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Association Of Physical And Mental Health During Covid-19 In College Going Students

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Abstract

Background:
Exercise is an important component of healthy lifestyle to reduce a person's risk of developing the disease and subsequent disability. Stress, anxiety, and depression are overwhelmingly prevalent across the globe during this COVID-19 pandemic, and multiple factors can influence the rate of mental health conditions. Our factorial analysis showed notable associations and manifestations of stress, anxiety, and depressive symptoms. In Corona pandemic one can easily understand that new world order has established and many things changed drastically but importance of physical activity is still at utmost importance so one shouldn't neglect importance of same.

Objectives:
To find out the association of physical activity and mental health in college going student's and to know their mental health status.

Methodology:
This study involved 150 participants between the ages of 18 to 25 years college going students. This survey based study was conducted via mail incitation.

Results:
Self-reported PA was lower post-COVID among participants reporting being previously active (mean change: - 32.3% [95% CI: - 36.3% to - 28.1%]) but largely unchanged among previously inactive participants (+2.3% [- 3.5% to +8.1%]). Decreased PA and increased screen time were associated with worsening in depression, anxiety and stress.

Conclusion:
The current findings strongly support the mental health benefits of implementing measures that promote physical activity.

Key-words:
COVID-19, physical impact, psychological impact, university students.

INTRODUCTION

COVID-19 outbreak: As per World Health Organization (WHO) - Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people who fall sick with COVID-19 will experience mild to moderate symptoms and recover without special treatment. It was caused by a novel coronavirus, which originated from a wet market in Wuhan, China, and has spread worldwide, earning the pandemic status by WHO on March 11, 2020.[1] As of the 3rd week of July, India has emerged as the third hardest-hit country with 10, 40,980 confirmed cases of COVID-19 and 25,602 deaths and the numbers are still increasing. According to WHO, the most common symptoms: are fever, dry cough, and tiredness. Less common symptoms: aches and pains, sore throat, diarrhoea, conjunctivitis, headache, loss of taste or smell, a rash on skin, or discoloration of fingers or toes. Serious symptoms: difficulty breathing or shortness of breath, chest pain or pressure, loss of speech or movement, Seek immediate medical attention if you have serious symptoms.[2]

Owing to COVID 19, prolonged home stay may lead to increased sedentary behaviours such as spending excessive amounts of time sitting, reclining, or lying down for screening activities (playing games, watching television, using mobile devices); reducing regular physical activity (hence lower energy expenditure); or engaging in avoidance activities that consequently, lead to inactivity and contribute to anxiety and depression and stress, which in turn can lead to a sedentary lifestyle known to result in a range of chronic health conditions. Maintaining regular physical activity and routinely exercising in a safe home environment is an important strategy for healthy living during the coronavirus crisis as an improvement in mental health status of college going students. Mental health is a state of well-being in which an individual realizes their abilities and to cope up with daily stresses of life and able to do productive work and to contribute to society.[3]

Mental health has core symptoms such as anxiety, depression and stress lead to disturbance in mental health. For accurate analysis of depression, anxiety, stress standard scale is DASS-21 (Depression, Anxiety, and Stress Scales – 21) this scale was developed by Lovibond. The three-dimensional self-reporting scales assess the presence and intensity of affective states of depression, anxiety, and stress. And to measure physical Activity standard scale is IPAQ (International physical activity questionnaire) it comprises a set of 4 questionnaires, long (5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available.[4]

METHODOLOGY

Research Design: Cross-sectional Survey

Study setting: Online mode

Sampling Method: Convenient Sampling

Sample size: 150

Inclusion criteria:

- Indian college-going students between 18-25
- Able to read, write and understand English language
- Has Internet facility with e-mail

Exclusion criteria:

- Mini-mental scale less than 24
- Any systemic illness (musculoskeletal, cardiovascular, degenerative, and neurological)

Data collection tool:

- Physical activity assessed by: International Physical Activity Questionnaire (IPAQ)
- Mental health assess by DASS-21 (Depression, anxiety, stress scale)

Procedure:

