

IMPACT OF COVID-19 PANDEMIC ON PSYCHOLOGICAL, SOCIAL & MENTAL HEALTH: AN EMPIRICAL ANALYSIS

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ABSTRACT

Aim of the study: The purpose of this research was to examine how the COVID-19 epidemic affected the mental, social, and psychological well-being of medical students in Delhi-NCR, India.

Design/Methodology: Medical students in the 'Delhi-NCR' region of India were surveyed for a pandemic. The hypothesised relationship was examined by regression analysis, and the conceptual model was confirmed through the results.

Findings: This study shows that the mental, social, and psychological impact of COVID-19 among Indian medical students is substantial. Medical students' 'mental, social, and psychological' health was shown to be strongly damaged by the identified risk factors, such as having a family member infected with COVID-19 or losing close ones. The study also indicated that the association between the 'Impact of the Covid 19 Pandemic (ICP)' and 'Psychological Health (PH)' was the strongest (0.818), while the relationship between the 'ICP' and 'Social Health (SH)' was the worst (0.587).

Practical Implications: This research has the potential to significantly improve people's health and social functioning by assisting in the design of individualised preventative and intervention programmes to lessen the toll the pandemic has taken on people's physical and mental health.

Originality/value: The focus of this study was to analyse how the recent COVID-19 pandemic has affected medical students' emotional, social, and mental well-being.

Keywords: COVID-19, Psychological, Social & Mental Health, Regression Analysis

Paper Type: Research paper

1. INTRODUCTION

CoVD-19 caused a lengthy period of stress. Originating in has since spread to every continent, triggering a potentially fatal worldwide pandemic (World Health Organisation, 2020). Studies conducted all throughout the world show that the epidemic has had a significant destructive effect on people's mental and social health (Joseph et al., 2021).

College students may be at risk for mental health issues during the pandemic, despite the fact that young adults have a low risk of contracting COVID-19 from the initial strain of the virus (Vieira et al., 2020). Aslan and Pekince (2021) note that medical students face tough scenarios such as changes in teaching methods and concerns about the impending influence of the virus on the educational system.

According to research, the psychological toll of the pandemic varies from person to person. Those who are female, younger, or more worried about the health of their loved ones are most vulnerable to its effects. Medical schools should benefit from a better understanding of the pressures that COVID-19 causes their students, such as the fear of infection and the physical, mental, social, and psychological effects of that illness. Fortunately, research suggests that employing coping mechanisms may mitigate the mental health risks associated with stress (Charles et al., 2021).

Constant worry about contracting an illness has a negative impact on daily living, leading to less social interaction and ultimately altered human relationships. The focus of this study was to analyse how the recent COVID-19 pandemic has affected medical students' emotional, social, and mental well-being.

2. LITREATURE REVIEW

2.1 COVID-19 Pandemic's Effect in India

People's physical and emotional health have been severely impacted by the ongoing COVID-19 outbreak., as well as economies around the world. Young people may be more resilient to the disease than adults, experiencing fewer severe symptoms, less morbidity, and a better prognosis (Ludvigsson JF.2020). Many of them have become isolated, anxious, and depressed as a result of the rise in stress (Ellis WE et al., 2020; Cao W,et al., 2020). Adolescent emotional symptoms have been linked to a variety of negative outcomes and an augmented demand for medical treatment (Rivenbark et al., 2018). COVID-19 infection in young people may be more harmful than the infection itself (Depoux A et.al., 2020). Early projections of mental health resource requirements may be especially helpful.

