



PSYCHO-SOCIAL IMPACT OF COVID-19 LOCK DOWN ON MEDICAL STUDENTS

Pediatrics

Rajveer Singh Yadav	MD, Assistant Professor Department Of Pediatrics, Mahatma Gandhi University Of Medical Sciences And Technology, Jaipur, Rajasthan
Priya Marwah*	DNB, Associate Professor Department Of Pediatrics, Mahatma Gandhi University Of Medical Sciences And Technology, Jaipur, Rajasthan *Corresponding Author
Abhishek Saini	MD, Assistant Professor Department Of Pediatrics, Mahatma Gandhi University Of Medical Sciences And Technology, Jaipur, Rajasthan
Saket Yadav	MD, Senior Resident Department Of Pediatrics, Mahatma Gandhi University Of Medical Sciences And Technology, Jaipur, Rajasthan
Munish Kumar Kakkar	MD, Professor & Head of Department Department Of Pediatrics, Mahatma Gandhi University Of Medical Sciences And Technology, Jaipur, Rajasthan

ABSTRACT

OBJECTIVE The objective was to study the psycho-social impact of COVID-19 lockdown among medical students in Mahatma Gandhi University of Medical Sciences and Technology, (MGUMST) Jaipur.

METHODS A medical college based cross sectional study was conducted in MGUMST by the department of Clinical Pediatrics, Jaipur from May 2020 to June 2020 using an online (anonymous) survey platform.

RESULTS A total of 320 respondents were included in the study and more than half (56.87%) were female respondents. 85.3% of the respondents stayed with their parents during the lockdown. Though none of the participants tested positive 6.5% of them had a family member that tested COVID 19 positive. 32.2% respondents found the role of their parents demotivating and nearly two-thirds (63.75%) felt that lockdown was not good for their future. Multivariate analysis revealed that parental role, online classes and impact of lockdown on future were factors significantly associated with anxiety, stress and depression in the respondents.

CONCLUSION During the initial stages of COVID-19 during the lockdown, nearly one third respondents had significant psychological impact. Thus policy makers should develop strategies to provide crisis-oriented psychological services for future doctors to minimize the mental health impact of such outbreaks.

KEYWORDS

COVID-19, Lockdown, Psychological impact

INTRODUCTION

The COVID-19 pandemic has affected almost all nations.^{1,2} The widespread outbreak not only brought about the risk of death but an increased psychological stress too. During this period most of the focus has been on testing, treating and exploring preventive measures and global governance. The psychological impact of this pandemic like stress and anxiety among general population is also of grave concern³.

A study from China⁴ suggests that more than half of the participants had a significant psychological impact of the COVID-19 pandemic. Another study from Denmark⁵ reported psychological well being as negatively affected. In the United States nearly half were found to be anxious as per the study conducted by the American Psychiatric Association⁶.

The continuous spread of Coronavirus, strict isolation measures and delays in starting colleges across the country is expected to influence the mental health of students. Despite its mental health impact, no detailed study on the psychological impact on medical students facing the lockdown during the pandemic has been conducted. Being a part of the Health care workers, the medical students faced the crisis of inaccessibility to hands on learning, delayed curriculum as well as helplessness at being at the crossroads of general population and the health care workers forming a distinct category of future health professionals. Therefore this study aims to show the psychological impact of COVID-19 outbreak and its associated factors among the medical students of Mahatma Gandhi University of Medical Sciences and Technology in Jaipur, India.

MATERIAL AND METHODS

Study setting, Design and Period

A medical college based cross-sectional study was conducted in Mahatma Gandhi University of Medical Sciences and Technology (MGUMST) by the departments of Clinical Pediatrics, Jaipur from May 2020 to June 2020.

All medical students who study in MGUMST and provided informed consent were included.

Unwilling and not providing informed consent for the study were excluded from the study

A cross-sectional survey design was decided to assess the psychological impact of COVID -19 Lockdown. We collected data anonymously without collecting information that could identify the respondents. The period of data collection was between May 2020 and June 2020.

Once the users clicked on the link they were given information about the nature and purpose of the survey on first page. Subsequently if they consented to participate they were taken to the next page of the survey. The first part of the study questionnaire collected demographic information (age, gender, year of MBBS, type of family and city of residence) and information regarding physical symptoms like cough, cold, head ache breathing difficulty, fever and fatigue related to corona virus disease. Contact history was also taken.

The second part of the questionnaire designed by the Departments of Clinical Pediatrics had 8 items which measure the effect of routine life stress, everyday traumas and acute stress related to the future. The questionnaire was adapted from the tool designed by the department of Psychiatry to assess their patients of anxiety, stress and depression.

