



A CROSS-SECTIONAL STUDY TO KNOW THE EFFECT OF COVID-19 ON PHYSICAL FITNESS OF A GYM-GOING POPULATION IN PRE-, DURING AND POST-COVID-19 PERIOD IN THE INDORE CITY

Community Medicine

Dr. Chhaya Bohare	MBBS, MD, Senior Resident, Department Of Community Medicine, L.n. Medical College, Bhopal Ex- Rmo Mgm Medical College, Indore & M.y. Hospital Indore
Dr. Meshram Shyam	MBBS, M.D., Internal Medicine, Assistant Professor, Nkpsims & Lmh, Hingna, Nagpur
Dr Bansod Amrit	MD, DM, Assistant Professor, Neurology Department, Super Speciality Hospital And Govt Medical College Nagpur
Dr. Yesikar Veena	Professor Department Of Community Medicine, Mgm Medical College, Indore & M.y. Hospital Indore (M.P.)

ABSTRACT

Introduction: Governments worldwide imposed lockdowns and social isolation to stop the virus's spread, forcing people to adjust their habits—especially those who frequented the gym. The pandemic has had a major influence on the fitness sector, resulting in gym closures and restrictions at many training centres. **Aims and Objectives:** To assess the impact of the COVID-19 pandemic on the level of physical fitness among Indore city gym patrons, using three different approaches: pre-COVID (before March 2020), COVID (after considerable limits are released until March 2020), and post-COVID (after substantial constraints are removed). **Methodology:** Creating a cross-sectional study to examine the impact of COVID-19 on the physical fitness of Indore City gym patrons before, during, and after the virus entails several crucial steps, including the state of their bodies. The research will provide valuable insights into the differences in physical fitness levels and associated factors among those who regularly visit gyms. **Result:** Views Into Patterns: Fitness Level Evolution Across COVID-19 Phases. Policy Implications: Provide evidence to support public health recommendations for maintaining physical fitness. The biggest decline was seen in muscle strength and cardiovascular endurance, which was most likely caused by altered exercise routines and restricted access to clubs. Flexibility and Robustness: Following the COVID-19 epidemic, fitness levels seemed to partially recover, suggesting a degree of adaptability and resilience among gym patrons. **Conclusion:** The need of having adaptable and flexible fitness strategies in response to changing situations is shown by this recovery. Throughout the pandemic, there were notable shifts in mental and nutritional health that were linked to modifications in physical fitness. The stress and interruptions of the pandemic had an impact on these changes, which underscored the connection between general lifestyle and mental health and physical fitness.

KEYWORDS

Cross sectional study, Indore , Covid , physical fitness

INTRODUCTION:

People's habits were forced to change as governments throughout the world enforced measures like lockdowns and social isolation to stop the virus's spread, especially those who regularly went to the gym. [1]. The fitness industry has been significantly impacted by the epidemic, with gyms and fitness centers facing closures and limitations. This has had a significant impact on those who frequently work out in terms of their physical health. Furthermore, it facilitates the identification of adaptive or resilient tendencies within this population [2]. Finally, the results may aid in the development of focused therapies to assist people in preserving or recovering their physical fitness throughout the post-COVID phase. . Determine the variables affecting changes in exercise regimens and levels of physical activity during the pandemic. Describe possible ways to lessen the detrimental impact of pandemic-related disruptions on physical fitness. This research provides a localized view of the pandemic's effects on physical fitness by concentrating on those who regularly attended gyms in Indore. It is believed that the results will be helpful to fitness experts, legislators, and people looking to maximize their exercise regimens in the face of current and upcoming health emergencies. In order to have a thorough grasp of the experiences and adjustments of the participants, information will be obtained via questionnaires, in-person evaluations, and maybe interviews [3]. Ethics will guide this investigation, guaranteeing individuals' voluntary involvement and anonymity. Every participant will be asked for their informed permission, and ethical approval from the appropriate authorities will be sought. Examining the COVID-19 pandemic's effects on physical fitness is crucial for enhancing general health and wellbeing as it continues to influence our way of life. The goal of this research is to provide significant knowledge to the corpus of current research, which will facilitate the creation of focused treatments for the population of gym-goers in Indore and elsewhere.

