

Causes of Anxiety Among Adolescents During the Reopening of Schools Amid Speculations of the New Waves of COVID Pandemic in India: A Cross-Sectional Study

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ABSTRACT

This cross-sectional study was conducted to identify the major causes of anxiety among adolescents after reopening of schools in India. The sample was collected from 243 adolescents. The data was analyzed using stepwise regression analysis in which respondents identified family health, increase in the number of covid cases, proper sanitisation and eating meals in schools, as the major causes for their covid pandemic and school reopening related anxiety. The other factors such as meeting face to face with teachers and peers and catching of covid infection in schools were also seen as significant causes for anxiety in few respondents.

Keywords- covid 19, pandemic, school reopening, adolescents, anxiety.

I. INTRODUCTION

Emerged from the Wuhan, Hubei province of China, the coronavirus had spread across the globe in the year 2020 (3;9). Many nations have faced horrific sights of covid infection in the past two years (33). In India, the spread of Covid-19 had occurred in the year 2020 (16). To contain the spread of the virus, in India the nationwide closures and lockdowns were implemented during first wave in March 2020 (13). All the educational institutions were closed to temporarily stop the spread of this contagious disease (16;14). The educational institutions started opting for various online mediums to continue imparting education (8; 40). The online media helped in bridging the communication gap among students and teachers (6; 40). India had witnessed the severe spread of the disease in the form of second wave of Covid infection during April, and May 2021 which again led to full lockdowns in the country (12;13). In this time period India had witnessed nearly four to five times hike in daily corona cases and deaths in comparison to the first wave (12; 28). The whole country witnessed horrific sights of covid disease (2; 28). Many families faced loss of their

close relatives and family members. All over India, the second wave of covid created a tensed situation and the need for getting physically healthy became the prime concern for the Indian population (28).

According to reports, India had witnessed over 26 million Covid-19 cases and became the epicentre of the disease in April and May 2021 with approximately 5 thousand death cases on daily basis (10;38). The central and state governments took strict measures to curb the spread. The healthcare sector was also seeing hard times in delivering the services to the people of nation. Many people had lost their close ones during the spread of second wave of covid infection. After witnessing such horrific health conditions, the experts urged the governments worldwide to make the vaccination drive of the people their topmost priority (2; 28). In India also, the vaccination was first administered to the people above the age of 60 but soon after decrease in the cases of covid patients during second wave the government started vaccinating the people who are above 18 years for the first dose of vaccination (4). The observational decrease in the number of cases led to the reopening of the services in the nation. The unlocking was started in phased manner and

the guidelines were issued by government regularities in order to minimize the collateral damage to the system (27).

During the reopening of schools various challenges arose in educational fraternity where safety of health and protection was considered the topmost priority. UNICEF in the year 2020 had issued guidelines notes on reopening of schools in the Latin America and Caribbean countries. UNICEF along with UNESCO and the World Bank had adapted a framework to reopen schools and defined the reopening of schools as “The mean for the child a return to a sense of normality, to a routine that, although different, will allow him/her to share with his/her teachers and peers, practice hygiene measures, get informed, receive psychosocial and cognitive support.” (26). The guidelines covered the pre and post school reopening process where the safety, sanitization practices according to COVID protocols were majorly emphasized. As of May 2021, around 141 countries have reopened the schools and started face-to-face interaction in schools (39).

After the decrease in the COVID cases, the state governments across India had decided to reopen the schools and other educational institutions (29). COVID pandemic had drastically affected the emotional and mental well-being of the students across the nation (19). Panda et al. (2021) had found in their review analysis that out of total children or adolescents 79.4% of children were negatively affected by the pandemic. Accordingly, the researchers through this cross-sectional study made an attempt to find the factors that contribute to the adolescent's COVID pandemic and school attending related anxiety. The results suggest that there are various factors that contribute towards the anxiety among adolescents during school reopening. These findings can be widely applied and will be beneficial in dealing with emotional and mental wellbeing of the adolescent age group.

