



# Impact of Physical Activity on Health During Covid-19

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## ABSTRACT

This study aimed to know the impact of physical activity on health during Covid-19. The study was delimited to 100 households selected randomly within 1km radius of the residence of the corresponding author. i.e. Ranaji Enclave Golden, Najafgarh, New Delhi-110043. Subjects' ages were ranged from 18-60 years, irrespective of gender. For this purpose, the authors prepared the Questionnaire with the consultation of three experts in the field. Finally, this Questionnaire consisted of 13 questions for yielding authentic information. It comprises various statements related to Physical Activity & its duration, Covid-19 Status & its treatment, Vaccinations, and comorbidity. The information obtained through administering the Questionnaire on the subjects was compiled and analysed using the percentage method to find the results. After analysis, the findings showed significant effects of Physical Activity on Health during COVID-19.

## KEYWORDS

Covid – 19, Physical Activity, Health

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## INTRODUCTION

Meaning of Physical Activity: - WHO defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure – including activities undertaken while working, playing, carrying out household chores, traveling, and engaging in recreational pursuits. Regular physical activity, such as walking, cycling, wheeling, doing sports or active recreation, provides significant benefits for health. Some physical activities are better than doing none. By becoming more active throughout the day in relatively simple ways, people can easily achieve the recommended activity levels recommended by WHO.

WHO defines health as state of complete physical, mental, social, and spiritual well-being and not merely the absence of disease or infirmity.

**COVID-19** is caused by a coronavirus known as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). The disease is transmitted primarily through contact with infectious material, particularly respiratory droplets that enter the environment when an infected person sneezes or coughs.

**Vaccination** is a simple, safe, and effective way of protecting you against harmful diseases before you come into contact with them. It uses your body's natural defenses to build resistance to specific infections and makes your immune system stronger.

**PANDEMIC:** - Outbreak of infectious disease that occurs over a wide geographical area and that +is of high prevalence, generally affecting a significant proportion of the world's population, usually over the course of several months.

## STATEMENT OF THE PROBLEM

Mainly this problem is related to physical activity which widely impacts the health of an individual which in return affects the immune system of an individual. Hence to find out the degree of impact of physical activity on health during COVID-19 is entitled "Impact of Physical Activity on Health During Covid-19".

## METHODOLOGY

In this study total 100 households were selected randomly from the locality within the radius of 1km from the residence of corresponding author. i.e. Ranaji Enclave Golden, Najafgarh, New Delhi-110043. Further, during the survey of households total 503 Subjects were Considered for this study, which were members of the 100 households selected randomly, the age of the subjects were ranged from 18-60yrs irrespective of gender. 100 households were selected randomly. After that each selected household was visited by the authors in the month of April 2022. Total 503 subjects were considered for data collection.

## TOOL USED

A self-designed Questionnaire was used as per the requirement of the study. It was prepared by the authors with due consultation with three experts in the field. The responses elicited in the Questionnaire were analyzed by the authors with the help of percentage method and further it was exhibited through Pie-Charts.

## RESULTS

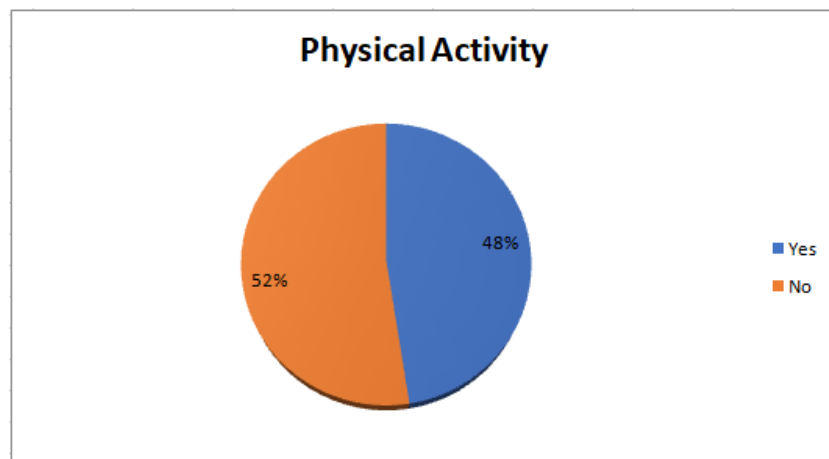
For the purpose of the study a Self-designed Questionnaire was administered on selected subjects. i.e. 100 randomly selected households with 503 subjects within 1km radius of the residence of corresponding author i.e. Ranaji Enclave Golden Najafgarh New Delhi-110043. The data was collected from these subjects. Further data pertaining to each of the selected variables were examined in order to determine the results of the study. The data was analyzed with the help of percentage method and Pie-Chart.

