



Effect of COVID-19 on Physical and Behaviour Activities among Youth During Pandemic: A Cross-Sectional Survey

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ABSTRACT

Apart from physiological effects of COVID-19, Worldwide Lockdown during COVID-19 has affected almost all the age groups in different ways. Covid-19 has had a significant impact on social life in various parts of the world. Closures of schools and universities, along with other socio-behavioural changes such as social isolation and quarantining, are having an effect on young people's behaviour and physical activity. The aim of the study was to explore the effect of COVID-19 Pandemic on Behaviour and physical activity of youth. A cross-sectional survey was done from June to November 2021 via both online and offline mode. The subjects were enrolled using Convenient sampling Technique. Total 500 subject of 15-25 years of age were enrolled in the study. Data was collected using self-structured questionnaires and Likert scale which was developed after extensive review of literature and validated by experts. Total 434 participants completed the survey. Analysis was done using Descriptive and inferential statistics with IBM SPSS. As per the study objectives and hypothesis. Study results revealed that there was a significant increase in activities like playing indoor games, use of social media, watching TV and use of computers, sleep duration and frequency and browsing information about Coronavirus disease. As per behaviour changes as concerned significant increase was reported in mood swings, anger and decreased concentration between males and females. Significance difference was found in weight before and after lockdown as p value < 0.05 .

Keywords: COVID-19 Pandemic, Behavioural Changes, Physical Activity, Youth

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INTRODUCTION

The COVID-19 pandemic has far-reaching and dramatic consequences, affecting much more people than those who become ill and changing the Behaviour and Physical activity among adults [1]. Youths' participation in healthy or unhealthy behaviors, may be disrupted by the epidemic and limitations on public gatherings [2, 15]. Physical activities may Reduce peer interaction, increase parental proximity, decrease engagement in school-sponsored extracurricular activities, reduce the availability of gathering areas, amplify the stressor, worry, and potential monotony [3].

The decline in physical activity was probably brought on by cancellations of youth sports during stay-at-home orders and a decrease in active commuting once online education became accessible [4]. Adolescents were prohibited from visiting friends. This drop-in physical activity is similar to the drop in involvement in organized sports and active commuting as teenager's transition into adulthood [5]. The extent to which teenage health behaviors have changed due to the epidemic has implications for both immediate and future wellness [6].

Declines in cigarette, alcohol, and cannabis users might be used to speed prevention and cessation efforts, but increases in use would indicate the need for more resources and support [7]. Youth may be denied physical and social benefits of exercise due to more sedentary lifestyles and limited access to recreational venues and organized sports [8, 16].

This pandemic caused most of the world's population, including many children and adolescents, to stay at home for several weeks. Adults have been shown to have harmful psychological impacts, but its impact on young children are still be studied [9-11].

More than two-thirds of US teenagers and young adults who had ever used e-cigarettes claimed their use has reduced since the outbreak started in a national online survey [12]. Two strategies can be used to develop a strong, physically active lifestyle [13-14]. Training teenagers to foresee and work for disruption in their physical activity can lessen the risk that they will become inactive due to the disturbance¹⁷. When

a child is given a stay-at-home directive, this strategy may entail helping them learn new, enjoyable ways to be productive in their current environment. Second, fostering intrinsic drive defined as the desire to exercise for its own sake can help reduce reliance on outside factors [18]. Youth who enjoy exercise and value it highly are more likely to keep up their exercise routines. Young people's resilience might be improved by facilitating these impulses both inside and outside of sports [19].

MATERIAL AND METHODS

The study was conducted from June to November 2021 in selected states of India during second wave of COVID 19, with objective to assess the physical and behavioural changes among youth during COVID 19 pandemic. The study subjects were adolescent and young adults between age group of 15-25. Institutional Ethics Committee (letter no. SGTU/FON/21/902) provided the ethical clearance. Convenient sampling technique was used to enrolled the study subjects. Data was collected in both online and offline mode. Each participant gave their consent after being explained of the study's objectives. Data collection tool consisted three sections: (a) Socio- Demographic profile (b) Questionnaire to measure the changes in physical activity, which consist a list of 12 items with 3-point Likert scale and details of changes in body weight and total hours spent on physical activity, screen and sleep before and during lockdown. (c) Questionnaire to assess the changes in behaviour and eating habits which consists 9 items with increase, same, and decrease response options. Total 500 subjects were enrolled in study out of which 434 subjects completed the survey.