II. METHODOLOGY

Design and Setting of the Study

The present study deals with the cross-sectional approach for reporting the causes of anxiety among adolescents after reopening the schools in India. A brief questionnaire was designed by the researchers using Google Forms. The form was kept open for seven days (12th August to 18th August 2021) for collecting data. The researcher contacted the head of the schools and shared a link for the Google Form Questionnaire, renamed as ‘Questionnaire for Students of 9th to 12th Class’. An explanatory note was also shared along with the link in which the purpose of the data collection was mentioned in the following manner: “This questionnaire is designed to get reviews of students of 9th to 12th class to understand the causes for anxiety during school reopening in India.” The head of the schools further forwarded the

link to the students of 9th to 12th class students. The participants responded to all the questions in the questionnaire anonymously. The random selection of schools was done in the New Delhi area, India. In total, 243 responses were collected in this period. To limit the response from the participants, the “Limit to 1 response setting” was enabled, and respondents also were not allowed to edit the response after submission. All the participants responded to all the items in the questionnaire. Thus, all responses were kept for further analysis.

Survey Tool and its Components

A questionnaire was designed using Google Forms which comprised 24 close-ended-questions. Approximate 10 mins were required to fill the questionnaire, which the investigator also mentioned in the questionnaire description. The questionnaire was divided into three parts: First of them was participant characteristics in which four items [Gender, Class, COVID infection and Family loss] were kept. Second of them was a list of factors related to COVID infection in which ten items [5 point-Likert Scale; 1 {Not at all} to 5 {Very Anxious}] were kept. The third of them was a list of factors related to attending school in which ten items [5 point-Likert Scale; 1 {Not at all} to 5 {Very Anxious}] were kept. The factors of COVID pandemic related anxiety included the spread of COVID virus, personal and family health concerns treatment, vaccines and safety in schools. School-attending-related anxiety factors included meeting with classmates, teachers, wearing masks, sanitization of the classroom, and social distancing practices. The investigator used the result to evaluate factors that can relatively strengthen to the causes of anxiety among adolescents.

III. ANALYSIS OF THE DATA

The responses were automatically generated on a Google Sheet in which all the responses were stored. For further coding, validation, and analysis, the researcher used the SPSS software version 26. No missing values were found on the data. Thus, all 243 responses were used for analysis. For the count data, Google Forms generated pie charts and frequency tables, and for measurement data, mean \pm SD was used. A Multiple regression analysis using the Stepwise method was applied to explore the factors of COVID pandemic related anxiety and school attending related anxiety. In COVID pandemic related anxiety, overall anxiety about COVID pandemic was the dependent variable, and the other nine factors were independent variables. In attending school-related anxiety, overall anxiety about attending school was a dependent variable, and the other nine factors were independent variables. The P-value at less than 0.05 ($p < 0.05$) was considered statistically significant.

IV. RESULTS

Participant Characteristics

Figure 1 shows the participants characteristics in respect of Gender, Class, Covid Infection and Family Loss. Out of 243 participants, 50.6% (n=123) of the participants were male and 49.4% (n=120) participants were female.

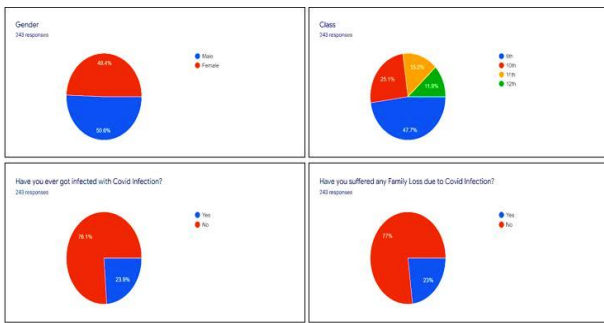


Figure 1: Participants Characteristics (Percentage pie-charts)

Among all the participants majority (47.7%) of the participants belonged to the ninth class. 23.9% of participants have agreed that they had been infected with Covid Infection, and 23% responded that they had suffered some family loss due to covid infection.

Table 1: Participant Characteristics Frequency Table (N=243)

Variables	n
Gender	
Male	123
Female	120
Class	
9 th	116
10 th	61
11 th	37
12 th	29
Covid Infection	
Yes	58
No	185
Family Loss	
Yes	56
No	187

Table 1 displays the frequency of participants characteristics. The study involved total 123 male participants and 120 female participants. The majority of the participants (n=116) belonged to ninth class. Out of 243 majority of participants did not face covid infection (n=185) and 187 participants did not face anykind of family loss.

