

## Understanding the impact of COVID-19 on adolescents in India

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### ABSTRACT

**Background:** It has been six months since the first case of COVID-19 was reported in India. Since then, the focus has been on finding a cure to the disease. Largely neglected is the psychological impact of the pandemic on the adolescent population in the country. **Methods:** A hybrid combination of interviews and standardised questionnaires was used for data collection. The questionnaires were sent through an anonymous link on a social media platform to collect responses from July 4-8. The Impact of Events scale-Revised (IES-R) and Multidimensional Scale of Perceived Social Support were used to assess the psychological impact and perceived social support. **Results:** Approximately, every four in five respondents had a significant psychological impact (IES score >24). Higher psychological impact was significantly associated with females, lower perceived social support, decreased sleep quality and a greater frequency of watching pandemic related news. Increased physical activity and time spent to relax predicted lower psychological impact. **Conclusion:** Approximately 81% of the adolescents surveyed had a significant psychological impact due to the pandemic which highlights the need of more longitudinal studies to be conducted on this age group. Urgent care and appropriate formulation of policies is needed to address the identified problems and to provide care to those in need.

**Keywords:** COVID-19 Pandemic, Psychological Impact, Perceived Social Support, Psychosocial Impact, Adolescent Psychiatry, Mental Health

The whole world is currently facing a worldwide pandemic, which according to the UN is “the greatest test since World War 2.” (“Coronavirus Outbreak ‘Greatest Test since WW2,’” 2020) The coronavirus disease 19 (COVID-19) is believed to have originated at a fish-market in Wuhan, China and was first reported to the World Health Organisation (WHO) on December 31, 2019 as “a cluster of pneumonia cases.” The WHO declared COVID-19 a pandemic on March 11, 2020. (*Coronavirus Disease (COVID-19) - Events as They Happen*, n.d., 2020) Since its origin, over 15 million cases have been recorded with more than 600,000 deaths spread over 200+ countries. (*WHO Coronavirus Disease (COVID-19) Dashboard*, n.d., 2020)

The symptoms of the virus include cough, fever, shortness of breath, fatigue, and loss of ability to smell although these vary greatly across individuals. (Grant et al., 2020) In most cases, patients can recover on their own but some require treatment and are given antiviral

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drugs (including Azithromycin and Hydroxychloroquine) along with plasma therapy in a few cases. (*Treatments for COVID-19 - Harvard Health*, n.d.,2020)

Pandemics not only are serious medical concerns but also cause deep problems to general day to day lives of people. Many individuals struggled with financial issues and a large part of the population were victims of mental health problems. A very crucial and overlooked issue is the impact of lockdown on the lives of adolescents. Since the imposition of the lockdown, all schools, colleges and institutes were shut down forcing classes to be conducted remotely which have led students to face a large set of problems. Stressors, such as monotony, disappointment, lack of face-to-face contact with classmates, friends, and teachers, lack of enough personal space at home, and family financial losses during lockdowns, can potentially trigger troublesome and even prolonged adverse mental consequences in children. Several dynamic factors like social isolation, routine changes and fear of infection can result in increased mental health problems in children. (Dubey et al., 2020) In the past, parents have reported the effect of pandemic on their children's mental health and thus, further highlighting the importance of this study. (Sprang & Silman, 2013) In this study, the focus is on these high school students in India to compare their lives now with those before the lockdown and analyse the physical, social, psychological and academic impact of the pandemic on the lives of these students. A series of problems are identified, which lay the basis of further research on this matter.