Data was analysed Descriptive and inferential statistics. Pearson's Chi square was used to compare the time spent on physical activity, screen and sleep. Paired t test was used to compare the changes in body weight. Pearson's Chi square was used to find the association between socio demographical variables and changes in physical activities and behaviour.

RESULTS

Table 1: Distribution of subjects according to sociodemographic variables [n=434]

Variables	Frequency	Percentage (%)
Age(years)*		
15-20	285	65.7
21-25	149	34.3
Gender		
Male	286	65.9
Female	148	34.1
Education		
Matriculation	17	4
Senior secondary	87	20
Under Graduation	304	70
Postgraduation	26	6
Mother's Education		
Illiterate	72	16.6
Senior secondary	212	48.8
Graduation	109	25.1
Postgraduation and above	41	9.4
Father's education		
Illiterate	27	6.2
Senior secondary	184	42.4
Graduation	165	38
Postgraduation and above	58	13.4
Parents Employment		
Employed	346	79.7
Unemployed	88	20.3
Having Siblings		
Yes	378	87.1
No	56	12.9

Table 1 explains the socio-demographical characteristics of study objects. Most of the study subjects i.e., 285(65.7%) were from age group 15-20 years with mean age 19.95 years. Most of the subjects 286 (65.9%) were male and 148 (34.1%) were female. Maximum number of subjects 304 (70%) were perusing graduation. As per the parents' education maximum number of subjects have mothers 212 (48.8%) and fathers 184 (42.4%) with senior secondary education. Maximum number of parents 346(79.7%) were employed and Most of the subjects 378 (87.1%) had siblings.

Figure 1: Distribution of subjects according to changes in physical Activities [n=434]

