



## A study to assess the effectiveness of exercise programme on the health-related quality of life of the patients with coronary artery disease admitted at Dr. Vitthalrao Vikhe Patil, Pravara Rural Hospital, Loni

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### Abstract

**Background of study:** Coronary artery disease (CAD), also known as coronary heart disease (CHD) or ischemic heart disease (IHD), is a prevalent cardiovascular condition characterized by the narrowing or blockage of coronary arteries due to atherosclerosis—the accumulation of cholesterol-laden plaques on arterial walls. CAD remains the leading cause of morbidity and mortality worldwide. Preventive strategies for CAD focus on lifestyle modifications, including adopting a healthy diet, engaging in regular physical activity, maintaining a healthy weight, and smoking cessation. Common forms of aerobic exercise that activate large muscle groups, such as the quadriceps, include brisk walking, jogging, cycling, and swimming. Regular physical activity has been shown to enhance peak aerobic capacity and lower overall mortality rates in CAD patients. Material and methods: A Quasi-experimental with one group, pretest

**Objectives:** To assess the existing level of oral mucositis among patients undergoing radiotherapy treatment. To assess coping strategies adopted by patients undergoing radiotherapy treatment. To determine association between severity of oral mucositis and selected socio-demographic variables.

**Material and methods:** A Quasi-experimental with one group, pretest post-test study design was used to assess the effectiveness of exercise programme on the health-related quality of life of the patients with CAD admitted at Dr.V.V.P. PRH Loni. The sample consisted of 40 patients diagnosed with CAD fulfilling inclusion criteria. Sampling techniques used for the present study was probability method, systemic random sampling technique. A proforma was prepared to collect the data. The study participants were assessed using demographic variables, and modified WHO HRQOL scale to assess pretest and post-test health-related quality of life of the patients with CAD. Descriptive and inferential statistics were used to analyze the data according to objectives.

**Results:** A Quasi-experimental with one group, pretest post-test study design was used to assess the effectiveness of exercise programme on the health-related quality of life of the patients with CAD admitted at Dr.V.V.P. PRH Loni. The sample consisted of 40 patients diagnosed with CAD fulfilling inclusion criteria. Sampling techniques used for the present study was probability method, systemic random sampling technique. A proforma was prepared to collect the data. The study participants were assessed using demographic variables, and modified WHO HRQOL scale to assess pretest and post-test health-related quality of life of the patients with CAD. Descriptive and inferential statistics were used to analyze the data according to objectives.

**Keywords:** Exercise programme, health-related quality of life, cad

### Introduction

Coronary artery disease (CAD), also referred to as coronary heart disease (CHD) or ischemic heart disease (IHD), is a common heart condition marked by the narrowing or obstruction of the coronary arteries. This occurs due to atherosclerosis, a condition where fatty deposits, particularly cholesterol, build up on the inner walls of the arteries. As a result, blood flow to the heart muscle is restricted, which can decrease oxygen supply and lead to symptoms such as chest pain (angina), breathlessness, or even a heart attack (myocardial infarction) <sup>[1]</sup>.

Coronary artery disease (CAD) continues to be the primary cause of illness and death across the globe. In 2015, it impacted around 110 million people and was responsible for nearly 8.9 million deaths worldwide. The risk of developing

CAD rises with age and is observed more frequently in men than in women <sup>[2]</sup>.

Multiple factors can increase the likelihood of developing coronary artery disease (CAD). These include high blood pressure, tobacco use, diabetes, lack of physical activity, obesity, elevated cholesterol levels, unhealthy eating patterns, chronic stress, and heavy alcohol intake. In addition to lifestyle-related risks, genetics also play a major role, with nearly 50% of cases having a hereditary component. Recent studies indicate that environmental influences, such as exposure to air pollution— particularly fine particulate matter—may further raise the risk of cardiovascular complications <sup>[3]</sup>.

The diagnosis of coronary artery disease (CAD) requires both a thorough clinical evaluation and the use of various

diagnostic tools. Common methods include electrocardiograms (ECG), cardiac stress tests, coronary computed tomographic angiography (CCTA), and invasive coronary angiography. Identifying the disease at an early stage is essential for implementing timely treatment strategies and reducing the risk of serious complications [4].

### Statement of Problem

A study to assess the effectiveness of exercise programme on the health-related quality of life of the patients with coronary artery disease admitted at Dr.V.V.P. PRH Loni.

### Objectives

1. To assess the existing health-related quality of life of the patients with CAD.
2. To assess the effectiveness of the exercise programme on the health-related quality of life of the patients with CAD.
3. To find out the association between the post-test health-related quality of life with selected demographic variables.

### Methodology

#### Research Design and Approach

It involves the description of the plan to investigate the phenomenon under study in structured (quantitative), unstructured (qualitative) or combination of two methods (quantitative qualitative integrated approach).50

The approach used for the study was quantitative and evaluative approach.