### **METHODS AND MEASURES**

A cross-sectional study was performed on high students in India from July 4 until July 11. Only high school students in India aged between 13 and 18 years took part in the study. A hybrid combination method was adopted for data collection which included both standardised questionnaires and structured interviews. Students were recruited through convenience and snowball sampling methods. Informed consent was obtained from all participants' guardians by having them sign an online declaration form. The study adhered to the Helsinki Declaration of ethical guidelines but did not seek approval from any institution due to lack of affiliation with any institution. The study was harmless in its design and was performed independently which prevented the author from submitting to Institutional Review Boards. An anonymous link was circulated on Whatsapp that redirected the participants to a Qualtrics page where the survey was hosted. Participants were provided with no monetary rewards for completing the questionnaires. As they opened the link, they were given information about the nature and the purpose of the questionnaire. If they consented to be a part, they were redirected to the next page where socio-demographic information (age, gender, grade, city of residence) was collected anonymously. A total of 398 responses were collected (with a response completion rate of 51%) out of which 203 were used for data analysis. At the end of the survey, students were asked to give their phone numbers if they wanted to be interviewed as a part of the study. 89 students opted in out of which 82 were interviewed and the data was collected.

#### ***Psychological Impact***

Impact of Events Scale- Revised (IES-R): A pandemic modified version of the IES-R was used to assess the psychological and emotional impact of the pandemic on the lives of students. This tool is comprised of 22 questions and is commonly used to measure the effect of extreme life events on the lives of individuals. This includes 3 subscales which measure impact of events along intrusion, hyperarousal and avoidance. For all questions, scores could range from 0 through 4. The wordings of the questionnaire were minorly adjusted to account for the pandemic in accordance with multiple studies conducted in similar format. The items

are summed to generate a total overall score and a mean score is calculated for each subscale. A categorisation was used in which score ranges from 24 to 32, 33 to 36 and 36+ were used to signify mild, moderate and severe psychological impact respectively whereas a score <24 was considered normal. (Beck et al., 2008) (Creamer et al., 2003) The internal consistency of the questionnaire as well as each of the subscales was tested using Cronbach's alpha.

### *Perceived Social Support*

Multidimensional Scale of Perceived Social Support (MSPSS): A pandemic modified version of MSPSS was used to assess the social capital of each student which was approved by the original author. This includes 3 subscales to account for social support from friends, family and significant other. This comprised of 12 items with a 7-point Likert scale for each item where '1' means Strongly Disagree and '7' means Strongly Agree. The items are summed and then a mean score is generated for the overall score as well as for each subscale. (Zimet et al., 1988) The questionnaire has been validated to be used in Indian studies. (Kaur & Beri, 2019) Studies have also shown that this questionnaire has been validated for use on adolescents. (Canty-Mitchell & Zimet, 2000) The internal consistency of the questionnaire as well as each of the subscales was tested using Cronbach's alpha.

### *Other Lifestyle Changes*

A schedule of questions was prepared to determine lifestyle changes with respect to the pandemic.) This covered questions regarding the change's students experienced physically and academically. They were also asked specific questions regarding the pandemic. On a 3-point Likert scale, students were asked to compare the changes in their sleep quality and the amount of time they spent to exercise and relax during the lockdown. The options to each question were "Increase", "Decrease" and "Almost Similar". Additionally, they were asked to mention the increase in their average screen time usage during a day in the week. They were sent 3 images on Whatsapp as a part of the interview to identify their body posture while attending online classes.

Academically, students were asked to rate their procrastination, motivation to study, learning output and distractions while attending online classes on the same 3 point Likert scale. All of the factors were tested for association with the Impact of Events Scale score to study whether these lifestyle changes had a psychological impact on each individual.

### *Statistical Analysis*

All statistical tests were performed on JASP (Version 0.13.1) [Computer software]. Reliability tests were performed for both scales and each of the subscales to check internal consistency of the modified questionnaires. For the data collected from the questionnaire, Linear Regression was used to analyse relationships between the scales, and independent sample t tests were used to study variations across different groups of students. The data collected from interviews was tested for association with demographics using Chi Squared Tests. ANOVA was used to check whether there was an association between these lifestyle changes and psychological impact (using IES-R score).

