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A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Coronary Artery Disease Among Postmenopausal Women of Selected Rural Areas of Tumkur

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ABSTRACT

"The Atlas of heart Disease," by the World Health Organization (WHO) revealed that 3.4 million women worldwide die each year from Coronary Artery Disease (CAD). Of these India accounts for the highest numbers of deaths at 15, 31,534 for both men and women population. The burden of CAD in women is high with a lifetime risk greater than 20% . Women of post menopausal age have greater cardiovascular responses to stress than men or pre-menopausal women. Coronary heart diseases need to be more aggressively managed in women than men," was the remark on World Heart Day by Madhukar, Interventional Cardiologist, Artemis Health Institute, Gurgaon.

Keyboard*: Coronary Artery Disease, Post-Menopausal Women, Cardiovascular Disease.*

INTRODUCTION

For the heart muscle to contract properly it must have an adequate blood supply. The major disorders resulting from an insufficient blood supply to the myocardium are known as Coronary Artery Disease. Every year since 1994, disease has claimed the lives of more females than males. More than 4,50,000 women succumb to heart disease annually and 2,50,000 die of coronary artery disease [1]. In addition to being associated with termination of reproductive life in women, the menopause coincides with an increase in several comorbidities including cardiovascular disease [2]. Menopause is an universal and irreversible part of the overall aging process involving a women's reproductive system, after which she no longer menstruates [3].

It is estimated that perhaps 50 million women worldwide will go into menopause annually. Artherosclerotic cardiovascular disease is a common chronic disorder after menopause, representing major health problems in most developed countries [4]. Following the menopause, women develop Coronary Artery Disease at the same rate as men. The lifetime probability that a woman will develop CAD is 46%. In women younger than the age of 60, the incidence of coronary artery disease is significantly lower than in men. However, after the age of 60, the incidence is approximately equal. The difference may be related to estrogen. Women tend not to recognize the symptoms as early as men to wait longer to report their symptoms and seek medical advice [5].

The under diagnosis and under treatment of coronary artery disease is greater in women worldwide and appears to be worse in India [6]. Advances in the prevention and treatment of Coronary Artery Disease should not be denied to women. Although considerable research has been focused on the experiences of coronary artery disease in men, little has been done to investigate the experience of women and it is necessary for the post menopausal women

to be aware of coronary artery disease and protect themselves from the disease [7].

Objectives

1) To assess the knowledge among postmenopausal women about Coronary Artery Disease
2) To develop, validate and evaluate the effectiveness of STP regarding CAD.
3) To find out the association between the knowledge and pre-test scores of post-menopausal women in relation to selected demographic variables.

Delimitation of the Study

1) The study is limited to postmenopausal women.
2) Data collection is limited to postmenopausal women who are willing to participate during data collection.

Need for the Study

The World Health Organization has warned about the ominous fact that coronary artery disease is the modern epidemic[10] and coronary calamity will be Indian number one killer by 2010. New Delhi, September 28, World Heart Day Sunday brings bad news for Indian women who have been found to be more vulnerable to coronary disease because their arteries are narrower than those of men.

Women continue to be under represented in research on heart disease. They account for less than 30% of the participants in most studies and trials in cardiology. It is difficult, therefore to draw conclusive evidence on managing Coronary Artery Disease in women [10]. Women from ancient Greece experienced menopause at the same age as modern women, with the symptomatic transistors to menopause usually commencing at approximate age 45.5 – 47.1 years. Cardiovascular disease mortality rates have decreased in men during the past 20 years but, have steadily increased in women.

Menopause associated estrogen deficiency has both metabolic and vascular consequences that increase the risk for CAD. In the United States, greater than 50,000 women die of coronary artery disease every year [17].

Women represent 60% of those over the age of 65 years in the US and more women than men have died of Coronary Artery Disease since 1984 [10]. Indian women have the highest coronary artery disease mortality 30% higher than Whites and 32.5% higher than the Chinese. The excess of CAD has been similar or greater in women than in men, and offers a broad "Window to the World," for the impending epidemic of coronary artery disease among Indian women [10].

Menopause is associated with significant elevations in serum cholesterol levels and a threefold increase in the risk of coronary artery disease. Among Indian women, the presence of Hypertensions, Diabetes Mellitus, Cholesterol are correlated with coronary artery disease [11].

"Know Your Risk" -Theme for World Heart day

Supported by the World Heart Federation internationally – which encourages people to adapt health lifestyle and go for periodic health checks.

Indian Ethnicity: The risk of coronary artery disease among Indians is even greater than Europeans, double that of Americans and several folds higher than other Asians.

Age: Compared with the age group 34-44 years, CAD mortality among women increases 40 fold by the age of 65 years , when its incidence become identical in men and women .

Educational Status: Women with less than a high school education have a 30-50% higher CAD mortality than those with higher education. Indians with low literacy have a higher prevalence of CAD.