The dependent variables were psychological impacts (depression, anxiety, and stress), while the independent variables were socio-demographic variables (age, sex, altered sleep, parental support, satisfaction at online classes, lockdown and its impact on future, apprehension about choice of profession and living with parents) and clinical factor (relatives got COVID) and substance use were also the independent variables.

Statistical analyses were done using computer software (SPSS version 23 and primer). The qualitative data were expressed in proportion and percentages and the qualitative data expressed as mean and standard deviations. The difference in proportion was analyzed by using chi square test. Significance level for tests were determined as 95% ($p < 0.05$).

The data was coded and entered into Microsoft Excel spreadsheet. Analysis was done using SPSS version 20 (IBM SPSS Statistics Inc., Chicago, Illinois, USA) Windows software program. Descriptive statistics included computation of percentages, means and standard deviations. Chi-square test was used for qualitative data whenever two or more than two groups were used to compare. Level of significance was set at $P \leq 0.005$.

RESULTS

Three hundred and sixty four students were contacted and informed about the study. Of these 320 students agreed to the terms by signing the consent form.

A total of 320 respondents were included in the study and more than half (56.87%) were female respondents. More than 91.25% of the respondents were in the age group of 18-24 years. 85.3% of the respondents stayed with their parents during the lockdown. 298(93.13%) of the participants had no history of chronic illness. Though none of the participants tested positive 6.5% of them had a COVID 19 positive in their family. More than three-fourths (84.7%) did not use a substance like cigarette, alcohol or tobacco. A majority of the respondents (92.8%) did not report any change in sleeping pattern due to lockdown. 32.2% respondents found the role of their parents demotivating and nearly two-thirds(63.75%) felt that lockdown was not good for their future. Majority of them (87.5%) expressed satisfaction at the online classes yet 14.4% expressed apprehension about the choice of their profession.

Table-1: Clinico- Demographic Profile

VARIABLE	CATEGORY	NUMBER	PERCENTAGE %
AGE	18-25 YEARS	292	91.25
	>25 YEARS	28	8.75
SEX	MALE	138	43.13
	FEMALE	182	56.87
LIVING WITH PARENTS	YES	273	85.3
	NO	47	14.7
CHRONIC ILLNESS	YES	22	6.87
	NO	298	93.13
SUBSTANCE ABUSE	YES	49	15.3
	NO	271	84.7
ALTERED SLEEP	YES	23	7.2
	NO	297	92.8
PARENTAL SUPPORT	MOTIVATING	217	67.8
	DEMOTIVATING	103	32.2
COVID IN RELATIVES	YES	21	6.6
	NO	199	93.4
ONLINE CLASSES SATISFACTORY	YES	280	87.5
	NO	40	12.5
LOCKDOWN GOOD FOR FUTURE	YES	116	36.25
	NO	204	63.75
APPREHENSION ABOUT CHOICE OF PROFESSION	YES	46	14.4
	NO	274	85.6

FACTORS ASSOCIATED WITH ANXIETY

Multivariable analysis was carried out and the variables significantly associated with anxiety were COVID positivity in relative ($p=0.000$), substance abuse ($p=0.000$), altered sleeping pattern ($p=0.020$), satisfactory online classes ($p=0.002$) and impact of lockdown on the future ($p=0.000$). (Table 2)

Table 2- Anxiety

Living with parents		ANXIETY		
		YES	NO	$X^2(df)$ P Value
		N (%)	N (%)	
	yes	82 (86.31%)	191(84.88%)	0.109 (1) 0.742
	no	13(13.69%)	34(15.12%)	
	total	95(100%)	225(100%)	
Covid positive in relative		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	13(22.42%)	08(3.06%)	29.0 (1) 0.000
	no	45(77.58%)	254(96.94%)	
	total	58(100%)	262(100%)	

Parental support		ANXIETY.5		
		YES	NO	$X^2(df)$ P Value
	Motivating	85(75.22%)	146(70.53%)	0.801 (1) 0.371
	Demotivating	28(24.78%)	61(29.47%)	
	total	113(100%)	207(100%)	

Substance abuse		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	37(24.03%)	12(7.22%)	17.4 (1) 0.000
	no	117(75.97%)	154(92.78%)	
	total	154(100%)	166(100%)	

Altered Sleep		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	16(10.81%)	7(4.07%)	5.42 (1) 0.020
	no	132(89.19%)	165(95.93%)	
	total	148(100%)	172(100%)	

Online Classes Satisfactory		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	53(76.81%)	227(90.43%)	9.19 (1) 0.002
	no	16(23.19%)	24(9.57%)	
	total	69(100%)	251(100%)	

Lockdown, Good for Future		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	69(69.69%)	47(21.27%)	69.4 (1) 0.000
	no	30(30.31%)	174(78.73%)	
	total	99(100%)	221(100%)	