After analysing the data the result and interpretation of the data has been presented in Table No. 1 to 13 and further it has been exhibited through the Pie-Chart from Figure No. 1 to 13.

**Table 1** - Are you doing any type of physical activity for your health?

| N   | YES | PERCENTAGE | NO  | PERCENTAGE |
|-----|-----|------------|-----|------------|
| 503 | 239 | 47.51%     | 264 | 52.48%     |

The analysis of data presented in Table No. 1 shows that 47.51% subjects were doing some kind of physical activity for health. Whereas 52.48% subjects were not doing any kind of physical activity. Further the graphical presentation of the data has-- been shown as Pie-Chart in Figure No. 1.

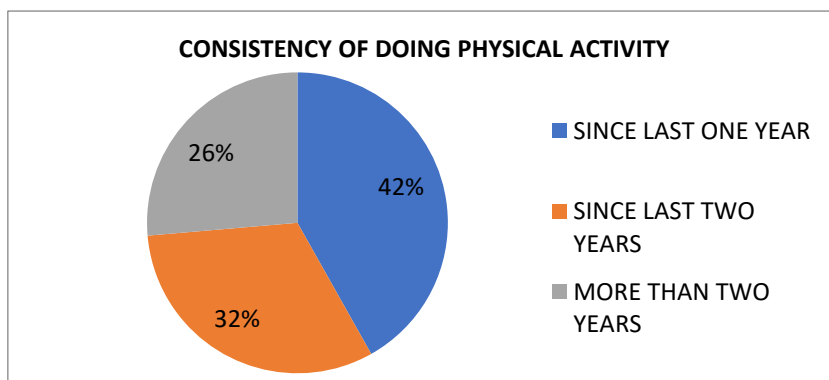


**Figure 1** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No. 1

**Table 2** Those Who Were Doing Physical Activity, Mention Since How Long?

| N   | SINCE ONE YEAR | %      | SINCE TWO YEARS | %      | SINCE THREE YEARS+ | %      |
|-----|----------------|--------|-----------------|--------|--------------------|--------|
| 239 | 100            | 41.84% | 76              | 31.79% | 63                 | 26.35% |

The analysis of data presented in Table No. 2 shows that 41.84% subjects from there who were doing any type of physical activity since one year, 31.79% subjects were doing physical activity since two years, & 26.35% subjects were doing physical activity more than two years. Further the graphical presentation of the data of the Table No. 2 has been shown as Pie-Chart in Figure No. 2

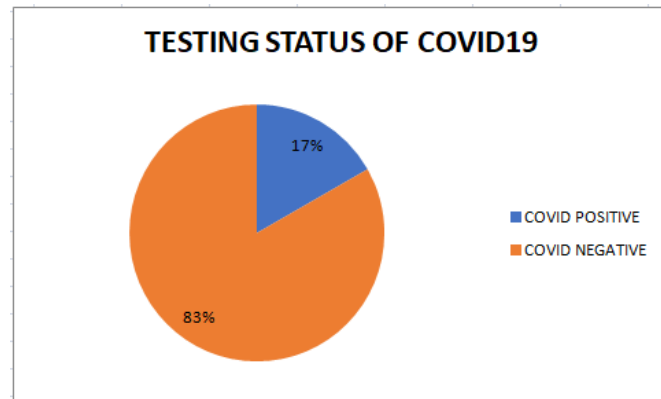


**Figure 2** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.2

**Table 3** - Have you been diagnosed with covid-19 (sars-cov2) during the period (22.03.2020 to 21.03.2022)

| N   | YES | PERCENTAGE | NO  | PERCENTAGE |
|-----|-----|------------|-----|------------|
| 503 | 84  | 16.69%     | 419 | 83.30%     |