The study was conducted among the college-going students of the Indian population between the ages of 18 to 25 years. Participants entered into the study from different fields of education. A random selection of the participants was used. Firstly, the Google form was created and circulated on an online platform via mail. The online consent form was taken from all the participants before they answered the questions. Secondly, with respective permission, they entered into the online survey of the DASS-21 and IPAQ along with consent and demographic details. Google form consisted of three pages and a total of 28 questions. The first page was about consent and the demographic detail of the participants. The second page was about the depression anxiety, stress scale which consisted of 21 questions and the rating scale was from 0 to 3. Whereas, 0 means did not apply at all and 3 means apply to very much and most of the time. After fillip in the second page, they entered the third page of the survey form. The third page was about the international physical activity questionnaire which consisted of 7 subparts the physical activity in different circumstances. They filled the form with tangible self-experience. The distribution of the survey form was extended to the whole country, however mostly in Gujarat where the majority of students belong. Then we waited for two days for survey collection. Initially, we received 100 responses from the first circulation. After that, we did follow up with the college-going students again via calls and messages. Moreover, we sent a new invitation to other students of the colleges. Then again we waited for the 2 days for more responses. Eventually, at the end of the survey collection, we received more than 160 responses. After the collection of the sample size, we started statistical analysis of the online survey.

DATA ANALYSIS

- Descriptive analysis was done for demographic details.

- Pearson correlation coefficient was to find out the association between physical activity and mental health of college-going students.

RESULT:

160 responses were received, out of which 10 responses were incomplete and hence excluded. The final sample size was 150. The participants were of age group 18 to 25 years with an average age of 21.6 ± 2.15 years.

Table 1: Number the participants according to Gender and Educational Status

Variables	Subgroups	No of Participants	%
Gender	**Male**	79	51.97
	Female	73	48.03
Educational Status	**Bachelor's Degree**	140	92.10
	Master's Degree	11	7.23
	PhD	1	0.65

Table 2: DASS-21 Score for number the participants

	Depression	Anxiety	Stress
Normal	89	72	108
Mild	17	13	14
Moderate	27	23	15
Severe	6	21	8
Extremely Severe	13	23	7

Table 3: IPAQ Analysis for the participants

Type of Activity	Average Days/Weeks	Average Minute/Weeks
Vigorous Physical Activity	3.85	62.5
Moderate Physical Activity	4.33	53.29
Walking	3.85	63.71
Travelling	2.88	67.38
Bicycling	4.17	43.17
Leisure Time	4.68	27.15

DISCUSSION

This research presents a timely investigation of changes in physical activity, sitting time, and screen time as a result of COVID-19 public health restrictions, and their associations with mental health in students. The current findings indicate: (1) large reductions in physical activity and increases in sedentary time across the population and particularly among previously physically active and self-isolated/quarantined individuals; (2) consistent associations between reductions in physical activity and increases in screen time with higher negative mental health and lower positive mental health; and, (3) more severe anxiety and depressive symptoms for those in self-isolation compared to less restrictive situations, which were not moderated by changes in physical activity or sedentary behaviour. We found that females were 1.7 times more likely to be present with depressive symptoms, 2.6 times as likely to show symptoms of anxiety, and twice as likely to show stress symptoms when compared to males but when adjusted for other confounding factors, females were quadruple times as likely as males to have depression and 3.5 times as likely as males to have anxiety. Our results are similar to previous studies conducted during the SARS and COVID-19 pandemic in Italy and China, where the prevalence of psychological disorders was steadily associated with the female gender[4, 5, and 6]. This trend was noted in India before the outbreak too where the prevalence of depression and anxiety disorders was more in females than males. There was no significant association between gender and the likelihood of stress which is in accordance with studies conducted during earlier epidemic/pandemic situations[7]. Gender-specific help and counselling should be offered to mitigate the psychological strain on the population. An interesting finding in our study was the variation in the association between age and depression, anxiety, and stress. Educational status influences the occupation and income of the individual, which are in turn associated with psychosocial wellbeing. The economic crisis due to lockdown might put the individuals without formal education at a higher risk of developing anxiety. Counselling, guidance, or any form of mental health help should include verbal or pictorial representations to aid this group population.

CONCLUSION

The current findings strongly support the mental health benefits of implementing measures that promote physical activity during periods of societal modification due to a pandemic. Potentially effective methods to do so may be through enhanced telehealth or public broadcasting time devoted to the promotion/implementation of home-based physical activity.

LIMITATIONS

- This cross-sectional design precludes inference of causality and the sample is predominantly well-educated.
- In particular, as this study sample is not representative of the entire Indian population, generalizations should be limited based on the sample characteristics.
- All behaviours and currently followed public health guidelines were self-reported and included a recall of pre-COVID-19 activity, which is potentially subject to misreporting. The self-selection and convenience sampling of participants to complete the survey may also affect the results, although a >70% completion rate for those who began the survey is high.

FUTURE RECOMMENDATIONS

Future research should replicate these findings in other large samples, investigate potential cross-national differences, longitudinally assess dynamic relationships between these factors, and integrate device-based measures.

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