

Post Covid Effect on the Nutritional Status, Academic Interest and Psycho-Social Behaviors among College Students

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Abstract

The COVID-19 epidemic has eclipsed global development activities. Global political, financial, and technical resources have been mobilised to combat the COVID-19 pandemic. The pandemic's impact will be long-lasting, affecting all aspects of human life and impeding all developmental endeavours, including the ambitious and aspirational Sustainable Development Goals. Good nutrition is an essential criterion for adolescent health, productivity, and functional efficiency. The present study was to investigate the impact of covid 19 to young people's health and nutritional state, academic interest, and psychosocial behaviour. This is a cross-sectional study in which 100 adolescents aged 18 to 21 years were assessed for anthropometry, nutritional profile, and perceived stress using relevant scales. The findings demonstrated an association between good nutritional status and psychosocial behaviour in adolescents. In addition, the COVID-19 pandemic has had a significant impact on adolescents' dietary status, academic interest, and psychosocial behaviour. This study provides novel ideas for future policies and intervention programmes.

Keywords: Covid-19 Pandemic, Nutritional Status, Academic Interest, Psycho-Social Behaviour

Introduction

Coronavirus Disease 2019 (COVID-19) was originally identified as pneumonia of unknown origin in Wuhan, Hubei Province, China, in December 2019. On March 12, 2020, the World Health Organisation (WHO) declared the COVID-19 outbreak a pandemic, citing its rapid expansion not only in China but throughout the world. As of August 25, 2020, there were 23,491,520 confirmed cases and 809,970 fatalities across 216 nations (Browning et al., 2021). The government has implemented many measures to reduce the risk of disease spread. These strategies include travel bans, mandatory travel quarantines, social distance, prohibitions on public gatherings,

school and university closures, business closures, self-isolation, requiring people to work from home, curfews, and lockdowns. Authorities in numerous nations have imposed a lockdown or curfew to prevent the virus from spreading too rapidly. These policies negatively affect international trade, education, health, and tourism (Hasan et al., 2020). Extreme lifestyle changes, social isolation, and an extended quarantine period have far-reaching social, economic, physical, and mental health consequences. The enormous changes in daily routines during the COVID-19 global outbreak affected the college-aged population as much as any other demographic (Toquero et al., 2020). These pressures, combined with a common energetic and socially engaging lifestyle, are changing college students' daily physical activity and eating choices. These changes might be related to a reduction in daily travel/commuting, as well as boredom during stay-at-home orders. The development of major diseases, including the possibility of SARS CoV-2 infection and its severity, is largely dependent on a number of risk factors, including increased psychological stress, loss of access to public amenities like gyms and parks, employment status, and access to food, physical inactivity, and poor diet (Pokhrel and Chhetri, 2021). Food is crucial for both personal and global health, especially considering the significant environmental effects of current food production and consumption practices. Disasters, such as the COVID-19 pandemic, have the potential to disrupt our food chain and alter our relationship with food. Border and other logistical limits, limiting the flow of products and people, for example, elevated the possibility of food shortages owing to interrupted supply chains, particularly those related to labour shortages (Pastorino et al., 2021). The COVID-19 epidemic has affected education at all levels. Educational institutions worldwide (in 192 countries) have either temporarily closed or imposed localised closures, affecting around 1.7 billion pupils (Shahzad et al., 2021). Many institutions throughout the world have postponed or cancelled all campus activities in order to reduce crowding and, as a result, viral transmission. These policies, on the other hand, have more economic, medical, and social implications for both undergraduate and postgraduate populations (Fruehwirth et al., 2021). In a recent study on virus outbreaks and pandemics, stresses included infection fears, dissatisfaction, boredom, a lack of resources, information, financial loss, and stigma. Gadgets are a major source of concern because of the health risks they present. Excessive device use has been linked to eye strain, finger pain, backache, neck pain, and sleep issues (Camacho-Zuñiga et al., 2021). More research is needed to better understand how a global pandemic and quarantine period affect physical and sedentary activity, food habits, and general population well-being (Birmingham et al., 2021). With the sudden and potentially significant lifestyle changes, it is critical to investigate how the quarantine is affecting college students, as physical activity, sedentary, and nutritional habits developed during this period of life are primary predictors of future health practices (Odriozola-González et al., 2020). This study aims to track changes in physical activity, eating habits, and psychosocial behaviour among college students with the objectives of studying the socioeconomic status, health and nutritional status, and activity patterns of college students irrespective of gender, studying the academic stress, psycho-social behaviour among college students, assessing the impact of the covid 19 pandemic on the health and nutritional status among college students, and evaluating the impact

Materials and Methods

Selection of the Area

It is a cross-sectional study conducted in Muthurangam Government Arts College (Autonomous) Otteri, Vellore. Vellore has a semi-arid climate. It lies in the Eastern Ghats region and Palar River basin. The entire city has four zones covering an area of around 87,915 km and has a population of 5, 79,000 based on the 2021 census. This area is being chosen because of the availability of samples, ease and cooperation to conduct the study successfully.

