



## Effect of structure teaching module (STM) on prevention of menopausal osteoporosis among women

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### Abstract

A quasi-experiment with non-randomized control group design was used to find out the effect of structured teaching module on prevention of menopausal osteoporosis among conveniently selected 174 women (control-87 & experimental group-87) residing at selected urban regions of Maharashtra. To collect data on demographic variables & knowledge regarding prevention of menopausal osteoporosis, a Structured Interview Schedule was used among women in control & experimental group before and after an intervention. After a pre-test, the structured teaching module was used to teach on prevention of menopausal osteoporosis among 87 women of experimental group whereas no such deliberation was made in control group. However, after one week, the post test was conducted among women in control & experimental group to assess the effect of structured teaching module on prevention of menopausal osteoporosis

**Results:** From the findings, it was observed that the pre-intervention demographic variables of women in control and experimental group were more or less similar revealing both the groups had similar characteristics. It was observed that the mean knowledge (control group;  $9.28 \pm 2.11\%$  & experimental group;  $8.7 \pm 1.85$ ) on prevention of menopausal osteoporosis among women were more or less similar before intervention.

**Conclusion:** after an intervention, the mean knowledge on prevention of menopausal osteoporosis was significantly increased from  $8.7 \pm 1.85$  to  $21.7 \pm 3.91$  in experimental group whereas it was almost remained unchanged in control group. There was a significant difference ( $p < 0.0001$ ) between pre-test and post-test knowledge scores in experimental group. And, there was also a significant difference ( $p < 0.0001$ ) between the post tests of control and experimental group. No significant association ( $p > 0.05$ ) was found between knowledge on prevention of menopausal osteoporosis and Age of the women, Religion, Education, Per capita family income, and Occupation. Findings of study revealed that the STM on prevention of menopausal as a method of teaching was effective among women residing in selected urban region of Maharashtra state.

**Keywords:** Structured teaching module, knowledge, Menopausal osteoporosis, women

### Introduction

The menopause is a critical time for a woman's bone health. This is due to a decline in the oestrogen hormone, which is crucial for maintaining bone strength and stability in bone density. Consequently, bone density also begins to decline. With this loss of bone density come reduced bone strength and a greater risk of breaking bones. Following the menstrual cycles finish, changes may occur more quickly for ten years, following which there will be a gradual decline into old age [1].

The ovaries in women produce progesterone and estrogen, which aid in regulating menstruation and periods. The body begins to produce less of these hormones when women approach their late forties. Due to changes in hormone levels, women may experience irregular periods after the age of 40, which may be heavier, lighter, longer, or shorter. The ovaries stop producing eggs and menstruation completely stops. Numerous health problems, such as dry vagina, abrupt hot feelings, chills, sweating at night, difficulty sleeping, mood swings, weight gain, hair thinning, dry skin, and even osteoporosis can result from these hormonal changes [2].

Low bone mass and structural degeneration of bone tissue are hallmarks of osteoporosis, a systemic skeletal disease that increases the risk of fracture and causes bone fragility [3].

Due to their smaller, thinner bones, lower peak bone mass (PBM), and propensity to lose bone more quickly and at a younger age than males, women are more likely than men to experience fractures over their lives. Additionally, oestrogen is crucial for the growth of women's bones throughout their lives, and its loss after menopause increases the likelihood that women may acquire osteoporosis in later life [4].

Additionally, osteoporosis and the mild trauma fractures it causes have a substantial financial impact on avoidable medical expenses. Because bone mineral density (BMD) normally declines and fracture risk significantly rises with age, clinical treatment for osteoporosis usually begins in late adulthood. Nonetheless, it is beneficial to initiate discussions and motivate people to take proactive steps to increase bone mass and lower fracture risk far earlier in life, particularly when bones are still growing [5].

Osteoporosis is sometimes referred to as "a silent disease" since it is typically undetected until you experience your first fracture. "Osteoporosis doesn't show any symptoms until a fracture occurs." This is a crucial aspect since many people mistakenly believe they must not have osteoporosis if they do not exhibit any symptoms. However, a lot of people who have achy hips or feet believe that osteoporosis is the cause of their problems, which is improbable when there isn't a fracture [6].