Apprehension about choice of Profession		ANXIETY		
		YES	NO	$X^2(df)$ P Value
	yes	17(17.52%)	29(13.01%)	1.12 (1) 0.289
	no	80(82.48%)	194(86.99%)	
	total	97(100%)	223(100%)	

FACTORS ASSOCIATED WITH DEPRESSION

COVID positivity in relative ($p=0.028$), substance abuse ($p=0.000$), altered sleep ($p=0.023$), online classes ($p=0.000$) and impact of lockdown on future ($p=0.000$) were factors significantly associated with depression. Table (3)

Table 3. Depression

Living with parents		Depression		
		YES	NO	$X^2(df)$ P Value
	yes	72(82.75%)	201(86.26%)	0.622 (1) 0.430
	no	15(17.25%)	32(13.74%)	
	total	87(100%)	233(100%)	

Covid positive in relative		Depression		
		YES	NO	$X^2(df)$ P Value
	yes	07(13.46%)	14(5.22%)	4.82 (1) 0.028
	no	45(86.54%)	254(94.78%)	
	total	52(100%)	268(100%)	

Parental support		Depression		
		YES	NO	$X^2(df)$ P Value
	Motivating	68(69.38%)	163(73.42%)	0.552 (1) 0.458
	Demotivating	30(30.62%)	59(26.58%)	
	total	98(100%)	222(100%)	

Substance abuse		Depression		
		YES	NO	$X^2(df)$ P Value
	yes	23(31.08%)	26(10.56%)	18.5 (1) 0.000
	no	51(68.92%)	220(89.44%)	
	total	74(100%)	246(100%)	

Altered Sleep		Depression		
		YES	NO	$X^2(df)$ P Value
	yes	11(12.50%)	12(5.18%)	5.14 (1) 0.023
	no	77(87.50%)	220(94.82%)	
	total	88(100%)	232(100%)	

Online Classes Satisfactory		Depression		
		YES	NO	$X^2(df)$ P Value
	yes	51(75.00%)	229(90.87%)	12.3 (1) 0.000
	no			

	no	17(25.00%)	23(9.13%)		
	total	68(100%)	252(100%)		
Lockdown, Good for Future		Depression			
		YES	NO	X ² (df)	P Value
	yes	53(60.91%)	63(27.03%)	31.5 (1)	0.000
	no	34(39.09%)	170(72.97%)		
	total	87(100%)	233(100%)		
Apprehension about choice of Profession		Depression			
		YES	NO	X ² (df)	P Value
	yes	16(18.60%)	30(12.82%)	1.71 (1)	0.191
	no	70(81.49%)	204(87.18%)		
	total	86(100%)	234(100%)		

FACTORS ASSOCIATED WITH STRESS

Variables like parental support ($p=0.000$), online classes ($p=0.006$), and lockdown impact on future ($p=0.000$) adversely affected the respondents resulting in significant stress.(Table4)

Table 4. STRESS

Living with parents		Stress			
		YES	NO	X ² (df)	P Value
	yes	138(85.71%)	135(84.90%)	0.417 (1)	0.838
	no	23 (14.29%)	24(15.10%)		
	total	161(100%)	159(100%)		
Covid positive in relative		Stress			
		YES	NO	X ² (df)	P Value
	yes	10(6.09%)	11(7.06%)	0.119 (1)	0.731
	no	154(93.91%)	145(92.94%)		
	total	164(100%)	156(100%)		
Parental support		Stress			
		YES	NO	X ² (df)	P Value
	Motivating	142(80.68%)	89(61.80%)	14.1 (1)	0.000
	Demotivating	34(19.32%)	55(38.20%)		
	total	176(100%)	144(100%)		
Substance abuse		Stress			
		YES	NO	X ² (df)	P Value
	yes	23(14.47%)	26(16.15%)	0.175 (1)	0.676
	no	136(85.53%)	135(83.85%)		
	total	159(100%)	161(100%)		
Altered Sleep		Stress			
		YES	NO	X ² (df)	P Value
	yes	14(9.59%)	09(5.18%)	2.32 (1)	0.128
	no	132(90.41%)	165(94.82%)		
	total	146(100%)	174(100%)		
Online Classes Satisfactory		Stress			
		YES	NO	X ² (df)	P Value
	yes	111(81.61%)	169(91.84%)		0.000
	no	25 (18.39%)	1518.16%		
	total	136(100%)	184(100%)		
Lockdown, Good for Future		Stress			
		YES	NO	X ² (df)	P Value
	yes	83(66.40%)	33(15.92%)	80.7 (1)	0.000
	no	42(33.60%)	162(83.08%)		
	total	125(100%)	195(100%)		
Apprehension about choice of Profession		Stress			
		YES	NO	X ² (df)	P Value
	yes	21(12.72%)	25(16.12%)	0.751 (1)	0.386
	no	144(87.28%)	130(83.88%)		
	total	165(100%)	155(100%)		