Selection of the Sample

About 100 college students studying in Muthurangam Govt Arts College, Vellore including boys 43 and girls 57 were selected by simple random sampling method based on the inclusion criteria of college students in the age group between 18 to 22 years and students who are willing to participate and give consent.

Tools used for the Study

The data collection instrument used in the present study was an interview schedule which was adopted from the available existing structured questionnaire and modified the content based on the relevance to the study title. This questionnaire involves various chapters about the baseline information, socio economic profile, health status, morbidity pattern, nutrition screening, food security, assessment of nutritional status, dietary pattern, 24 hours recall survey, food frequency consumption and perceived stress scale.

Socio Economic Status Survey

Socio economic status of the college students was evaluated through their families' education, occupation and income level. Socio economic status is a measure of economic, education and social standing of a person or a family. This is the most commonly used scale for measuring socio economic status of people in India for both urban and rural areas. The sample was classified based on their scores into various classes such as upper, middle, and lower socio-economic status.

Basic Nutritional Screening and Health Status

Basic nutritional screening was done by asking seven relevant questions related to nutrition and the impact of covid 19 pandemic. Health status was assessed by physical activity, exercise pattern, and morbidity pattern. Physical activity was estimated by calculating the time and duration given for various individual activities. Exercise pattern was estimated by calculating the time and duration given for various activities and based on the exercise pattern of an individual. The morbidity pattern of the college students was collected based on the prevalence of obesity, underweight, micronutrient deficiencies, the occurrence of dental and skin problems and other clinical examinations. All information was extracted by asking questions before covid 19 and the current status to assess the impact of the covid 19 pandemic.

Nutritional Anthropometry

Anthropometry is the measurement of human beings. It is a measurement tool in physical anthropology. It has been used for identification, to better comprehend human physical variation, in paleoanthropology, and in numerous attempts to correlate physical with racial and psychological characteristics. Anthropometric data such as height, weight, and BMI were measured using appropriate measuring tools.

Results and Discussion

Demographic, Socio-Economic Profile and Nutritional Screening of College Students

Fifty seven percent were female and 43% were male. They were undergraduates in 74% of cases and postgraduates in 26% of cases. The majority of them were day scholars (83%) and only a small percentage (27%) stayed in a hostel. Most of them (93%) belonged to middle-class family (78%), 19% were lower class families and very few students belonged to upper class families (3%). The income of the family of the majority of them was 5000 to 20000 (97%). They had one sibling in 57% of cases, two siblings in 30% of cases, and more than two siblings in 7% of cases.

The majority of the children's parents were farmers (Father -77%, Mother- 15%). Table 1 explains the details of the basic nutritional status screening of adolescents through various questions.

Table 1 Distribution of Nutritional Screening of College Students Before and After Covid Pandemic

Nutritional Screening Questions	Before Covid (%)		After Covid (%)		Chi-Square χ^2
	Yes	No	Yes	No	
Do you observe any unexplained weight loss or gain?	22	78	83	17	44.9***
Do you eat properly?	83	17	75	25	13.2***
Do you skip meals?	30	70	41	59	85.4***
Do you have sleeping trouble?	10	90	16	86	74.6***
Do you get up in the middle of night to eat?	13	87	15	85	9.7**
Do you exercise daily?	21	79	25	75	8.2*
Do you feel weak and tired during class hours?	65	35	65	35	5.6*
Do you have any food allergies?	13	87	12	88	0.27***

P= <0.0001

The majority 78% them not observe unusual weight gain or weight loss before the COVID-19 pandemic whereas around 83 % were feeling like unexplained weight gain or weight loss. Eighty-three percent were eaten properly before the COVID-19 pandemic and it was reduced to 75 % after covid pandemic. Skipping of meals also increased from 30 % to 41% due to the impact of covid 19 pandemic. Though the majority of 86% were not having sleeping trouble, the condition of sleep trouble increased from 10% to 16% due to the impact of covid 19. They had the habit of eating in the middle of the night around 13 to 15 % of the students and not much difference existed by the covid19 pandemic. Around 12 to 13 % of students had food allergies, 65 % had feelings of weakness and tiredness during the class hours and 21 to 25 % were not doing the simple exercise regularly which was not found any significance between before and after covid 19 pandemic.