The analysis of data presented in Table No. 3 shows that 16.69% subjects were diagnosed positive with COVID-19(SARS-COV2).Whereas 83.30% subjects were diagnosed negative with COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 3 is shown as Pie-Chart in Figure No. 3

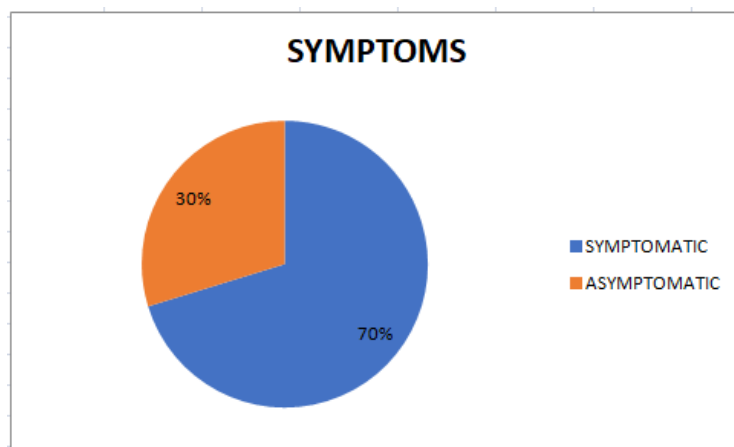


**Figure 3** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.3

**Table 4** – Those who had been diagnosed positive with COVID-19 mention whether it was symptomatic or asymptomatic

| N  | SYMPTOMATIC | PERCENTAGE | ASYMPTOMATIC | PERCENTAGE |
|----|-------------|------------|--------------|------------|
| 84 | 59          | 70.23%     | 25           | 29.76%     |

The analysis of data presented in Table No. 4 shows that 70.23% subjects those who had diagnosed positive with Covid-19 were showing symptoms of COVID-19 (SARS-COV2). Whereas 29.76% subjects were not showing any symptoms of COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 4 has been shown as Pie-Chart in Figure No. 4

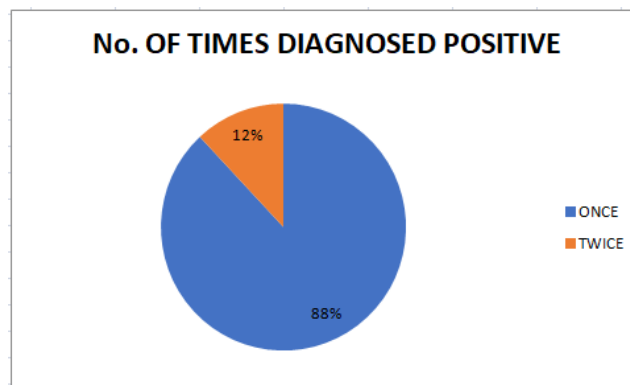


**Figure 4** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.4

**Table 5** – Those who had diagnosed positive with covid-19, then mention, how many times have you been tested positive with covid-19?

| N  | ONCE | PERCENTAGE | TWICE | PERCENTAGE |
|----|------|------------|-------|------------|
| 84 | 74   | 88.09%     | 10    | 11.90%     |

The analysis of data presented in Table No. 5 shows that 88.09% of subjects those who had diagnosed positive once for COVID-19(SARS-COV2). Whereas 11.90% subjects were diagnosed positive twice for COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 5 has been shown as Pie-Chart in Figure No. 5

