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Impact of COVID 19 lockdown lifestyle behavior changes among school age children

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Abstract
Background: The COVID-19 pandemic, also known as coronavirus pandemic, is a persistent pandemic of coronavirus disease 2019 (COVID-19) exaggerated by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). As the coronavirus pandemic is still enduring, it has created a intense impact on socially, physically and economically on families across the globe. Similarly, home confinement leads to an increase in sedentary behaviors that lead to low levels of energy and mainly activities involving an excessive amount of sitting. These changes in dietary and lifestyle related habits during the COVID 19 outbreak could be associated with feelings of fear, anxiety, and stress, which many people may be experiencing around the world. Under the current restrictive measures and the prolonging of school closures indefinitely, there is a pressing need to call attention to the pandemics longer term effect on children and adolescent health and well-being.
Objectives: To assess the level of knowledge on COVID 19 among school age children.
- To assess the knowledge on impact of lockdown behavior changes among school age children.
- To find the association between levels of knowledge on COVID 19 among school age children with the selected socio demographic variables.
Methodology: A descriptive research design with purposive sampling technique was adopted to conduct a study among 60 school age children. Data was gathered by using self-structured questionnaires. Confidentiality was maintained throughout the procedure. Collected data were analyzed by using descriptive and inferential statistics.
Result: Among 60 school age children that level of knowledge regarding lifestyle changes on general information, majority 36(60%) had moderately adequate knowledge, 18(30%) had inadequate knowledge and 6(10%) had adequate knowledge. The study shows that none of the demographic variables like age, sex, educational status, religion, place of residence, diet pattern, about COVID 19 had shown statistically significant association with level of knowledge on impact of lockdown lifestyle behavior changes among school age children.
Conclusion: This studies concluded that there is statistically significant association with level of knowledge on impact of COVID 19 lockdown behavior changes.

Keywords: Assess, knowledge, Impact, lifestyle behavior changes, school age children

Introduction
The current coronavirus disease (COVID-19) outbreak has led to a first-time public health crisis worldwide [1]. The COVID-19 outbreak was first discovered in Wuhan, Hubei Province, China on December 2019. On January 30, 2020, the World Health Organization (WHO) declared the COVID-19 epidemic a community health emergency of international concern [2]. At the beginning of the pandemic, children were thought to be at a lower risk for contracting the virus compared to adults [3].

The coronavirus pandemic is still persistent, it has created a penetrating impact socially, physically and economically on families across the globe. With the home confinement laws and regulations still being required, health care systems are weakening, economies are shutting down and school closures are being extended. The restrictions are important to severe repercussions on individuals daily routines and lifestyle behaviors and including the food access and consumption, outdoor activities, travel, school related functions, and access to many forms of leisure and exercise [4]. The consequences of the lockdown on uneven eating habits, excessive snacking and lack of physical activity, all of which are associated with high calorie intake and increased risk of obesity [5]. Lockdown leads to a rise in sedentary behaviors that lead to low levels of energy and mainly activities involving an excessive amount of sitting [6].

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These modifications in dietary and lifestyle related habits during the COVID 19 outbreak can be associated with the feelings of fear, anxiety, and stress, which many people may be experiencing everywhere the world [16].

At the end of March 2020, more than 150 million children and adolescents around the world have been affected by school closings [8]. By the end of April 2020, an estimated 1.5 billion children (5–12 years old) and adolescents (13–17 years old) transitioned to remote learning following school closures [9]. The school closures, coupled with the additional socio-behavioral adaptations (e.g, social distancing, quarantining, etc.), are impact the lifestyle activities of children and adolescents through the 24-h day. Of concern, initial evidence suggests that social restrictions needed to reduce the spread of COVID-19 have increased sedentary behavior [10], disturbed sleep patterns [11], and decreased opportunities for children and adolescents to engage in physical activity. Nevertheless, COVID-19-related restrictions have caused the new challenges making it challenging to achieve the recommended physical activity, sedentary behavior, and sleep guidelines [12].

The socio-ecological model is useful strategies for healthy behavior adoption and maintenance during these first-times. Four unique factors, or levels, commonly described in the socio-ecological model include intra-individual (e.g, enjoyment, self-efficacy), inter-individual (e.g., social support), physical environment (e.g., neighborhood), and policy (e.g., government guidelines) level determinants. COVID-19 related restrictions have potentially caused the barriers to engagement in healthy behaviors across the socio-ecological model. The prevalence of engaging in unhealthy behaviors is not a unique problem for this population [13].Under the current restrictive measures and the extending of school closures indefinitely, there is a need to the pandemics longer term effect on children and adolescent health and well-being.

It is well known that when children are out of school (e.g, weekends and summer holidays), they are physically less active, more sedentary, sleeping more often, and follow less favorable diets all of which result in weight gain [14]. Such negative impact on health are likely to be much worse when children are confined to their homes during lockdown [15].

Therefore the aim of this study was to assess the impact of COVID 19 lockdown lifestyle behavior changes among school age children.