Adolescents Covid Pandemic Related Anxiety and School Attending Related Anxiety

Figure 2 and Figure 3 highlight the adolescents' school attending related anxiety and covid pandemic related anxiety with respect to their class and gender. The graph shows the mean score obtained by both males and females on overall covid pandemic related anxiety and overall attending school-related anxiety. The data was scored on a 5-point Likert scale where 1 represents the positive perception, and 5 represents the negative perception towards school reopening among adolescents amid speculations of the third wave of the pandemic in India.

The mean score of Overall Covid pandemic related anxiety was 3.90±1.15. In figure 3, female students of the 11th & 12th class have shown more anxiety towards the covid pandemic than their male counterparts.

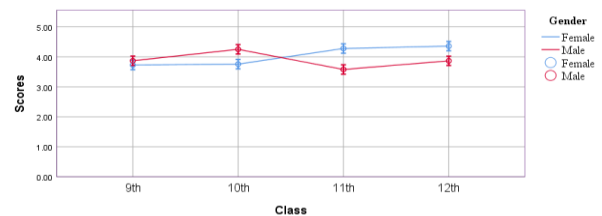


Figure 2: Adolescents overall anxiety towards covid pandemic. This figure shows the mean score of overall anxiety towards Covid Pandemic with respect to class and Gender in 5- point Likert Scale where 1 refers to Not at all anxious and 5 refers to Very anxious.

The mean score of Overall attending school-related anxiety was 3.75 ± 1.28. In figure 2, male students of the 10th class have shown more anxiety towards attending school than their female counterparts.

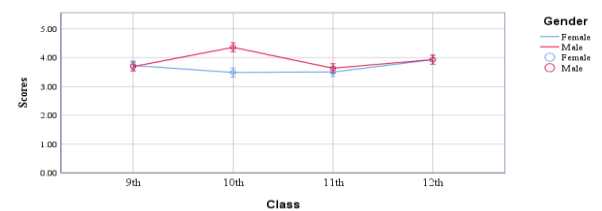


Figure 3: Adolescents overall anxiety towards attending school. This figure shows the mean score of overall anxiety towards attending school with respect to class and gender in a 5 point Likert Scale where 1 refers to Not at all anxious and 5 refers to Very anxious.

Scores for the Causes of Covid Pandemic Related Anxiety and Attending School-Related Anxiety Among Adolescents

Table 2 displays the average response of participants to each item in the survey questionnaire. The questionnaire consisted of 10 questions on anxiety related to Covid Pandemic and ten questions related to anxiety

related to attending school. The results show a quick overview such as the item ‘I feel anxious about my family’s health in case I got infected’ (4.16 ± 1.36) and ‘I feel anxious that covid cases might increase in coming times’ (4.11 ± 1.18) had received the highest score in determining causes of anxiety for the covid pandemic.

Whereas, items such as ‘I feel anxious about the proper sanitization of my classroom’ (3.58 ± 1.39) and ‘I feel anxious about removing the mask for eating lunch in school’ (3.57 ± 1.43) had received the highest score in determining causes of anxiety for attending school.

Table 2: Questionnaire each item Mean and S.D. (N=243)

Questionnaire	Mean	S. D
Anxiety-related to Covid Pandemic		
I feel anxious because I might get infected with Covid virus in school.	3.44	1.42
I feel anxious because my friends can become carrier of Covid virus.	3.37	1.43
I feel anxious because there is no vaccine available for children of my age.	3.96	1.33
I feel anxious because there is no effective treatment is available against covid.	3.59	1.42
I feel anxious because I can’t be assured of my safety in large groups.	3.79	1.32
I feel anxious because my teachers can become carrier of Covid virus	3.54	1.37
I feel anxious because my friends might not follow safety measure guidelines.	3.58	1.37
I feel anxious about my family’s health in case I got infected	4.16	1.36
I feel anxious that covid cases might increase in coming times.	4.11	1.18
Rate your overall anxiety about Covid pandemic	3.90	1.15
Anxiety-related to attending school		
I feel anxious about attending school after a long time.	3.14	1.59
I feel anxious to meet my classmates after such a long time.	2.58	1.54
I feel anxious about my classroom performance.	3.09	1.51
I feel anxious to meet my teachers after such a long time.	2.93	1.53
I feel anxious about wearing mask in school for a long time	3.16	1.60
I feel anxious about removing mask for eating lunch in school	3.57	1.43
I feel anxious about proper sanitization of my classroom.	3.58	1.39
I feel anxious about maintaining the social distancing in classroom sitting arrangements.	3.41	1.49
I feel anxious about staying away from my home for a long time.	2.67	1.56
Rate your overall anxiety about attending school.	3.75	1.28

Causes for Anxiety Related to Covid Pandemic and Attending School Using Stepwise Multiple Regression Method.

