Journal for Re Attach Therapy and Developmental Diversities
eISSN: 2589-7799
2023Feb; 6(5s): 1146-1154

Long Term Effects Of COVID-19 Induced Home Confinement On Lifestyle And Physical Activity Levels Of Adolescents

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ABSTRACT

The global COVID-19 pandemic and the resulting lockdown measures have had a profound impact on the lives of adolescents. In this article, we aim to explore the effects of the lockdown on the lifestyle and physical activity levels of teenagers. The lockdown period led to significant changes in the lifestyle of adolescents. With schools and recreational activities closed, adolescents spent significantly more time on electronic devices. This increase in screen time resulted in reduced physical activity, disrupted sleep patterns, and potential exposure to harmful online content. Lockdown drastically reduced opportunities for exercise. Closing schools meant that students wouldn't have access to organised physical education programs, which are essential for teenage health. Limitations on social events and outdoor activities decreased the amount of time people could spend playing, sports, and relaxing. Teenagers embraced more sedentary lifestyles due to rising screen time and constrained physical spaces, which resulted in a decline in muscle strength, endurance, and general fitness.

KEYWORD: - Physical Activity, Lifestyle, Covid-19 lockdown, Adolescence, school closure, mental health, Home confinement, exercise regime.

Introduction

It is common knowledge that physical activity of any kind, regardless of intensity, has advantages. It has become clear that a sedentary lifestyle, which includes excessive TV watching, internet use, online gaming, and general screen time, negatively affects the prognosis of chronic illnesses. It has been difficult to stay physically active during lockdown periods due to park and gym closures as well as restrictions on public movement. The majority of studies show that during home confinement, sedentary behaviour increases and physical activity levels decrease. Both genders saw an average decrease in activity intensity during the COVID-19-induced lockdown. The majority of studies revealed a declining trend in actual body work levels, notably in overweight people, especially in men, as well as elderly adults and seniors. Physical activity decreased by 24% during the lockdown, according to a multi-national poll. During home confinement, the study indicated that daily sitting time increased by 5 to 8 hours. During the epidemic, social media users discovered a number of home-based training courses; nevertheless, many were unable to adapt to practicing at home since they lacked the necessary equipment and space for exercise. In order to enable people to work out at home and maintain an active lifestyle, the Indian Ministry of AYUSH emphasized the importance of daily at least thirty minutes spent in meditation, yoga, sana, and pranayama. People who work from home tend to spend more time sitting, leaning, and lying down in bed. People who lead inactive lifestyles are more likely to be overweight or obese. During the lockdown, both previously active and inactive people's overall patterns of physical activity were disturbed; nevertheless, those who had previously been physically active were experiencing significant discomfort due to being confined to their homes. The elderly who exercised in groups and those who did not use online fitness programs suffered more from a decline in their level of physical activity. The majority of research found that there was little physical activity throughout the epidemic, although some people took advantage of opportunities to stay physically fit by gardening or doing small amounts of stair climbing or staircase climbing at home. According to studies, people who kept themselves occupied throughout the lockdown time reported feeling less stressed, anxious, and depressed.

Adolescent's lives have been profoundly affected by the COVID-19 pandemic and the lockdowns that followed, especially in terms of their levels of physical activity. Reduced physical activity and altered eating patterns have resulted from the closing of schools and recreational centres, limitations on outdoor activities, and an increase in sedentary behaviour. These variables may have detrimental effects on one's physical and mental well-being, such as a higher chance of developing chronic illnesses, mental health issues, and educational inequalities. Promoting physical activity at home, supporting a healthy diet, giving mental health first priority, fostering social connections, and addressing educational inequalities are all critical in addressing these issues. The regular school schedule, which is integral to adolescent life, was disrupted. This lack of routine affect sleep patterns, meal times, and the overall daily structure, contributing to

