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A Study on COVID – 19 Impact on Heart Related Diseases with Special Reference to Tumkur City

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ABSTRACT

This abstract explores the outbreak of COVID-19 has not only posed immediate health challenges but has also led to a growing concern regarding its long term impacts on various organ systems, including the cardiovascular system. The study will utilize a retrospective analysis of medical records from a diverse population to examine trends in cardiovascular diseases before and after the pandemic. Key parameters such as incidence rates types of CVDs, age groups affected and associated risk factors will be analysed to understand the magnitude and nature of this increase.

Furthermore, it will explore potential mechanisms underlying the heightened risk of CVDs post-COVID -19, including viral-induced myocardial injury, systemic inflammation, changes in lifestyle behaviours, and psychological stress. By identifying these factors, the study aims to contribute to a better understanding of the long term health implications of COVID-19 and inform strategies for prevention and management of heart-related diseases in post- pandemic healthcare settings.

Top of Form

INTRODUCTION

The emergence of the corona virus and the subsequent COVID-19 pandemic have had a profound impact on global health systems and public health. While much attention has been focused on the acute respiratory manifestations of COVID-19, emerging evidence suggests a potential link between COVID-19 and an increased risk of cardiovascular diseases. This seeks to delve into the critical aspects of post COVID-19 health effects, specifically focusing on the rise in heart-related diseases following COVID-19 infection. Understanding the factors contributing to the surge in heart-related diseases post COVID-19 is crucial for several reasons. First it sheds light on the spectrum of health impacts associated with COVID-19 beyond respiratory symptoms. Second, it highlights the need for targeted interventions and preventive strategies to mitigate the long-term cardiovascular effects of the pandemic. Third, it provides valuable insights into the interplay between viral infections, systemic inflammation, and cardiovascular health. A thorough investigation into trends, risk factors, and mechanisms driving the increase in heart related diseases following COVID-19 aims to contribute to the broader understanding of post-pandemic health challenges and inform evidence-based strategies for cardiovascular disease prevention and management in the post-COVID era.

RESEARCH METHODOLOGY

To conduct research on individuals who have been diagnosed with COVID-19 using Google Forms, a comprehensive research methodology needs to be devised. The first step involves defining the research objectives, which may include pre-pandemic, and post-pandemic phases to capture longitudinal trends.

The research design should be chosen based on the nature of the study, whether it's exploratory, descriptive, or causal. In this case, a descriptive design may be suitable to gather detailed information about individuals who have been diagnosed with COVID-19.

A well-structured questionnaire will be developed using Google Forms, incorporating both closed-ended and open-ended questions. The questionnaire should cover various aspects such as demographics, pre-existing comorbidities, disease severity, and treatment modalities. Additionally, questions related to the clinical characteristics to assess different risks should be included.

STATEMENT OF THE PROBLEM

The study on increase of heart related disease after COVID-19 aims to address several key issues among individuals who have recovered from COVID-19. One primary concern is understanding the factors on analyzing the incidence rates, risk factors, clinical manifestations, and long-term effects of cardiovascular complications post COVID-19 recovery. This research seeks to identify and enhance our understanding of the cardiovascular sequelae of COVID-19 and contribute valuable insights to the medical community for better management and prevention strategies. Additionally, the study aims to conduct a comprehensive analysis of heart-related diseases in individuals post COVID-19 recovery. By examining these aspects, the research intends to provide valuable insights that investigate the prevalence, risk factors, clinical presentations, and long-term cardiovascular outcomes in this population. The analysis of these aspects, we seek to identify potential mechanisms underlying the development of heart-related complications after COVID-19, assess the impact on patient outcomes, and purpose evidence-based recommendations for prevention, management, and follow-up care.

OBJECTIVES OF STUDY

- To identify the risk factors that contribute to the development of post COVID-19.
- To investigate the infection to cardiovascular complications that link COVID-19.
- To evaluate the long-term impact of COVID-19 on cardiovascular health, including the persistence of symptoms and recovery patterns.
- To enhance patient care by improving detection, diagnosis, and treatment of cardiovascular complications in COVID-19 survivors.