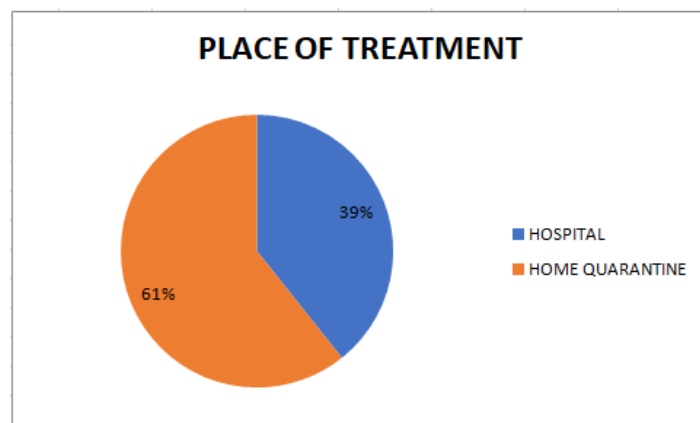


**Figure 5** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.5

**Table 6** – Those who had diagnosed positive with covid-19, then mention the place where you were treated?

| N  | HOSPITAL | PERCENTAGE | HOME QUARANTINE | PERCENTAGE |
|----|----------|------------|-----------------|------------|
| 84 | 33       | 39.28%     | 51              | 60.71%     |

The analysis of data presented in Table No. 6 shows that 39.28% subjects those who had diagnosed positive with Covid-19 were treated in hospital for COVID-19(SARS-COV2).Whereas 60.71% subjects were treated at home as Home Quarantine for COVID-19(SARS-COV2). Further, the graphical presentation of the data of the Table No. 6 is shown as Pie-Chart in Figure No. 6

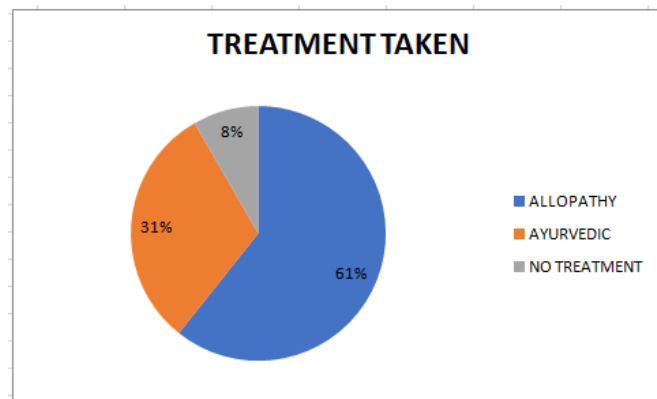


**Figure 6** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.6

**Table 7** Those who had diagnosed positive with covid-19, specify the types of treatment taken?

| N          | ALLOPATHY | AYURVEDIC | NO TREATMENT |
|------------|-----------|-----------|--------------|
| 84         | 51        | 26        | 7            |
| PERCENTAGE | 60.71%    | 30.95%    | 08.33%       |

The analysis of data presented in Table No. 7 shows that 60.71% subjects those who had diagnosed positive with Covid-19 were treated with Allopathic treatment for COVID-19(SARS-COV2), 30.95% subjects were treated with Ayurvedic treatment for COVID-19(SARS-COV2), & 08.33% subjects didn't took any type of treatment. Further the graphical presentation of the data of the Table No. 7 has been shown as Pie-Chart in Figure No. 7