The results of stepwise multiple regression are displayed in Table 3 and Table 4 respectively. Table 3 displays the results of causes of anxiety related to covid pandemic where overall anxiety about covid pandemic was selected as depending variable and causes for the anxiety related to covid pandemic were taken as independent variable. Out of 9 independent variables 4 variables statistically significantly predicted the causes

for overall anxiety related to covid pandemic for adolescents [Adjusted $R^2 = 0.597$, $F(4,238) = 90.75$ and $p < 0.001$]. Class, gender, covid infection and family loss were used as confounding variables and were not considered significant variables. The items ‘I feel anxious that Covid cases might increase in coming times’ ($B = .309$; $p < 0.001$) and ‘I feel anxious because there is no effective treatment is available against Covid’ ($B = .217$; $p < 0.001$) were found to be the most influential causes towards overall anxiety related to Covid pandemic.

Table 3: Causes of Anxiety related to Covid pandemic by Stepwise Regression Method

Anxiety related to Covid pandemic (Causes)	Unstandardized coefficients		Standardized coefficients Beta	t	p-value	Confidence Interval (95%)	
	B	Std. Error				Lower	Upper
I feel anxious that Covid cases might	.309	.058	.315	5.343	.000	.195	.423

increase in coming times							
I feel anxious because there is no effective treatment available against Covid	.217	.043	.268	5.046	.000	.132	.302
I feel anxious because I might get infected with Covid virus in School	.160	.047	.197	3.405	.001	.067	.252
I feel anxious because I can't be assured of my safety in large groups	.132	.054	.150	2.449	.015	.026	.237

Table 4 displays the results of causes of anxiety related to attending school where overall anxiety about attending school was selected as depending variable and causes for the anxiety related to attending school were taken as independent variable. Out of 9 independent variables 4 variables statistically significantly predicted the causes for overall anxiety related to attending school for adolescents [Adjusted R²= 0.499, F (4,238) = 61.29

and p <0.001]. Class, gender, covid infection and family loss were used as confounding variables and were not considered significant variables. The items 'I feel anxious about removing my mask for eating lunch in school' (B= .0283; p<0.001) and 'I feel anxious about proper sanitization of my classroom' (B= 0.235; p <0.001) were found to be the strongly associated causes towards overall anxiety related to attending school.

Table 4: Causes of anxiety related to attending school by Stepwise Regression Method

Anxiety related to attending School (Causes)	Unstandardized coefficients		Standardized coefficients Beta	t	p-value	Confidence Interval (95%)	
	B	Std. Error				Lower	Upper
I feel anxious about removing my mask for eating lunch in school.	.283	.050	.317	5.605	.000	.183	.382
I feel anxious to meet my teachers after such a long time.	.170	.053	.204	3.232	.001	.067	.274
I feel anxious about proper sanitization of my classroom.	.235	.052	.256	4.519	.000	.133	.338
I feel anxious to meet my classmates after such a long time	.163	.052	.196	3.125	.002	.060	.265

V. DISCUSSIONS

The results of the study provide information on the causes of covid-pandemic related anxiety and school-attending related anxiety felt by the adolescent age group of school going students in India. A stepwise multiple-regression technique was used to analyse the responses of adolescents out of which significant factors were extracted that state the covid-pandemic related anxiety and school-attending related anxiety. In particular, this study identified different factors that affect the school reopening related anxiety amidst the speculations of third wave of covid pandemic. The identified factors the safety concerns of students for their families and increase in

covid spread have shown higher standardized coefficient values compared to other factors (Table 3). In India, students attend school for approximately 8 hours in a day which consists strength of approximately 30-40 students per class. As a result, students interaction with teachers and their peers consist a long duration, which can result in higher anxiety towards covid pandemic. Student's concerns toward the health of their family members may have significant effect on their covid pandemic related anxiety (24;27)

Other than this, there is also higher standardized coefficients values for anxiety towards the proper sanitization of their classrooms and removing mask in school for eating meals. In India, no vaccination is

available for the age-group of 13-17 years which may increase the higher anxiety level of adolescents (Table 4). Students have also shown moderate level of anxiety related to face-to face interaction in schools (27). In total four factors related to school reopening anxiety were found to be highly significant. All the significant factors have pointed towards the concerns for safety in outside home environment.