Stress and Psychological Factors: "The primary factor that causes cardiac problems is stress. Indian women are subjected to excessive stress at home and work which bring about greater aggressive and take a toll on the quality of life," The impact of psychosocial and behavioral factors on CAD in Indian women requires further investigation.

Generalized Obesity: In the 16 year data from the Nurses' Health study (NHS) , CAD mortality was 4 fold lower in lean than obese women. Post menopausal over weight and obesity leads to increased rates of CAD and all cause mortality.

Physical Activity (Exercise): Daily walking for 45-60 minutes is necessary to prevent weight gain in most women.

Hypertension: Hypertension confers a fourfold risk of CAD in women versus a threefold one in men. Hypertension tends to be more common in women than in men after 45 years of age.

Diabetes Mellitus: Diabetes is a stronger risk factor for CAD in women than in men, with a 3 to 7 fold higher incidence.

Cholesterol: Total cholesterol levels in women compared to men are about 10mg/dl lower before the age of 45 and 10mg/dl higher after the age of 65 years.

Pharmacological Therapy: Because of the high rate of CAD despite maximum modifications of lifestyle, pharmacological therapy may be necessary in many Indians. More recent epidemiologic students continue to supply evidence that long term post menopausal hormone therapy reduce the risk for coronary artery disease in healthy women [12].

Despite the expending available literature, many questions on CAD in post menopausal women remain unanswered and await the publications of ongoing and future research. "Coronary disease in women has gone relatively unrecognized," warned physician educator Ken Graver, M.D [14]. The investigator from the clinical knowledge and the review of literature has found that post menopausal women have less knowledge regarding CAD. Hence, the investigator is determined to assess the knowledge of post menopausal women regarding CAD [15-16].

METHODOLOGY

The research design of the study was experimental one group pre- test, post- test design. The population was post menopausal women above the age of 45 years. The sample consists of 100 post menopausal women in rural areas of Kyatsandra PHC, Tumkur. Post menopausal women were selected by purposive sampling. The pre–test was conducted and STP was given to the patients after the pre- test. The post–test was conducted after a week of the pre-test with interview schedule by using the same questionnaire. The data obtained was analyzed by using descriptive and inferential statistics.

Sampling Criteria

Inclusion Criteria

1) Women who have attained their menopausal state
2) Post menopausal women who can understand and speak Kannada or English.
3) Post menopausal women who are willing to participate in the study.

Exclusion Criteria

1) Post menopausal women who are professional in medical and nursing fields.

2) Post menopausal women who are not willing to participate in the study.

DESCRIPTION OF TOOL

A Structured Knowledge Questionnaire was used to assess the knowledge of CAD among post menopausal women. It consisted of two Parts (**Part I, Part II).**

Part I: Demographic Data

It contained items like age, education, occupation, marital status, diet, history of previous illness, exercise practiced (walking), source of information.

Part II: Structured Knowledge Questionnaire

To assess the knowledge regarding CAD among post menopausal women a structured knowledge questionnaire was used, it consisted of 32 items, which were divided into seven areas. Each correct answer was given a score of one and wrong answer zero.

