



# Impact of COVID - 19 Lockdown on Dietary and Lifestyle Pattern of Adolescents

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## Abstract

**Background of the Study:** As the Corona virus (COVID-19) pandemic is still ongoing; it has created profound impact socially, physically and emotionally on families across the globe. With confinement laws and regulations still being enforced, healthcare system is deteriorating, Economics are setting down and school closer are being extended. Unfortunately, this also led to increase vulnerability of food insecurity especially among the urban poor and increased risk of overweight and obesity in higher income classes [2]. The lock down restrictions is leading to severe repercussions on individuals; daily routine and lifestyle behaviour including food access and consumption, outdoor activities, travel, school related functions, and access to many forms of leisure and exercise [3]. Particularly alarming are the implication of the lockdown on irregular eating habits, excessive snacking, lack of physical activity, high calorie intake and increased risk of obesity [4]. The aim of this study was to assess changes in lifestyle behaviour of adolescents during the country-wide lockdown. **Materials & Methods:** A descriptive study design was adopted. Snowball sampling technique was used to gather data from 108 adolescents in between the age group of 11 years to 19 years. A semi-structured questionnaire was used for the collection of data from the participants through an online survey. **Results:** Finding reveals that 26.85% of adolescents had good impact (Healthy dietary pattern), 51.85% had average impact (Moderate changes) and 21.29% had poor impact (Drastic changes) on dietary pattern. Related to lifestyle pattern results also revealed that 39.81% of adolescents had good impact (Healthy lifestyle), 51.85% had average impact ((Moderate changes)) and none of them had poor impact (Drastic changes) on lifestyle pattern. **Conclusion:** The ongoing COVID-19 pandemic has become a major public health concern and has changed the daily lives of citizens across the globe. Healthy eating and good life style pattern are key for health and well-being, especially when the immune system is challenged. The present study revealed a substantial increase in unhealthy dietary and lifestyle pattern among adolescents during COVID-19 lockdown.

**Keywords:** Adolescents, Covid –19, Dietary Pattern, Lifestyle.

## Introduction:

As of the end of March 2020 more than 150 million children and adolescents around the world have been affected by the school closure. Under the current restrictive measures and the prolonging of school closure indefinitely there is a pressing need to call attention to the pandemic longer-term effect on children and adolescents health and wellbeing.

It is well recognized that when children are out of school, they are physically less active, more sedentary, sleeping more often, and follow less favourable diet, all of which result in negative effects on health, which are likely to be much worse when children are confined to their homes. Under the emergency lockdown situation, it is likely that nutrition and obesity are not priority policy issues due to mounting problem and need in all realms [1]. As the Corona virus (COVID-19) pandemic is still ongoing, it has created profound impact socially, physically and emotionally on families across the globe. With confinement laws and regulations still being enforced, healthcare system is deteriorating, Economics are setting down and school closer are



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being extended. Unfortunately, this also led to increase vulnerability of food insecurity especially among the urban poor and increased risk of overweight and obesity in higher income classes [2]. The lock down restrictions is leading to severe repercussions on individuals; daily routine and lifestyle behaviour including food access and consumption, outdoor activities, travel, school related functions and access to many forms of leisure and exercise [3]. Particularly alarming are the implication of the lockdown on irregular eating habits, excessive snacking, lack of physical activity, high calorie intake and increased risk of obesity [4]. Similarly, home confinement led to an increase in sedentary behaviour that led to low level of energy and mainly activities involving an excessive amount of seating [2]. These changes in dietary and lifestyle related habit during the COVID 19 outbreak could be associated with feeling of fear, anxiety and stress, which many people may be experiencing around the world. According to WHO 50% of Indian people suffering from sedentary life style.

The cross-sectional study on impact of corona virus-imposed lockdown on Indian population and their habit was conducted among 18-40 years of the age group. A probability systemic sampling technique was used and 749 samples were selected.

A self-prepared semi-structured anonymous questionnaire was used to record the responses of participants. The result shows that majority of people 75% has changed their eating habits, 65% participants agreed that they are having good access to basic necessities, 79% agreed that they were worried about their family. 42% of participants go to exercise at least more than 3 times in a week before lockdown that habit comes down to as 22% of post lockdown restriction implementation [5].

A cohort study to assess the Diet and physical activity during the COVID-19 lockdown period (March-May 2020) was conducted in France. A total of 37,252 samples were collected through the web-based Nutri Net-Santé using a specific questionnaire. Result of the study shows weight gain (for 35%; +1.8kg on average), decreased physical activity (53%), increased sedentary time (63%), increased snacking, decreased consumption of fresh food products (especially fruit and fish), increased consumption of sweets, biscuits and cakes. weight loss (for 23%, -2kg on average), increased home-made cooking (40%), increased physical activity (19%) [6].