## **RESULTS**

### *Characteristics of Survey Respondents*

A total of 398 responses were obtained from the questionnaire through the Qualtrics platform. Out of these, 195 responses had at least one item missing in the questionnaire and were hence excluded from the analysis. The final analysis was conducted on rest of the 203

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responses. The mean age of the students was 15.71 (SD=1.13, Range=13-18) (Table 1) For simplicity, the students were divided into 2 categories- one for classes 9-10 and one for classes 11-12. There was a greater representation from grades 11-12 [138(68%)] than grades 9-10 [65(32%)].(Table 2)

**Table 1- Gender distribution**

Gender	Frequency	Percent
Female	132	65.025
Male	71	34.975
Total	203	100.000

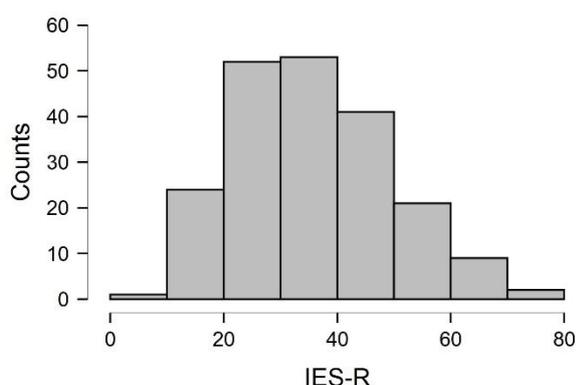
**Table 2- Grade distribution**

Grade	Gender	Frequency	Percent
Grade 11 - 12	Female	96	69.565
	Male	42	30.435
	<b>Total</b>	<b>138</b>	<b>100.000</b>
Grade 9 - 10	Female	36	55.385
	Male	29	44.615
	<b>Total</b>	<b>65</b>	<b>100.000</b>

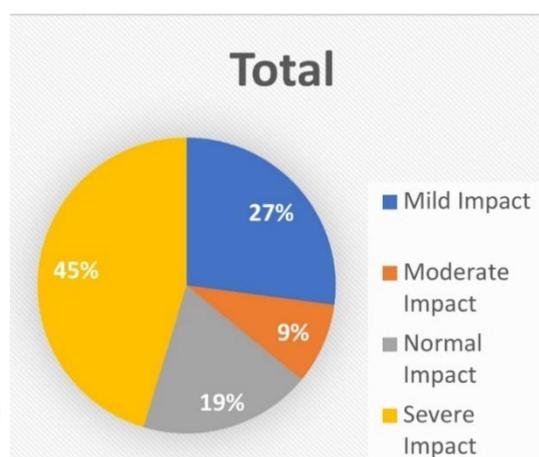
### **Psychological Impact- Impact of Events Scale-Revised (IES-R)**

IES-R has been consistently used across various studies and is considered to be a good measure of the psychological impact of an event. The scale revealed a mean score of 36.00 (S. D=14.09) along with a median of 34. Each participant was grouped into a separate category based on their IES-R score. There was a significant impact of the pandemic on the lives of 165 (81.28%) participants. As can be seen from Table, 92(45.32%) students had a severe psychological impact due to the pandemic. (Figure 1 & 2)

The overall scale and each of the subscales were tested for internal consistency using Cronbach's Alpha. (Table 3) The test revealed good overall reliability of the Impact of Events-Scale Revised. The reliability of intrusivity subscale was good as well whereas the reliability of avoidance and hyperarousal subscales was in the acceptable range.



**Figure 1- Distribution Graph**



**Figure 2- Impact Distribution**

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**Table 3- Impact of events scale scores**

Scale Derived values (N=203)	Row Labels (IES-R Range)	Number of Students	Percentage of students	Cronbach's alpha
Impact of event scale	Normal Impact (0-23)	38	18.719	0.858
	Mild Impact (24-32)	55	27.093	
	Moderate Impact (33-36)	18	8.867	
	Severe Impact (36+)	92	45.320	
	<b>Grand Total</b>	<b>203</b>	<b>100</b>	
Subscale (Range of score)	Items	Mean (SD)	Median	
Intrusivity subscale (0-32)	Q 1,2,3,6,9,14,16,20	11.394 (6.695)	10	0.82
Avoidance subscale (0-32)	Q 5,7,8,11,12,13,17,22	12.099 (5.822)	12	0.78
Hyper-arousal subscale (0-24)	Q 4,10,15,18,19,21	12.562 (4.636)	12	0.73

