

# Efficacy of Physical Exercise Post Covid-19

<sup>1</sup>Abhishek mishra, <sup>2</sup>Dr Rabab kaur, <sup>3</sup>Dr Himanshu

<sup>1</sup>Student researcher, <sup>2,3</sup>Assistant professor  
<sup>1</sup>Bachelors of physiotherapy,  
 Galgotias University, Greater Noida, INDIA

## Abstract—

**BACKGROUND-** The outbreak of COVID-19 crisis with normal life leads to change the way of living these days or despite being at home all day's remote workers and normal people in the time of corona virus faces key challenges that can affect their psychological and social interaction, the survey will help to knowing the impact of being quarantine on people's physical and mental changes.

**METHODS-** Due to physical limitations and the pandemic, online surveys are one of the few opportunities to reach as many respondents as possible. Use the snowball method to recruit participants 15 years and older. Online surveys are completed through Google Forms and sent to people through various platforms such as social media, email and other recommendations. Use descriptive analysis is done to analyze survey responses.

**Results:** According to the study and data, the people (Students) those are more active in vigorous activity has shown least mental and physical changes in them in compare to people those are moderate or least physical active after the COVID pandemic time period.

**Conclusion:** On the basis IPAQ and DASS21 scale this survey is helpful to conclude how importance of physical activity is there in life. while the major changes that are seen after the pandemic and isolation that people felt there is no meaning of life because of least active.

**Index Terms:** Inactivity, IPAQ scale, DASS21 scale

## INTRODUCTION

Physical fitness dropped significantly as a result of government-imposed social isolation measures, as recreation centers, athletic centers, gyms, public parks, playgrounds, and colleges were forced to close. Since societies may take a long time to return to their old mode, the longitudinal effects of physical inactivity square measure still not noticeable. Yet, alternative analysis victimization on-line questionnaires investigated how it had an impact of social isolation has been shown to have a negative impact on physical activity in a range of populations, despite the fact that extended inactivity can lead to a range of health problems<sup>2</sup>.

Muscles being physically relaxed. Caused by inactive period might cause a temporary a progression of age-related muscle wasting, fast sarcopenia progression and therefore the occurrence of co morbid conditions. Lessons no heritable Step-reduction models are considerably more useful since they more closely reflect the physical inactivity brought on by isolation. Bed resting and limb immobilization have both been proven to be useful models for studying the effects of total inactivity on muscle health. In older persons, taking fewer daily steps (to 1,500 steps/day) was demonstrated to decrease back leg fat mass by or so four-dimensional over fourteen days. It is estimated that over five million people die each year as a output of the physical inactivity around the world. It is undeniable that social isolation measures are required to tackle the spread of COVID-19 and prevent the health systems from collapsing<sup>11</sup>.

However, we must always keep in mind that enhanced inactivity has the potential to rescale morbimortality among people, particularly among the elderly population age65+, especially if isolation persists for long periods of time. We tend to feel it's very important that international and national's policymakers emphasize the requirement of the general public achieving the physical activity recommendations—completely<sup>5</sup>. In order for physical activity to be properly recognized as a health-promoting activity, society, science, and government bodies must reach a deal. Physical activity has positive impacts on the vas, metabolic rate, and blood pressure, Immunological and psychological conditions are involved. To that end, this study sought to determine the most effects that are significant of physical inactivity and passive behavior on the quantity of fitness of the population during COVID-19 pandemic<sup>11</sup>.

## METHODOLOGY

Study design: Cross-sectional study

Sample source: Students from Galgotias University and various other universities in Delhi/NCR

Sampling method:

Sample Size: 100

Tools: IPAQ (International Physical Activity Questionnaire) Questionnaire, DASS (Depression. Anxiety, Stress, Scale) 21 Scale

## Inclusion Criteria:-

Students attempting their class through online procedure due to shutting of offline classes<sup>3</sup>

Age group: 18-27 years.