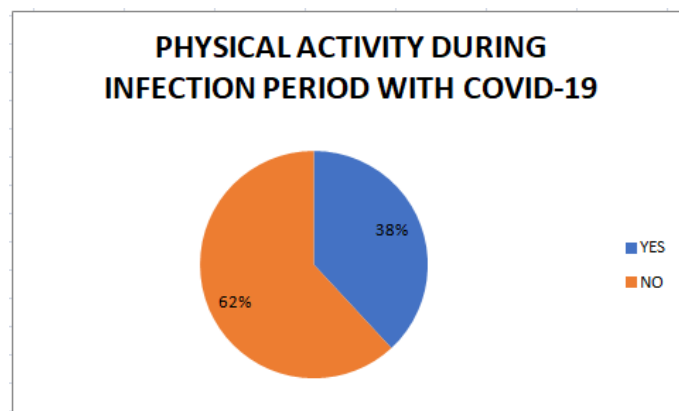


**FIGURE 7** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.7

**Table 8** Those who had diagnosed positive, then mention have you done any type of physical activity during this infection period?

| N  | YES | PERCENTAGE | NO | PERCENTAGE |
|----|-----|------------|----|------------|
| 84 | 32  | 38.09%     | 52 | 61.90%     |

The analysis of data presented in Table No. 8 shows that 38.09% subjects those who had diagnosed positive with Covid-19 did physical activity during that infection period. Whereas 61.90% subjects didn't do any physical activity during that infection period. Further the graphical presentation of the data of the Table No. 8 has been shown as Pie-Chart in Figure No. 8

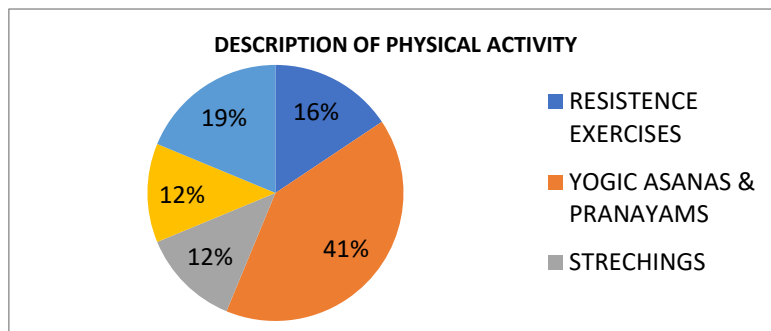


**Figure 8** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.8

**TABLE No** Those who had done physical activity during the infection period with covid-19, then specify the description of activity

| N          | RESISTANCE EXERCISES | YOGIC ASANAS & PRANAYAMS | STRECHINGS | WALKING | MEDITATION |
|------------|----------------------|--------------------------|------------|---------|------------|
| 32         | 5                    | 13                       | 4          | 4       | 6          |
| PERCENTAGE | 15.62%               | 40.62%                   | 12.50%     | 12.50%  | 18.75%     |

The analysis of data presented in Table No. 9 shows that 15.62% subjects who had diagnosed positive with Covid-19 and had done some physical activity did some Resistance Exercises, 40.62% subjects did Yogic Asanas & Pranayams Practices, 12.50% subjects did some Stretching Exercises, 12.50% did Walking, & 18.75% did Meditation as activity during diagnose of COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 9 has been shown as Pie-Chart in Figure No. 9

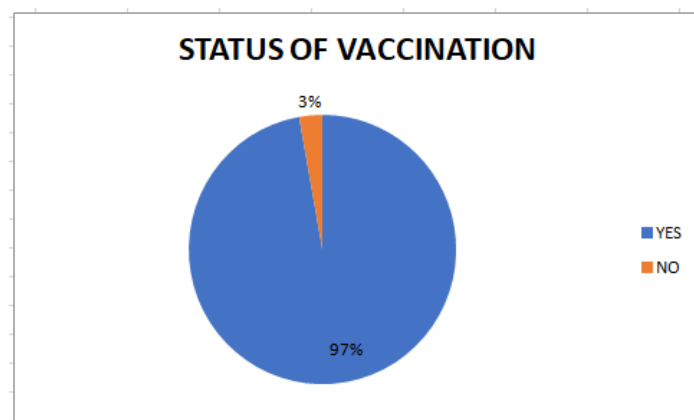


**FIGURE 9** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.9

**Table 10** - Have you been vaccinated?

| N   | YES | PERCENTAGE | NO | PERCENTAGE |
|-----|-----|------------|----|------------|
| 503 | 489 | 97.21%     | 14 | 2.7%       |