## Background

The postmenopausal or perimenopausal stage affects a sizable portion of Indian women. A reduction in bone mineral density (BMD), a decrease in cortical and cancellous bone thickness, and an increased risk of fractures are all problems associated with ageing in women. For women, osteoporosis has a profoundly negative impact on their lives, reducing their quality of life, their standard of living, and their risk of fractures. If you have a hip or spine fracture, it might be really bad since you might not be able to move [7].

One of the newer health problems in the globe is osteoporosis. It is a silent illness that results in bone fractures. Similar to the western world, osteoporotic fractures are becoming a major source of morbidity and mortality in India as a result of a rise in life expectancy. It is believed that around 36 million people in India suffer from osteoporosis at the moment [9].

Women make about 80% of the estimated 10 million Americans with osteoporosis. Osteoporosis-related bone fractures affect one in every two women over the age of 50. Hip fracture risk is equal to breast, uterine, and ovarian cancer risk. Osteoporosis is a common disease in India, jeopardizing the country's economy. According to the World Health Organization, osteoporosis is the world's second most frequent health concern after diabetes, trailing only cardiovascular disease, and medical research has confirmed this. A woman's lifetime hip fracture risk at age of 50 is same as her lifetime risk of breast cancer at the same age [10].

## Need of the Study

Structure, organ protection, muscle anchoring, and calcium storage are all functions of bones. You may take precautions to maintain bone health as an adult, even though it's crucial to develop strong, healthy bones during your infancy and adolescence. Bones are always changing. The body continuously breaks down old bone and forms new bone. We term this procedure remodelling. Younger people make new bone more quickly than they break down old bone. As a result, your bone mass increases. Around age 30, most people reach their maximal bone mass. The process of bone remodelling then proceeds. However, your bone mass loss is somewhat more than your increase. A disorder called osteoporosis makes bones brittle and prone to breaking [15]. Most postmenopausal women will experience a fracture at some point in their lives, and one in two will develop osteoporosis. Broken bones, or fractures, impair function, cause discomfort, and limit movement. Fractures are linked to higher mortality and a worse quality of life. Osteoporosis therapy is never too late, and in fact, early treatment is more likely to be effective for older women [16].

A medical disease called osteoporosis weakens bones, increasing their brittleness and likelihood of breaking. It takes years to manifest and is sometimes discovered only after a fall or other traumatic event breaks a bone (fracture). Those who have osteoporosis are more likely to sustain fractures to their wrists, hips, or vertebrae in their spine. Breaks, though, can also occur in other bones, such the arm or pelvis. Until a bone breaks, osteoporosis is normally painless; nevertheless, shattered spine bones can result in chronic discomfort [17].

For World Menopause Day in 2021, the International Menopause Society (IMS) Board has chosen to highlight bone health. The most prevalent chronic metabolic bone

disease, osteoporosis and related fractures, are a significant global health concern, accounting for 8.9 million fractures annually. The prevalence of hip fractures and severe osteoporotic fractures varies significantly around the globe. In addition to increasing morbidity, osteoporosis-related fractures significantly increase mortality [18].

## Problem statement

“Effect of Structured Teaching Module (STM) on prevention of Menopausal Osteoporosis among women at selected urban regions of Maharashtra.”

## Objectives

1. To assess the knowledge of women regarding Prevention of Menopausal Osteoporosis in experimental and Control group before intervention.
2. To assess the knowledge of women regarding Prevention of Menopausal Osteoporosis in experimental and Control group after intervention.
3. To find out the effect of STM on Prevention of Menopausal Osteoporosis among women.
4. To find out the association between post-test knowledge scores on prevention of Menopausal Osteoporosis and selected demographic variables of women in experimental group.

## Hypothesis

- **H01:** There is no a significant difference between pre-test and post test knowledge scores on Prevention of Menopausal Osteoporosis among women in experimental and Control group.
- **H02:** There is on a significant difference between post-test knowledge scores of women in experimental and Control group regarding Prevention of Menopausal Osteoporosis.
- **H03:** There is no a significant association between post-test knowledge scores on prevention of menopausal osteoporosis and selected demographic variables of women in experimental group.