feelings of boredom and isolation. The confinement and social isolation imposed by the lockdown worsened mental health issues among adolescents, including anxiety, depression, and loneliness. Changes in food availability, meal preparation, and reduced physical activity often led to unhealthy eating habits, contributing to weight gain and nutritional deficiencies. The collective impact of altered lifestyle choices and decreased physical activity levels during lockdown has long-term consequences for the health of adolescents. Obesity and its associated chronic diseases, such diabetes and heart disease, can be caused by increased sedentary behaviour and unhealthy eating habits. Long-term isolation and inactivity might deteriorate mental health. Study by Roy et al. (2020) discovered that among teenagers and young adults, the COVID-19 pandemic caused an increase in screen time, a rise in stress levels, and a drop-in physical activity. Another Research by Shakir et al. (2020) stated that during the lockdown, participants in this study consumed more food and engaged in less physical exercise. The direct impact of COVID-19 lockdown on adolescent's physical activity was because of closing of Schools. Closing of schools was one of the direct consequences of lockdowns. Opportunities for physical activity are frequently offered by schools, including playtime, extracurricular sports and physical education classes. Adolescents were robbed of these organized chances when schools closed. *Restricted Outdoor Access*: Lockdowns frequently prohibited teenagers from playing outside, participating in sports, or just going for a stroll or jog. As a result, they had fewer opportunities to exercise.
Closure of Gyms and Recreational Facilities: During lockdowns, a large number of gyms, sports clubs, and recreational centers were compelled to close, which further reduced the opportunity for teenagers to engage in physical activity.

Objective

The main goal of this study is to evaluate the variations in adolescent's physical activity levels between COVID 19 lockdown and post pandemic period and to assess how adolescent lifestyle decisions, including eating and exercise habits during pandemic, have long term consequences.

• To identify factors associated with changes in physical activity levels among adolescents during the pandemic, such as school closures, restrictions on outdoor activities, and increased screen time.

• To investigate the connection between adolescent mental health outcomes and physical activity levels throughout the pandemic.

Methodology

This study was conducted in the Kashmir Valley, focusing on school-going adolescents aged between 10 to 19 years. A self-structured questionnaire was designed to collect data on lifestyle and physical activity level during and after the COVID-19 pandemic. The questionnaire included items related to physical activity level and overall changes in exercise routine, bodily movement and emotional well-being.

Data Collection

• **Participants:** Adolescents aged 10-19 years, attending schools in the Kashmir Valley. • Instrument: Self-structured questionnaire focusing on physical activity levels and physical health indicators.

• **Content:** The questionnaire covered: lifestyle, physical activities, exercise routine.

Data Sampling

• **Locations:** Data were collected from both urban and rural areas to capture variations in mental health across different environments.

• **Periods:** Data were gathered for two distinct periods: a) *During the COVID-19 lockdown and b) After the lockdown restrictions were lifted*

Results

The global pandemic of COVID-19 had a profound effect on people's lifestyles, particularly their levels of physical exercise. Exercise regimens changed as a result of lockdowns and restrictions imposed in some nations. Due to lockdowns, gym closures, and limitations on outdoor activities, there was an overall decline in physical activity during the early stages of the pandemic.

Table 1. Physical activity levels and their relationship with BMI ranges.

No. Of days	BMI Range									
	Underweight (<18)		Normal Range (18.5 – 22.9)		Overweight (23.0 – 24.9)		Obese (≥ 25.0 and above)		Total	
	F	Percent	F	Percent	F	Percent	F	Percent	F	Percent
None	9	2.5	5	1.1	3	0.9	2	2.2	19	1.6
1 days	29	8.2	38	8.7	1	0.3	4	4.4	72	6.0
2 days	25	7.1	39	9.0	12	3.7	2	2.2	78	6.5
3 days	44	12.4	62	14.3	27	8.4	4	4.4	602	50.1
4days	35	9.9	24	5.5	13	4.0	7	7.8	79	6.6
5days	32	9.0	46	10.6	12	3.7	13	14.4	103	8.6
6days	23	6.5	51	11.7	22	6.9	15	16.7	111	9.2
7days	44	12.4	62	14.3	27	8.4	4	4.4	137	11.4
Total	354	100.0	435	100.0	321	100.0	90	100.0	1200	100.0

Table 1.depicts the physical activity done in a week during COVID-19 lockdown for 30 minutes or more including sport, exercise and brisk walking and cycling, which was enough to raise the breathing rate. This analysis suggests that higher levels of physical activity are associated with lower BMI ranges, while lower levels of physical activity are associated with higher BMI ranges. However, it's essential to note that correlation does not imply causation, and other factors may influence these relationships.