#### Setting of The Study

The study was conducted in oncology in patient department and oncology day care centre of DRVVPPRH, Loni. DRVVPPRH, Loni is a 1275 bedded multispecialty trust hospital at Loni village.

#### Sample

The physical location and condition in which data collection takes place in the study.53 The present study was conducted at Dr. VVP PRH, Loni Bk.

#### Sample Size

Sample size for present study was 40.

#### Sampling Technique

The sampling technique used for the study was the probability, systemic random sampling technique.

#### Sampling Procedure

Samples were screened for eligibility of inclusion and exclusion criteria. Patients eligible and willing to participate were included in the study.

### Inclusion and Exclusion Criteria

#### Inclusion Criteria

The patients, who are,

1. diagnosed with CAD
2. admitted at Dr.V.V.P. PRH Loni Bk

3. willing for participation in the study
4. able to understand Marathi, Hindi, and English
5. able to respond to the tool

### Exclusion Criteria

The patients, who are,

1. critically ill
2. unable to respond to the tool

### Tools and Techniques

Interview method was used to collect the data from the participants, which consists of following sections; It consists of following sections like,

**Section A:** This section consists of items for obtaining information about Sociodemographic profile of participants like Age, Gender, Education, Occupation, Type of family, Religion.

**Section B:** This section consists of modified WHO health-related quality of life scale to assess health-related quality of life of the patients diagnosed with coronary artery disease.

### Data Collection Procedure

#### Ethical Aspects

**a. Ethical clearance:** Proposal was presented before Institutional Ethics Committee of PIMS(DU), Loni and ethical clearance was obtained.

**b. Permission from concerned authority:** Written permission was obtained from Medical Superintendent of the DR.V.V.P.PRH, Loni Bk.

**c. Informed written consent:** The study participants were contacted on one-on-one basis and explanation regarding study objectives, confidentiality of their data, their willingness to participate and right to withdraw from the study were provided to them. Informed written consent was obtained from participants of the study.

**Data collection:** After self-introduction and informed written consent the data was collected from the participants using interview method.

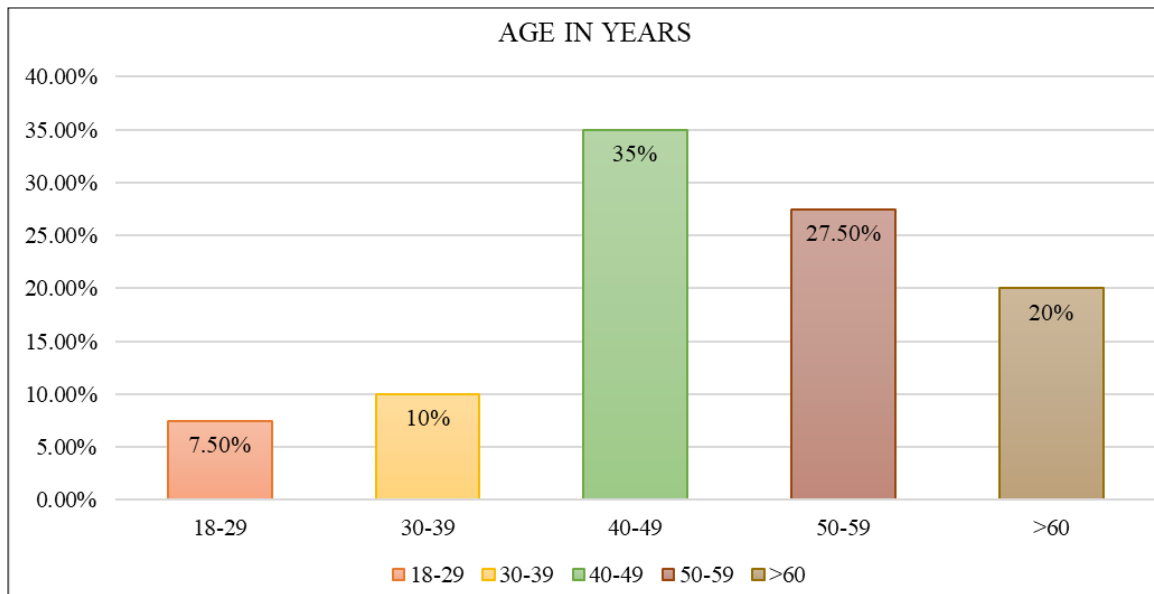
### Data Analysis

Analysis is a "process of organizing and synthesizing data in such a way that research questions can be answered."58 This chapter presents that analysis and interpretation of the data collected to assess the effectiveness of exercise programme on the health-related quality of life of the patients with CAD admitted at Dr.VVP PRH Loni

### Results

#### Description of the study participant according to their demographic characteristics.

This section deals with description of the study participants according to their demographic characteristics. Frequency and percentage are used to describe the demographic characteristics of study participants.