## A. Title

“Effect of Structured Teaching Module (STM) on prevention of Menopausal Osteoporosis among women”

## B. Objectives

1. To assess the knowledge of women regarding Prevention of Menopausal Osteoporosis in experimental and Control group before intervention.
2. To assess the knowledge of women regarding Prevention of Menopausal Osteoporosis in experimental and Control group after intervention.
3. To find out the effect of STM on Prevention of Menopausal Osteoporosis among women.
4. To find out the association between post-test knowledge scores on prevention of Menopausal Osteoporosis and selected demographic variables of women in experimental group.

## C. Operational Definition

### ▪ Structured Teaching Module (STM)

“Refers to a systematically organized instructional material on Prevention of Menopausal Osteoporosis that is used to teach women of selected urban regions. It includes various

information including definition, causes, signs and symptoms, and prevention of menopausal osteoporosis”.

#### ▪ **Effect**

“refers to statistical difference (as a result of STM) in pre-test and post-test knowledge scores of women in experimental and Control group as measured by Structured Interview Schedule on Prevention of Menopausal Osteoporosis”.

#### ▪ **Menopausal Osteoporosis**

“Menopausal osteoporosis is osteoporosis that's related to the decrease in estrogen production that occurs during menopause”.

#### ▪ **Women**

“Refers to premenopausal women residing in selected at selected urban regions of Maharashtra state”.

#### ▪ **Selected urban regions**

“Refers to geographical area of Maharashtra state located within the city where the investigator has drawn the samples for research study”.

### **D. Hypothesis**

**H01:** There is no a significant difference between pre-test and post test knowledge scores on Prevention of Menopausal Osteoporosis among women in experimental and Control group.

**H02:** There is on a significant difference between post-test knowledge scores of women in experimental and Control group regarding Prevention of Menopausal Osteoporosis.

**H03:** There is no a significant association between post-test knowledge scores on prevention of menopausal osteoporosis and selected demographic variables of women in experimental group.

### **E. Dilimitations**

The study was limited to –

- Assessment of knowledge
- 174 samples
- Women residing in selected urban regions
- Study was limited to urban area

### **F. Ethical Aspect**

Research scholar has presented the synopsis before the Committee of Board of Research studies (BORS) dated 13.12.2023 Accordingly, the BORS has reviewed and approved the proposal including ethical aspects of sampling. Later, dated 10.01.24 the Institutional Ethics Committee (IEC) has approved the ethical aspects of synopsis and permitted to conduct study among Women as the research title was limited to assessment of knowledge. Before data collection, the informed consent was obtained from the women for their willingness to participate in the study. Purposes of research study were explained by the investigator and ensured the anonymity of participation.

### **G. Review of Literature**

The review of literature is done under following areas

1. Literature related to incidence and prevalence of osteoporosis among women

2. Literature related to osteoporosis and its pathology among women
3. Literature related to knowledge of women on prevention of Menopausal Osteoporosis
4. Literature related to effect of health teaching on prevention of menopausal osteoporosis

### **H. Conceptual Framework:**

The conceptual framework used for the present study is based upon general systems theory of Ludwig Von Bertalanffy (1968).

### **Methodology**

- **Research design:** A quasi-experimental design with non-randomized control group
- **Setting of the study:** The study is conducted in selected urban regions of Maharashtra
- **Research approach:** Quantitative research approach
- **Research variable:** The dependant variable is knowledge on prevention of menopausal osteoporosis and Independent Variable is STM on prevention of menopausal osteoporosis
- **Demographic variables:** Age of women, Religion, Education, Per capita family Income, Occupation,
- **Population:** women
- **Target population:** all women
- **Accessible population:** women who were available for the research study were considered as accessible population.

### **Sampling**

- **Sample size:** 171
- **Sampling technique:** A convenient sampling technique

### **Sampling criteria**

#### **Inclusion criteria**

- Women those who were consented to participate in the study
- Women those who were available at the time of data collection
- Women those who understand Marathi

#### **Exclusive criteria**

- Women who underwent an educational program on menopausal osteoporosis

#### ▪ **Validity**

Content validity of SIS and STM were established in consultation with 10 experts from the field of Nursing ( $n=7$ ), gynecologist ( $n=1$ ) statistician ( $n=1$ ), and a language expert ( $n=1$ ).

#### ▪ **Reliability**

The Split-half technique was used where Karl Pearson's correlation coefficient was calculated. The tool was found to be reliable ( $r=0.9$ ).