Table 2: - **Physical Activity and exercise during a lockdown week compared to a typical week following the lifting of COVID-19 restriction.**

Degree of extent	BMI Range									
	Underweight (<18)		Normal Range (18.5 – 22.9)		Overweight (23.0 – 24.9)		Obese (≥ 25.0 and above)		Total	
	F	Percent	F	Percent	F	Percent	F	Percent	F	Percent
A lot more	18	5.1	10	2.3	4	1.2	2	2.2	34	2.8
A bit more	10	2.8	4	0.9	7	2.2	7	7.8	28	2.3
Neither more nor less	40	11.3	27	6.2	11	3.4	3	3.3	81	6.8
A bit less	36	10.2	39	9.0	17	5.3	3	3.3	95	7.9
A lot less	242	68.4	345	79.3	280	87.2	75	83.3	942	78.5
Don’t know	8	2.3	10	2.3	2	0.6	0	0.0	20	1.7
Total	354	100.0	435	100.0	321	100.0	90	100.0	1200	100.0

Source:

Tan, K., C.B., (2004). Appropriate body-mass index for Asian population and its for policy and intervention strategies
Due to lockdowns, gym closures, and limitations on outdoor activities, there was an overall decline in physical activity during the Covid-19 pandemic. People got used to exercising at home, taking fitness classes online, and participating in outdoor activities that followed social distance rules. As possibilities for physical activity have decreased, sedentary behaviour—such as spending more time in front of screens—has become more common. As evident from table 2, the majority of respondents that constitutes 78.5% (942) revealed that their physical activity and exercise regime was a lot less during Covid-19 lockdown in comparison to a week after Covid-19 restrictions were lifted.

Table 3:- Time spent outside home during COVID-19 lockdown and after restrictions lifted.

Hours per day typically on average spend outside of home/residence	**Before Lockdown**		**During Lockdown**	
	F	**Percent**	**F**	**Percent**
0-1 hours per day	15	1.25	919	76.6
2-3 hours per day	36	3	197	16.4
4-5 hours per day	115	9.5	58	4.8
6-8 hours per day	1003	83.6	15	1.3
More than 8 hours per day	31	2.5	11	0.9
Total	1200	100	1200	100

Table 3 indicated that during Covid-19 pandemic the respondents spent most of their time inside of their home /residence, 76.6% (919) of respondents stated that only 1 hour on an average per day was spent outside of home. Whereas, after Covid-19 restrictions were lifted, the majority of adolescents included in this study spent very less time inside their homes, 83.6 % (1003) respondents spent 6 to 8 hours outside of their residence after Covid-19 restrictions were lifted. Time spent outside the home during the COVID-19 lockdown was significantly reduced compared to pre-pandemic levels. Restrictions on movement, closures of public spaces, and social distancing measures limited opportunities for outdoor activities. However, as the pandemic progressed and restrictions eased, there was a gradual increase in time spent outside the home, with people venturing out for essential errands, exercise, physical activities, and social interactions.

Table 4:- Assessment of physical activity and exercise during Covid-19 lockdown by measuring the degree of agreement or disagreement of statement.

Regarding each statement, how much do you agree or disagree?		**F**	**Percent**
I found new ways to be active during COVID-19 pandemic	Strongly agree	917	76.4
	Tend to agree	180	15.0
	Tend to disagree	42	3.5
	Strongly Disagree	21	1.8
	Don't Know	40	3.3
	Total	1200	100.0
I now have more time to engage in physical activity.	Strongly agree	718	59.8
	Tend to agree	259	21.6
	Tend to disagree	119	9.9
	Strongly disagree	73	6.1
	Don't know	31	2.6
	Total	1200	100.0
The advice of the government has motivated me to exercise.	Strongly agree	123	10.2
	Tend to agree	119	9.9
	Tend to disagree	647	53.9
	Strongly disagree	244	20.3
	Don't know	67	5.6
	Total	1200	100.0
I don't find exercising on my own enjoyable	Strongly agree	317	26.4
	Tend to agree	366	30.5
	Tend to disagree	245	20.4
	Strongly disagree	222	18.5
	Don't know	50	4.2
	Total	1200	100.0
I miss the type of physical activity I was	Strongly agree	734	61.2

able to do before the outbreak	Tend to agree	253	21.1
	Tend to disagree	106	8.8
	Strongly disagree	57	4.8
	Don’t know	50	4.2
	Total	1200	100.0
I'm anxious about going outside to work out or be active.	Strongly agree	746	62.2
	Tend to agree	255	21.2