The analysis of data presented in Table No. 10 shows that 97.21% subjects took vaccination for COVID-19(SARS-COV2).Whereas 2.7% subjects didn't took vaccination for COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 10 has been shown as Pie-Chart in Figure No. 10

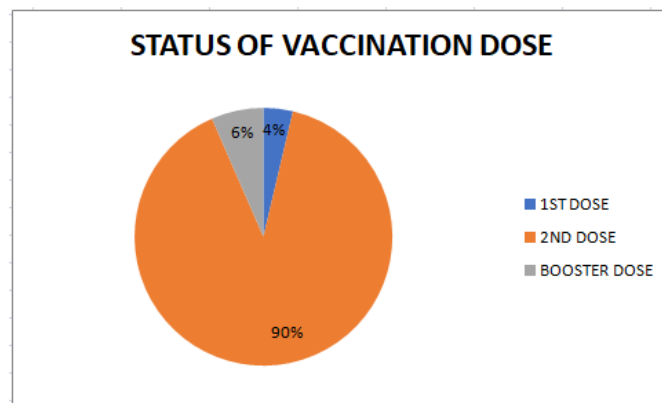


**Figure 10** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.10

**Table 11** Those who had been vaccinated, then mention how many doses have you taken?

| N   | 01 <sup>ST</sup><br>DOSE | PERCENTAGE | 2 <sup>ND</sup><br>DOSE | PERCENTAGE | BOOSTER<br>DOSE | PERCENTAGE |
|-----|--------------------------|------------|-------------------------|------------|-----------------|------------|
| 489 | 18                       | 3.68%      | 439                     | 89.77%     | 32              | 6.54%      |

The analysis of data presented in Table No. 11 shows that 3.68% subjects those who had been vaccinated for Covid-19 took 1<sup>st</sup> Dose of vaccination, 89.77% subjects took up to 2<sup>nd</sup> Dose of vaccination for COVID-19(SARS-COV2), & 08.33% subjects took Booster Dose of vaccination for COVID-19(SARS-COV2). Further the graphical presentation of the data of the Table No. 11 has been shown as Pie-Chart in Figure No. 11.

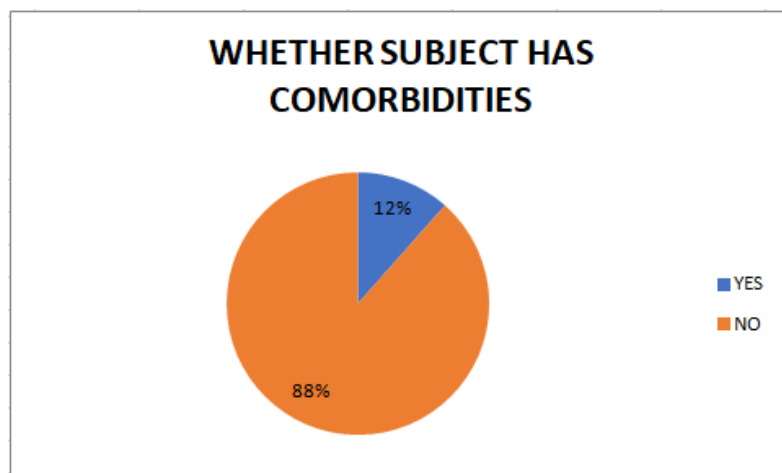


**Figure 11** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.11

**TABLE No.12. Do you have any comorbidity?**

| N   | YES | PERCENTAGE | NO  | PERCENTAGE |
|-----|-----|------------|-----|------------|
| 503 | 58  | 11.53%     | 445 | 88.46%     |

The analysis of data presented in Table No. 12 shows that 11.53% subjects had some Comorbidity. Whereas 88.46% subjects didn't had any Comorbidity. Further the graphical presentation of the data of the Table No. 12 has been shown as Pie-Chart in Figure No. 12