A longitudinal observational study on effect of COVID-19 lockdown on lifestyle behaviour in children and adolescents with obesity living in Verona. The sample included 41 children and adolescents. Life style information including diet, activity and sleep behaviours was collected at baseline and 3 weeks into the national lockdown during which home confinement was mandatory. The result shows there were no change in vegetable intake and fruits intake increased by (SD=156) potato chips, red meat, and sugary drink intake increase significantly during lockdown and time spent in sports activities decreased by (SD=4.60) and sleep time increased by (DS=1.29) screen time increased by (SD= 2.40) [7].

However, despite the overwhelming issues, it is critical to tackle children and adolescent lifestyle behaviour with the added challenge of COVID-19. It is crucial to investigate how individual behaviour changes overtime under lockdown condition, and how crisis such as COVID-19 pandemic may directly impact the behaviour of health status of population, particularly children and adolescents. The situation could be worsened by the current challenges of the pandemic and its negative effects of dietary and lifestyle habit of children and adolescents [8]. Therefore, the aim of this study was to assess changes in lifestyle behaviour of adolescents during the country-wide lockdown.

### Materials and Methods:

A descriptive study design was adopted to assess the impact of COVID-19 lockdown on dietary and lifestyle pattern among adolescents in Uttar Pradesh. Snowball sampling technique was used to gather data from 108 adolescents in between the age group of 11 to 19 years. A semi-structured questionnaire was used for the collection of data from the participants through an online survey. Questionnaire consists of three parts. Section A questions were related to the demographic variables. Demographic variables included are Age, Gender, Education, Occupation, Place of residence, Paternal Education, Number of children, Religion, Type of family, Nutritional status and Annual income. Section B consists of 10 Semi structured questionnaire regarding impact of COVID-19 lockdown on dietary pattern. Each question carries 2 marks, with total 20 marks for the questionnaire. Score interpretation: Score (1 to 6) - Drastic dietary changes, Score (7 to 13) - Mild dietary changes, Score (14 to 20) - No

dietary changes. Section C of the questionnaire consists of total 20 questions regarding impact of COVID-19 on lifestyle changes. Each question carries 2 points, with total 40 points for the questionnaire. Score interpretation: Score (1 to 13) - Drastic lifestyle changes, Score (14 to 20) - Mild lifestyle changes, Score (21 to 40) - No lifestyle changes.

### Results:

Results revealed that 16 (14.8%) of the participants were in the age group of 11-13, 44 (38.8%) of them were in between 14-16 age group and majority 50 (42.2%) of them were in between the age group of 17-19. In gender males were 66 (61.1%) and females were 42 (38.8%). In education, 35 (32.4%) had high school education, 45 (41.6%) had higher secondary education and 28 (25.9%) had primary school education. Regarding the occupation, 106 (98.1%) are students, 1 (0.92%) of them was labour worker and another 1 (0.92%) of them was unemployed. In regard to place of residence, 51 (47.2%) resides in rural area and 57 (52.7%) of the participants were residing in urban area. Regarding the paternal education, 45 (41.6%) has done middle secondary school, 45 (41.6%) were graduated, 10 (9.25%) were post- graduated and 8 (7.4%) were illiterate. Regarding the number of children in family, 16 (14.8%) of them have 1 child in their family, 33 (30.5%) of them had 2 children, 22 (20.3) of them had 3 children 16 (14.8%) of them had 4 children and 21 (19.4%) of them had more than 5 children in their family respectively. Majority of them 101 (93.5%) were Hindus, 2 (1.85%) of them were Christians, 1 (0.92%) of them was Muslim and 4 (3.7%) of them belongs to other religion. Regarding the type of family, 46 (42.5%) of them were from nuclear family and 62 [57.4%] of them were from joint family.

In regard to type of diet 60 (55.5%) of the participants were vegetarians and 48 (44.4%) were non vegetarians. 23 (21.2%) of the participants family had an income less than 1,00,000 rupees per month, 11 (10.1) of the participants family income was in between rupees 1,00,000 - 2,00,000. 58 (53.75 %) of the participants family had an income in between Rs. 3,00,000 - 4,00,000 rupees per month, 16 (14.8%) of the participants family income was above Rs, 5,00,000 per month.

**The Table - 1** shows that 26.85 % of adolescents had good or healthy dietary pattern, 51.85 % of adolescents had average dietary pattern (moderate dietary changes) and 21.29% of adolescents had poor dietary pattern. With regard to the impact of COVID-19 lockdown on dietary pattern among adolescents, the overall mean score was 36 with standard deviation of 14.35.