DISCUSSION

To our knowledge, this study is the first to evaluate the psychological effects of the COVID-19 pandemic lockdown on medical students. This cross-sectional study demonstrated overall elevated levels of depression, anxiety, and stress among medical students during the COVID-19 lockdown. Considering the scenario during lockdown where medical education itself had come to a standstill and there is

awareness of the risk of exposure to COVID-19, medical students are experiencing tremendous pressure, which is affecting their mental health. The result is increased fear and psychological distress among medical students.

The Canadian study by Dyrbye et al indicated that distress experienced during medical education may be due to several factors, among them, the need to memorize large volumes of information, academic competition between students, grade point averages, and the fear of failure [7].

Students who used substance had higher risk of developing anxiety and depression compared to those who had not used substance. Martin et al in their study found people who use substance are a marginalized and stigmatized group with weaker immunity responses, and vulnerability to stress [8]. The finding is supported with a study done in Dessie, Ethiopia where substance use was significantly associated with mental distress of students [9].

In comparison with depression, stress and anxiety in medical college students' general life, it appears that countermeasures put in place against COVID-19, such as shelter-in-place orders and social distancing practices, may have underpinned significant changes in students' lives. They expressed that lockdown was not good for the future too. This is similar to recent findings of deteriorated mental health status among Chinese students [10] and increased internet search queries on negative thoughts in the United States [11]. The findings on the impact of the pandemic on sleeping habits are also a cause for concern, as these variables have known correlations with depressive symptoms and anxiety [12]. Five variables of Covid positivity in relative, substance abuse, altered sleep, online classes and impact of lockdown on future had significant association with depression and anxiety, though surprisingly Covid positivity in relative did not increase the stress in the respondents.

CONCLUSION

In the present study, there were elevated levels of depression, anxiety, and stress reported by the medical students during the COVID-19 pandemic. Results of the current study can streamline university efforts to assess and address current levels of stress, depression, and anxiety and guide program development and implementation of mental health programs. Health-care providers also provide psychosocial and mental health services alongside health-care service.

CLINICAL SIGNIFICANCE

Thus policy makers should develop strategies to provide crisis-oriented psychological services for future doctors to minimize the mental health impact of such outbreaks.

LIMITATIONS

The present study was an online survey, so there was a possibility of reporting bias. The study also did not take into consideration the differences in the mental health variables at different times as we had no baseline data on the mental health of the students prior to testing.

REFERENCES

1. WHO. Coronavirus [Internet]. 2020
2. Director-general WHO. WHO director-general's opening remarks at the Mission briefing on COVID-19 [Internet] 2020.
3. WHO. Mental Health and psychological considerations during COVID-19 outbreak. World Health Organization 2020. Report No. WHO/2019-nCoV/mental health 2020.1
4. Wang C, Pan R, Wax X, et al. Immediate Psychological Responses and Associated Factors during the Initial stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. *Int J Environ Res Public Health* 2020; 17:1729.
5. Sonderskov KM, Dinesen PT, Santini ZI, et al. The depressive state of Denmark during the Covid-19 pandemic. *Acta Neuropsychiatr*. 2020;1-3.
6. American Psychiatric Association. NewPoll: Covid-19. Impacting Mental Well Being: Americans Feeling Anxious, Especially or Loved Ones; Older Adults are Less Anxious. 25 Mar 2020.
7. Dyrbye L, Thomas M, Shanafelt T. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Acad Med*. 2006; 81(4): 354-373
8. Martin JM. Stigma and student mental health in higher education. *Higher Education Res Dev*. 2010 Jun;29(3):259-274. doi: 10.1080/07294360903470969
9. Kelemu RT, Kahsay AB, Ahmed KY. Prevalence of mental distress and associated factors among Samara university students, Northeast Ethiopia. *Hindawi*. 2020;2020. doi:10.1155/2020/78362960A.
10. Cao W, Fang Z, Hou G, et al. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res* 2020 May;287:112934
11. Jacobson NC, Lekkas D, Price G, et al. Flattening the mental health curve: COVID-19 stay-at-home orders are associated with alterations in mental health search behavior in the United States. *JMIR Ment Health* 2020 Jun 01;7(6):e19347.
12. Acharya L, Jin L, Collins W. College life is stressful today - emerging stressors and depressive symptoms in college students. *J Am Coll Health* 2018 Oct;66(7):655-664.