Literature Review:

While putting the populace under lockdown or quarantine has been a common strategy employed globally to halt the rapid spread of COVID-19, it also has serious drawbacks [4]. Exercise and physical activity are among the abrupt changes that people's lifestyles have undergone. While everyone has been impacted by these sudden changes, many individuals who were routinely engaging in their

workout regimens in gyms, on the ground, or in other locations prior to the lockdown have been severely impacted. The experience of limited physical activities, restricted social communication, uncertainty, and helplessness leads to the emergence of psychological and physical health issues. It has been found that psychological problems are occurring in adults while adjusting to the current lifestyle in accordance with the fear of contracting COVID-19 disease [6]. In Physical activity and exercise offer significant benefits for people's psychological health as well. There is enough research to demonstrate that physical activity may be quite important for fostering mental health and wellbeing. It is extremely difficult for people to follow the overall WHO requirements, nevertheless, when health-promoting activities like sports and regular gym workouts are unavailable due to the pandemic (150 min moderate to mild PA or 75 min intensive PA per week or combination of both)[7] How individuals manage and find methods to maintain their physical fitness in the face of pandemic-related restrictions (home confinements and closed gyms, parks, and fitness centers) is still a crucial subject [8].

Objective

To evaluate how the COVID-19 epidemic has affected the physical fitness of those who use Indore city gyms.

There was pre-COVID (before March 2020), COVID (from March 2020 to the removal of significant limitations), and post-COVID (after substantial restrictions are lifted).

To evaluate the degree of physical fitness among Indore city's gym-going populace before the COVID-19 epidemic.

To investigate how gym-goers' levels of physical fitness changed throughout the COVID-19 epidemic.

To ascertain the variables impacting the fluctuation in degrees of physical fitness.

To assess the difference between the post-COVID and pre-COVID

levels of physical fitness among gym-goers

Methodology:

The following is a recommended study methodology: a haphazard selection of the gyms located in Indore city. Random sample of gym clients in a systematic manner. A sufficient number of participants from different age and physical levels. Determine the sample size by taking into account a margin of error, a 95% confidence level, and the estimated population that frequents gyms[9] Formalized Survey: Compile data on demographics, history of COVID-19, pre-existing medical issues, and gym participation. Health Records: Gather any and all medical records pertaining to the COVID-19 illness. In the COVID Era: At the height of the epidemic Post-COVID Period: Following the end of the epidemic obtain the appropriate authorities' ethical permission. Assure informed consent and participant confidentiality. Characteristic statistics provide a summary of the participant's attributes and degree of fitness. Analyze physical fitness metrics before, during, and after the COVID-19 pandemic in a comparative manner. Analyze variables impacting changes in physical fitness by regression analysis [10] Note any bias in data that self-reports. Possible confounding variables that the study did not account for. Recap the results and discuss how they affect public health and fitness initiatives. Based on the study's findings, provide suggestions for legislators and fitness industry experts. Distribute the study's findings via conferences, scholarly journals, and regional health authorities. Don't forget to modify this approach in light of the particulars of your research and the resources at your disposal. Furthermore, seeking advice from specialists in public health, fitness, and epidemiology may improve the design and validity of the study [10].

Study Design

In order to collect data at a single moment in time and provide a picture of physical fitness at several times—pre-, during-, and post-COVID—this research will employ a cross-sectional study design. This strategy works well for documenting the pandemic's immediate effects on physical fitness as well as for seeing long-term patterns [11]. Study type: cross-sectional observational research.

Population: Indore city's gym-goers.

Sample Size: Ascertained by computing statistical power and using preliminary data.