**The Table - 2** shows that 39.81% of adolescents have good lifestyle pattern, 51.85% of adolescents were having average lifestyle pattern and none of adolescents had poor lifestyle pattern. With regard to the impact of COVID-19 lockdown on lifestyle pattern among adolescents, the overall mean score is 36 with standard deviation of 24.11.

Demographic variable age had a significant association between the impact of COVID - 19 lockdown on both the dietary and lifestyle pattern among adolescents. Education shows a significant association between the impact of COVID - 19 lockdown on dietary pattern among adolescents at  $p < 0.05$  level. Demographic variable gender had a significant association between the impact of COVID -19 lockdown on lifestyle pattern among adolescents at  $p < 0.05$  level.

**Table No 1 -Frequency and percentage distribution of the impact of COVID 19 lockdown on dietary pattern among adolescents.**

Dietary pattern	Frequency	Percentage	Mean	Standard Deviation
<b>Good</b> (Healthy Dietary Pattern)	29	26.85%		
<b>Average</b> (Moderate Changes)	56	51.85%	36	14.35
<b>Poor</b> (Drastic Changes)	23	21.29%		

(n=108)

**Table No. 2 -Frequency and percentage distribution of the impact on COVID - 19 lockdown on lifestyle pattern among adolescents.**

<i>(n=108)</i>				
Level of lifestyle pattern	Frequency	Percentage	Mean	Standard Deviation
<b>Good</b> (Healthy lifestyle Pattern)	43	39.81%		
<b>Average</b> (Moderate Changes)	56	51.85%		
<b>Poor</b> (Drastic Changes)	0	0	36	24.11

**Discussion:**

The Corona virus (COVID-19) pandemic has led to the enforcement of home confinement and the prolonging of school closures, indefinitely. There is a pressing need to call attention to the pandemic's longer-term effect on children and adolescents health and well-being. The aim of this study was to assess the impact of the country-wide lockdown on dietary and lifestyle behaviours of adolescents in Lucknow [8].

**Impact of covid-19 lockdown on dietary pattern**

The present study finding reveals that 26.85% of adolescents had good impact (healthy dietary), 51.85% had average impact (moderate changes) and 21.29% had poor impact (drastic changes) on dietary pattern. Similar study was conducted to survey the changes in dietary pattern and related health factors in Egyptian children and adolescents during the COVID-19 lockdown. Findings revealed that changes in eating patterns were found in Egyptian children and adolescents. 45.6 % of the participants reported increased sweets and unhealthy food consumption, and 37.6% showed increased frequent snacking between meals [9].

**Impact of covid-19 lockdown on lifestyle pattern**

The result shows that 39.81% of adolescents had good impact (healthy lifestyle), 51.85% had average impact (moderate lifestyle changes) and none of them had poor impact (drastic lifestyle changes) on lifestyle pattern. Findings of this study were consistent with the other cross-sectional study which was conducted to assess the impact of COVID-19 confinement on the eating habits and lifestyle changes. It was conducted in Kurdish population of

Iraqi Kurdistan. Total number of included respondents was 2,137. The results showed that 12% (256) of participants stated that their lifestyle was improved, whereas 50.9% (1,087) declared their lifestyle deteriorated. In particular, the frequency of physical activity was decreased and sleeping hours were significantly increased during lockdown [10].

**Association between impacts COVID-19 lockdown on dietary pattern among adolescents with demographic variable**

The result shows that there was a significant association between impact of COVID-19 lockdown with the demographic variables such as age and education. Hence, the hypothesis was partially accepted. The remaining variables such as gender, occupation, place of residence, paternal education, no. of children in family, religion, type of family, nutritional status and annual income has no significant association with the impact of COVID-19 on dietary pattern. Hence, the hypothesis is partially rejected.

**Association between impacts of COVID-19 lockdown on lifestyle pattern among adolescents with demographic variable**

The result shows that there was a significant association between impact of COVID-19 lockdown with the demographic variables such as age and gender. Hence, the hypothesis is partially accepted. The remaining such as education, occupation, place of residence, paternal education, number of children in family, religion, type of family, nutritional status and annual income has no significant association with the impact of COVID-19 on lifestyle pattern.

### Conclusion:

The ongoing COVID-19 pandemic has become a major public health concern and has changed the daily lives of citizens across the globe. Healthy

eating and good life style pattern are key for health and well-being, especially when the immune system is challenged. The present study revealed a substantial increase in unhealthy dietary and lifestyle pattern among adolescents during COVID-19 lockdown.

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