

Adherence to Physical Activity during COVID-19 Lockdown in India- A Survey

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ABSTRACT

Background: Novel Covid-19 pandemic led to a lockdown in India. During this lockdown, staying at home is the safest measure to prevent spread. Prolonged homestay leads to inactivity and is having effects on physical as well as mental health. This study aimed to find the physical activity levels and the factors contributing to inactivity during the lockdown period in India.

Methods: A survey was conducted on Indian population by circulating a questionnaire through social media. 1132 responses were obtained of which 1110 were included in the study, those not willing to participate were excluded.

Results: 710 (64.54%) participants were engaging in physical activity during the lockdown phase, the remaining participants 400 (35.45%) were not engaging in physical activities. The factors for adherence to exercise routine were reported as motivation, general fitness, free time and encouragement by peers. Majority participants belonged to sedentary work profile 46.03%. The reasons for lack of exercise were reported as lethargy and inability due to work schedules.

Conclusion: Physical activity is perceived as very important by the exercising population. Adherence to exercise was promoted by availability of time and motivation and maintenance of fitness. Lack of physical activity was because of factors such as lethargy, lack of time and working nature. Awareness regarding the benefits of physical activity is lacking.

Key words: Physical activity, COVID-19, Lockdown, Pandemic, Adherence

INTRODUCTION

The Corona virus that emerged in China in December 2019 has spread to other countries very rapidly including India and is affecting Indian population to a large extent. Coronaviruses (CoVs) are positive-sense, single-stranded RNA viruses of the family Coronaviridae that infect a wide host range to produce symptoms ranging from common cold, cough, fever to severe/fatal illnesses affecting the respiratory system. [1] Because of its extensive spread leading to fatal outcomes, it has been declared as a pandemic and global health emergency by the World Health Organization (WHO). [1]

Due to this global outbreak, governments in various countries have been forced to take swift and protective measures as a means of limiting people's exposure to the virus. [2] In India, strict lockdown was imposed on all cities along with implementation of travel bans and cancellations, closing of schools and colleges, postponing classes and Work from home for the working population. As mandated by the Indian government, all citizens must stay at home unless required to go out for valid reasons like medical emergencies and groceries and helping sick or the disabled. Important sporting events, competitions and various other outdoor

activities have either been postponed or cancelled.

Since increasing number of governments have imposed nationwide quarantine and have considered various forms of lockdown in order to halt the spread of the novel Coronavirus disease 2019 (COVID-19), a major problem that emerges is the risk harmful effects of physical inactivity due to personal restrictions. [2] These restrictions lead to a hindrance in participating in outdoor activities including physical activity and exercise and disrupt normal routine activities. [2]

Staying at home is one of the safest measures currently but may have negative impacts on health of the people. Staying at home may promote sedentary behaviour, cause an increase in the time of sleeping, lying down or reclining for doing activities like playing video games, reading books or using mobile phones which may further lead to worsening of physical condition.

Physical activity has many known benefits including physical and mental health. Studies have reported that exercise has a beneficial effect on stress and depression. By performing regular physical activity, we can improve our health and decrease all causes of mortality rate by 30%. Regular physical activity reduces the risk of getting cardiovascular disease up to 35%, regulates type 2 diabetes up to 40%, colon cancer by 30%, and breast cancer by 20%. Most influencing risks such as depression, hip fractures, and dementia (memory loss) are reduced up to 30%, 68%, and 30%, respectively. [3]

Exercise causes release of endorphins which contribute towards an improved mental health and reduction in depression. In addition, physical activity also causes increase in circulation of immunoglobulins, cytokines, macrophages, etc which play an important role in maintaining immunity. Regular exercise also has an effect in boosting immunity against viral infection especially respiratory tract infections. [4] Studies have also proven

a reduced risk of illness on a regular moderate intensity exercise in obese, sedentary and post-menopausal women. [5] The World Health Organization (WHO) has established clear guidelines on the minimal amount of physical activity necessary to maintain adequate health and fitness. For example, it is recommended that for adults aged between 18 and 64 years, should engage in weekly training of at least 150 min of moderate-intensity physical activity or 75 min of vigorous-intensity physical activity, or a corresponding combination of moderate and vigorous-intensity activity. [6]

Many individuals who are also working from home are following these norms and have started engaging in physical activity at home. However, the level of physical activity and the perception of importance of regular exercise should be understood to increase awareness and promote physical activity. The aims of the study were: 1) To find out the level of physical activity during the lockdown. 2) To understand the factors contributing to adherence and non-adherence of physical activity in these individuals.