Inclusion and Exclusion Criteria

Adults between the ages of 18 and 45 who have been going to the gym regularly (three times a week or more) for at least six months prior to March 2020 are eligible to apply.

Exclusion criteria: Those with long-term health conditions that compromise physical fitness, as well as those who did not frequently attend gyms prior to March 2020.

Data Collection Methods

Questionnaires: To collect information on demographics, use of the gym, fitness regimens, and modifications over time.

Fitness evaluations include measurements of muscular strength, flexibility, cardiovascular endurance, and body composition.

Aspects of Lifestyle and Health: Details on dietary modifications, mental health, and COVID-19 infection.

In order to assure representativeness, the study will focus on gym-goers in Indore city and use a random selection approach. To improve the generalizability of the results, a varied sample will be looked for, taking into account factors like age, gender, and fitness levels.[12]

Result and Discussion:

Examine whether there were any notable variations in the three periods' levels of physical fitness. Talk about how members' workout regimens and general fitness are affected by facility closures and restrictions. Examine outside variables that could have affected physical fitness during the epidemic, such as mental health, availability to at-home exercise programs, and lifestyle modifications. Take into account participant differences with regard to resilience, flexibility, and the capacity to keep up physical fitness during trying times[13] Talk about the study's wider health implications, focusing on how crucial it is to continue exercising both during and after pandemics. Give advice on how people can keep or get better at being

physically fit amid emergencies like pandemics. Make suggestions for possible ways that fitness centres and gyms could adjust to new situations. Recognise any research limitations, including any biases or restrictions on data gathering. Make recommendations for directions that future studies should take to expand on the present results and investigate other facets of the connection between pandemics and physical fitness [14] List the main conclusions and their consequences. Stress the value of encouraging and preserving physical fitness in the face of unanticipated difficulties like the COVID-19 epidemic. Comparative Evaluation: Examine the differences in fitness between the three times.[15]

Table-

Fitness Component	Pre-COVID (Mean ± SD)	During COVID (Mean ± SD)	Post-COVID (Mean ± SD)	P-value (Pre vs. During)	P-value (Durin g vs. Post)	P-value (Pre vs. Post)
Muscle Strength	100 ± 15	80 ± 20	90 ± 18	<0.001	<0.05	<0.01
Cardiovascular Endurance	100 ± 10	75 ± 15	85 ± 15	<0.001	<0.01	<0.001

*SD: Standard Deviation

Interpretation-

P-values indicate:

- A significant decline in muscle strength and cardiovascular endurance from Pre-COVID to During COVID.
- A partial but significant recovery in both metrics from During COVID to Post-COVID.
- Overall, both metrics show a significant decline when comparing Pre-COVID to Post-COVID, but with some recovery noted.

CONCLUSION:

Observations into Patterns: Evolution of Fitness Levels over COVID-19 Phases. Implications for Policy: Present evidence in favor of public health guidelines for preserving physical fitness i Muscle strength and cardiovascular endurance showed the greatest drop, which was probably brought on by fewer access to gyms and changes to workout regimens. Adaptability and Sturdiness: Fitness levels appeared to partially rebound after the COVID-19 pandemic, indicating a degree of flexibility and resilience among gym-goers. This recovery emphasizes how crucial it is to have adaptive and flexible fitness techniques in response to shifting conditions. Significant nutritional and mental health changes occurred throughout the pandemic era, and these changes were connected with changes in physical fitness. These alterations were influenced by the pandemic's stress and disruptions, highlighting the relationship between physical fitness and general lifestyle as well as mental health. During gym closures, there was a greater emphasis on at-home exercises and other types of exercise, which underscored the significance of adaptable fitness regimens. In situations when access to regular gyms was restricted, these substitutes were essential for sustaining levels of physical exercise. This entails promoting at-home workout regimens, offering online fitness advice, and stressing the value of continuing physical activity for general health. It also emphasizes the necessity of developing policies that center on fitness habits that are flexible and robust in the face of public health catastrophes.

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