### Relation with Demographics

A Mann Whitney Test showed that males (median=29) had a lesser psychological impact compared to the females (median=38),  $U=6277.5$ ,  $p < .001$ . (Figure 3)

Test of Normality (Shapiro-Wilk)			
		W	p
IES-R	Female	0.990	0.464
	Male	0.965	0.043

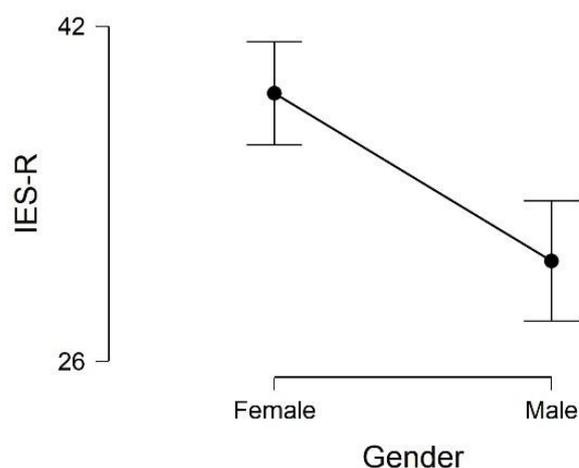
Note. Significant results suggest a deviation from normality.

	W	df	p	Hodges-Lehmann Estimate	Rank-Biserial Correlation
IES-R	6277.500		< .001	8.000	0.340

Note. For the Mann-Whitney test, effect size is given by the rank biserial correlation.

Note. Mann-Whitney U test.

Group Descriptive					
	Group	N	Mean	SD	SE
IES-R	Female	132	38.803	14.297	1.244
	Male	71	30.789	12.164	1.444



**Figure 3- Mean score Descriptive**

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However, no significant association was found between any other demographic variables and the impact of events score after testing the same using univariate simple linear regression. (Table 4)

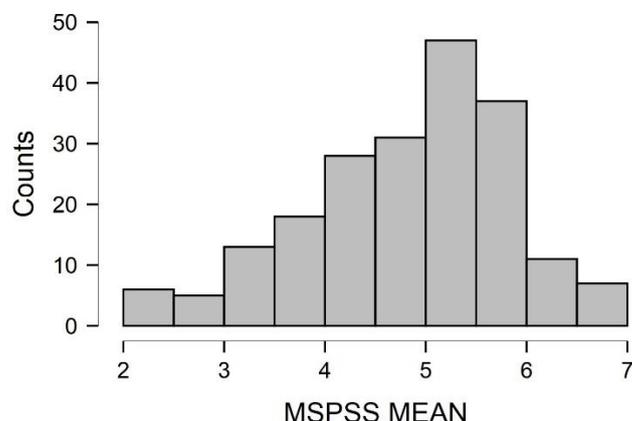
**Table 4- Relation of IES-R score with Demographics**

S No.	Variables	N (%)	R <sup>2</sup>	Unstandardized	Standardized	t	p-Value
1	Age	Mean (203)-15.71	0.001	0.318	0.026	0.362	.718
2.	Grade	9-10 [65(32%)] 11-12 [138(68%)]	0.005	-2.173	-0.072	-1.025	.307

*Note: Simple Linear Regression with IES-R score as dependent variable*

### **Social Impact: Multidimensional Scale for Perceived Social Support (MSPSS)**

This scale was used to measure the perceived social support of students. The scale revealed a mean score of 58.374 (SD=12.243) with a median score of 61. (Figure 4) As per the scoring guidelines provided, the means were calculated for the overall scale as well as for each subscale. (Table 5) The test revealed a good overall reliability for the scale and each subscale.



**Figure 4- MSPSS Distribution**

**Table 5- MSPSS Scores**

Subscale (Range of score)	Items	Mean (SD)	Median	Cronbach's alpha
Multidimensional scale of perceived social support (0-7)		4.865 (1.02)	5.083	0.862
Significant Other Subscale (0-7)	Q 1, 2, 5, 10	4.856 (1.376)	5	0.818
Family Subscale (0-7)	Q 3, 4, 8, 11	5.005 (1.257)	5.25	0.81
Friends Subscale (0-7)	Q 6, 7, 9, 12	4.733 (1.247)	5	0.791

### **Relation with Demographics**

Mann Whitney test was used to check for relation between genders. However, no significant association was found between gender and MSPSS Mean scores.