METHODS

A questionnaire was prepared aiming to address the physical activity of people during lockdown due to Covid-19 and was circulated to the public via social media from 18th April 2020 to 28th April 2020. Face validity of the questionnaire was obtained from three experts. The questionnaire which consisted of 22 questions was divided into four sections a) Consent for the participation in the study b) Demographic data of the participants and questions pertaining to nature of daily work, level of physical activity and degree of importance of exercises during lockdown c) Questions focussed for exercising population and d) Questions pertaining to non-exercising population. Consent was obtained from the participants at the beginning of the questionnaire and those individuals unwilling to participate were

excluded. 1137 responses were obtained out of which 1110 were included in the study. Results were obtained and analysed using Microsoft Excel (version 2018).

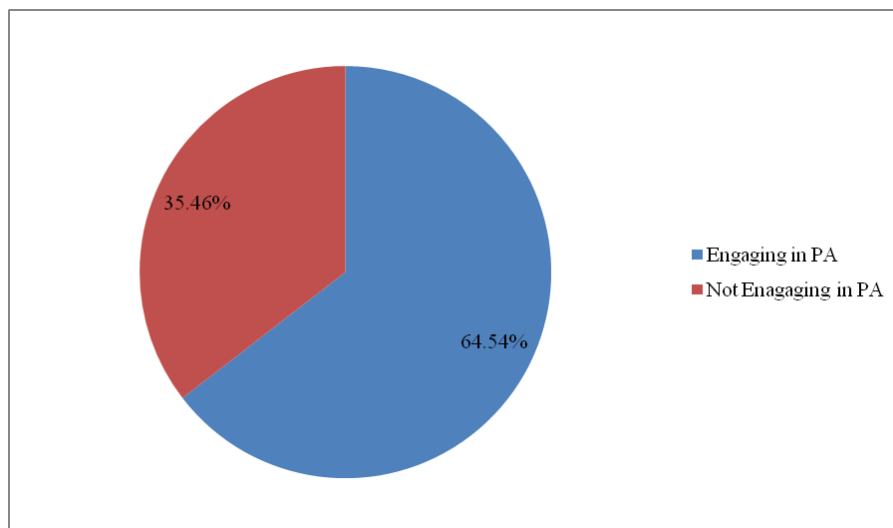
RESULTS

Overall participants

Total 1137 responses were received, out of which 1110 (97.62%) were willing to give their consent for the survey. Descriptive analysis was conducted on 1110 responses.

Table 1- Demographic details of the overall participants as well as based on physical activity engagement during the lockdown.

	Total population (N=1,110)	Exercising population (n1=710)	Non Exercising population (n2=400)
Age			
18-29	601	382	219
30-39	194	132	62
40-49	128	94	34
50-59	149	75	74
60 and above	38	27	11
Gender			
Male	443	301	142
Female	667	409	258
Work Profile			
Sedentary work	511	300	211
Light work	459	311	148
Medium work	127	90	37
Heavy work	13	9	4
Sitting hours			
Greater than 7	371	212	159
5 to 7 hours	351	221	130
3 to 5 hours	375	269	106
1 to 3 hours	13	8	5



Pie 1- Distribution of survey participants based on engagement in Physical activity. (PA=Physical Activity)

Participants Engaging in Physical activity

The participants who engaged in physical activity before and during the lockdown, the reasons for adherence to physical activity were reported as weight loss, recreational and general fitness. The quality of sleep as perceived by the participants in the study was rated at good (38.4%) & excellent (34.5%). The quality of life as perceived by the participants was good (49.21%) and average (31.69%).