The rate at which the virus was spreading, however, has accelerated since March of 2020. In response, the government implemented a curfew across the country in an effort to stop the disease from spreading further. Every Indian has experienced the shutdown of educational and training facilities, albeit the intensity of the lockdown varies by location dependent on the overall

number of COVID-19 cases in that region (Kaushik S et al., 2020). Patra and Patro (2020) wrote an essay speculating that the closure of schools may have had a disproportionately negative impact on young people and calling attention to the critical need to address mental health concerns among Indian teenagers. However, as far as we are aware, no such concerted efforts have been made. Here, we share fresh information gleaned from a sample of Indian youth. We discuss how the COVID-19 pandemic has exaggerated their lives and how they have dealt with it. Here, we quantify the current negative and (lack of) positive emotions that young people report feeling and describe the nature of the most commonly stated anxieties that they have. Next, we determine which groups of young people (based on factors like gender, age, and socioeconomic position) are more likely to report high levels of depression and anxiety. Prior to the outbreak, there was growing public awareness in India of the importance of addressing youth mental health issues and the fact that these issues might have significant financial repercussions. (Gururaj G et al., 2020) As a result, our findings can help identify post-pandemic mental health issues before they become widespread and expensive.

2.2 COVID-19's Effect on Mental Health as a Pandemic

People with preexisting illnesses suffered more severe symptoms during previous corona virus outbreaks like SARS and MERS (Yang, et.al.2017). The CDC (2020) is constantly revising the list of preexisting diseases that raise the probability of a severe COVID-19 illness. This is not an all-inclusive list; at this time, it only contains diseases and disorders for which there is sufficient clinical proof. It helps doctors determine which patients are most in need of specialised care in order to implement preventative measures and targeted therapies. However, their precise causes are little understood, and preclinical diagnosis is notoriously challenging. Because of this, they probably aren't the most appealing area of study in many countries, Poland included. Autoimmune illnesses are caused by an aberrant immune reaction against healthy organs, tissues, and cells (Wa'nkowicz et al., 2020). Epidemiological data show a consistent rise in the prevalence of autoimmune illnesses in Western cultures over the past few decades, affecting an estimated 20 million people in the United States alone. Uveitis has an incidence rate of fewer than 5 per 100,000 people, but Hashimoto's disease has an incidence rate of approximately 350 per 100,000 people (Cooper et al., 2003). One of the most prevalent autoimmune disorders is Hashimoto's disease. The condition is hard to detect, and doctors often miss important clues until it's too late. Increased amounts of antithyroid peroxidase antibodies, and high levels of thyrotropic hormone are the most often observed biochemical abnormalities in Hashimoto's illness.

H1: Impact of the COVID 19 Pandemic (ICP) has significant influence on Psychological Health (PH).

2.3 The Effects of the SARS-CoV-19 Pandemic on Social Health

During epidemics of communicable diseases, social isolation is an effective approach for reducing the spread of the COVID-19. It has proven difficult to implement preventative efforts to reduce mortality rates caused by this virus.

When there were just 519 confirmed cases and nine deaths from the COVID-19 pandemic in India, on March 25, 2020, the government announced a statewide lockdown as a precautionary measure.⁴ Maintaining social distance in India is extraordinarily difficult, despite widespread doubt about the world's greatest lockdown. India is home to 17% of the world's population and has a wide range of living conditions. The population density in cities like Mumbai varies from an average of 1,220,000 to 544,000 people per square mile. Considering the potential consequences for India if COVID-19 spread over the country as quickly as it had in Italy and other nations, the government of India was compelled to make such a strategic choice quickly.

The lockdown has been prolonged three times (known as lockdown phases 1–4) as a result of population migration both into and out of India, which has contributed to the steady increase in cases. COVID-19 incidence varied by region, India's 739 districts (population range: 1.7×10^6 to 4×10^6) were divided into red, orange, and green zones.

Fear and misrepresentation about COVID-19 were also reported on by international media outlets in response to the lockdown's disruption, turmoil, financial issues, lack of shelter for the vulnerable communities, and so on. However, population-level evidence on the effects of this lockdown on individual health is lacking.

It's possible that disruptions in healthcare delivery are caused, in part, by a decrease in capacity as a result of social isolation and other constraints imposed after a period of leisure.

In this article, we provide the findings of a questionnaire survey conducted as part of a larger multi-center study (SMART India) to examine the effect on healthcare provision and participants' overall, social, and mental health. Our study aimed to answer the question, "Will the severity of the pandemic and restrictiveness of lockdown stage affect the SMART India participants' access to healthcare and their health and well-being?"