## Exclusion criteria:-

Subjects with any pre-existing mental instability<sup>3</sup>.

Subjects below the age of 18 or above 27.

**Procedure:-** A Google model was created and distributed using social networking sites. Google Form helps to collect information from users by using a survey or quiz that we have designed. Afterwards, the data is automatically collected and connected to a

spreadsheet. The Google poll automatically analyzed knowledge and presented it in the form of pie charts and bar graphs. Total number of 100 subjects participated in the online survey.

The use of IPAQ scale for assessment of physical activity involvement and DASS 21 scale for assessment of emotional states of depression, anxiety and stress.

#### Abbreviations and Acronyms

1. IPAQ: International Physical Activity Questionnaire
2. DASS 21: Depression Anxiety and Stress Scale
3. MET: Metabolic Equivalents
4. SPSS: Statistical Package For Social Science

#### DATA ANALYSIS

Data analysis was performed using statistical package for social science (SPSS) version 25 and MS EXCEL 2007. Graphical representation was done using google form result analysis system and MS EXCEL 2007 version.

#### RESULT

In this survey study 100 subjects participated and answer all 46 questions of IPAQ scale and DASS 21 scale questionnaire and including their detailed demographic data name ,age, gender, contact number ,address, occupation and email contact details.

The total responses were 100 which include 70% male and 30% female genders respectively represented in Table 5.2 and Figure 5.2.1. The study includes only those subjects (students) who uses to attend the classes through virtual platform throughout the pandemic with average time of 3 hours represented in Figure

The survey form consists of 2 categories of people which are vigorous physically active and moderate physically active with both genders of Male and female in it. The 2 scales which are IPAQ and DASS21 scale are used to examine the severities of respective measures.

The IPAQ scale used to assess the activity level both pre and post COVID time periods and found that out of 100% participants ,79% of the participants are vigorously physically active and 31% of the remaining participants found to be moderate physically active within Pre COVID time period represented in Table. While some of those participants of 100% are found that 39% of the participant are vigorously physically active and 61% of the participants are found to be moderate physically active after Post COVID time period represented in Table

The basic changes that people admitted In their questionnaire answer after pre COVID time period are weight gain, laziness, headache, less motivated symptoms represented in Figure. The further assessment through DASS 21 questionnaire represent the mean of 7.83 with Standard deviation of 3.43 are found within pre COVID time period the t test is performed to check the significant difference and got the value of 8.345 with the p value of .00 in it represented in Table. While the post COVID time period assessment got the mean of 12.87 and standard deviation of 8.979 and the t test is performed to check the significant difference and got the value of 14.334 with the p value of .00 represented in Table.

The overall result of this survey on the students is , the people those are more active in vigorous activity during pre COVID time are found to have least mental and physical changes in compare to people those are moderate physically active during post COVID time, they shown more mental and physical changes within them. 81% of the peoples are found to have no respiratory problem due to pandemic or self-isolation while 86% peoples admitted that they have lost their previous strength to perform an activity.

#### Figures and Tabless

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-20	27	27.0	27.0	27.0
	21-23	38	38.0	38.0	65.0
	24-26	35	35.0	35.0	100.0
	Total	100	100.0	100.0	