SCOPE OF STUDY

The extent of this examination is to analyse epidemiological data to quantify the prevalence and incidence rates of heart-related diseases post-COVID-19. This explore depends on essential information and optional information. Because of time requirement just predetermined number of people contacted. This think about conduct clinical assessments to identify cardiovascular complications in COVID-19 survivors, such as cardiac imaging, biomarker analysis, electrocardiograms (ECGs), and echocardiograms. The investigation say about the contributing risk factors for the development of heart-related diseases after COVID-19, including comordities, severity of COVID-19 illness and treatment modalities. The extent of research is constrained for Bangalore territory. It gives assistance to advance the exploration for underlying biological mechanisms linking COVID-19 infections to cardiovascular complications, such as inflammation, endothelial dysfunction, immune responses, and thrombotic events. It plans to evaluate the effectiveness of intervention strategies aimed at preventing, managing, or treating heart-related diseases in individuals recovering from COVID-19, such as pharmacological treatments, lifestyle modifications, and rehabilitation programs.

LIMINTATION OF STUDY

- To check the availability of reliable and comprehensive data on post-COVID-19 diseases can be challenge, leading to potential biases or incomplete analyses.
- Investigate the impact of vary in their methodologies, population selection, and outcome measures, making it challenging to compare findings across different studies.
- To know the factors such as age, pre-existing health conditions, medications, lifestyle factors and access to healthcare can confound the relationship between COVID-19 and heart-related diseases**.**
- Examine the clear temporal relationship between COVID-19 infection and subsequent heart-related issues can be complex, especially considering the potential lng-term effects of the virus.
- Patients with severe COVID-19 symptoms may receive more intensive medical interventions.
- Explore studies on tracking individuals overtime are essentials to understand the progression and long-term effects of post COVID-19 heart-related diseases.

REVIEW OF LITERATURE

1. Researchers have identified various risk factors associated with an increased likelihood of developing heart-related diseases after COVID-19. These include older age, pre-existing cardiovascular conditions, severe COVID-19 illness requiring hospitalization or intensive care, and the presence of inflammatory markets. Many studies have documented a range of cardiac complications in COVID-19 patients, including myocarditis, myocardial infarction, arrhythmias, and heart failure. These complications can occur during acute infection or as long term sequelae.

2. Longitudinal studies have highlighted the persistence of cardiovascular symptoms and abnormalities beyond the acute phase of COVID-19. This includes ongoing inflammation, cardiac dysfunction, and a higher risk of cardiovascular events in recovered COVID-19 patients compared to the general population.

3. Studies have investigated the mechanisms through which COVID-19 can lead to cardiac injury. These mechanisms include direct viral invasion of cardiac cells, systematic inflammation triggering immune-medicated damage, endothelial dysfunction, and hypercoagulability contributing to thrombotic events. Research has also explored the impact of COVID-19 vaccination on reducing the risk of heart-related diseases post-infection. Vaccination has been shown to lower the likelihood of severe illness hospitalization, and subsequent cardiac complications in infected individuals.

4. Studies have evaluated various treatment strategies for managing cardiac complications in COVID-19 patients, such as anticoagulation therapy, anti-inflammatory agents, and cardiac monitoring protocols. Understanding the increased risk of heart-related diseases after COVIF-19 has important public health implications. It underscores the importance of post-COVID-19 cardiac screening, follow-up care for recovered patients, and targeted interventions to mitigate cardiovascular risks. The review indicates a growing body of evidence highlighting the complex interplay between COVID-19 and cardiovascular health, emphasizing the need for further research, clinical vigilance, and holistic approaches to address cardiac complications in the post-COVID-19 period.

RESEARCH METHODOLOGY

In conducting research on individuals who have been diagnosed with COVID-19 using Google Forms as a primary data collection method, the research methodology involves several key steps. The process begins with the formulation of research objectives and the development of a structured questionnaire using Google Forms. The questionnaire is designed to gather relevant information about pre-existing comorbidities, disease severity, and treatment modalities of individuals.

SOURCE OF DATA COLLECTION

In conducting primary data collection on individuals who have been diagnosed with COVID-19, Google Forms can serve as an effective tool for gathering information. Google Forms is a versatile and user-friendly online survey platform that allows researchers to design and distribute custom surveys to targeted audiences.

SAMPLING METHOD

To collect primary data on individuals who have been diagnosed with COVID-19, a systematic sampling method utilizing Google Forms will be employed. The process will begin by defining the target population, which in this case, comprises the individuals visiting a health care frequently . A sampling frame will be developed, encompassing all potential respondents, ensuring a representative cross-section of the individual health base.