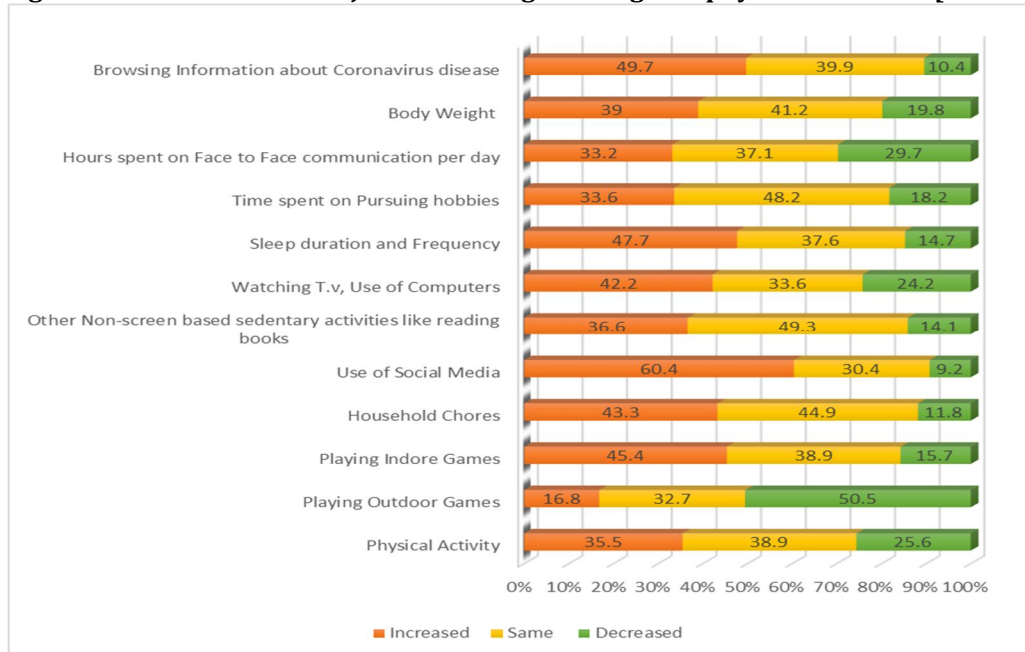


Fig. 1 depicts the changes in physical activities among study subjects. Most of the subjects reported increase in activities like playing indoor games (45.4%), use of social media (60.4%), watching TV and use of computers (42.2%), sleep duration and frequency (47.7%) and browsing information about Corona virus disease (49.7%). Study subjects reported decrease playing outdoor game (50.5%). Rest of activities like physical activities (38.9), Household chores (44.9%), non-screen based sedentary activities (49.3%), perusing hobbies (48.2%), face to face communication (37.1%) were reported same by most of the subjects.

Figure 2: Distribution of subjects according to changes in Behaviour and eating habits [n=434]

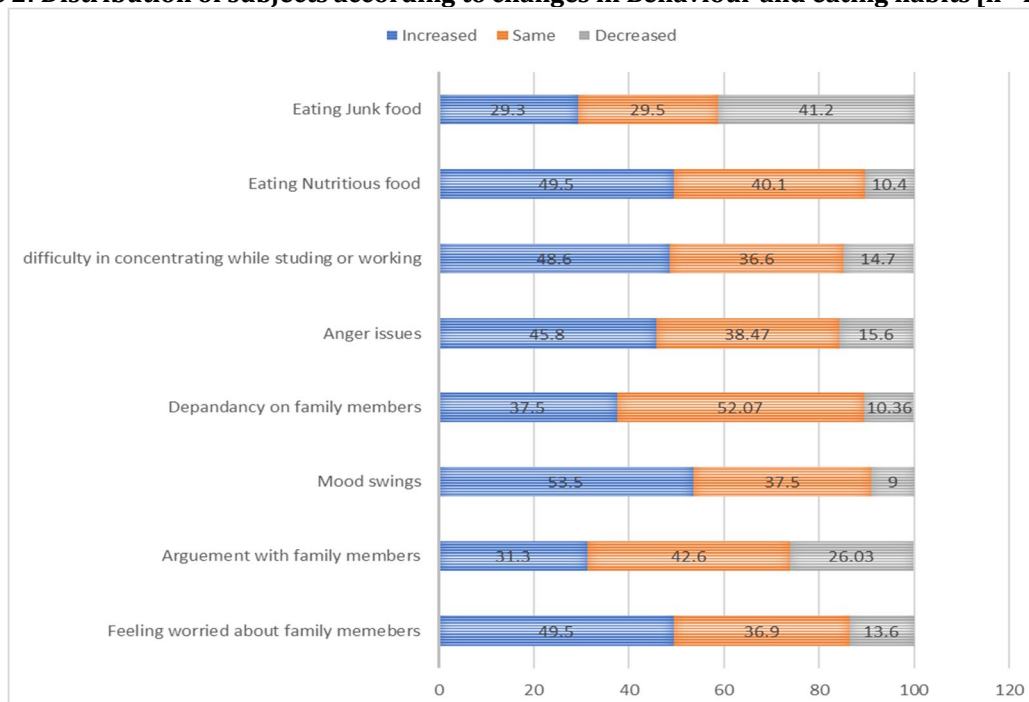


Fig. 2 explains the changes in behaviour and eating habits study subjects. Most of the subjects (49.5%) reported that they are worried about family members leaving house during COVID 19. Many subjects (42.6) reported increase in arguments with family members and 53.5% reported increase in mood swings. Increase in anger issues were reported by 45.8% of subjects. Most of the subjects (48.6%) reported difficulty in concentrating on study and work. Maximum subjects (49.5%) started eating nutritious food.