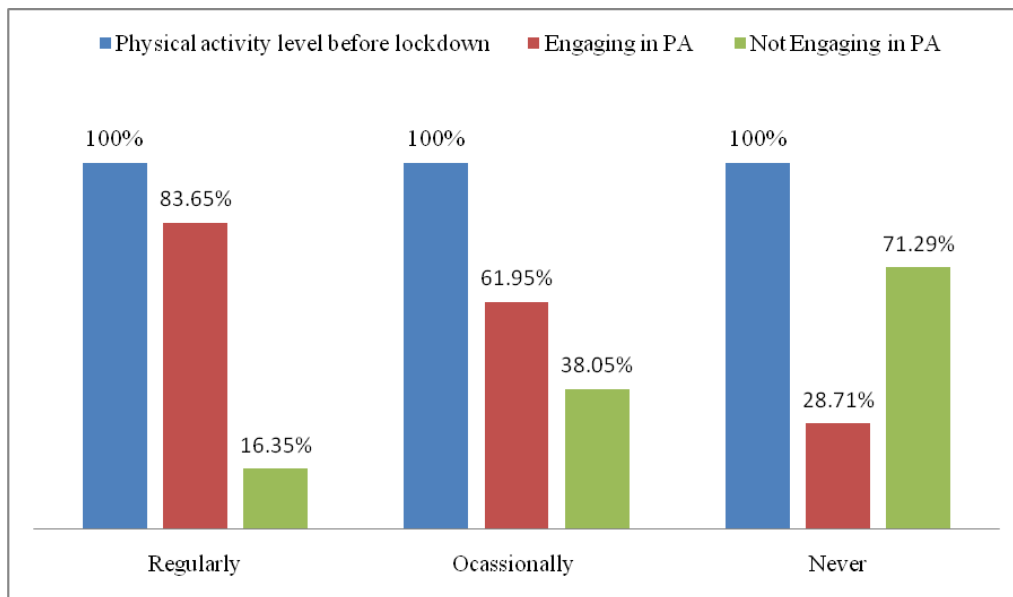
Maximum number of participating individuals followed a self prescribed exercise routine, followed by physiotherapist’s advice and following fitness pages on social media.

Table 3- Duration of exercise done each day during the lockdown by the survey participants.

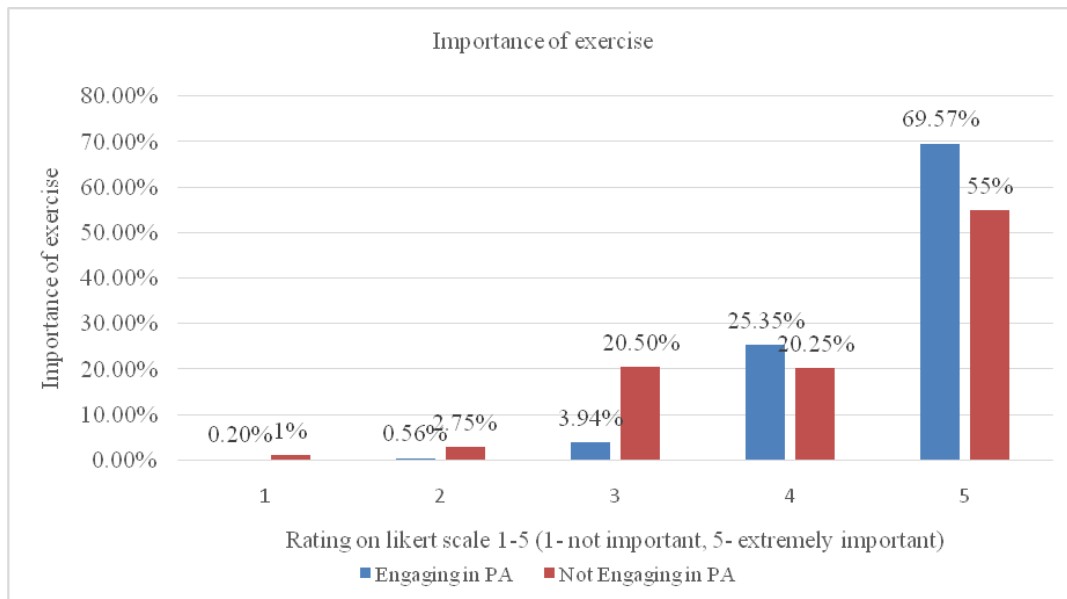
Duration of exercise	Participants (n1=710)
Less than 30 mins	149
30mins to 1 hour	482
More than 1 hour	79

Participants Not engaging in Physical activity

The factors for not adhering to physical activity were reported as lethargy, disturbed routine and sleep and work duties.



