%, 95%CI: 8.55 to 21.88%)
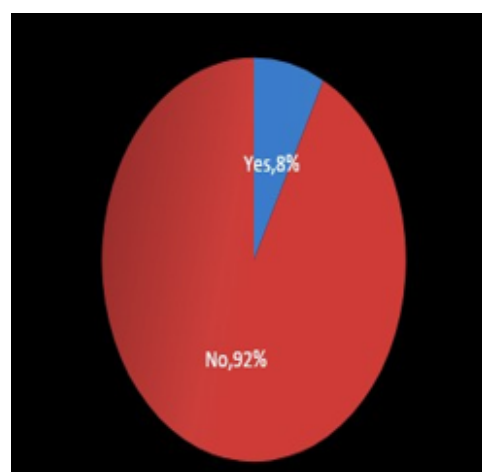
Fig. 2: Depression in respondents (Propotion = 7.56%, 95% CI: 3.52 to 13.87%)

(5.88%) students mild depression is present and 1 student (0.84%) had moderate and 1 student (0.84%) had severe depression.

4.2. Crude (independent) analysis

The independent association analyses of anxiety and depression suggested that only anxiety is significantly influenced by past H/o psychiatric illness, but depression is not. And age was not found to be significantly correlated with depression or anxiety.

**Table 1:** Baseline characteristics of the respondents (n=119)

Characteristics	No.	%
Mean Age (years)	24.34 ± 1.12	Range 21 -27
Gender		
Male	62	52.10%
Female	57	47.90%
Profession		
Medical	61	51.26
Dental	5	4.20
Physiotherapy	19	15.97
Nursing	34	28.57
Mean duration of quarantine (days)	8.66 ± 2.59	Range 4 -14
Mean duration of complaints	**18**	**15.13%**
Past history of psychiatric illness		
Yes	**9**	**7.56**
No	**110**	**92.44**
MeanAnxiety score (HARSHMA) out of total 52(n=18)	9.24 ± 4.89	Range 3 -19
Mean Depression score (HDRS) out of total 56(n=17)	7.89 ± 6.30	Range 1-24

**Table 2:** Distribution of participants by severity of anxiety and depression

Anxiety	No.	%
None (Total score between1- 17)	102	85.71
Mild (Total score between18- 24)	15	12.61
Moderate (Total score between 25- 52)	2	1.68
Total	119	100.0

Depression	No.	%
None (Total score between1- 7)	110	92.44
Mild (Total score between 8- 16)	7	5.88
Moderate (Total score between 17- 23)	1	0.84
Severe (Total score between 24- 56)	1	0.84
Total	119	100.0

Table 3: Association of Anxiety and Depression with Gender, Profession and Past history of psychiatric illness

Factors			Anxiety			Depression	
Gender		n	Mean score ± SD	SD	n	Mean score ± SD	SD
	Male	6	10.83	5.31	6	10.5	4.23
	Female	10	8.36	4.67	12	65.8	6.91
	P		**0.3359, NS**			**0.2243, NS**	
Profession							
	Medical	6	10.5	5	6	10.67	8.14
	Dental	2	7.5	6.36	2	5	5.66
	Physiotherapy	4	9.25	7.14	5	6.8	6.61
	Nursing	5	8.4	3.36	5	6.8	3.96
	P		**0.8756, NS**			**0.6370, NS**	
Past H/o psychiatric illness							
	Yes	9	12	4	9	10.11	6.27
	No	8	6.12	3.94	9	5.67	5.83
	P		**0.0082*, HS**			**0.1393, NS**	
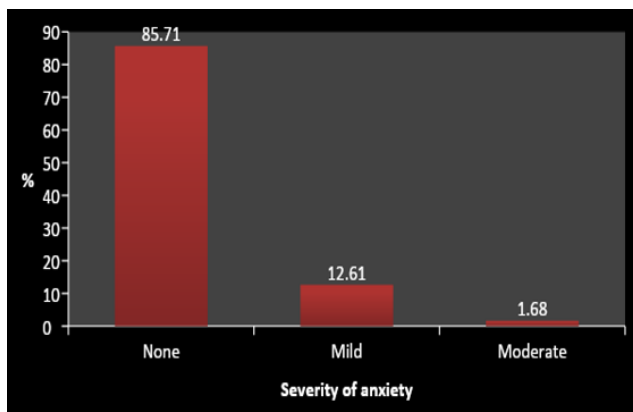
Fig. 3: Severity of anxiety among respondent
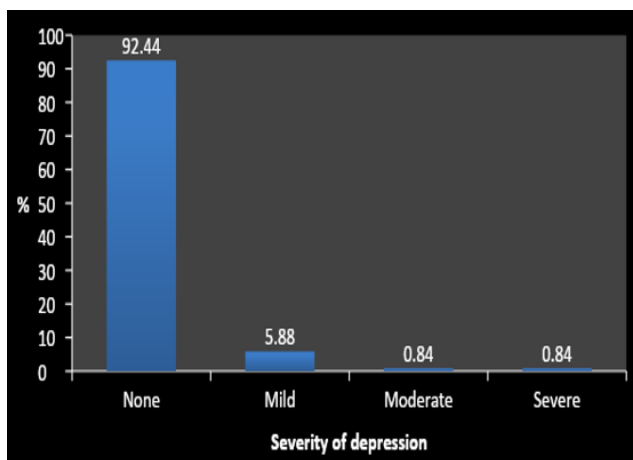
Fig. 4: Severity of depression among respondents