H2: Impact of the COVID 19 Pandemic (ICP) has significant influence on Social Health (SH).

2.4 The Psychological Effects of the COV-19 Pandemic

Herpes and legionnaires' disease in the 1970s, HIV in the 1980s, Ebola in the 2000s, SARS in the 2010s, and now COVID-19 are just a few examples of the destructive effects of communicable illnesses on global health and the mounting stress they place on people everywhere. The COVID-19 pandemic has sparked a "viral scare" in the twenty-first century, similar to the "microbe panic" of the previous century. Quarantine, physical separation, mask use in public, and hand washing are only some of the public health measures being implemented around the world to slow the spread of disease. It's possible that people's mental health will suffer as a result of these measures, despite the fact that they're effective at preventing the spread of the pandemic (Nikopoulou et al., 2020).

The negative impacts of the quarantine were found to be more pronounced among college students than among the broader public (Wathelet et al., 2020). The prevalence of mental health issues is a growing global problem, especially among young people. One in five adults had a mental health issue in the previous year, per a 2008 WHO report (Mirzaei et al., 2019). A dramatic increase in adult cases of mental illness was induced by the COVID-19 epidemic.

Even after a shorter quarantine period, people's mental health might suffer, and the consequences can linger for up to three years, according to research published in The Lancet in February 2020 (Brooks et al. 2020). Students' mental health may be negatively impacted by the unusually long duration of social isolation they encounter in India during this new epidemic (Pietrabissa et al., 2020).

H3: Impact of the COVID 19 Pandemic (ICP) has significant influence on Mental Health (MH).

3. RESEARCH OBJECTIVES

- To comprehend the COVID-19 pandemic's effects on social, psychological and mental health of medical students in Delhi-NCR, India
- To test and validate propose conceptual model showing the relationship between the selected variables.

4. CONCEPTUAL FRAMEWORK

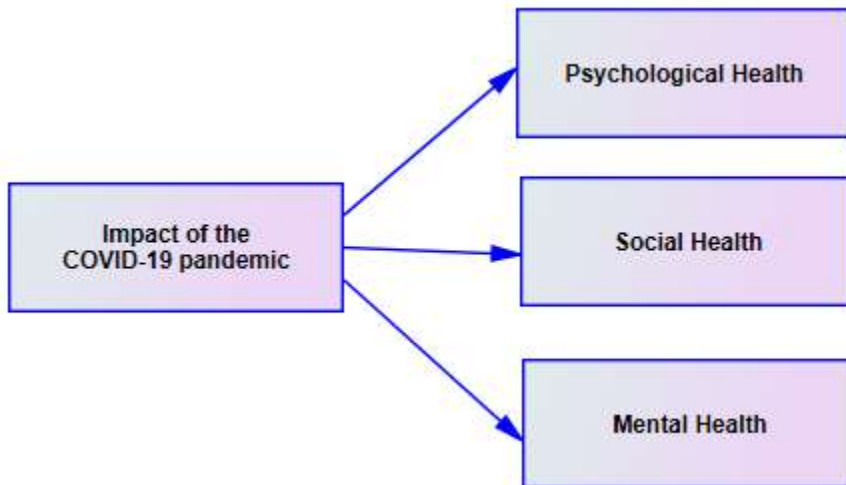


Figure1: Conceptual model showing the relationship between the selected variables

5. RESEARCH METHODS

The survey questions and associated weights for the questionnaire were selected following thorough review of the available research, the authors' own expertise, and the perspectives of

academics and physicians familiar with the effects of the pandemic. This study surveyed future doctors from the Delhi-National Capital Region (NCR). For this study, a special Google Forms survey was developed. In addition to the standard socio-demographic questions, the form also included a scale part. From the Delhi-National Capital Region (NCR), a total of 641 valid responses were collected through an online survey. Regression analysis was used to evaluate hypotheses and validate the conceptual model.