<b>Test of Normality (Shapiro-Wilk)</b>			
		<b>W</b>	<b>p</b>
MSPSS MEAN	Female	0.934	0.001
	Male	0.986	0.192

*Note.* Significant results suggest a deviation from normality.

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<i>Group Descriptive</i>					
	<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
MSPSS MEAN	Female	71	4.978	1.049	0.124
	Male	132	4.804	1.003	0.087

	<b>W</b>	<b>df</b>	<b>p</b>	<b>Rank-Biserial Correlation</b>
MSPSS MEAN	5344.000		0.099	0.140

*Note.* For the Mann-Whitney test, effect size is given by the rank biserial correlation.

*Note.* Mann-Whitney U test.

No significant association was found between MSPSS mean scores and other demographics using univariate simple linear regression. (Table 6)

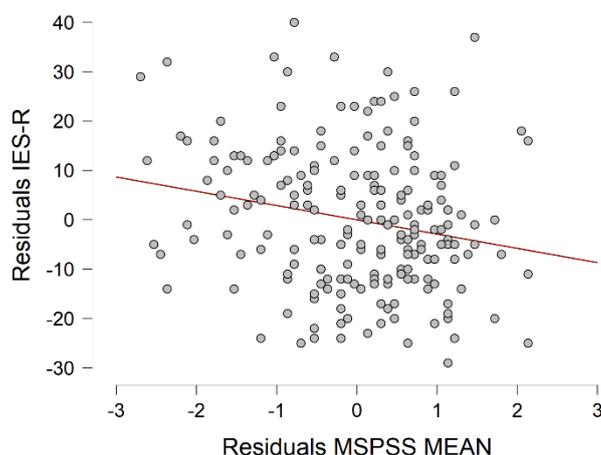
**Table 6- Relation of MSPSS with demographics**

S No.	Variables	N (%)	R <sup>2</sup>	Unstandardized	Standardized	t	p-Value
1	Age	Mean (203)-15.71	0.001	-0.028	-0.031	-0.441	0.660
2.	Grade	9-10 [65(32%)]	0.007	0.177	0.081	1.152	0.307
		11-12 [138(68%)]					

### **Relation Between Psychological and Social Impact**

According to univariate linear regression, there was a significant association between MSPSS mean and IES-R score. (Figure 5) Linear regression shows that perceived social support (MSPSS) can significantly predict IES-R score  $F(1,201)=9.222$ ,  $R^2=0.044$ ,  $p=0.003$  using the following regression equation-

$$\text{IES-R Score} = 50.070 - 2.892x \quad \text{where } x = \text{MSPSS score}$$



**Figure 5- Relation between MSPSS & IES-R Residuals**

### **Other Lifestyle Changes**

#### **Characteristics of Interview Respondents**

The mean age of the students was 15.793 (SD=1.074, Range- 14 to 18). (Table 7) The students were again categorised into 2 groups for convenience i.e. Grade 9-10 and grade 11-12 respectively. (Table 8)

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**Table 7- Gender distribution**

Gender	Frequency	Percent
Female	47	57.317
Male	35	42.683
Missing	0	0.000
Total	82	100.000

**Table 8- Grade distribution**

Grade	Gender	Frequency	Percent
Class 11-12	Female	34	60.714
	Male	22	39.286
	Total	56	100.000
Class 9-10	Female	13	50.000
	Male	13	50.000
	Total	26	100.000

### **Relations with Demographics**

After checking that the value of the expected counts was greater than 5 in each of the variables, a chi squared test was used to test the association between demographics and each categorical variable. Female students were more likely to report a significant decrease in their sleep quality than males  $\chi^2(2, N=82)= 6.057, p=.048$ . Additionally, Grade 11-12 students were more likely to report greater procrastination than the grade 9-10 students  $\chi^2(2, N=82)= 8.376, p=.015$ . Apart from these, no significant associations were found between demographics and lifestyle changes. (Table 9)