	Tend to disagree	102	8.5
	Strongly disagree	57	4.8
	Don’t know	40	3.3
	Total	1200	100.0
I regret wanting to work out during the outbreak.	Strongly agree	418	34.8
	Tend to agree	430	35.8
	Tend to disagree	194	16.2
	Strongly disagree	84	7.0
	Don’t know	74	6.2
	Total	1200	100.0
I regret not working out more throughout the outbreak.	Strongly agree	370	30.8
	Tend to agree	434	36.2
	Tend to disagree	222	18.5
	Strongly disagree	96	8.0
	Don’t know	78	6.5
	Total	1200	100.0
During the epidemic, I worked out to help maintain my physical health.	Strongly agree	389	32.4
	Tend to agree	448	37.3
	Tend to disagree	216	18.0
	Strongly disagree	104	8.7
	Don’t know	43	3.6
	Total	1200	100.0
During the epidemic, I worked out to help maintain my emotional well-being.	Strongly agree	410	34.2
	Tend to agree	386	32.2
	Tend to disagree	249	20.8
	Strongly disagree	112	9.3
	Don’t know	43	3.6
	Total	1200	100.0

According to table 4 the majority of respondents 76.4% (917) strongly agree that during covid-19, they found new ways to be active. While 59.8% (718) respondents strongly agree that they have more time now to be physically active and 53.9% (647) respondents tend to disagree that they have been encouraged to exercise by the government's guidance. The study revealed that 30.5% (366) tend to agree and 26.4% (317) strongly agree that they do not find exercising on their own enjoyable. 61.2% (734) strongly agree that they have missed the types of physical activity they were able to do before the outbreak. Whereas, 62.2% (746) strongly agree that they worry about leaving their home to exercise or be active, 35.8% (430) tend to agree and 34.8% (418) strongly agree about feeling guilty about wanting to exercise during the outbreak. 37.3% (448) respondents tend to agree and 32.4% (389) strongly agreed that they exercised to help manage their physical health during the outbreak. 34.2% (410) of respondents strongly agreed while 32.2% (386) stated that they exercised to help manage their mental health during the outbreak.

Table 5:- **Assessing the Validity of Statements regarding resuming physical activity levels post covid-19 lockdown.**

After the elimination of COVID-19 restrictions, I plan to…	**F**	**Percent**
Boost my level of activity	910	75.8
Maintain the current level of activity	144	12.0
Reduce my level of activity	146	12.2
Total	1200	100.0

As per table 5 the respondents revealed that after Covid-19 restrictions were lifted there was an increase in activity level and exercise regime as 75.8% (910) of respondents stated that they will increase their physical activity levels.

Conclusion

The global pandemic of COVID-19 had a profound effect on people's lifestyles, particularly their levels of physical exercise. Exercise regimens changed as a result of lockdowns and restrictions imposed in some nations. Due to lockdowns, gym closures, and limits on outdoor activities, physical activity levels usually declined in the early stages of the pandemic. People got used to exercising at home, taking fitness classes online, and participating in outdoor activities that followed social distance rules. As possibilities for physical activity have decreased, sedentary behaviour—such as spending more time in front of screens—has become more common. Many resumed or increased their physical activity levels as limitations loosened. Some people carried on with the fitness routines they had established throughout the pandemic, like virtual exercises or at-home-based fitness routines. Some people's levels of physical activity may still be influenced by factors such as chronic health concerns, economic hardships, or mental health issues. Individual differences in Covid-19's impact on physical activity were largely due to socioeconomic position, age, health, and resource availability. Research is also ongoing to determine the long-term effects of patterns of physical activity changing during and after the pandemic. The value of consistent exercise even in the times of difficulties, continuing a regular physical exercise regimen is essential for general health and wellbeing.

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