Exercise Pattern of the College Students Before and After the COVID-19 Pandemic

The distribution of exercise pattern of the selected college students is presented in Table 2. The exercise pattern of the college students did not change majorly as a result of Covid 19. It was observed in the present study that the sleep hours of college students were reduced among college students. This is due to the increasing availability and accessibility of mobile and other digital access after covid-19.

Table 2 The Impact of Covid 19 on Exercise Pattern of the College Students

Exercise Activity	Before covid-19 %	After covid-19 %	Chi-Square χ^2
Walking			
Less than 30 mins	51	58	0.06+
More than 30 mins	49	42	
Yoga			
Less than 30 mins	88	85	0.15***
More than 30 mins	12	15	
Sleep pattern			
Less than 7 hours	35	47	0.12**
More than 7 hours	65	53	

Impact of Covid 19 on the Nutritional Status of the College Students

The nutritional status of college students was assessed during the survey for post-covid 19 data, and information on pre-covid 19 was obtained by asking respondents orally.

Table 3 Nutritional Status of College Students Before and After Covid 19

Nutritional Anthropometry	Before Covid -19		After Covid -19		Mean Difference	Independent sample "t" test
	Mean	SD	Mean	SD		
Weight (kg)	54.84	13.13	52.48	12.80	2.36	3.8***
Height (cm)	161.84	13.46	163.43	9.11	1.59	4.9***
BMI	20.89	4.64	19.40	4.61	1.48	0.5**

** $P = < 0.05$ *** $P = < 0.000$

The nutritional status of college students before and after the COVID-19 pandemic is presented in Table 3. The mean height of the students gradually increased from 161.84 to 163.43 indicating the growth increment during the adolescent years. The mean weight and mean body mass index were significantly reduced from 54.84 and 20.89 to 52.48 and 19.4 respectively in before and after the COVID-19 pandemic. The covid 19 pandemic impacted much on the nutritional status of adolescence which is evidenced by the level of significant reduction observed during the post covid 19 pandemic period among college students.

Impact of Covid 19 on Perceived Stress Levels of the College Students

The stress level of the college students was marginally high at 77.7 % which indicates moderate stress among college students due to various reasons (Figure 1). About 15.5 % of the college students had low academic stress levels and 3.9 % of them were having high stress due to the COVID-19 pandemic regarding starting regular college and other related issues on examination patterns, extended time, duration, and other academic activities. There is a statistical significance of less than 1% observed between and within groups on the stress level of college students.

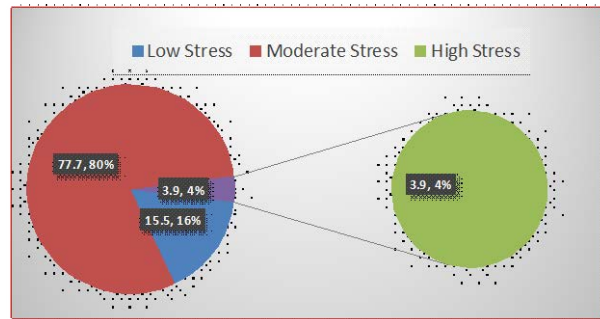


Figure 3 Perceived stress level of the college students

Association of Nutritional Status and Perceived Stress Level of College Students

The association between the nutritional status and the stress level of college students is given in Table 4. The nutritional status of college students significantly influences their stress levels. The majority of the undernourished college students were having moderate stress (47%) when compared to normal and healthy students. The occurrence of low stress was observed more significantly among healthy college students than undernourished students. Similarly high stress was noted among undernourished people as the majority (3%) than normal and healthy people.

Table 4 Association between the Nutritional Status and Perceived Stress Level of College Students

		Total Score Classified (%)			Total	Chi Square
		Low Stress	Moderate Stress	High Stress		
Nutritional Status	Undernutrition	9	47	3	59	1.4 P=<0.05
	Normal Nutrition	7	33	1	41	
Total		16	80	4	100	

The results reveal that the nutritional status of college students is highly influencing the academic stress level and psycho-social behaviour of adolescence. The COVID-19 pandemic had a high impact on the nutritional status and also had a negative impact on the stress level of college students.

Conclusion

The study concludes that the covid 19 pandemic had a high negative impact on the nutritional status, academic interest, and psycho-social behaviour among college students. The results revealed that there is a positive association between good nutritional status and academic interest and good nutritional status and psycho-social behaviour among adolescence. And also, this study offers new insight for formulating policies and intervention programs in the future.

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