#### ▪ **Pilot study**

Pilot study was conducted among conveniently selected women (18) to find out the effect of STM on prevention of menopausal osteoporosis at selected urban region, after a prior permission from the authorities concerned. Informed consent was obtained from the women and data was collected during the month of March 2025.

**Data collection**

After obtaining permission from concerned authorities, the investigator has fixed the date and time for data collection in consultation with urban women. According to pre-planned date and time, the investigator has visited to home and collected data from 10.03.25 to 30.03.2025.

**Results**

**Section A**

Distribution of women according to their demographic variables in experimental and control group

**Table 1:** Frequency and percentage distribution of demographic variables of the women in experimental and control group *n*=174

Sr. No.	Demographic Variables	Experimental Group		Control Group	
		f	%	f	%
1	AGE of the women				
	a. 19 - 25 years	22	25.3%	15	17.2%
	b. 26 – 32years	22	25.3%	30	34.5%
	c. 33 – 39 years	15	17.2%	20	23%
	d. 40-46 years and above	28	32.2%	22	25.3%
2	Religion				0
	a. Hindu	60	69%	63	72.4%
	b. Muslim	5	5.8%	6	6.9%
	c. Buddhist	15	17.2%	14	16.1%
	d. Other	7	8.1%	4	4.6%
3	Education				0
	a. Primary education	22	25.3%	25	28.7%
	b. Secondary education	32	36.8%	37	42.5%
	c. Higher Secondary education	26	29.9%	21	24.1%
	d. Degree and above	7	8.1%	4	4.6%
4	Per capita family income monthly				0
	a. Rs. 10000/- 15000/-	24	27.6%	39	44.8%
	b. Rs. 15001/- Rs 20000/-	35	40.2%	34	39.1%
	c. Rs. 20001/- and above	17	19.5%	11	12.6%
	d. No income	11	12.6%	3	3.45%
5	Occupation				0
	a. Government job	5	5.75%	5	5.75%
	b. Private job	32	36.8%	28	32.2%
	c. House Wife	40	46%	46	52.9%
	d. Other	10	11.5%	8	9.2%

**Section B**

Assessment of knowledge on prevention of menopausal osteoporosis among women before intervention in experimental and control group

**Table 1:** Assessment of knowledge on prevention of menopausal osteoporosis among women before intervention in experimental and control group

Level of knowledge	Control group		Experimental group	
	f	%	f	%
Very Poor	11	12.6%	13	14.9%
Poor	69	79.3%	72	82.8%
Average	7	8.05%	2	2.3%
Good	0	0%	0	0%
Very Good	0	0%	0	0%
Overall	87	100%	87	100%

According to the distribution of knowledge scores before to intervention, the experimental group had 72 (82.8%) and the control group had 69 (79.3%) women with poor knowledge. Additionally, before to intervention, 11 women (12.6%) and 13 women (14.9%) in the control and experimental groups, respectively, had very poor level of knowledge. However, before to intervention, 7 (8.0%) and 2 (2.3%) had an average level of knowledge. Hence, it was interpreted that the women in Control group and experimental group had more or less similar knowledge before intervention.

**Table 2:** Mean & SD knowledge scores on Prevention of menopausal osteoporosis among women in experimental and Control group before intervention *n*=174

Level of knowledge	Control group		Experimental group	
	f	Mean ± SD	f	Mean ± SD
Very Poor	11	6±0	13	6±0
Poor	69	9.3±1.47	72	9.16±1.46
Average	7	13.2±0.45	2	13±0
Good	0	0±0	0	0±0
Very Good	0	0±0	0	0±0
Overall	87	9.28±2.11	87	8.7±1.85

Distribution of Mean & SD knowledge scores on Prevention of menopausal osteoporosis before intervention among women shows more or less similar mean score of (9.28±2.11) for Control group when compared to with a Mean & SD knowledge score (8.7±1.85) for experimental group, Hence, it was interpreted that the knowledge of women on Prevention of menopausal osteoporosis were more or less similar in Control and experimental group before intervention.