**Table 9- Relation Between lifestyle changes and demographics**

Lifestyle Changes with the Lockdown	Gender		p-value	Grade		p-value
	Female	Male		Class 9-10	Class 11-12	
<b>Time spent to exercise n(%)</b>						
Decrease	14(30)	14(40)	.246	13(50)	15(26)	.109
Almost Similar	11(23)	11(31)		6(23)	16(29)	
Increase	22(47)	10(29)		7(27)	25(45)	
<b>Time spent to relax n(%)</b>						
Decrease	9(19)	9(26)	.277	5(20)	13(23)	.205
Almost Similar	17(36)	7(20)		11(42)	13(23)	
Increase	21(45)	19(54)		10(38)	30(54)	
<b>Changes in Sleep Quality n(%)</b>						
Decrease	27(58)	12(34)	.048*	9(35)	30(54)	.087
Almost Similar	10(21)	16(46)		8(30)	18(32)	
Increase	10(21)	7(20)		9(35)	8(14)	
<b>Motivation to Study n(%)</b>						
Decrease	29(62)	18(51)	.564	15(58)	32(57)	.99
Almost Similar	9(19)	10(29)		6(23)	13(23)	
Increase	9(19)	7(20)		5(19)	11(20)	
<b>Procrastination n(%)</b>						
Decrease	7(15)	8(23)	.653	9(35)	6(11)	.015*
Almost Similar	18(38)	12(34)		10(38)	20(36)	
Increase	22(47)	15(43)		7(27)	30(53)	
<b>Learning output from school n(%)</b>						
Decrease	22(47)	22(63)	.096	11(43)	33(59)	.328

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Lifestyle Changes with the Lockdown	Gender		p-value	Grade		p-value
	Female	Male		Class 9-10	Class 11-12	
<b>Time spent to exercise n(%)</b>						
Almost Similar	20(43)	7(20)		10(38)	17(30)	
Increase	5(10)	6(17)		5(20)	6(10)	
<b>Distraction in classes n(%)</b>						
Decrease	11(23)	4(11)		4(15)	11(20)	
Almost Similar	6(13)	8(23)	.249	6(23)	8(14)	.596
Increase	30(64)	23(66)		16(62)	37(66)	
<b>Watching pandemic related news n(%)</b>						
Not at all	6(13)	7(20)		3(12)	10(18)	
Rarely (once a week)	7(15)	5(14)		4(15)	8(14)	
Sometimes (2-3 times a week)	16(34)	7(20)	.588	8(31)	15(27)	.774
A lot (4-5 times a week)	8(17)	9(26)		4(15)	13(23)	
Everyday	10(21)	7(20)		7(27)	10(18)	

Note: Chi Squared Tests, \*-p<.05, \*\*-p<.01, \*\*\*-p<.001

### *Lifestyle Changes*

The average increase in screen time usage as compared to before the pandemic was 331 minutes in a single day. 51% of the respondents' interview reported having a slouched sitting body posture while attending online classes.

Majority of students (57%) reported having decreased motivation to study. Additionally, 51% of all students interviewed believed that the learning output of classes decreased due to online classes being held since the lockdown started. A good majority of students (65%) reported having greater distractions in online classes than in-person classes.

The IES-R scores of all interview participants were collected from the Survey Result Data. The mean IES-R score of interview participants was 40.780 (SD=15.500, Range = 11 to 73) with a median of 40.5.

ANOVA was used to check for associations between lifestyle changes and psychological impact. All assumptions of ANOVA were met after examining Q-Q plot of residuals for normality and Levene's test for equality of Variances for homogeneity of variance.