RESULTS AND DISCUSSION

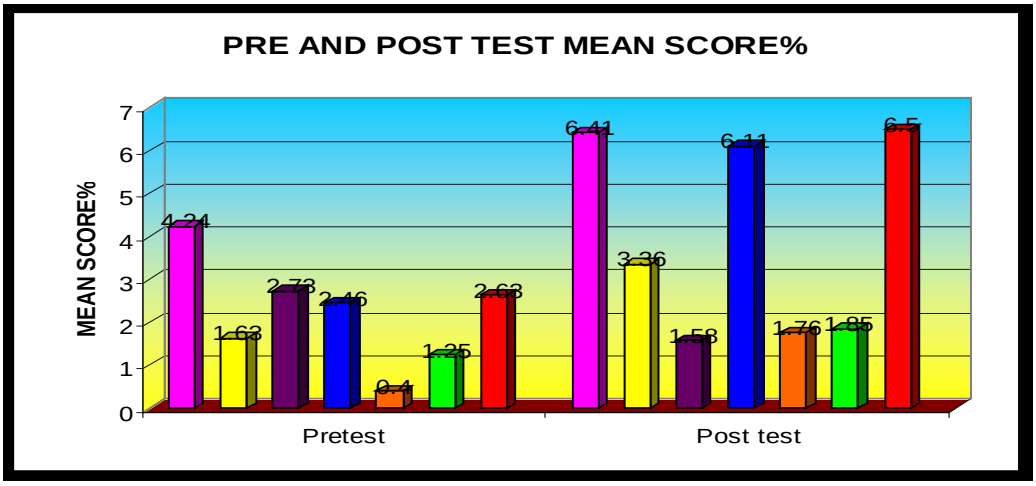

Fig. 1. Pre and Post-Test Mean Score %

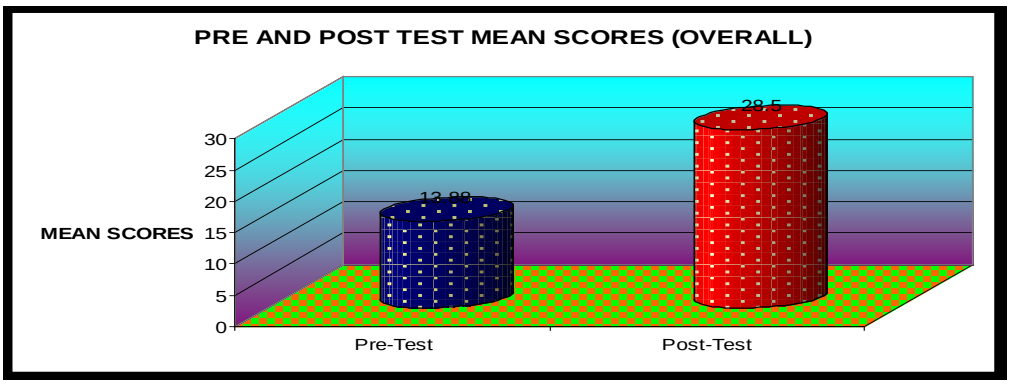

Fig. 2. Pre and Post Test Mean Score (Overall)

I) Assessment of Knowledge on CAD among Post–Menopausal Women before STP

Table 1: Assessment of Knowledge on CAD among Post–Menopausal Women before STP.

S.No	Knowledge	Max Possible Score	Mean	SD	Range	Mean Score%
1	Coronary Artery Disease	32	13.88	4.342136	6 – 30	13.88

The Table 1 shows the summary of statistical outcomes of knowledge on CAD before STP. Overall knowledge score was 32.The mean knowledge on CAD was 13.88 with SD 4.3 and range from 6 - 30 before STP. The mean score percentage was computed and it was found to be 13.88%. From the results it was found that the sampled subjects were having poor knowledge regarding CAD.

Table 2: Mean, SD and Mean Score Percent of Knowledge score after STP

S.No	Knowledge	Max Possible Score	Mean	SD	Range	Mean Score%
1	Coronary Artery Disease	32	28.5	2.986502	12-32	28.5

The table shows the summary of statistical outcomes of knowledge on CAD after STP. Overall knowledge score was 32.The mean knowledge on CAD was 28.5 with SD 2.986502 and range from 12-32 before STP. The mean score percentage was computed and it was found to be 28.5%. The scores and outcomes were appreciably more in this table compared to the scores observed before STP. Thus from the statistical significance it may be confirmed that knowledge of post menopausal women increased after STP.

II) Evaluating the Effectiveness of STP

Table 3: Pre and Post-Test Mean and Standard Deviation and t-Value on CAD among Post Menopausal Women

Knowledge	Mean	SD	Paired t- value	Df	P-Value
Pre-test	13.88	4.342136	30.0191*	99	P,0.001
Post-test	28.5	2.986502			
Paired Mean Difference	14.62				

***Note: '*'-** denotes significant at 0.001 levels (highly significant).*

Though it was seen that the post test knowledge scores more than the pre- test knowledge scores, it is essential to put it under statistical significance. So suitably the paired t-test was chosen and worked out. The paired mean difference of knowledge on CAD before and after STP was 14.62 and it was statistically significant at 0.001(*i.e.,* p<0.001, highly significant).

The results undoubtedly confirm that the STP, significantly effective in improving the knowledge on CAD among the sampled post menopausal women.

The pre test subjects were having poor knowledge on CAD *(i.e)* about 13.88%. Regarding the post- test the sampled subject had an increased knowledge on CAD, *i. e* about 28.5%. In relationship to structured teaching programme, the paired "t" test showed that the teaching programme was statistically significant at $p < 0.001$ level in post-menopausal women. These data proved that the knowledge of CAD among post menopausal women had been markedly increased after the administration of STP. The chi square test showed a significant ($p< 0.005$) association between knowledge and some variables of the subject in the pre-test. The findings of the study states that there is significant difference between pre and post test.

CONCLUSION

In the above findings of the present study, the investigator found that there was significant improvement in knowledge among post-menopausal women after receiving STP regarding CAD.

RECOMMANDATIONS

1) The present study was conducted in a small sample. A more extensive study on large sample is recommended to arrive at generalization.
2) It would be of immense value to conduct a study in different settings like hospitals, women work place, urban areas etc.
3) A follow up study need to be conducted to find the effectiveness terms of retention of knowledge and to reinforce health promotion behaviour.
4) It is vital to conduct a comparative knowledge assessment study among men–women and pre-menopausal – post menopausal women regarding coronary artery disease.
5) Teaching and demonstration materials can be video recorded and can be encouraged in out-patients and wards of the hospital.

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