Materials and Methods
A descriptive research design was used to assess the impact the COVID 19 lockdown lifestyle behavior changes among school age children. This study was conducted in Sri Annai paediatric clinic located at Ayapakkam in Chennai The total sample size is 60 who all are satisfies the inclusion criteria. Convenient sampling technique was used to collect the data from sample. The inclusion criteria children with the age between 6 to 12 years. Those who are willing to participate, available during the time of data collection and able to speak or read Tamil. Those who are not willing to participate in the study were excluded. Explained about the study and informed consent was obtained. Data was collected by self-structured questionnaires. Confidentiality was maintained throughout the study. Collected data were analyzed by using descriptive and inferential statistics. The project has been approved by the Ethics Committee of the Institution.

Results and Discussion
Section 1: Description of sample characteristics
Majority of the school age children, 37(61.7%) were aged between 10 – 12 yrs., 31(51.7%) were male, 35(58.3%) were Hindus, 37(61.7%) were studying 5th – 7th STD, all 60(100%) were residing in urban area, 42(70%) were both vegetarian and non-vegetarian, 43(71.7%) belonged to nuclear family and 55(91.7%) were known about COVID-19.

Section II: Assessment of level of knowledge on impact of lockdown behaviour changes among school age children.

Table 1: Frequency and percentage distribution of level of knowledge on impact of lockdown lifestyle behavior changes among school age children.

Level of Knowledge	Items	Inadequate Knowledge (≤50%)		Moderately Adequate (51 – 75%)		Adequate Knowledge (>75%)	
		No.	%	No.	%	No.	%
General information	8	18	30.0	36	60.0	6	10.0
Dietary habits	5	21	35.0	21	35.0	18	30.0
Physical activity	4	39	65.0	11	18.33	10	16.67
Screen time	2	35	58.33	0	0	24	41.67
Sleep pattern	1	26	43.33	0	0	34	56.67
Educational	2	46	76.67	0	0	14	23.33
Psychological	8	28	46.67	25	41.66	7	11.67
Overall	30	12	20.0	43	71.67	5	8.33

The data presented in the table 1 shows that the level of knowledge regarding impact of COVID 19 lockdown lifestyle behavior changes. It shows that regard to general information, majority 36(60%) had moderately adequate knowledge, 18(30%) had inadequate knowledge and 6(10%) had adequate knowledge on impact of COVID 19 lockdown lifestyle behavior changes among school age children.

The present study finding is supported by C Chambonniere, C Lambert, P Genin *et al*., (2021) conducted a study on Effect of the COVID-19 lockdown on physical activity and sedentary behaviors in French children and adolescents.

This study aimed to investigate the effects of home confinement as a result of lockdown on the activity (physical activity and sedentary behaviors), on French children (6-10 years) and adolescents (11-17 years). Online survey from April 1st, to May 6th, 2020 was conducted using popular social networks and websites. 6,491 children were included in this study. The results shows that active children and adolescents decreased their PA more than those initially inactive ($p>0.001$), while those who met the sitting time recommendations increased more their sitting time during lockdown ($p<0.001$). The same applied to screen

time ($p<0.001$). Living in an urban environment was associated with a decrease in PA ($p<0.001$), an increase in sitting time ($p<0.001$) and children's screen time (p=0.002) during lockdown.

Section 3: To determine the impact of level of knowledge on lifestyle behavior changes among school age children.
To find out the significant mean difference between the level of knowledge on lifestyle behavior changes among school age children.

Knowledge	Mean
Minimum Score	12.0
Maximum Score	25.0
Mean	17.83
Standard Deviation	2.98

The table 2 depicts that the mean score of knowledge impact of lockdown behavior changes among school age children was 17.83 with standard deviation 2.98 and minimum score of 12.0 and maximum score of 25.0
The present study findings is supported by Kirsten Tulchin Francis , Xiangli Gu , *et al*., (2021) conducted a study on the impact of the COVID-19 pandemic on physical activity in US children. This study aimed to examine the impact of the pandemic on the PA and play behavior of US children and to provide evidence-based recommendations to improve their PA. A cross-sectional, online, parent-reported survey was conducted of children aged 3-18 years to assess light and moderate-to-vigorous PA. The results shows that 1310 samples indicated child PA scores declined during the pandemic (from 56.6 to 44.6, max 119, $p<0.001$). Specifically, moderate-to-vigorous PA score decreased (from 46.7 to 34.7, max 98, p < 0.001) while light PA remained the same. Age-based changes were seen in the quantity, variety, and intensity of PA, with the lowest pandemic-related impact seen in preschool. This study shows decreased PA levels in US children, according to parent reporting, during the COVID-19 pandemic. Highest in high-schooler (–4.7 vs. –17.2, p ≤ 0.001). This study concluded that decreased PA levels in US children, according to parent reporting, during the COVID-19 pandemic.