6. RESULTS AND ANALYSIS

Construct validity was determined using exploratory component analysis.. To test the hypothesised connections between the variables, a regression analysis was conducted.

6.1 Demographic Profile

There were slightly more women than men among the 641 responders, with 378 (59%) participating versus 263 (41%). There were 641 total participants; 237 (37.0%) were between the ages of 31 and 40, and 483 (75.4%) were undergraduate or graduate students majoring in engineering. In addition, 322 out of 641 respondents (50%) said they had between 11 and 20 years of professional experience.

Table 1. Frequency Summary of Respondents

		Frequency	Valid%
Gender profile	Male	263	41.0 %
	Female	378	59.0 %
Age profile	21-30 years	182	28.4 %
	31-40 years	237	37.0 %
	41-50 years	160	25.0 %
	51-60 years	62	9.7 %
Highest education level	Diploma in Engineering	14	2.2 %
	UG/PG in Engineering	483	75.4 %
	Master degree	42	6.6 %
	Bachelor degree	102	15.9 %
Working Experience (in years)	Less than 10 years	197	30.7 %
	11 to 20 years	322	50.2 %
	21 to 30 years	112	17.5 %
	31 to 40 years	10	1.6 %

6.2 Exploratory Factor Analysis

KMO In most cases, factor analysis should be considered for the data if this number is somewhere between 0.5 and 1.0. Bartlett's test of sphericity shows the degree of correlation between the items in the variable. The test result is displayed as a significance level. Significant correlations between the variables are shown by extremely small values (p 0.05). If the value is more than 0.10, it is possible that the data are unsuitable for factor analysis. These two analyses show that factor analysis can be successfully applied to the data at hand. Twelve items were confirmed for the final analysis because no items with loadings below 0.5 were eliminated.

Table 2. Exploratory Factor Analysis

Statement	Factor loadings	KMO (>0.5)	Chi Square	Sig. (<.10)	Confirmed Items	Dropped Items	Cum %
Psychological Health (PH) -1	0.863	0.782	1.456E3	0.000	4	0	73.912
Psychological Health (PH) -2	0.875						
Psychological Health (PH) -3	0.861						
Psychological Health (PH) -4	0.840						
Social Health (SH)-1	0.860	0.811	1.188E3	0.000	4	0	70.394
Social Health (SH)-2	0.880						
Social Health (SH)-3	0.852						
Social Health (SH)-4	0.760						
Mental Health (MH)-1	0.850	0.755	1.262E3	0.000	4	0	70.385
Mental Health (MH)-2	0.847						
Mental Health (MH)-3	0.840						
Mental Health (MH)-4	0.818						

6.3 Reliability Analysis

The reliability of the questionnaire has been determined by a Chronbach Alpha calculation, demonstrating that it is internally consistent. According to Nunally and Bernstein (1994), the lowest acceptable alpha value for new scales is 0.60, whereas for established scales, an alpha value of 0.70 is typically considered the criterion for internal consistency.

Cronbach's alpha was used as the threshold for acceptability in this study, and a value greater than 0.7 was considered to be within this range. Table 3 shows that the questionnaire has a high Cronbach's alpha of 0.945, indicating that it is a credible research instrument.

Table 3 : Summary of Reliability Analysis

Variable	Cronbach Alpha	Micro Variable	Cronbach alpha
Psychological Health (PH)	0.881	Psychological Health (PH) 1	0.847
		Psychological Health (PH) 2	0.838
		Psychological Health (PH) 3	0.844
		Psychological Health (PH) 4	0.860
Social Health (SH)	0.859	Social Health (SH) 1	0.808
		Social Health (SH) 2	0.794
		Social Health (SH) 3	0.813
		Social Health (SH) 4	0.861
Mental Health (MH)	0.857	Mental Health (MH) 1	0.805
		Mental Health (MH) 2	0.812
		Mental Health (MH) 3	0.821
		Mental Health (MH) 4	0.833
Impact of the COVID 19 Pandemic (ICP)	0.881	ICP 1	0.845
		ICP 2	0.848
		ICP 3	0.854
		ICP 4	0.859
		ICP 5	0.872
		Overall Reliability of the Questionnaire	0.945