Table 2: Comparison of activities before and during lockdown [n=434]

Activities	Before Lockdown	During Lockdown	Chi value df P value
Total Hours Spent on physical activities	251	235	1.467
Less than 2 hours	118	124	3
2-3hours	41	49	0.690 ^{NS}
3-4hours	24	26	
More than 4hours			
Total Hours spend on Screen			
Less than 2 hours	202	102	1.531
2-4 hours	174	111	3
4-6 hours	45	105	0.000*
More than 6 hours	13	116	
Total Hours spend on Sleep			
Less than 6 hours	75	48	1.903
6-8 hours	302	137	3
8-10 hours	53	209	0.000*
More than 10 hours	4	40	

*Significant difference as p value < 0.05

NS- Non Significant

Table 2 explains the Comparison of hours spent on physical activities, screen and sleep before and during lockdown. Pearson's Chi square test was used to compare activities before and during lockdown. Significance difference was found in hours spent on screen and sleep before and during lockdown as p value<0.05.

Table 3: Comparison of weight before and after lockdown [n=434]

Variable	Before Lockdown Mean ± SD	After Lockdown Mean ± SD	t-value df p value
Body weight	55.31 ± 12.72	56.42 ± 12.28	-4.843 433 0.000*

*Significant difference as p value< 0.05

Table 3 depicts the comparison of weight before and after lock down. Paired t test was used to find the difference in weight. Significance difference was found in weight before and after lockdown as p value<0.05.

Table 4: Association of selected variables (age and gender) with physical and behaviour changes [n= 434]

Age			
Variables	15-202	20-25	Chi value df p value
Physical Activities			
Increase	115	39	8.761
Same	101	68	2
Decrease	69	42	0.013*
Browsing information about Corona virus disease			
Increase	128	88	7.87
Same	124	49	2
Decrease	33	12	0.019*
Gender			
Variables	Female	Male	Chi value df p value
Playing Outdoor games			
Increase	42	31	21.44
Same	42	100	2
Decrease	64	155	0.000*
Body Weight			
Increase	70	99	11.89
Same	61	118	2
Decrease	17	69	0.003*
Mood Swings			
Increase	59	173	18.73
Same	68	95	2
Decrease	21	18	0.000*
Anger Issues			
Increase	55	144	7.23
Same	64	103	2
Decrease	29	39	0.027*
Difficulty in Concentration while doing work and studying			
Increase	52	159	16.36
Same	68	91	2
Decrease	28	36	0.000*

*Significant difference as p value < 0.05

Table 4 depicts association of demographical variables age and gender with physical and behaviour changes. Pearson's Chi square test was used for the same. Age was found to be significantly associated with physical activities and browsing information about corona virus disease. Similarly Gender was significantly associated with playing outdoor games, body weight, mood swings, anger issues and difficulty in concentration as p value < 0.05.

Table 5: Association of selected variables (Education) with physical and behaviour changes [n=434]

Education					
Variables	Matriculation	Senior Secondary	Undergraduate	Postgraduate	Chi value df p value
Other non- screen sedentary activities					
Increase	11	24	118	6	25.50
Same	5	58	139	12	6
Decrease	1	5	47	8	0.000*
Playing video games and using other gaming applications					
Increase	1	24	104	8	14.52
Same	5	32	89	13	6
Decrease	11	31	111	5	0.024*
Difficulty in Concentration while doing work and studying					
Increase	4	43	151	13	15.98
Same	5	30	115	9	6
Decrease	8	14	38	4	0.014*
Mother's Education					
Variables	Illiterate	Senior Secondary	Graduation	Postgraduate and above	Chi value df p value
Playing Outdoor games					
Increase	22	36	9	6	19.09
Same	24	64	43	11	6
Decrease	26	112	57	24	0.004*
Household Chores					
Increase	31	88	48	21	15.04
Same	34	101	51	9	6
Decrease	7	23	10	11	0.020*
Father's Education					
Variables	Illiterate	Senior Secondary	Graduation	Postgraduate and above	Chi value df p value
Playing Outdoor games					
Increase	10	33	19	11	21.02
Same	10	60	47	25	6
Decrease	7	91	99	21	0.002*

Table 5 depicts association of demographical variables subjects' education and parents' education with physical and behaviour changes. Pearson's Chi square test was used for the same. Subjects' education was found to be significantly associated with non-screen sedentary activities, playing video games and difficulty in concentration as p value<0.05. Both mother and father's education were significantly associated with playing outdoor games whereas mother's education was also significantly associated with household chores as p value<0.05.

