



Impact of COVID-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity

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Abstract

Introduction: The 2019 Coronavirus Disease or, as it is now called, COVID-19, is a severe acute respiratory syndrome caused by SARS coronavirus 2 (SARS-CoV-2). In response to COVID-19 multinational measures were implemented by the authorities, including school closures, lockdown, quarantine and social distancing recommendation, aiming at the mitigation of the virus spread as well as decrease in the pressure of health care system. As a result 2.4 billion people were subjected to home confinement. These circumstances have led the people in change of their lifestyle and eating behaviour including buying and consuming large quantities of preserved and processed food due to fear of food shortage. In parallel the increase in sedentary behaviour and screen time, as well as decrease in physical activity, could be associated with obesity.

Objectives: The objective of the study were to assess impact of COVID-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity

Methods: A descriptive research design was adopted with 40 samples who met the inclusion criteria in Vellore. Self-structured questionnaire method was used to collect the data. Data were analyzed by descriptive and inferential statistics.

Result: Out of 40 samples that there is a greater impact (52.5%) of COVID-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity. In respect the demographic variable religion had shown statistically significant association with the level of impact of COVID-19 lockdown on lifestyle and dietary pattern on adolescent boys at $p < 0.05$ level.

Conclusion: The study concludes that there is a high impact of COVID-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity in Vellore.

Keywords: Determine, stress, zumba, effectiveness, intervention

Introduction

Coronavirus disease 2019 (COVID-19) is a multi-system disease caused by: Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), with a high incidence, Mortality. After more than 1,700,000 confirmed human cases and 111,600 deaths, More than 200 countries have reported, according to the World Health Organization it is classified as March 11, 2020 pandemic. As a result 2.4 billion people were subjected to home confinement. Those circumstances have led the people in change of their lifestyle and eating behaviours including buying and consuming large quantities of preserved and processed food due to fear of food shortage. In parallel the increase in sedentary behaviour and screen time, as well as decrease in physical activity, could also be associated with obesity [1]. The worldwide prevalence of obesity and obesity has exceeded 1.9 billion in adults, 38 million in children under 5 years of age, and more than 340 million in adolescents and children aged 5-19 years [2]. The effects of the lockdown on irregular eating patterns, excessive snacking, and lack of physical activity, all of which are linked to high calorie consumption and an increased risk of obesity, are

particularly concerning [3]. Obesity is defined as abnormal or excessive fat accumulation that poses a threat to human health. Although people are increasingly aware of the threat of obesity to health, the global prevalence of obesity is still rising steadily [4]. Obesity is a health condition that occurs when a man or woman has excess weight or body fat, which is associated with a prolonged risk of many persistent diseases, such as type 2 diabetes, heart disease and stroke. An immediate determinant of adolescent obesity is the energy balance between energy intake through food and beverages and energy expenditure through exercise (physical activity and sedentary behaviour) [5]. Reduced physical activity may also impact sleep quality and related routines [6]. Staying at home for an extended period of time may promote hypercaloric diets and increased snacking; it may also influence individual decisions to cook more or buy prepared meals more frequently, as well as provide limitless access to food associated with low physical activity [7]. The obesity rate has reached an alarming level, with more than a billion overweight adults, 300 million of them considered clinically obese. Real effects of obesity in developed and developing countries of all countries groups include all age

groups, which is an alarming problem, described by the World Health Organization (WHO) as an "escalating global epidemic" [8]. During pandemics like COVID-19, a well-balanced diet is an important aspect of a personal risk management approach [9]. It's essential to keep track as to how people's eating habits changed throughout the COVID-19 pandemic [10].

Methods and Materials

A quantitative approach with descriptive research design was used to conduct the study in Vellore. 40 samples were selected by using random sampling technique. The criteria for sample selection was Adolescent boys between the age group of 10 to 19 years, willingness to participate, able to read both english and Tamil language and the boys who were available at the time of data collection were included in this study. The boys who were below than age group of 10 and above the age of 19, mentally ill boys were excluded. The data collection period was done with prior permission from the district head of Vellore and ethical clearance was obtained from the Institute (SIMATS). The purpose of the study was explained to the samples and oral consent was obtained from them. The demographic data was collected using a semi- structured questionnaire. The level of impact was assessed on the adolescent boys with obesity during COVID-19 lockdown. The data was analyzed using descriptive and inferential statistics.

Results and Discussion

Section A: Description of the demographic variables of the adolescent boys with obesity.