**Fig 4.1:** Description of the study participant according to their age in years

Fig 4.1 shows the percentage wise distribution of study participant according to their age in years. Majority 35% of the study participants were in the category of age 40 to 49 years, followed by 27.50% of the study participants were in the category of 50 to 59 years, followed by 20% of the study

participants were in the age group of more than 60 years of age, followed by 10% of the study participants were in the age group of 30 to 39 years, and 7.50% of the study participants belonged to the category of 18 to 29 years of age.

**Table 4.1:** Description of patients with CAD according to their demographic characteristics. n=40

| Sr. No. | Demographic variables | F                           | %  |       |
|---------|-----------------------|-----------------------------|----|-------|
| 1       | Age in years          | 18-29                       | 3  | 7.5%  |
|         |                       | 30-39                       | 4  | 10%   |
|         |                       | 40-49                       | 14 | 35%   |
|         |                       | 50-59                       | 11 | 27.5% |
|         |                       | >60                         | 8  | 20%   |
| 2       | Gender                | Male                        | 25 | 62.5% |
|         |                       | Female                      | 15 | 37.5% |
| 3       | Education             | Illiterate                  | 6  | 15%   |
|         |                       | Primary                     | 23 | 57.5% |
|         |                       | Secondary/ Higher secondary | 6  | 15%   |
|         |                       | Graduation                  | 3  | 7.5%  |
| 4       | Occupation            | Above graduation            | 2  | 5%    |
|         |                       | Housewife                   | 7  | 17.5% |
|         |                       | Farmer                      | 16 | 40%   |
|         |                       | Daily wages                 | 8  | 20%   |
|         |                       | Salaried                    | 7  | 17.5% |
| 5       | Type of family        | Business                    | 2  | 5%    |
|         |                       | Joint                       | 22 | 55%   |
| 6       | Religion              | Nuclear                     | 18 | 45%   |
|         |                       | Hindu                       | 23 | 57.5% |
|         |                       | Muslim                      | 8  | 20%   |
|         |                       | Christian                   | 3  | 7.5%  |
|         |                       | Any other                   | 6  | 15%   |

Table no. 4.1 shows the description of the study participants according to their demographic profile, the detailed description of the participant according to each demographic characteristic is discussed further in the chapter.

**Discussion**

**The Findings of The Study Are Discussed Under the Following Sections**

**Section I: Findings related to demographic characteristics**

In the present study, 40 patients with CAD were included in the study.

Majority of 35% of the study participants were in the category of age 40 to 49 years, followed by 27.50% of the study participants were in the category of 50 to 59 years, followed by 20% of the study participants were in the age group of more than 60 years of age, followed by 10% of the study participants were in the age group of 30 to 39 years, and 7.50% of the study participants belonged to the category

of 18 to 29 years of age. The gender of the study participants states that, majority 62.50% of the study participants were male, and 37.50% of the study participants were female.

The data based on their educational qualification reveals that, majority 57.50% of the study participants were in the category of Primary education, followed by 15% of the study participants were in the category of illiterate, followed by 15% of the study participants were in the category of secondary/higher secondary education, followed by 7.50% of the study participants were in the category of graduation and 5% of the study participants belonged to the category of above graduation educational qualification.

Occupational status of the participants states that, majority 40% of the study participants were farmer, followed by 20% of the study participants were belonged to daily wages category of occupation, followed by 17.50% of the study participants were housewife, followed by 17.50% of the study participants were self-owned business.

The data based on the type of family states that, majority 55% of the study participants were belonged to the joint family and 45% of the study participants were belonged to the nuclear family.

The data based on religion shows that, majority 57.50% of the study participants were belonged to the Hindu religion, followed by 20% of the study participants were belonged to the Muslim religion, followed by 15% of the study participants belonged to the other category of religion, and 7.50% of the study participants belonged to the Christian religion.

## Section II: Description of existing Health-related Quality of Life among the study participants

The present study assesses the existing health-related quality of life of the patients with CAD.

The data based on the health-related quality of life of the CAD patients before the intervention reveals that, majority 50% of the study participants had average Health-related Quality of Life, followed by 45% of the study participants had poor Health-related Quality of Life and 5% of the study participants had good Health-related Quality of Life.

## Conclusion

The exercise programme was found to be effective on the health-related quality of life the patients with CAD admitted at at Dr.VVP PRH Loni. The exercise programme can be practiced for the patients with CAD alongside routine care.

## Declaration by Authors

**Ethical approval:** The present study was approved by the Institutional Ethics Committee of Smt. Sindhutai Eknathrao Vikhe Patil College of Nursing of Pravara Institute of Medical Sciences (DU), Loni. [Ref. No. PIMS/CON/ICE/PG/01/2024.]

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**Conflicts of Interest:** The authors declare no conflict of interest.

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