Table 6 explains association of demographical variables like parents' employment and presence of siblings with physical and behaviour changes. Pearson's Chi square test was used for the same. Both parents' employment and presence of siblings were significantly associated with dependency on family members whereas parents' employment was also significantly associated with Feeling worried about one of the family members will leave house during COVID 19 as p value<0.05.

Table 6: Association of selected variables (Parent's Employment and presence of siblings) with physical and behaviour changes [n= 434]

Parents Employment			
Variables	Employed	Unemployed	Chi value df p value
Feeling worried about one of the family members will leave house during COVID 19			
Increase	183	32	8.88
Same	122	38	2
Decrease	41	18	0.012*
Dependency on Family members			
Increase	141	22	8.86
Same	168	58	2
Decrease	37	8	0.012*
Presence of Siblings			
Variables	Yes	No	Chi value df p value
Dependency on Family members			
Increase	143	20	8.69
Same	202	24	2
Decrease	33	12	0.013*

DISCUSSION

The study reported decreased physical activity during the lockdown, mainly playing indoor games. It reveals that public recommendations for physical activity have been ineffective thus far.

Our results show that most of the age group is 15-20 years old. The present study observed changes in physical activities, primarily increased uses of social media, playing indoor games, watching TV and use of computers, sleep duration but decreased in playing outdoor game, face to face communication, Household chores.

According to the youth's perceptions, more than half, 53.5% have mood swings, 49.5% are worried about family members leaving the house during COVID 19 but eating nutritious food, and 48.6% complain of difficulty concentrating while studying or working. More than half, 41.2% of youth reduced Eating Junk food, 26.03% reduced Arguments with family members. Francisco R et al¹⁹, More than half of the children reported feeling bored, 40% were irritable, and about a third reported feeling more alone, restless, nervous, worried, anxious, and uneasy than they had the week prior to the quarantine. The finding shows that before lockdown, 251 youth and during lockdown, 235 youth spend less than 2 hours' on physical activities. 202 youth's spent less than 2 hours before lockdown, but During Lockdown, 116 youth's spent more than 6 hours on screen. Before Lockdown, 302 youths spend 6-8 hours on Sleep. During Lockdown, 209 youth spend on sleep 8-10 hours. Significance difference was found in hours spent on screen and slept before and during lockdown as a p value<0.05. Schmidt S C E *et al* [20], the fact that children and adolescents in Germany spent more active time after lockdown than before could be explained because they had more leisure time. Olive LS et al [6], Children and parents subjected to lockdown limitations report significantly higher sleep issues rates than pre-pandemic levels, with parents indicating that their child spent more time on weekends watching recreational screen time. Depressive symptoms were also more prevalent in children who engaged in less physical activity, spent more time watching recreational television, and had more sleep problems.

The present study shows that the mean, standard deviation (55.31 ± 12.72) and weight before and after lockdown (56.42± 12.28). As a p value of 0.05 (p=-4.843), it indicates a significant difference in weight before and after lockdown. During COVID-19 lockdown, 32 % of students gained weight, 22 % lost weight, and 46 percent stayed the same weight, according to Jalal SM *et al* [5]. According to Alshahrani SM *et al* [4], nearly a quarter (23%) of the population has put on at least 5% of their pre-2020 weight. Between pre-2020 and post-2020, females put on more weight than males did.

CONCLUSION

Apart from the severe physical health repercussions of the COVID-19 pandemic, long-term health consequences owing to changes in health practices are a major public health concern. This study discovered a significant decrease in physical activity and increase in sedentary activities and weight gain attributed to lockdown during COVID-19. A significant difference was reported in body weight, mood swings, anger

issues, and difficulty in concentration between males and females. Because these activities have the potential to cause health crises, this study suggests that during any pandemic, public health initiatives should promote health-enhancing behaviors alongside other precautionary measures.

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