ISSN No:-2456-2165

# Medication Adherence and its Related Factors among Patients with Coronary Artery Disease

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**Abstract:- The present study was done to assess the medication adherence and its related factors among patients with coronary artery disease. The objectives of the study were, to assess the medication adherence level, to determine the related factors of medication adherence, to find out the relationship between medication adherence and its related factors, to find out the association between selected socio demographic and clinical variable and medication adherence among patients with CAD. The sample consisted of 100 patients with CAD selected by convenience sampling technique. The design used was descriptive research design with quantitative approach. The tools used were Structured Questionnaire on socio demographic data, Checklist to assess medication adherence and the factors were assessed using structured questionnaire. The data was analyzed using descriptive and inferential statistics. The findings of the study showed that 77% of the samples were adherent to the medication and 23% were not adherent. Behavioural factors such as smoking after diagnosed as CAD(fisher's exact test= .000), alcoholism after diagnosed as CAD (fisher's exact test= .000), practicing exercise(fisher's exact test= .000), therapy and system related factors such as difficulty in following medication regimen(fisher's exact test= .000), regular follow-up check-up(fisher's exact test= .000), support related factors such as someone to accompany during check-up(fisher's exact test= .000) and someone to remind about the medication(fisher's exact test= .000) are related factors of medication adherence. Chi-square test and Fisher's Exact test was used to study the association of variables under study with medication adherence. The analysis showed that medication adherence was significantly associated with marital status (fisher's exact test= .001) and specific comorbidities (fisher's exact test= .006). The present study concluded that low proportion (23%) of the patients were found to be non-adherent. Essential steps should be taken to enhance the medication adherence among CAD patients. Appropriate health education about long term complication of CAD should be provided.**

## I. INTRODUCTION

Coronary Artery Disease (CAD) is a long-term condition in which the blood vessels that carry oxygen and nutrients to the heart muscles are clogged and narrowed. It is caused by atherosclerosis of the coronary arteries that leads to a restriction of blood flow to the heart which can lead to symptoms such as angina. If a blood clot forms in the narrowed artery, it can cause a life-threatening heart attack. Adherence to therapies is a primary determinant of treatment success. The long-term treatment of CAD mainly involves taking medications. In order to prevent the development of related medical conditions, all people who have CAD are advised to take two types of medications: Antiplatelet to prevent blood clots and statins to protect the blood vessels.

Non-adherence to medications is common for patients with chronic conditions like cardiovascular disease. It is a well-established cause of failure to meet recommended management goals for cardiovascular disease risk factors. Even among patients with known complications such as myocardial infarction, non-adherence to secondary preventive medications remains prevalent. Improving medication adherence among patients with cardiovascular disease could improve risk factor control and reduce complications and costs.

### *A. Need for the study*

CAD is a major cause of mortality and morbidity all over the world. There has been an alarming increase in over the past two decades in the prevalence of CAD and cardiovascular mortality in India and other south Asian countries. Prevention of CAD is a multi-interventional approach involving therapeutic lifestyle changes and adherence to medical therapies. Studies showed that these interventions have contributed to a marked reduction on CAD related deaths. The reviewed literature and the clinical experience created an insight in the investigator and intensified the need to undertake a study to assess the medication adherence level among CAD patients.

### *B. Statement of the problem*

A descriptive study to assess the medication adherence and its related factors among patients with CAD in a selected hospital Kottayam.

### *C. Objectives of the study*

- Assess the medication adherence level among patients with CAD.
- Determine the related factors of medication adherence among patients with CAD.
- Find out the relationship between medication adherence and its related factor.
- Find out the association between selected socio demographic and clinical variable and medication adherence among patients with CAD.

*D. Operational definitions*

➢ *Medication adherence*

In this study, medication adherence is the degree to which a patient correctly follows medicines with the agreed recommendations from a health care provider which will be assessed by using a checklist.

➢ *Related factors*

In this study, related factors refer to the elements like behavioural factors, co morbidity related factors, therapy and system related factors, support related factors, personal factors which influence the individual to comply with medication regimen which will be assessed by using structured questionnaire

➢ *Patients with coronary artery disease*

It refers to the patients coming to Caritas hospital who has diagnosed with CAD for minimum of 3 months as per medical records.

*E. Assumption*

Patients with coronary artery disease can have poor medication adherence.

*F. Hypotheses*

All the hypotheses will be tested at 0.05 level of significance.

**H1 :** There is significant relationship between medication adherence and related factors among patients with CAD.

**H2 :** There is significant association between medication adherence and selected demographic and clinical variables among patients with CAD.

## II. METHODOLOGY

*A. Research design*

The research design selected for the present study was descriptive study design.

*B. Setting of the study*

The study was conducted in the cardiology OPDs of Caritas Heart Institute.

*C. Population*

Population in the present study is CAD patients who had come for review in the cardiology OPDs of Caritas Heart Institute.