4.3. Combined (adjusted) analysis

Multifactorial ANOVA analyses suggested that past H/O psychiatric illness has significant influence on Anxiety and Depression when adjusted for Gender and Profession. But Profession and Gender has otherwise no significant influence on anxiety and depression, both independently or in combination with other factors as well.

5. Discussion

In current study, the levels of depression were found to be mild, whereas the levels of anxiety were moderate among males and females. This could be because the current lockdown and fear of getting infected with Covid-19 are so pervasive, that experiences of distress are evident. This study also highlights the levels of symptomatology in students, indicating that the uncertainty and the potential negative impact on academic progress may have motivated the impact on students' mental health. We have also seen the association of past history of psychiatric illness with the current symptoms, during this COVID lockdown severity

of current psychiatric symptoms was higher in those who had past history of psychiatric symptoms. However the new onset symptoms occurred with milder intensity than in students who had past history of psychiatric illness. In 23rd June 2020, Usama Rehman et al studied depression and anxiety in times of COVID – 19 lockdown and found the mean values of females to be higher than males with no significant difference was observed. Both males and females reported moderate anxiety (mean value 12.63) and mild depression (mean value 13.9).[12] there was normal depressions in mental health professionals and health professionals reported mild levels and students reported a moderate level of depression. In this study also there is no significant difference with respect to gender but moderate anxiety was present in only 1.68% students whereas most of them had mild form of anxiety (12.61%) and mild depression was reported in 5.88%. In Aug 2020, paula odriozola -Gonzalez et al studied psychological effects of the COVID-19 outbreak and lockdown among students and found moderate to extremely severe scores of anxiety and depression 21.34%, 34.19% respectively.[13] Also, 50.43% of participants obtained a score of moderate or severe intensity. The reasons for the difference between this study and our results may perhaps be related to large size of sample (3707 participants) in this study. A recent study carried out in China showed that 12.9% of the population affected by the quarantine showed symptoms of anxiety and 22.4% of depression.[14] A recent study evaluated 44 447 Chinese university students and found a prevalence of 7.7% of anxiety symptoms and 12.2% of depression symptoms.[15] Due to this divergence of data, the influence of the pandemic on the psychological factors is not yet exactly known. Considering the current prevalence of psychological symptoms some measures such as psychosocial help in form of online helpline number of psychiatrist and psychologist for students to help the academic and general population in COVID isolation .However, there is a need for wider spread of these services and continue the psychological assistance in this COVID- 19 pandemic. Studies have shown that women have a higher prevalence depression and anxiety disorders, while men have a higher prevalence aggression.[16] However in the current study there is no statistical significant correlation with gender.

6. Conclusion

Students under quarantine are susceptible for psychological problems. Symptoms of anxiety are more common among students under quarantine. Mild form of both anxiety and depression is prevalent. Psychological symptoms are strongly corelated with the past history of psychiatric illness. Students who have past history of psychological illness are more prone for psychological distress during quarantine period of COVID lockdown and also the severity of these symptoms were more in students with past

history of psychological illness. Age was not found to be significantly associated with either anxiety or depression. Prevalence of anxiety and depression is not affected gender and profession.

7. Limitations

Single institution based.
Sample size is small.
Age group is very limited as all participants were medical paramedical and nursing students.
Telephonically interviewed so high chance of variable assessment of symptoms.

8. Source of Funding

None.

9. Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Author biography

Jaiswal Bhumika, Junior Resident

Sushil Gawande, Associate Professor

Abhijeet Faye, Assistant Professor

Vivek Kirpekar, Professor and Head

Sudhir Bhave, Professor

Rahul Tadke, Associate Professor