

ORIGINAL ARTICLE

Effectiveness of a Structured Teaching Programme on Knowledge, Attitude, and Practice Regarding Prevention of Cardiovascular Disease and Osteoporosis Among Menopausal Women in Selected Health Centres of Coimbatore

Kavitha T¹, Sandhiya M², Praveena Mary P³

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ABSTRACT

Background: Menopause is associated with hormonal changes, particularly a decline in estrogen levels, which increases the risk of cardiovascular disease and osteoporosis among women. These conditions significantly affect morbidity and reduce quality of life in postmenopausal women. Despite the high prevalence, awareness regarding preventive measures remains inadequate, especially in community settings. Educational interventions focusing on knowledge, attitude, and practice are essential to promote healthy behaviours. This study aimed to evaluate the effectiveness of a structured teaching programme on knowledge, attitude, and practice regarding prevention of cardiovascular disease and osteoporosis among menopausal women.

Methods: A quasi-experimental one-group pre-test and post-test design was adopted. The study was conducted among 65 menopausal women attending selected health centres in Coimbatore. Participants were selected using non-probability convenience sampling. Data were collected using a structured questionnaire assessing knowledge, attitude, and practice. The intervention was administered using lecture and discussion methods with audiovisual aids. A post-test was conducted after seven days using the same tool. Data were analysed using descriptive and inferential statistics.

Results: The findings revealed a statistically significant improvement in post-test scores of knowledge, attitude, and practice compared to pre-test scores ($p < 0.001$), indicating the effectiveness of the intervention.

AUTHOR'S AFFILIATION:

¹Nursing Tutor, Department of Medical Surgical Nursing, KG College of Nursing, Coimbatore, Tamil Nadu, India.

²Nursing Tutor, Department of Medical Surgical Nursing, KG College of Nursing, Coimbatore, Tamil Nadu, India.

³Nursing Tutor, SRM Trichy College of Nursing, Trichy, Tamil Nadu, India

CORRESPONDING AUTHOR:

Sandhiya M, Nursing Tutor, Department of Medical Surgical Nursing, KG College of Nursing, Coimbatore, Tamil Nadu, India.

E-mail: sandhiyamurugesan20@gmail.com

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Conclusions: The structured teaching programme was effective in enhancing knowledge, developing positive attitudes, and improving preventive practices among menopausal women. Such interventions can be widely implemented to improve health outcomes.

KEYWORDS:

• Menopause • Cardiovascular Disease • Osteoporosis • Structured Teaching Programme • Knowledge • Attitude • Practice.

Key Points:

- ♦ Structured teaching programmes significantly improve knowledge, attitude, and practice regarding the prevention of cardiovascular disease and osteoporosis among menopausal women.
- ♦ Lack of awareness and unhealthy lifestyle practices contribute to increased risk of chronic diseases in menopausal women.
- ♦ Community-based educational interventions play a vital role in promoting preventive health behaviours and improving quality of life.

INTRODUCTION

Menopause is a natural biological transition characterized by a decline in estrogen levels, increasing the risk of cardiovascular disease and osteoporosis among women. These conditions contribute significantly to morbidity and reduced quality of life in postmenopausal women. Despite their high prevalence, awareness regarding preventive measures remains inadequate, particularly in community settings. Adoption of healthy lifestyle practices depends largely on knowledge and attitude. Structured teaching programmes are effective nursing interventions that promote awareness and encourage behavioural change. Therefore, this study aimed to assess the effectiveness of a structured teaching programme among menopausal women in selected health centres of Coimbatore.