The analysis showed that certain lifestyle changes i.e. time spent to exercise, time spent to relax, sleep quality, motivation to study and time spent watching pandemic related news had a significant psychological impact on the students. Those who reported a decrease in the amount of time spent exercising and relaxing were more likely to have a greater IES-R score than those who exercised and relaxed more or similar to pre-lockdown levels. Those students who reported having a decrease in sleep quality and motivation to study since the pandemic started were more likely to have greater IES-R scores and hence a greater psychological impact. Students who watched news everyday or 4-5 times a week had significantly greater IES-R scores. (Table 10)

Pearson's correlation revealed no significant association between screen time usage and IES-R score (p>.05)

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**Table 10- Relation Between lifestyle changes and Psychological Impact**

S No.	Factors	F	p-Value	$\eta^2$
	<b>Time spent to exercise (n%)</b>			
1	Decrease (34%) Almost Similar (27%) Increase (39%)	4.143**	.019	0.095
	<b>Time spent to relax (n%)</b>			
2	Decrease (22%) Almost Similar (29%) Increase (49%)	6.036**	.004	0.133
	<b>Sleep quality</b>			
3	Decrease (48%) Almost Similar (32%) Increase (20%)	8.944***	<.001	0.185
	<b>Motivation to study</b>			
4	Decrease (57%) Almost Similar (23%) Increase (20%)	4.890**	.01	0.110
	<b>Procrastination</b>			
5	Decrease (18%) Almost Similar (37%) Increase (45%)	0.231	.794	0.006
	<b>Learning output from classes</b>			
6	Decrease (51%) Almost Similar (29%) Increase (20%)	0.68	.509	0.017
	<b>Distraction in classes</b>			
7	Decrease (18%) Almost Similar (17%) Increase (65%)	1.608	.207	0.039
	<b>Watching pandemic related news (n%)</b>			
8	Not at all (16%) Rarely (once a week) (14%) Sometimes (2-3 times a week) (28%) A lot (4-5 times a week) (21%) Everyday (21%)	8.721***	<.001	0.312

Note: ANOVA with IES-R score as dependant variable \*-p<.05, \*\*-p<.01, \*\*\*-p<.001

### DISCUSSION

The current study investigated the impact of COVID-19 pandemic on the lives of high school students in India. Other studies conducted to understand the impact of the pandemic have studied individuals in the 18+ age category. The current study focusses on the psychosocial impact of the pandemic on adolescents who are generally overlooked in such studies.

Among the 203 respondents studied, the pandemic had a significant (mild/moderate/severe) impact on 165(81.28%) participants. This is significantly different from previous studies conducted on this matter. One study conducted in early March in India reported the

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pandemic to have a significant impact on one-third of the participants. (Varshney et al., 2020) Another study conducted in China reported 53.8% participants to have a significant impact whereas another one reported merely 7.6% participants to have a significant impact. (Wang et al., 2020) (Zhang & Ma, 2020) A potential reason for this could be that the current study focussed on adolescents whereas the previous studies focussed on adults. Differences in results might have also existed because at the time this study was conducted, the cases were at an all-time high in the country. Additionally, greater psychological effect of the pandemic might have resulted because of all participants having been in a state of lockdown for more than four months. This social isolation that students have gone through may have led to increased loneliness, which has been associated with mental health problems in adolescents. These problems may have resulted due to the greater importance of peers in the developmental period. (Loades et al., 2020) However, the current study's results match with a survey conducted by Young Minds which showed that 83% of its respondents reported a decline in their pre-existing mental health and identified disruption of routine, loss of social connection and school/university closures as the major reasons. (Young Minds, 2020)

Demographic variables show that females tended to have a significantly greater psychological impact as compared to males. These findings were similar to a study conducted for the general population in India during March 2020. (Varshney et al., 2020) Similar studies conducted in China and Spain also had similar results. (Wang et al., 2020) (Rodríguez-Rey et al., 2020)

Students who reported having a higher social support were more likely to have a lesser psychological impact of the pandemic. This finding is similar to the ones noted by researchers in Bangladesh and Spain. (Uddin et al., 2020) (González-Sanguino et al., 2020) This may be because greater perceived social support enhances our self-esteem (Poudel et al., 2020) which has been associated with better mental health in adolescents. (Trzesniewski et al., 2006)