Size of Sample:

70 patients

TYPES OF SAMPLING

- Using Google Forms, you can randomize the order of your questions or randomize the selection of respondents from a list.
- Divide the population into different strata or groups based on certain characteristics

(e.g., age, gender, geographic location).

- Ensure representation from each stratum in your sample to get a comprehensive view.
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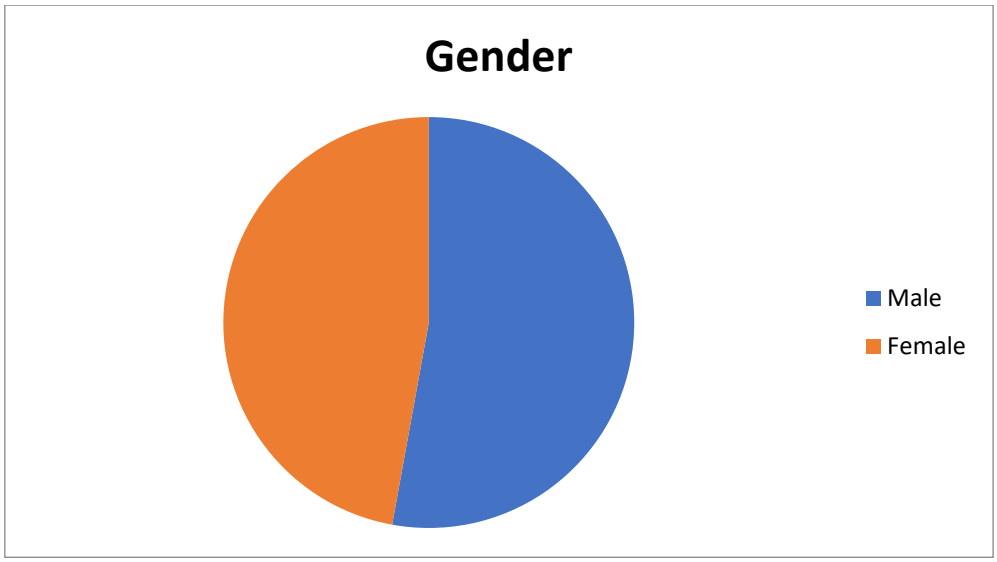
ANALYSIS AND INTERPRETATION OF DATA

Table no.1 Shows how respondents are arranged according to gender.