Table:- Age groups

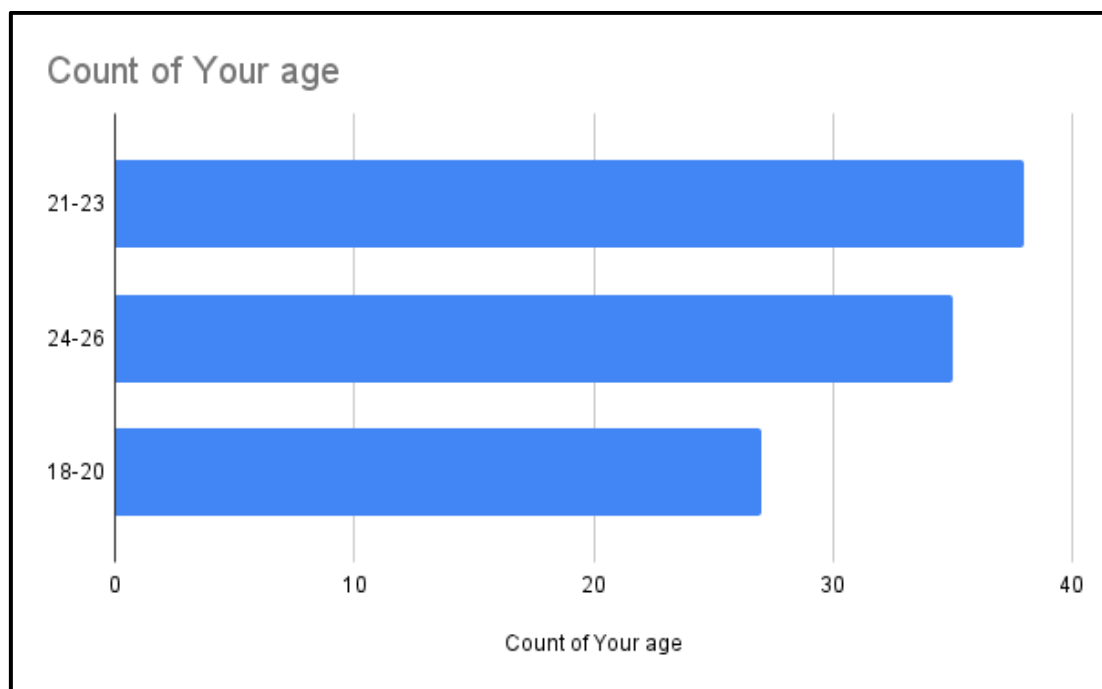


Fig-: Count of age

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	30	30.0	30.0	30.0
	Male	70	70.0	70.0	100.0
	Total	100	100.0	100.0	

Table-Gender

How much does your weight? (kg)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	46-50	5	5.0	5.0	5.0
	51-55	2	2.0	2.0	7.0
	56-60	25	25.0	25.0	32.0
	61-65	32	32.0	32.0	64.0
	66-70	12	12.0	12.0	76.0
	71-75	17	17.0	17.0	93.0
	76-80	1	1.0	1.0	94.0
	81-85	4	4.0	4.0	98.0
	86-90	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table-Weight of the participant (kg)

How much tall you are (cm)?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100-110	1	1.0	1.0	1.0
	141-145	4	4.0	4.0	5.0
	146-150	12	12.0	12.0	17.0
	151-155	15	15.0	15.0	32.0
	151-160	3	3.0	3.0	35.0
	156-160	9	9.0	9.0	44.0
	161-165	2	2.0	2.0	46.0
	166-170	30	30.0	30.0	76.0
	171-175	21	21.0	21.0	97.0
	176-180	3	3.0	3.0	100.0
Total		100	100.0	100.0	

Table-: Height of the participant (cm)

BEFORE THE COVID-19 EMERGENCY HOW MANY DAYS A WEEK DID YOU TRAIN REGULARLY?		
Mean	N	Std. Deviation
2.05	100	2.199

Table-5.6: Before the COVID-19 emergency

DOES YOUR HOUSE HAVE OUTDOOR SPACES FOR PHYSICAL ACTIVITIES?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	39	39.0	39.0	39.0
	Yes	62	62.0	62.0	100.0
	Total	100	100.0	100.0	

Table Outdoor spaces for physical activities

**Scoring the International Physical Activity Questionnaire (IPAQ)**

ACTIVITY PRE COVID					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MODERATE	31	31.00	31.00	31.00
	HIGH	79	79.00	79.00	100.0
	Total	100	98.0	100.0	
Total		100	100.0		