With respect to academic changes, majority of students reported increased distractions in class, decreased learning output from classes and a decreased motivation to study. Studies conducted previously show that academic disruption results in a decreased motivation to study and an abandonment of daily routines. (*Higher Education: Teaching, Internationalization and Student Issues / VOCEDplus, the International Tertiary Education and Research Database*, n.d., 2) This is contrary to the results of several other research studies which show that online learning is at least as effective as traditional classes. (Colvin et al., 2014) Studies conducted in the past have revealed that surfing the web and texting during classes have a significant negative impact on the learning output of students. This is because students have a divided attention. (Kuznekoff et al., 2015) (*Surfing the Web in class? Bad idea*. Michigan State University, n.d.)

Students who spent greater time relaxing and exercising during the lockdown than they did before also reported a significant decrease in their IES-R scores. These findings are similar to other research conducted in the past. (Zhang & Ma, 2020) (Płomecka et al., 2020) This is because exercise increases the release of serotonin and endorphins that enhance the mood of the individuals. (*Exercise and mental health*, Australia, 2020)

A greater frequency of watching pandemic related news was also associated with a higher psychological impact. This result is consistent with findings of studies conducted previously. This could be because increased media exposure can increase perceptions of threat and

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activate the fight or flight response in the body. (*The Novel Coronavirus (COVID-2019) Outbreak: Amplification of Public Health Consequences by Media Exposure.*, n.d., 2020)

The average increase in screen time usage of respondents in a day was 331 minutes which can have significant effects on the body like eye strain, headaches, blurred vision, back aches etc. ("Screen Time & Your Eyes," n.d.) Associations in the past have also been found between increased screen time usage and decreased psychological well-being. Adolescents with a screen time greater than 7 hours run a risk of having mental disorders. (Twenge & Campbell, 2018) This especially poses a problem for the school students because the pandemic has forced them to shift to remote learning which in itself has increased the screen time significantly. Additionally, to compensate for the time lost meeting peers and friends in school or in-person, students might have an increased use of social media and video conferencing apps to stay connected and hence creating a paradoxical situation.

52% of the respondents studied reported having a slouched body posture. Apart from the physiological problems it poses, a slouched or poor posture is also associated with a poor mood in stressful situations whereas an upright posture is associated with a positive and happy disposition. A good posture is also associated with enhanced confidence and self-esteem and hence many believe that sitting upright may be a simple behavioural strategy to build resilience against stressful situations. (Nair et al., 2015)

However, there are some limitations to be considered while analysing the results. First is the design of the study which restricts the data collection to a literate, English speaking population with sufficient access to the internet. The study does not include students from the government Hindi Medium schools due to the above-mentioned issues and hence the results cannot be generalised. Secondly, the study involved self-report measures which can be prone to social desirability. Thirdly, the study was conducted at a time when the participants had been in a lockdown for over 4 months which could have its own psychological impact. Lastly, the interviews involved students comparing their lifestyle to pre-lockdown times and hence this could have led to a recency bias.

Despite the limitations, this study provides cross-sectional data on the psychological impact of the pandemic on the lives of adolescents in India. This study provides a comprehensive account as to how certain changes in an adolescent's lifestyle (physical, social & academic) may have a psychological impact during the pandemic. Online surveys have been found to be effective methods to assess mental health (Henderson et al., 2012) (Michaels & Corrigan, 2013) and this becomes the primary source of data collection during this pandemic, when it's absolutely necessary to maintain social distancing. Further longitudinal studies should be conducted to confirm the results and formulate guidelines for the adolescent population.

### CONCLUSION

The COVID-19 pandemic has raised several concerns for the adolescent population in India. This survey is one of the first to examine the psychological impact on the high school students as per my knowledge. The study reported that the pandemic had a significant impact on the lives of adolescents in India. Females and those with low perceived social support tended to have a greater psychological impact. A greater time spent to exercise and relax, increased sleep quality and a lower frequency of watching pandemic related news were associated with better psychological well-being. The results of the study should be used by the stakeholders to form policies for the adolescents and help those in need.

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### **Conflict of Interest**

The author declared no conflict of interest.

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