The Present Study shows that out of 40 samples, 14 samples (35.0%) were in between the age group of 11 to 13 years, 17 samples (42.5%) were in between the age group of 14 to 17 years, 9 samples (22.5%) were in between the age group of 17 to 19 years; all the 40 samples were male; 16 samples (40.0%) were in the secondary education level, 15 samples (37.5%) were in the secondary education level, 9 samples (22.5%) were in the graduate and above education level; 18 samples (45.0%) were Hindu, 19 Samples (47.5%) were Christian, 3 samples (7.5%) were Muslim; 10 samples (25.0%) had below Rs.10000 of monthly income, 21 samples (52.5%) had Rs.10000 to Rs.20000 of monthly income, 9 samples (22.5%) had more than Rs.20000 of monthly income; all 40 samples had a urban residency.

The present study is supported by Allabadi et.al (2020) conducted a study to assess the impact of the country-wide lockdown on dietary and lifestyle behaviours of adolescents in the west bank, palestine consisted of a sample of 600 adolescents (10-19 years old) in which 50% were male population and 80% of the samples had been in secondary education.

Section B: Assessment of level of impact of covid-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity.

Table 1: Frequency and percentage distribution of factors that impacts the weight of adolescent boys

Variables	F	%
Type of diet		
Vegetarian	13	32.5
Non vegetarian	22	55.0
Others	7	17.5
Number of meals		
2-3 serving	32	80.0
3-4 serving	5	12.5
More than 4 serving	3	7.5
Exercise		
2 times a day	12	30.0
1 time a day	3	7.5
Never	25	62.5
Type of exercise		
Morning walk	13	32.5
Yoga	11	27.5
Nil	16	40.0
Frequency of drinking water		
Every 4 hours once	16	40.0
Every 6 hours once	12	30.0
Every 8 hours once	12	30.0
Do you take snack while watching tv		
Sometimes	20	50
Often	7	17.5
Rarely	3	7.5
Desserts and sweets, taken in week on an average		
More often	13	32.5
Some times	20	50.0
Never	9	22.5
Food you consume on daily basis		
Fast foods	12	30.0
Spicy foods	24	60.0
Steamed foods	4	10.0
Duration of sleep		
More than 10 hours	10	25
8-10 hours	14	35

Less than 10 hours	16	40
Weight at present		
More than 80 kgs	20	50
60-80 kgs	11	27.5
Less than 60 kgs	9	22.5
Weight of body before lockdown		
More than 80 kgs	4	10.0
60-80 kgs	24	60.0
Less than 60 kgs	12	30.0
Constituents that commonly appears in your food		
Rice and pulses	3	7.5
Meat	7	17.5
Milk and milk products	20	50
Litres of water you consume daily		
2-3 litres	16	40
1-2 litres	13	32.5
Less than 1 litre	11	27.5
Kind of food you prefer		
Homemade	14	35
Eatery/ restaurant	15	37.5
Others	11	37.5
Dietary pattern during covid lockdown		
Paleo diet	4	10.0
High calorie diet	24	60.0
Nil	12	30.0
Frequency of fast foods that you consume a week		
More often	12	30.0
Twice or thrice a week	20	50.0
Never	8	20.0
Kind of milk that you consume		
Cow milk	13	32.5
Soya milk	12	30.0
Others	15	37.5
Consumption of meats and meat products		
About 3 times a week	22	55.0
About 2 times a week	6	27.5
Never	12	30.0
Frequency of fruit juices consumed per day		
Once a day	14	35.0
Twice a day	11	20.0
Never	15	37.5
Any diet control for your weight		
Fasting	12	30
Herbal drink	8	20
Nil	20	50

Table 1 shows that Maximum (55.0%) of them had non vegetarian diet, (80%) of them had 2-3 servings per day, about (62.5%) of them had done no exercise, (50%) of them had snack while watching tv, (50%) of them had desserts and sweets sometimes, (60%) of them had spicy foods daily about. More than (50%) of them had preset weight more than 80 kgs. and about (60%) of were in the weight between 60-80 kgs before lock down. only 2- 3 serving of meals had high impact on weight (80%).

Similary, Magdalena Gornicka *et al.* (2020) conducted a study to identify patterns of dietary changes during the COVID 19 pandemic and there associations with socio demographic, body mass index (BMI) before pandemic, and lifestyle changes in polish adults and to examine the effects of lockdown on dietary-lifestyle changes. This study reveals that approximately 50% of respondents consumed water and 50% of the respondents had snacks while watching TV as well as 30% of polish adults was characterized by increased intake of milk and milk products. Also this study is

supported by Allabadi *et al.* (2020) conducted a study to assess the impact of the country-wide lockdown on dietary and lifestyle behaviour of adolescents in the west bank, Palestine. This study comprised of 45% of the adolescents with no physical activity.