REVIEW OF LITERATURE

The relationship between cardiovascular disease and bone health has been increasingly recognized in recent years. Estrogen deficiency plays a central role in both vascular dysfunction and bone resorption, thereby linking cardiovascular disease and osteoporosis in menopausal women.³ In addition, metabolic and inflammatory changes during menopause significantly increase cardiovascular risk.⁴

Recent studies have also focused on the role of lifestyle and behavioural factors. Lack of physical activity, poor dietary habits, and low awareness significantly contribute to the development of osteoporosis among postmenopausal women.¹⁰ Similarly,

inadequate knowledge and negative attitudes toward preventive practices increase the risk of chronic diseases among menopausal women.⁵

Educational interventions have been proven effective in improving health outcomes. Structured teaching programmes significantly improve knowledge and practice regarding osteoporosis prevention among menopausal women.⁶ Likewise, health education interventions positively influence attitude and lifestyle modifications among women at risk of cardiovascular disease.⁷

Furthermore, structured educational and lifestyle interventions are effective in reducing risk factors associated with both cardiovascular disease and osteoporosis.⁸ Community-based health education programmes also play an important role in improving preventive practices among menopausal women in developing countries.⁹

Overall, the reviewed literature indicates that menopausal women are at increased risk of cardiovascular disease and osteoporosis due to hormonal, metabolic, and lifestyle factors. Structured teaching programmes have been identified as effective interventions to improve knowledge, attitude, and preventive practices. However, there is a need for more community-based studies focusing on combined prevention strategies in local settings, which justifies the present study.

METHODOLOGY

Research Design

A quasi-experimental one-group pre-test and post-test design was adopted to

evaluate the effectiveness of a structured teaching programme on knowledge, attitude, and practice regarding the prevention of cardiovascular disease and osteoporosis among menopausal women.

Setting

The study was conducted in selected health centres located in Chinnavedampatti and Keeranatham, Coimbatore district, Tamil Nadu, India.

Participants

The study participants comprised 65 menopausal women who attended the selected health centres during the period of data collection. Participants were selected using a non-probability convenient sampling technique.

Inclusion Criteria

- Women who had attained menopause (cessation of menstruation for at least 12 months).
- Women aged between 45 and 60 years
- Women who were willing to participate in the study.
- Women who were available during the period of data collection.

Exclusion Criteria

- Women with diagnosed severe medical or psychiatric illness.
- Women who had previously participated in similar educational programmes.
- Women who were not available for post-test evaluation.

Data Collection Tools

Data were collected using a structured tool developed by the investigator, which consisted of four sections:

- **Section A:** Demographic variables (age, education, occupation, etc.).
- **Section B:** Knowledge questionnaire consisting of multiple-choice questions related to cardiovascular disease and osteoporosis.
- **Section C:** Attitude scale using a Likert scale format.
- **Section D:** Practice checklist assessing preventive behaviours.

RELIABILITY OF THE TOOL

The reliability of the tool was established using the Cronbach's alpha method. The overall reliability coefficient was found to be $r = 0.82$, indicating good internal consistency.

METHOD OF DATA COLLECTION

Prior permission was obtained from the concerned authorities of the selected health centres. After obtaining informed consent from the participants, a pre-test was conducted to assess baseline knowledge, attitude, and practice. Following the pre-test, a structured teaching programme was administered using lecture and discussion methods with the aid of audiovisual materials. A post-test was conducted after seven days using the same tool to evaluate the effectiveness of the intervention.

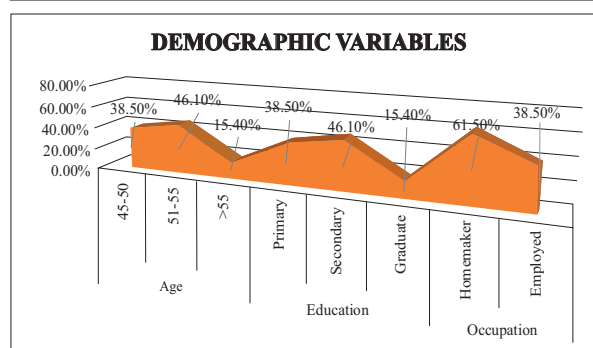
Ethical Consideration

Ethical approval for the study was obtained from the Institutional Ethics Committee. Informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of the participants were maintained throughout the study.