*D. Sample size*

The study sample consists of, 100 patients who are diagnosed as CAD more than 3 months of period, from the cardiac OPDs of Caritas Heart Institute.

*E. Sampling Technique*

The sampling technique selected for the present study was convenience sampling.

*F. Criteria for sample selection*

➢ Inclusion criteria

Patients who are,

- diagnosed as coronary artery disease for minimum of 3 months and on treatment.
- are willing for the study.
- able to understand Malayalam or English.

➢ Exclusion criteria

Patients who are,

- diagnosed as coronary artery disease within 3 months of period.
- those patients whose medicines are administered by others.
- on treatment for psychiatric illness.

*G. Tools*

In the study the data collection instruments used are,

➢ **Tool 1**- Structured Questionnaire on demographic variable and clinical variables.

- *Section A: Socio-demographic data*

Socio-demographic data were obtained by interview technique using a structured questionnaire (Appendix M [Tool: 1]) which includes information regarding the variables such as age, sex, marital status, level of education occupation and economic status.

- *Section B: Clinical variables*

Clinical data were also collected by interview technique using a structured questionnaire (Appendix M [Tool: 1]) which includes variables such as co-morbidities, number of medicines being taken, duration of diagnosed as CAD, treatment modalities received and history of any cardiac surgeries other than CABG.

➢ **Tool 2**- Checklist to assess medication adherence level.

Medication adherence level was assessed using a self-developed checklist (Appendix M [Tool: 2]). The tool was developed after referring various standardized tools to assess medication adherence level. It consists of 15 subjective type of questions. Each question has a 'Yes' or 'No' response. A response consistent with non-adherence is coded as 0 whereas a response consistent with adherence is coded as 1. For questions 1-5 a 'No' response is indicative of adherence and is coded as 1, while for questions 6-15 a 'Yes' response is indicative of adherence and is coded as 1. Total scores may range between 0-15 with a score less than 12 indicating non-adherence and 12 and more than 12 indicating adherence.

➢ **Tool 3**- Structured Questionnaire to assess the factors related to medication adherence.

The factors related to medication adherence was assessed using a structured questionnaire (Appendix M [Tool: 3]). The factors were assessed by using 15 questions which has 2 responses 'a' and 'b'. The response 'a' is coded as 1 and 'b' is coded as 2. The factors assessed are

- Behavioural factors
- Co morbidity related factors
- Cost related factors
- Therapy and system related factors
- Support related factors
- Patient related factors

ISSN No:-2456-2165

## III. RESULT

The tool used for assessing the medication adherence level was self-developed checklist. The study findings revealed that 77% of the samples were adherent to the medication and 23% were not adherent. The Chi square and Fisher's exact test was used to find the relationship between medication adherence and related factors. There is significant relationship between medication adherence and behavioural factors such as smoking after diagnosed as CAD (fisher's exact test= .000), using alcohol after diagnosed as CAD (fisher's exact test= .000), practicing exercise(fisher's exact test= .000); therapy and system related factors such as difficulty in following medication regimen(fisher's exact test= .000), regular follow-up check-up(fisher's exact test= .000); support related factor such as someone to accompany for check-up(fisher's exact test= .000), someone to remind to take medicine(fisher's exact test= .000).

| Level of medication adherence | Frequency (f) | Percentage (%) |
|---|---|---|
| Non-adherent | 23 | 23 |
| Adherent | 77 | 77 |

Table 1:- Frequency and percentage distribution of samples based on level of medication adherence [n=100]

The data in Table depicts that 77% of the samples were adherent to the medication and 23% were not adherent.

## IV. CONCLUSION

The present study was aimed to assess the medication adherence and its related factors among patients with CAD in a selected hospital, Kottayam. Based on the findings of the study, the following conclusions were drawn. Among the 100 samples studied, 77% of the samples were adherent to the medication and 23% were not adherent. The present study results revealed that, smoking after diagnosed as CAD, alcoholism after diagnosed as CAD, practicing exercise, difficulty in following medication regimen, regular follow-up check-up, someone to accompany during check-up and someone to remind about the medication are related factors of medication adherence.

- *Nursing Implication*

Nurses play a vital role in health care delivery system. Nurses can make use of non- pharmacological therapy, individual, group and health teachings to improve the medication adherence of the patient. The findings of the present study can help the nurse administrator to collaborate with the hospital authorities to formulate policies and plans in providing patient education during their hospitalization.

## RECOMMENDATIONS

- A similar study can be conducted on multicentre setting covering larger population.
- An interventional study to facilitate the introduction of a structured teaching programme to CAD patients and family members regarding the complications of not being adherent to the medicines.
- A correlational study to compare the medication adherence and quality of life among CAD patients.
- An interventional study to assess the effectiveness of follow-up phone calls, educational lectures, booklets and reminder cards to improve the medication adherence.

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