PARTICULARS	**RESPONDENTS**	**PERCENTAGE**
MALE	37	53%
FEMALE	33	47%
TOTAL	**70**	**100%**

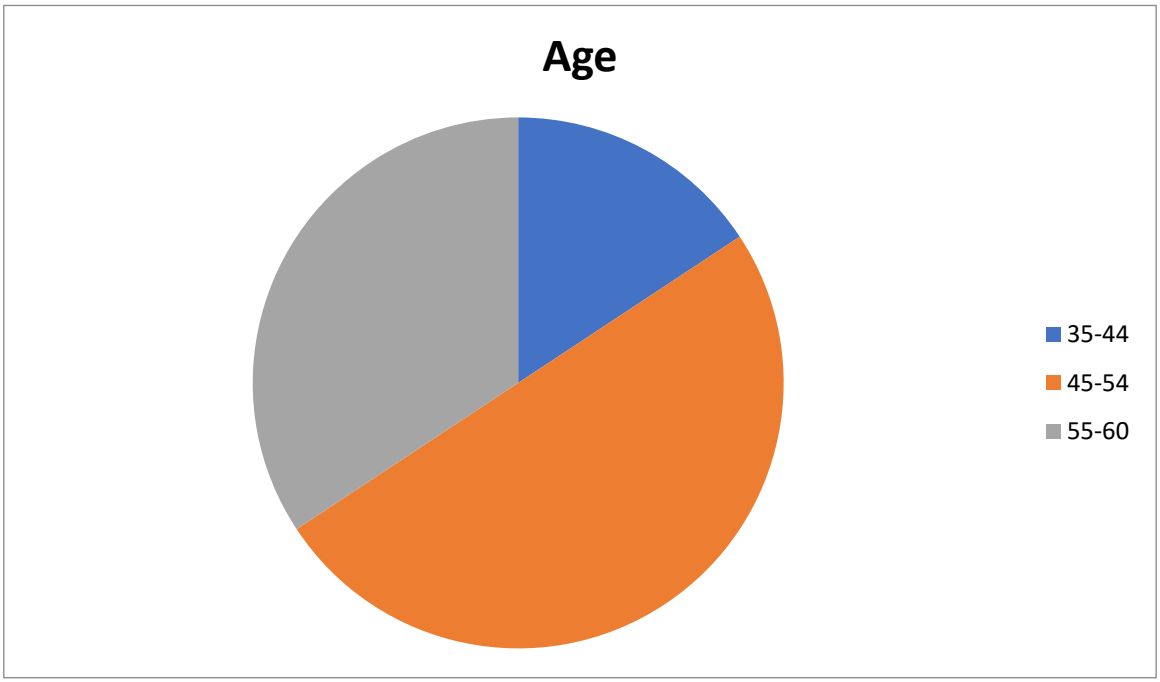
Graph no. 1



The graph makes it evident that most of the respondents are Male.

Table no.2 Shows the age of the Respondents.

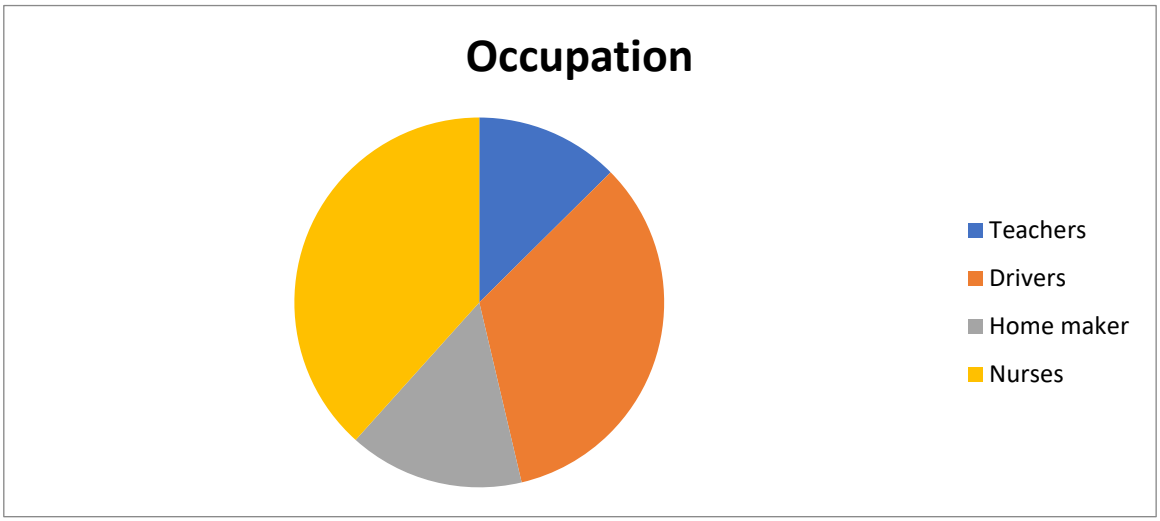
PARTICULARS	RESPONDENT	PERCENTAGE
35-44	11	16%
45-54	35	50%
55-60	24	34%
TOTAL	**70**	**100%**



The graph makes it evident that above 40 years and below 50 years make up the majority of the respondents.

Table no.3 showing the occupation of respondents

PARTICULARS	**RESPONDENT**	**PERCENTAGE**
TEACHERS	13	13%
DRIVERS	22	34%
HOME MAKER	10	15%
NURSES	25	38%
TOTAL	**70**	**100%**



This graph shows the maximum majority of nurses are respondents.

Table no.4 showing, have they experienced health issues after recovery of COVID-19