RESULTS

Table 1: Distribution of demographic variables among menopausal women (n = 65)

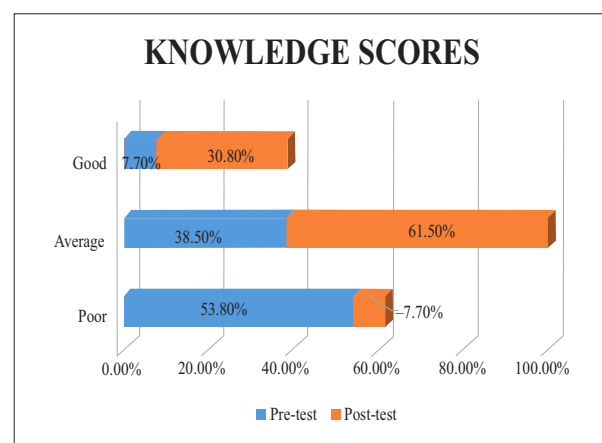
Variable	Category	Frequency (n)	Percentage (%)
Age	45-50	25	38.5
	51-55	30	46.1
	>55	10	15.4
Education	Primary	25	38.5
	Secondary	30	46.1
	Graduate	10	15.4
Occupation	Homemaker	40	61.5
	Employed	25	38.5



The above table shows that the majority of participants (46.1%) were aged between 51–55 years. Most of them had secondary education (46.1%), and the majority (61.5%) were homemakers.

Table 2: Distribution of Knowledge Scores (Pre-test & Post-test) among menopausal women

Level	Pre-test n (%)	Post-test n (%)
Poor	35 (53.8%)	5 (7.7%)
Average	25 (38.5%)	40 (61.5%)
Good	5 (7.7%)	20 (30.8%)



The table reveals that in the pre-test, the majority (53.8%) had poor knowledge, whereas in the post-test, most participants (61.5%) had average knowledge and 30.8% had good knowledge. This indicates improvement after the intervention.

Table 3: Mean and SD of Knowledge, Attitude and Practice Scores among menopausal women

Variable	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD
Knowledge	8.5 $\pm$ 2.1	16.7 $\pm$ 1.8
Attitude	20.3 $\pm$ 3.2	28.5 $\pm$ 2.5
Practice	9.1 $\pm$ 2.0	17.2 $\pm$ 1.9

The table shows that the mean post-test scores of knowledge, attitude, and practice are higher than pre-test scores, indicating improvement after the structured teaching programme.

Table 4: Comparison of pre-test and post-test scores of Knowledge, Attitude and Practice Scores among menopausal women

Variable	Group	Mean $\pm$ SD	t-value	p-value
Knowledge	Homemaker	8.2 $\pm$ 2.0	2.45	0.017*
	Employed	9.3 $\pm$ 2.1		

*Significant at $p < 0.05$

The table shows a statistically significant difference in knowledge scores between homemakers and employed women ($p < 0.05$), indicating occupation influences knowledge level.

Table 5: Comparison of post-test scores of Knowledge, Attitude and Practice Scores among menopausal women

Variable	Mean Difference	t-value	p-value
Knowledge	8.2	9.45	<0.001*
Attitude	8.2	7.32	<0.001*
Practice	8.1	8.10	<0.001*

*Highly significant

The paired t-test shows a highly significant difference between pre-test and post-test scores ($p < 0.001$), indicating that the structured teaching programme was highly effective.

Table 6: Correlation coefficient between of Knowledge, Attitude and Practice Scores among menopausal women

Variables	Knowledge	Attitude	Practice
Knowledge	1	0.62	0.58
Attitude	0.62	1	0.65
Practice	0.58	0.65	1

The table shows a positive correlation between knowledge, attitude, and practice. This indicates that improvement in knowledge is associated with better attitude and practices.