Regarding the significant factors of covid pandemic related anxiety, the item “ I feel anxious that Covid cases might increase in coming times”, at the time of study there are speculations in India that third wave of covid pandemic might hit again which also affected the decisions of various state governments regarding reopening of schools. In fact, there has been seen mixed reviews over the severity of the covid delta- plus variant strain that can trigger the third wave of covid in India. (18). Despite, in- person classes have been resumed for students at the discrete of the states (30). The item “I feel anxious because there is no effective treatment available against Covid” was also a significant factor which pointed towards the downfall of medical healthcare in India during second wave of Covid i.e. April to May 2021. Adolescents had shown their concerns towards availability of effective treatments due to their previous experiences with second wave of pandemic. Many families faced a scarcity of medical healthcare facilities and limited medical resources and had lost the lives of their family members due to covid infection (28). Thus, these factors may have majorly contributed towards the adolescents anxiety towards the covid pandemic.

The item “I feel anxious because I might get infected with Covid virus in School” may have been a significant factor because students interact with everyone in a close proximity inside school premises. There may not be enough social distancing practices at all the given times. This may increase the anxiety among the parents and teachers for coming in contact with the infected people. The infection in school can also lead to psychological effects on adolescents, teachers and parents. To minimize the spread of covid infection in school, the management should ensure that all the students come into minimal contact with each other and social distancing practices should be followed at all the times. The school may run into limited capacity in order to ensure safety of all the teachers and students.

Regarding the school attending related anxiety, the item “I feel anxious about removing my mask for eating lunch in school”, was the highest significant factor related to the concern that students might catch coronavirus infection incase they are unable to follow corona safety precaution guidelines properly. While in school, student get minimum 20 minutes as their lunch break during that time student generally meet their fellow classmates and have lunch in groups. This may become a significant cause of concern among the parents and teachers as well. The item “ I feel anxious about proper sanitization of my classroom” is also a significant factor

which contributes towards attending school anxiety. The proper sanitization of schools and classrooms should have to be the topmost priority of the government The state and central governments should closely monitor the safety precaution guidelines given to schools in order to keep a check upon the safety of students. The management should ensure minimum contact of students by allocating different lunch timings to the all the classes.

The items “ I feel anxious to meet my teachers after such a long time” and “ I feel anxious to meet my classmates after such a long time” may also show significant factor due to the reason that schools have been closed for a long period and adolescents might feel anxious about talking to their classmates or teachers in the face-to-face setup. Many students in India had limited resources to connect with their classmates and teachers during online learning sessions, thus school reopening should be planned in a phasewise manner by introducing shorter school durations.

VI. LIMITATIONS

The researcher came across various limitations during conduction of this study. First of all, this study was based on cross-sectional design and the data was collected within seven days of the month of August. In this time, there were lesser cases of covid infection reported in India. The state governments across the nation were working on the strategies of opening schools. Thus, many challenges might not have emerged during this research work. The further exploration to assess this overall situation is much needed. Secondly, there are many students who did not have access to the online education due to lack of access to computers and digital gadgets, especially in the rural sectors of India, thus the focus of studies could go on to explore the anxiety causes among the students who live in rural sector of India. There were many children who had got affected from covid and had lost their family members due to the Covid infection, thus a study can be conducted to ascertain the level of anxiety among those students as well.

VII. CONCLUSIONS

In conclusion, the school reopening and face-to-face education has left not only the students but also other stakeholders of educational fraternity with many questions. In India the impact of second wave of covid had been really drastic and fear of people regarding third wave of covid pandemic is also visible. The results have shown that adolescents have shown more anxiety towards the unpredictable situation that currently prevails in the country. These results may help the competent authorities to make necessary policy decisions in context of reopening of schools. These results may also be beneficial for the mental health caregivers, educationists, teachers, parents and other stakeholders, who could use this data to help adolescents overcome such anxiety issues.

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