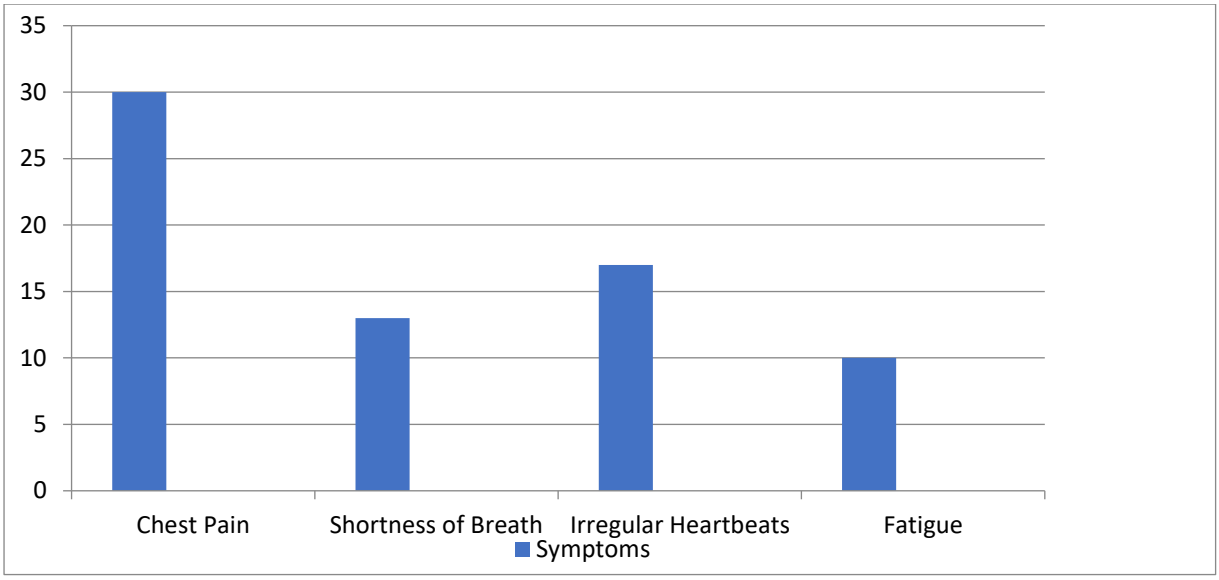
PARTICULARS	**NUMBER OF RESPONSES**	**PERCENTAGE**
YES	40	60%
NO	30	40%
TOTAL	**70**	**100%**

From the above table it can be analyzed that 60% of respondents have experienced health issues after recovery and 40% of respondents have not experienced any health issues.

Table no.5 Have noticed any symptoms related to the heart after COVID19 recovery

PARTICULARS	**RESPONSES**	**PERCENTAGE**
Chest Pain	30	45%
Shortness of Breath	13	13%
Irregular heartbeats	17	27%
Fatigue	10	15%
TOTAL	**70**	**100%**

From the above table it can be analyzed that 45% of respondents are suffering from Chest pain

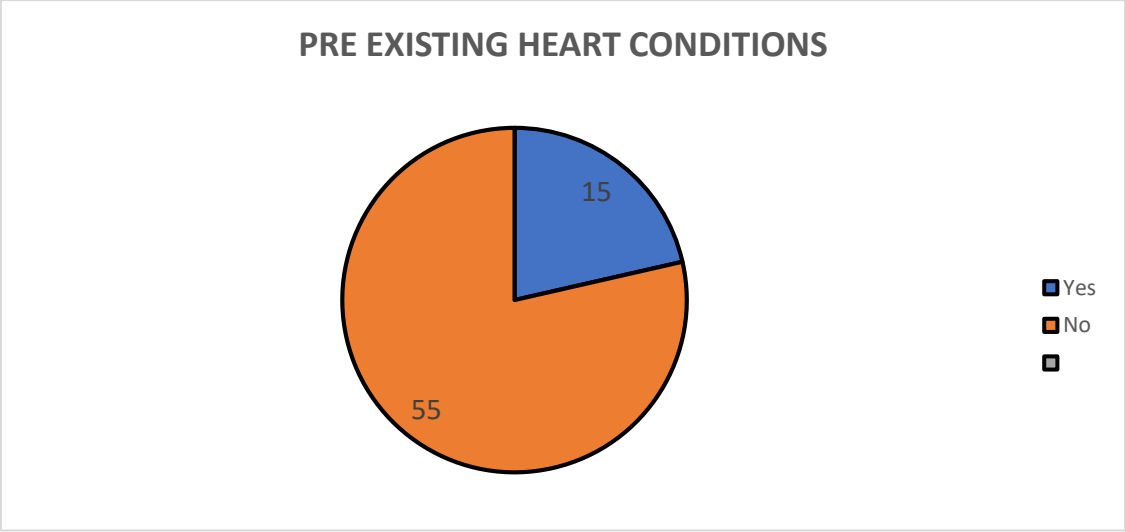


From the above graph it can be interpreted that most of the respondents are suffering from chest pain

Table no.6:shows having any pre-existing heart conditions

Particulars	**Number of responses**	**Percentage**
Yes	15	21%
No	55	79%
Total	**70**	**100%**

From the above table it can be analyzed in that 78% of respondents say that they have no pre-existing heart conditions