Table-Activity pre COVID

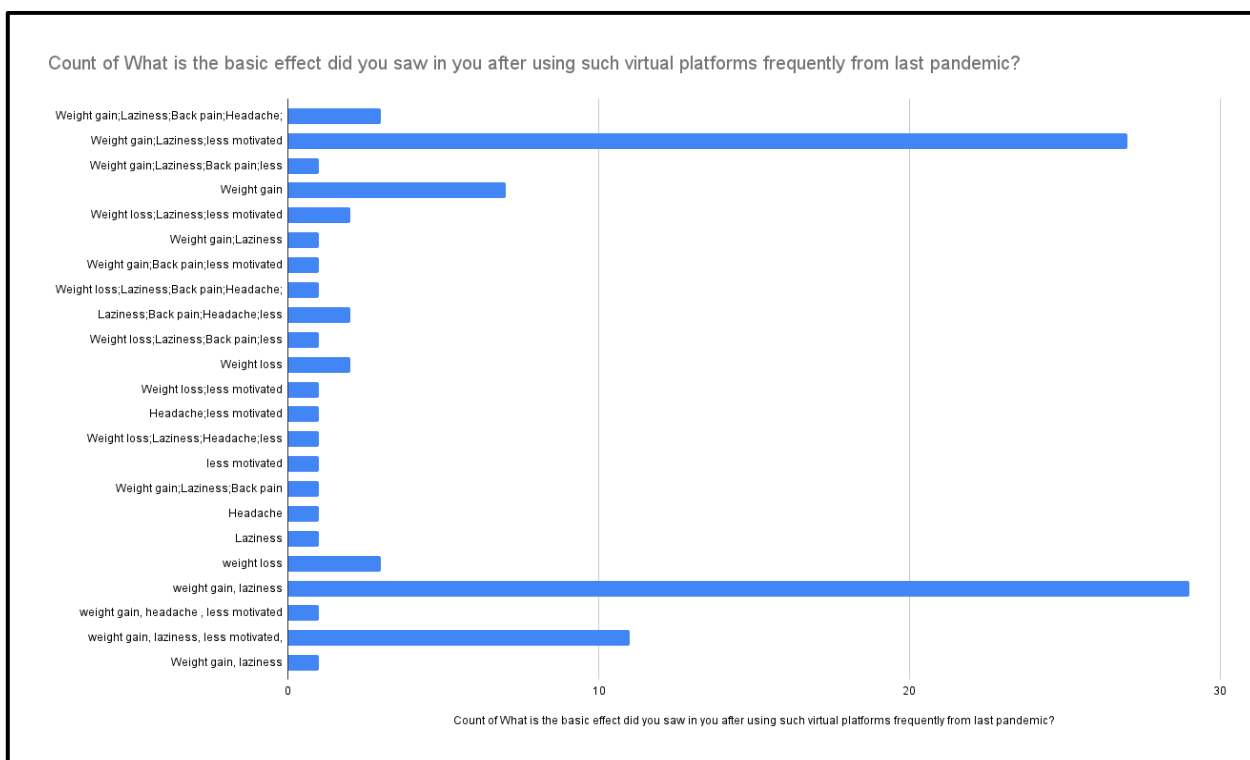


Fig:- Count of what is the basic effect did you saw in you after using such virtual platforms frequently from last pandemic

ACTIVITY POST COVID					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MODERATE	61	59.8	61.0	61.0
	HIGH	39	38.2	39.0	100.0
	Total	100	98.0	100.0	
Total		100	100.0		

Table:- Activity post COVID  
DASS 21

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Table:- Scoring of DASS21 Scale

	MEAN±SD	T TEST	P VALUE
PRE	7.83±3.43	8.345	.000
POST	12.87±8.979	14.334	.000

Table-Mean, SD, T test, P value

## CONCLUSION

The current study reveals that the physical activities are important even there in pandemic time also the physical inactivity affecting physical and mental health in students more frequently in those students who are attending their classes through virtual

platforms and having only moderate or walking activities. The major effect of being quarantine through pandemic days is losing the hope of meaning of life which are seen in many students' questionnaires answer.

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