Table 7: Association between Knowledge Level and Selected Demographic Variables (Pre-test)

Category	Poor	Average	Good	χ^2 value	p-value
Age					
45–50	15	8	2	8.21	0.016*
51–55	12	10	3		
>55	8	7	0		
Education					
Primary	20	5	0	10.45	0.005*
Secondary	10	12	2		
Graduate	5	8	3		
Occupation					
Homemaker	25	10	2	6.78	0.034*
Employed	10	15	3		

The above table shows the association between pre-test knowledge level and selected demographic variables. A statistically significant association was observed between knowledge level and age ($\chi^2 = 8.21$, $p < 0.05$), education ($\chi^2 = 10.45$, $p < 0.01$), and occupation ($\chi^2 = 6.78$, $p < 0.05$). This indicates that demographic variables have a significant influence on the knowledge level of menopausal women.

DISCUSSION

The present study was conducted to evaluate the effectiveness of a structured teaching programme on knowledge, attitude, and practice regarding the prevention of cardiovascular disease and osteoporosis among menopausal women. The findings revealed a significant improvement in knowledge, attitude, and practice scores following the intervention, indicating the effectiveness of the structured teaching programme.

In the present study, the pre-test findings showed that the majority of participants had poor knowledge regarding the prevention of cardiovascular disease and osteoporosis. This finding is consistent with previous studies which reported inadequate knowledge among menopausal women regarding preventive measures for chronic diseases.⁵ After the implementation of the structured teaching programme, a significant improvement in knowledge levels was observed, with most participants demonstrating average to good knowledge. This finding is supported by studies which reported that educational interventions significantly improve knowledge among postmenopausal women.⁶

The study also revealed a significant improvement in attitude scores following the intervention. The mean post-test attitude score was higher compared to the pre-test score, indicating the development of a positive attitude towards preventive practices. This finding is in agreement with studies which reported that health education programmes positively influence attitudes and promote behavioural change among women.⁷

Similarly, the practice scores of participants showed a marked improvement after the structured teaching programme. The increase in practice scores suggests that participants adopted healthier behaviours such as improved diet, increased physical activity, and preventive health practices. This finding is consistent with previous research which emphasized that structured educational programmes enhance preventive practices among menopausal women.⁹

The paired t-test analysis in the present study showed a highly significant difference between pre-test and post-test scores ($p < 0.001$), indicating the effectiveness of the

intervention. This finding is supported by studies which concluded that structured educational interventions significantly improve knowledge and health behaviours in at-risk populations.⁸

The study also identified a significant association between knowledge levels and selected demographic variables such as age, education, and occupation. This suggests that these factors play an important role in determining awareness and understanding among menopausal women. Similar findings were reported in previous studies which found that demographic factors significantly influence knowledge and health practices.¹⁰

Furthermore, a positive correlation was observed between knowledge, attitude, and practice, indicating that improvement in knowledge leads to better attitudes and practices. This finding highlights the importance of educational interventions in promoting overall health behaviour change among menopausal women.⁸

Overall, the findings of the present study are consistent with existing literature and provide strong evidence that structured teaching programmes are effective in improving knowledge, attitude, and preventive practices among menopausal women. The study emphasizes the crucial role of nurses in implementing community-based educational interventions to promote health and prevent chronic diseases.

CONCLUSION

The study concludes that the structured teaching programme was highly effective in improving knowledge, attitude, and practice regarding the prevention of cardiovascular disease and osteoporosis among menopausal women.

The findings highlight the importance of educational interventions in promoting health awareness and preventive practices. The study also emphasizes the role of nurses in delivering community-based health education programmes.

It is recommended that similar interventions be implemented on a larger scale to improve women's health and reduce the burden of chronic diseases.

RELEVANCE FOR CLINICAL PRACTICE

The findings of this study highlight the importance of structured teaching programmes in improving awareness and preventive practices among menopausal women. Nurses can play a key role in implementing community-based health education programmes to promote early prevention of cardiovascular disease and osteoporosis. These interventions can be integrated into primary healthcare services to enhance health outcomes and reduce the burden of chronic diseases among women.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this study.

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