6.4 Correlation Analysis

A substantial relationship exists between all of the variables, as shown by the results of the independent and dependent variable correlation analysis. There is a robust relationship between each variable and the whole set of variables that were studied. There is a substantial correlation between the three dependent variables (Psychological Health, Social Health, and Mental Health) and the independent variable (ICP) in (Table 4). The association between (ICP) and (PH) was determined to be the strongest (0.818), whereas the relationship between ICP and (SH) was the worst (0.587).

Table 4: Correlations

	PH	SH	MH	ICP
PH	1			
SH	.595**	1		
MH	.709**	.661**	1	
ICP	.818**	.587**	.749**	1

** . Correlation is significant at the 0.01 level (2-tailed).

6.5 Regression Analysis

Step wise regression was used to test and validate the proposed model. The researcher wanted to know how the COVID-19 epidemic would affect people psychologically, socially, and mentally.

Table 5a and 5b revealed that ICP, taken under consideration as factor, is significant predictor of Physiological health (PH), Social health (SH) and Mental health (MH). In Table 5a, R square at 0.669, .344 and .561 indicate that ICP is able to explain Physiological health (PH), Social health (SH) and Mental health (MH) to the extent of 66.9%, 34.4% and 56.1% respectively. Table 5c gives beta values of the factor as 0.818, .587 and .749 which are fairly demonstrative of the impact on Physiological health (PH) Social health (SH) and Mental health (MH).

Table 5a: Model Summary

Independent Variable	Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
ICP	Physiological health (PH)	.818 ^a	.669	.669	.44303
ICP	Social health (SH)	.587 ^a	.344	.343	.75262
ICP	Mental health (MH)	.749 ^a	.561	.561	.55970

Table 5b: ANOVA^b

Independent Variable	Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
ICP	Physiological health (PH)	Regression	253.868	1	253.868	1.293E3	.000 ^a
		Residual	125.420	639	.196		
		Total	379.288	640			
ICP	Social health (SH)	Regression	190.117	1	190.117	335.635	.000 ^a
		Residual	361.955	639	.566		
		Total	552.071	640			
ICP	Mental health (MH)	Regression	256.321	1	256.321	818.234	.000 ^a
		Residual	200.174	639	.313		
		Total	456.495	640			

Table 5c: Coefficients^a

Independent Variable	Dependent Variable	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
ICP	Physiological health (PH)	(Constant)	.515	.101		5.099	.000
		IC	.845	.024	.818	35.964	.000
ICP	Social health (SH)	(Constant)	.506	.171		2.951	.003
		IC	.731	.040	.587	18.320	.000
ICP	Mental health (MH)	(Constant)	.443	.127		3.476	.001
		IC	.849	.030	.749	28.605	.000

7. RESULTS OF HYPOTHESES TESTING

As can be seen in table 6, all three of the initial hypotheses given inside the conceptual study framework were ultimately accepted.

Table 8: Evaluation of the Hypotheses

Hy. No.	Ind. Var.	Dept. Var.	R-Square	Beta	t-value	Sig	Status
H1	ICP	PH	0.669	0.818	35.964	0.000	Accepted
H2	ICP	SH	0.344	0.587	18.320	0.000	Accepted
H3	ICP	MH	0.561	0.749	28.605	0.000	Accepted

8. DISCUSSION

According to the results of this evaluation, persons of all ages and both sexes experience high rates of anxiety, depression, and uneasiness when exposed to the COVID-19 virus. The fear and depression that people feel when they learn that a neighbour or loved one has contracted COVID-19 is a risk factor that has profoundly altered the way people interact with one another. The lockdown isolated many communities, forcing people to spend more time at home and decreasing physical distances through the use of electronic devices. Stress can have a number of detrimental consequences on people's mental and emotional health, which can have a negative domino effect on their cognitive and learning abilities, as stated by Aslan, Ochnik, & nar (2020).