Table 2: Frequency and percentage distribution of level of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity n=40

Level of Impact	No.	%
Low ($\leq 50\%$)	1	2.5
Moderate (51 – 75%)	18	45.0
High ($>75\%$)	21	52.5

The above table 2 shows that 21(52.5%) had high impact of Covid-19 lockdown on lifestyle and dietary pattern, 21(52.5%) had high impact and 1(2.5%) had low impact of Covid-19 lockdown on lifestyle and dietary pattern.

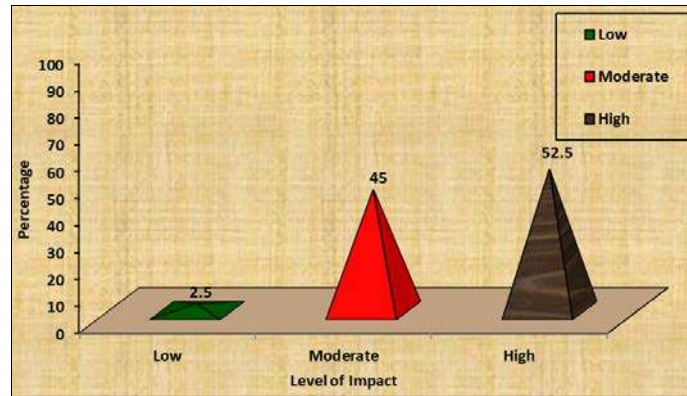


Fig 1: Percentage distribution of level of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity

Table 3: Assessment of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity n = 40

Impact	Score
Minimum Score	9.0
Maximum Score	19.0
Mean	15.20
Standard Deviation	2.22

The table 3 depicts that the mean score of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity was 15.20 with standard deviation 2.22 with minimum score of 9.0 and maximum score of 19.0.

Section C: Association of level of impact with selected demographic variables.

Table 4: Association of level of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity with their selected demographic variables n = 40

Demographic Variables	Low		Moderate		High		Chi-Square Value
	No.	%	No.	%	No.	%	
Religion							$\chi^2=9.513$ d.f=4 p = 0.049 S*
Hindu	0	0	6	15.0	13	32.5	
Christian	1	2.5	12	30.0	5	12.5	
Muslim	0	0	0	0	3	7.5	

*p<0.05, S – Significant, N.S – Not Significant

The table 4 shows that the demographic variable religion had shown statistically significant association with level of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys at $p<0.05$ level and the other demographic variables had not shown statistically significant association with level of impact of Covid-19 lockdown on lifestyle and dietary pattern on adolescent boys with obesity.

Conclusion

This research will help to educate public health policies, and will help to plan for future pandemic emergencies in terms of dietary and lifestyle choices. The obesity epidemic, particularly among adolescents, must be prioritised by authorities, together with the longer-term impacts of the COVID-19 lockdown on adolescent behaviour, as an urgent public health issue.

The study concludes that there is an high impact of COVID-19 lockdown on lifestyle and dietary pattern of adolescent boys with obesity in Vellore.

Reference

1. Stavridou A, Kapsali E, Panagouli E, Thirios A, Polychronis K, Bacopoulou F. Obesity in Children and Adolescents during COVID-19 Pandemic. *Children* 2021;8(2):135.
2. Banno M, Harada Y, Taniguchi M, Tobita R, Tsujimoto H, Tsujimoto Y *et al.* Exercise can improve sleep quality: A systematic review and meta-analysis. *Peer J* 2018;6:e5172.
3. Scully M, Dixon H, Wakefield M. Association between commercial television exposure and fast-food consumption among adults. *Public health nutrition* 2009;12(1):105-110.
4. Kosti RI, Panagiotakos DB. The epidemic of obesity in children and adolescents in the world. *Central European journal of public health* 2006;14(4):151.
5. Campbell MK. Biological, environmental, and social influences on childhood obesity. *Pediatric Research* 2016;79(1):205-211.
6. Banno M, Harada Y, Taniguchi M, Tobita R, Tsujimoto H, Tsujimoto Y *et al.* Exercise can improve sleep quality: a systematic review and meta-analysis. *Peer J* 2018;6:e5172.
7. Sidor A, Rzymiski P. Dietary choices and habits during COVID-19 lockdown: experience from Poland. *Nutrients* 2020;12(6):1657.
8. Bibiloni MDM, Pons A, Tur JA. Prevalence of overweight and obesity in adolescents: A systematic review. *International Scholarly Research Notices*, 2013.
9. Gasmi A, Noor S, Tippairrote T, Dadar M, Menzel A, Bjørklund G. Individual risk management strategy and potential therapeutic options for the COVID-19 pandemic. *Clinical Immunology* 2020;215:108409.
10. Popkin BM, Adair LS, Ng SW. Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition reviews* 2012;70(1):3-21.