Graph 1- Adherence of physical activity by participants 6 months prior to the lockdown & during the lockdown.



Graph 2- Importance of physical activity in the and non-exercising individuals

DISCUSSION

The present study aimed to understand the level of physical activity of people across all age groups during lockdown due to COVID-19. Out of all the participants that participated in the survey, it was found that about 64.5% of the population was exercising during the lockdown period. From Table 1, it is seen that exercising individuals belong to the younger age groups. This suggests that the young

population are more aware about the importance and benefits of physical activity. It is also seen from Table 1 that number of females (667) are more than males (443). Studies have been conducted showing that men and women in the ages above 40 years require regular physical activity. Women in this age group need more physical activity because of menopause and changes related to it. [7] This suggests that more efforts for increasing awareness regarding benefits of

physical activity for all populations are required.

As seen from Table 1, participants belong to sedentary working category, followed by light work category while very few belonged to medium work category prior to lockdown. Maximum number of participants the lockdown as well. Many musculoskeletal disorders are prevalent in sedentary job workers. [8] Along with the sedentary lifestyle and as a result of "work from home", the individuals are required to follow an inactive routine and lifestyle. This has a detrimental effect on physical and mental health. The exercising participants follow a physically active lifestyle, in spite of work duties because they perceive the positive effects of exercise. The same awareness should also be created in the non-exercising individuals. The physical activity level should be performed to maintain health as well as immunity.

For individuals who were exercising during the lockdown, the majority of them exercised for 30 min to 1 hour. About 30 to 60 min of any form of physical activity for 2-5 times/week is recommended by ACSM guidelines. [9] WHO recommends at least an hour of physical activity, 5 days a week to prevent ill-effects of inactivity. [10] Hence, it is important to make people aware of how to overcome these difficulties and teach various ways to exercise easily at home. Individuals also followed a self-prescribed exercise routine. Awareness regarding a prescribed fitness routine is lacking.

Physical activity is defined as any movement of the body that demands consumption of energy. [10] The participants were asked about the form of exercise they practice at home. About 58.4% practised yoga and 3% also practice Pranayama. Individuals with available facilities adhere to weight training and walking as well. The benefits of regular Yoga include improved balance, strength and mental health. Pranayama has a known positive effect on respiratory conditions. Yoga does not require space and equipment. These may be

the factors why the maximum population prefers to practice yoga. [11]

When asked about the importance of exercising, physically active participants rate it higher than non-active population. Exercising population perceives importance of exercise more than non-exercising population. The individuals exercising before lockdown continued their physical activity. Most important factor that helps to exercise is fitness followed by enjoyment, availability of time and motivation from peers. They also reported adequate sleep and a good quality of life. This shows that the exercising population has awareness regarding the benefits of physical activity and the problems caused by the sedentary lifestyle. [3]

Individuals not performing any kind of physical activity continued to not engage in any exercises even in the lockdown period. The non-exercising population may be aware of importance but lack sufficient motivation to adhere to exercise. Individuals who were not exercising during lockdown attributed laziness as the main reason. It was most commonly seen in the younger age group (18-29 years). According to a WHO report of 2018, India ranks 117th out of 168 countries in being physically active with only 34% of its population being lazy. It stated that physical inactivity during adolescence and teens tends to be carried on in further years of life. The benefits of regular exercise achieved during young age are important. Thus it is important to promote exercise in these youngsters. Other common reasons for not exercising were unavailability of time due to tight work schedule, pre-occupation due to household chores, unavailability of resources like gyms, pools, exercise equipment etc. Although the majority of the non-exercising participants rated physical exercise as extremely important (55%), they were unable to put it into practice. This shows that the awareness regarding the importance of physical activity is not a major concern as is its execution.

Our study does not fail to prove the fact that out of the non-exercising population, majority participants are suffering from either of the chronic conditions mentioned above. They also feel that their medical condition is an excuse for not exercising. Physical inactivity is an underrated but leading cause of most of the chronic illnesses.^[12] Thus it is important to create awareness and explain the preventive role of physical exercise in halting the progression of such conditions.

CONCLUSION

The study concludes that the awareness regarding the benefits of exercise should be promoted further across all populations. The body rapidly adapts to the bad changes that occur due to inactivity and can result in decreased quality years of life. Thus the primary preventive role of physical activity must be taken to an advantage.

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