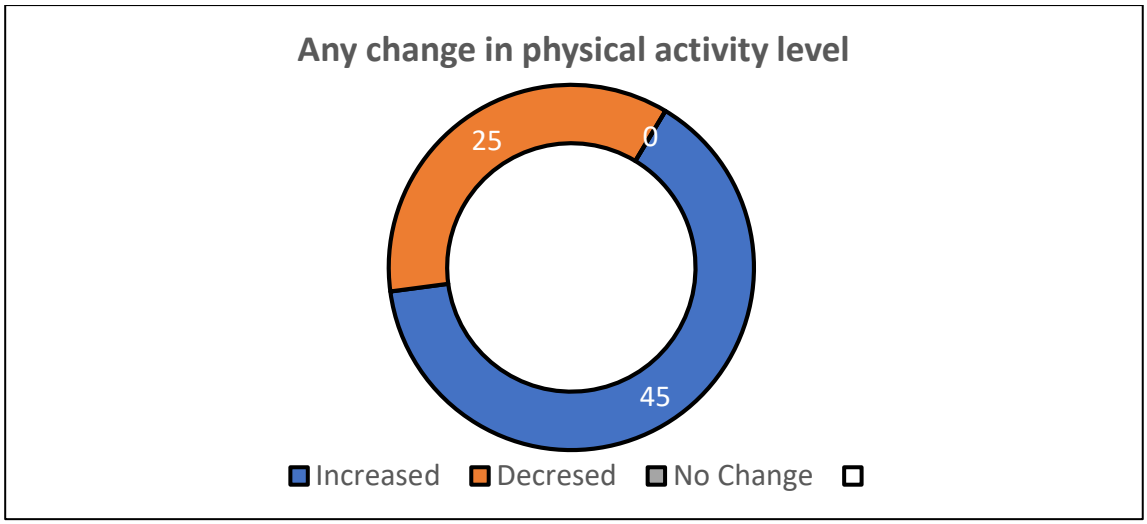


According to the graph, a significant most of respondents, precisely 79%, expressed that they do not have any pre-existing heart conditions before COVID-19.

Table no.7 Any changes in their physical activity level since recovery from COVID-19

Particulars	**Number of responses**	**Percentages**
Increased	45	64%
Decreased	25	36%
No Change	0	0%
Total	**70**	**100%**

From the above table it can be analyzed that 64% of respondents have increased the change in physical activity level.

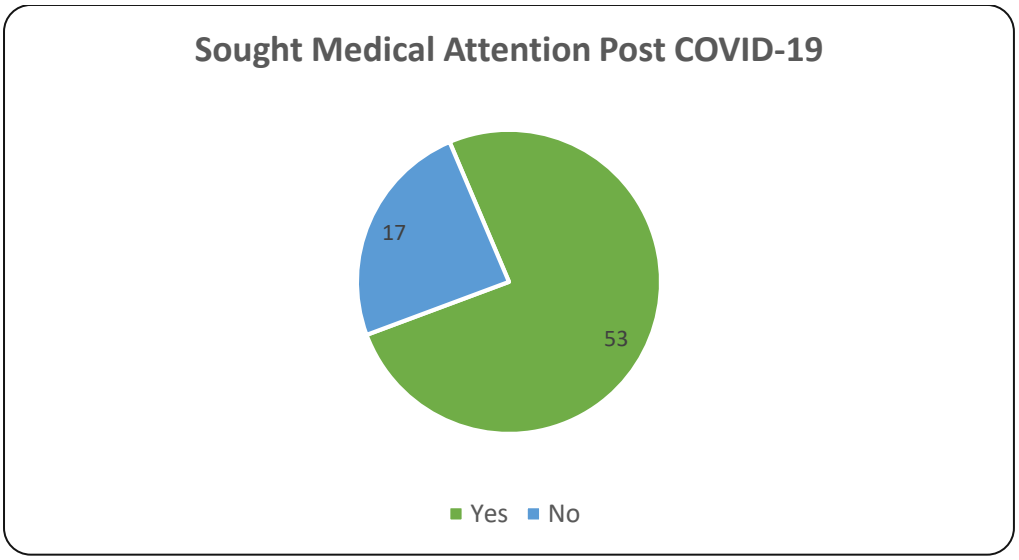


From the above graph it can be interpreted that majority of respondents, precisely 64%, of individuals have increased the change in physical activity level after recovering from COVID-19.