Our research shows that people's physiological health and well-being were significantly impacted during lockdowns around the world. This striking variation in COVID-19 anxiety may be attributable to variations in geographical location, demographic classification, and the rate of increase of COVID-19 cases, as well as the success of government initiatives to combat general health problems among its citizens.

In addition, Doshi et al. (2020) revealed that 48% of the Indian public is terrified of COVID-19, while Sathe et al. (2020) showed that 49% of the general population has a moderate to severe dread of COVID-19. Elemo et al. (2021) also discovered elevated levels of anxiety among overseas students in Turkey, with mean FCV-19S scores of 19.99 (SD 6.6).

According to our data, women have a higher likelihood than men to have elevated levels of stress before, during, and after a pandemic. Consistent with previous studies, this result is showing that female students experience greater levels of stress (AlHadi & Alhuwaydi, 2021). Studies have shown that demanding and unhelpful conditions are more stressful for female students than they are for male students (Dyrbye et al., 2006; zdin & Bayrak zdin, 2020).

The present study has a number of merits, most notably its well-thought-out research methodology. First, the preliminary baseline and follow-up surveys covered a wide range of variables (socio-demographic, psychological, health, COVID-19 specific, etc.), providing a treasure trove of data that can be used to get a full picture of the effects of the situation. In reality, the survey's questions were gleaned from the aforementioned empirical studies of epidemics and pandemics. Holmes et al.'s (2020) research identified eight groups of people who may be particularly susceptible to feeling mental discomfort at the present moment. These groups included front-line workers, those with low income or financial uncertainties, children and young adults, and others. Because of this, a wide variety of socioeconomic factors can be considered in the analysis of vulnerable populations.

The current research found a link between stress and concerns like fear of infection, social disruptions, indecision, and concern that the virus may harm the lives of loved ones. Worldwide, Anxiety and stress levels among the general public are extremely high due to the widespread panic caused by the COVID-19 epidemic. We found that our results were similar to those of a survey of university students in Bangladesh by Islam et al. (2020) with respect to anxiety, but that their results were greater with respect to depression.

Guidelines for the COVID-19 pandemic were enforced nationally, therefore the results of this study are compatible with those of studies conducted in India by Doshi et.al. (2020; Rehman et.al.(2021). While Islam et al. (2020) found no difference in anxiety or depression levels by age or gender among Bangladeshi university students compared to international students, they did find a difference in anxiety and depression levels by gender among French university students. Similarly, Pramukti et al.'s (2020) international study on college students' reactions to the COVID-19 pandemic found that women experienced more anxiety than men did, but this finding contradicts the results of the current study. In contrast, Aftab et al. (2021) discovered that neither age nor gender had any bearing on anxiety symptoms.

9. CONCLUSION

This study shows that the mental, social, and psychological impact of COVID-19 among Indian medical students is significant. Medical students' mental, social, and psychological well-being

were severely impacted by the recognized risk dynamics, such as having a close relative with COVID-19 infection or losing close ones. This research also indicated that there was a high degree of association (0.818) between ICP and PH variables, and a low degree of correlation (0.587) between ICP and SH variables.

The findings of this study could aid governments and medical organisations worldwide in making decisions and formulating policies that affect their citizens. We anticipate that The effects of this study on people's physical and mental health will be far-reaching and wellbeing by assisting in the creation of individualised preventative and intervention programmes to lessen the severity of the pandemic's effects. We suggest that the government develop and implement various policies and effective strategies to mitigate the impact of the COVID-19 pandemic on health, particularly among the most vulnerable populations, both before, during, and after the outbreak.

10. STUDY LIMITATIONS

Our investigation contains time, process, and methodology constraints. The unequal distribution of respondents in this sample may confound the general conclusions. Since the participant filled out the questionnaire independently, it is unclear whether or not the responses were honest and devoid of social desirability bias and superficial appearance. As the poll was conducted online, data from students who do not have access to social media was not dynamically collected.

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