Section IV: To find the association between levels of knowledge on COVID 19 among school age children with the selected socio demographic variables.
The study shows that none of the demographic variables like age, sex, educational status, religion, place of residence, diet pattern, about COVID 19 had shown statistically significant association with level of knowledge on impact of lockdown lifestyle behavior changes among school age children.
The present study finding is supported by Hala Allabadi, Amer Khader *et al*., (2020) conducted a study on 'Impact of COVID 19 lockdown on dietary and lifestyle behaviors among adolescents in Palestine". The aim of this study was to assess the impact of the country-wide lockdown on dietary and lifestyle behaviors of adolescents. The study was conducted on a sample of 600 adolescents (10-19 years old) and snowball sampling. Interviews were conducted by telephone to assess dietary habits, physical activity, screen time, sleeping patterns, sources of stress and socio-demographics. The results suggested that among the sample, there was an increase in weight gain, food intake, and

consumption of non-nutritional foods, screen time and sleeping hours as well as a decrease of physical activity in comparison to before the lock down. Therefore this study concluded adverse effects of the COVID-19 " pandemic and integrating dietary and lifestyle programs into lockdown conditions and school closures is critical for adolescents' long-term health.

Conclusion
The studies concluded that there is no significant difference between levels of knowledge on lifestyle behavior changes among school age children.

Authors Contribution
All the authors actively participated in the work of study. All the authors read and approved the final manuscript.

Conflict of Interest
The authors declare no conflict of interest.

Reference
1. Sohrabi Catrin, Alsafi Zaid, Agha Riaz *et al*. "World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19)" .International Journal of Surgery 2020;76:71-76.
2. Wang Chen, Horby W Peter, Hayden G Frederick et.al. "A novel coronavirus outbreak of global health concern". Journal of Lancet 2020;395(10223):470-473.
3. Pietrobelli Angello, Pecoraro Luca, Ferruzzi Alessandro *et al*. "Effects of COVID-19 lockdown on lifestyle behaviors in children with obesity living in Verona, Italy: a longitudinal study". Journal of Obesity (Silver Spring) 2020;28(8):1382-1385.
4. Hossain Md, Sultana A, Purohit N. "Mental health outcomes of quarantine and isolation for infection prevention:A systematic umbrella review of the global evidence 2020".Journal of Epidemiology and Health 2020:2(42):1-11.
5. Scully Maree, Dixon Helen, Wakefield Melanie. "Association between commercial television exposure and fast food consumption among adults". Journal of Public Health Nutrition 2008;12:105-110.
6. Hobbs Matthew, Pearson Natalie, Foster J Perry, et.al. "Sedantary behavior and diet across the lifespan:an updated systemic review" .British journal of sports medicine 2015;49(18):1179-1188.
7. Sayem A, Sayed A. Corona Virus problem: A systemic review. Int. J. Biol. Sci. 2020;2(1):03-07. DOI: 10.33545/26649926.2020.v2.i1a.15
8. Xiang Mi, Zhang Zhiruo, Kuwahara Keisuke. "Impact of COVID 19 pandemic on children and adolescents lifestyle behavior larger than expected" .Journal of Progress in Cardiovascular Diseases 2020;63(4):531-532.
9. Frankel Jennifer C, Vogel Gretchen, Weiland Meagan. "School openings across globe suggest ways to keep coronavirus at bay, despite outbreaks". Journal of Science 2020;369:241-245.
10. Margaritis, Irene Houdart Sabine *et al*., " How to deal

with COVID-19 epidemic-related lockdown physical inactivity and sedentary increase in youth? Adaptation of Anses benchmarks". Journal of Archives of Public Health 2020;78:1-6.

11. Becker Stephen P, Gregory Alice M. "Perils and promise for child and adolescent sleep and associated psychopathology during the COVID-19 pandemic". Journal of Child Psychology and Psychiatry, Allied Disciplines 2020;61:757-759.

12. Guerrero Michelle D, Vanderloo Leigh M *et al*., "Canadian children's and youth's adherence to the 24-h movement guidelines during the COVID-19 pandemic": A decision tree analysis. Journal of Sport Health Science 2020;9:313-321.

13. Roman-Vinas Blanca, Chaput Jean-Philippe *et al*. "Proportion of children meeting recommendations for 24-h movement guidelines and associations with adiposity in a 12-country study". International Journal of Behavioral Nutriton and Physical Activity 2016:13:123.

14. Lin Yingyi, Tremblay S Mark *et al*, "Temporal and bi-directional associations between sleep duration and physical activity/sedentary time in children: An international comparison. Journal of Preventive medicine 2018;111:436-441.

15. Brazendele Keith, Beets Michael W, Weaver Glenn R *et al*. Understanding differences between summer vs. school obesogenic behaviours of children: the structured day's hypothesis. International Journal of Behavioral Nutrition and Physical Activity 2017;14(1):100.

16. Anton Stephen D, Miller Peter M. Do negative emotions predict alcohol consumption, saturated fat intake, and physical activity in older adults? SAGE Journal: Behavior Modification 2005;29(4):677-688.