Table no.8 DO you have sought medical attention for post COVID-19 health issues

Particulars	**Number of responses**
Yes	53
No	17
Total	**70**

From the above table it can be analyzed that 76% of respondents have sought medical attention after COVID-19



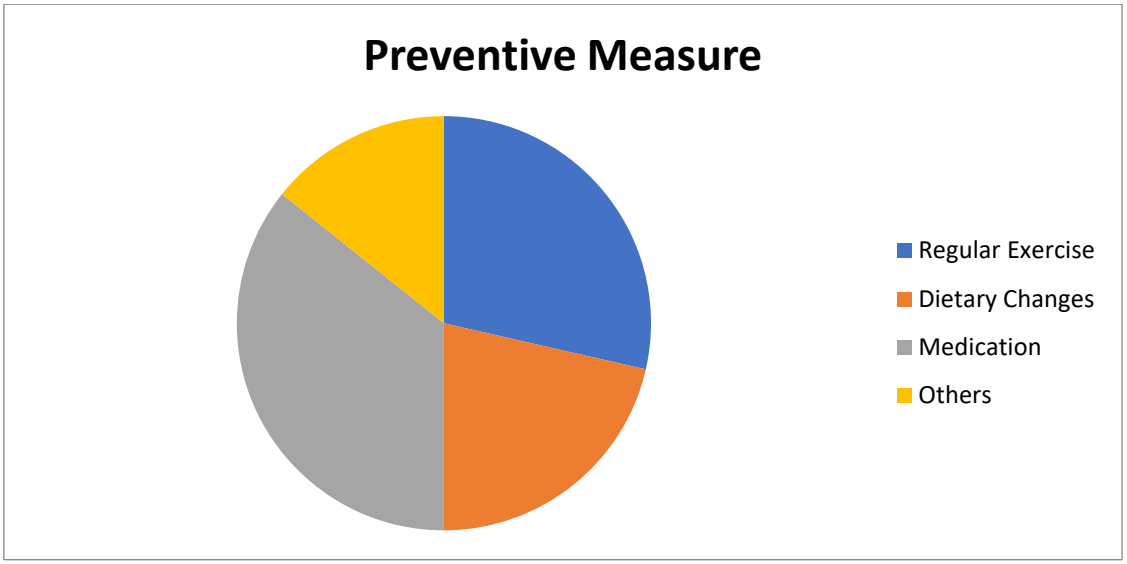
From the above graph it can be interpreted a majority of respondents, 76%, indicated that they have sought medical attention post COVID-19 health issues.

Table no.9 Have taken any preventive measures to reduce the risk of heart related diseases

Particulars	**Number of responses**	**Percentage**
Regular Exercise	20	29%
Dietary Changes	15	21%
Medication	25	36%

Others	10	14%
Total	**70**	**100%**

From the above table it can be analysed that 36% of respondents have taken medication has the preventive measure to reduce the risk of heart related diseases post COVID-19



From the above graph, it can be interpreted that majority of respondents, precisely 36%, expressed medication as their preventive measure to reduce the risk of heart related disease post COVID-19

Finding

1. The most of respondents are male
2. The most number of respondents are age belong to above 40 years and below 50 years.
3. The majority of respondents have experienced health issues after recovery of COVID-19.
4. The maximum number of respondents are Nurses.
5. The greatest number of respondents are suffering from Chest Pain.
6. The most of respondents have no pre-existing heart conditions.
7. A majority of respondents have sought medical attention after COVID-19.
8. The majority of respondents expressed medication as the preventive measure to reduce the risk of heart related diseases post COVID.

Conclusion

COVID-19 has been associated with an increased risk of heart-related complications such as myocarditis, arrhythmias, and blood clotting disorders. The importance of monitoring patients recovering from COVID-19 for potential long-term cardiovascular effects, even in those with mild or asymptomatic infections. The role of pre-existing cardiovascular conditions , age and severity of COVID-19 infection as significant risk factors for developing heart-related issues post-recovery. The need for tailored clinical management strategies, including regular cardiac assessments , lifestyle modifications , to mitigate the risk of heart complications post COVID-19. The broader public health implications , such as the importance of vaccination , public awareness campaigns , and healthcare infrastructure readiness to manage post COVID-19 cardiovascular challenges effectively. By incorporating these can provide a comprehensive overview of the impact of COVID-19 on heart related diseases and healthcare practices.