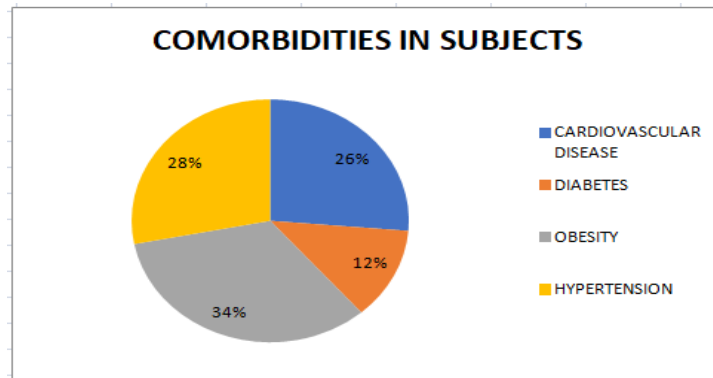


**Figure 12** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.12

**Table 13** Those who had any comorbidity, then specify?

| N          | CARDIOVASCULAR DISEASE | DIABETES | OBESITY | HYPERTENSION |
|------------|------------------------|----------|---------|--------------|
| 58         | 15                     | 7        | 19      | 17           |
| PERCENTAGE | 25.86%                 | 12.06%   | 32.75%  | 29.31%       |

The analysis of data presented in Table No. 13 shows that 25.86% subjects had cardiovascular disease, 12.06% subject had diabetes, 32.75% subjects had Obesity, 29.31% had Hypertension. Further the graphical presentation of the data of the Table No. 13 has been shown as Pie-Chart in Figure No. 13



**Figure 13** Percentage shown in clock-wise direction from 12 O'clock position as per Representation given in Table No.13

## DISCUSSION ON FINDINGS

1. After the analysis of the data it was found that greater percentage i.e. 52.48%. Subjects were not doing physical activity for their better health. Whereas less percentage i.e. 47.51% subjects were doing physical activity.
2. It was also found that lowest percentage i.e. only 26.35% subjects were doing physical activity for more than two years.
3. It was also found majority of the subjects i.e. 83.39% did not diagnosed positive with Covid-19 during the period 22.02.2020 to 21.03,2022, although more than fifty percent subjects were not doing physical activity.
4. It was also noticed that more than 70% subjects were symptomatic among diagnosed positive with Covid-19.
5. According to the results, it was found that nears about 2/3 of the diagnosed subjects were diagnosed positive with Covid-19 only once.
6. More than fifty percent subjects of the diagnosed positive with covid-19 were treated themselves at home only.
7. Near about 50% of the diagnosed positive with Covid-19, have taken allopathic treatment.
8. According to the results it was also noticed that more than 50% among the diagnosed positive with Covid-19, did not do any kind of physical activity during their Infection Period.
9. It was also found that highest percentage i.e. 15.62% subjects did yogic asana & pranayams among the infected person with Covid-19 and have done any type of physical activity during their infection period.
10. It was also found that more than 90% subjects were partially vaccinated.
11. According to the results the picture is very much clear about the fully vaccination because only 6.54% subjects had taken all the there doses including Booster dose.
12. Result of the study clearly indicates that more than 80% subjects did not have any comorbidity.

## CONCLUSION

Findings of this research highlights key role of physical activity, Covid-19 diagnosis, ways of treatment opted, and vaccination among the subjects. A notable proportion did not engage in physical activity, despite its recognized advantages. A major chunk of subjects was symptomatic, managed their illness at home, and opted for allopathic treatments.

The study also reveals a high rate of partial vaccination, including booster doses. A significant majority did not have critical health conditions.

These findings stress the need to promote physical activity for health toughness, improve Covid-19 management strategies, and ensure extensive vaccination. Future research and public health initiatives should continue to explore these factors to execute constructive health policies.

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