**Section C**

Assessment of knowledge on prevention of menopausal osteoporosis among women after intervention in experimental and control group

**Table 1:** Knowledge on prevention of menopausal osteoporosis among women after intervention in experimental and control group *n*=174

Level of knowledge	Control group		Experimental group	
	f	%	f	%
Very Poor	15	17.2%	0	0%
Poor	64	73.6%	0	0%
Average	8	9.2%	17	19.6%
Good	0	0%	39	44.8%
Very Good	0	0%	31	35.6%
Overall	87	100%	87	100%

Distribution of knowledge scores after intervention reveals that none of the women in the control group had good or very good knowledge. Nevertheless, following the intervention, 31 women (35.6%) and 39 women (44.8%) had good and very good knowledge, respectively in experimental group. It should be mentioned that following the intervention, none of the women in the experimental group showed very poor or poor knowledge. *n*=60

**Table - 2:** Mean & SD of knowledge scores on Prevention of menopausal osteoporosis among women in experimental and Control group after intervention *n*=174

Level of knowledge	Control group		Experimental group	
	f	Mean ± SD	f	Mean ± SD
Very Poor	15	5.7±0.44	0	0±0
Poor	64	9.4±1.5	0	0±0
Average	8	13.5±0.7	17	16.1±1.27
Good	0	0±0	39	20.6±1.44
Very Good	0	0±0	31	26.1±1.18
Overall	87	9.1±2.3	87	21.7±3.91

Distribution of Mean & SD knowledge scores on Prevention of menopausal osteoporosis after intervention shows the higher mean score of (27.7±3.91) for experimental group when compared to with a Mean & SD knowledge score (9.1± 2.3) for control group (table - 4.3.2). Therefore, it can be interpreted that the provision of Structured Teaching Module to the women in the experimental group significantly improved their knowledge of menopausal osteoporosis prevention following the intervention.

**Section D**

Comparison of knowledge on prevention of menopausal osteoporosis among women before and after intervention in experimental and control group

- a. Comparison of frequency of women before and after intervention based on knowledge regarding prevention of menopausal osteoporosis

**Table 1:** Comparison of frequency of women before and after intervention based on knowledge regarding prevention of menopausal osteoporosis *n*=174

Level of knowledge	Control group				Experimental group			
	Pretest		Post test		Pretest		Post test	
	f	%	f	%	f	%	f	%
Very Poor	11	12.6%	15	17.2%	13	14.9%	0	0%
Poor	69	79.3%	64	73.6%	72	82.8%	0	0%
Average	7	8.05%	8	9.2%	2	2.3%	17	19.6%
Good	0	0%	0	0%	0	0%	39	44.8%
Very Good	0	0%	0	0%	0	0%	31	35.6%
Overall	87	100%	87	100%	87	100%	87	100%

With regard to Control group, the women with very poor, poor and average knowledge were 12.6%, 79.3% & 7 % respectively in pre-test whereas it was more or less similar (17.2%, 73.6%, and 9.2%) in post-test without making any significant difference in the values. Further, none of them good or very good knowledge neither in pre-test nor post-test. With regard to experimental group, none of the women had good and very good knowledge in pretest, whereas in post-test it was significantly increased to 44.8% and 35.6% making a huge difference in the percentages of knowledge. However, following intervention, none of the women in experimental group were with poor and very knowledge Hence, it was interpreted that the huge difference in knowledge percentage in experimental group was due to an effect of Structured Teaching Module. Whereas a slight knowledge variation in Control group was negligible as that might have occurred by chance.

- b. Comparison of Mean & SD of knowledge regarding prevention of menopausal osteoporosis among women

in experimental and Control group before and after intervention

**Table 2:** Comparison of Mean & SD of knowledge regarding prevention of menopausal osteoporosis among women in experimental and Control group before and after intervention *n*=174

Level of knowledge	Control group				Experimental group			
	Pretest		Post test		Pretest		Post test	
	f	Mean ± SD	f	Mean ± SD	f	Mean ± SD	f	Mean ± SD
Very Poor	11	6±0	15	5.7±0.44	13	6±0	0	0±0
Poor	69	9.3±1.47	64	9.4±1.5	72	9.16±1.46	0	0±0
Average	7	13.2±0.45	8	13.5±0.7	2	13±0	17	16.1±1.27
Good	0	0±0	0	0±0	0	0±0	39	20.6±1.44
Very Good	0	0±0	0	0±0	0	0±0	31	26.1±1.18
Overall	87	9.28±2.11	87	9.1±2.3	87	8.7±1.85	87	21.7±3.91

With regard to Control group, the mean knowledge and standard deviation remained more or less same during and pre-test (9.28±2.11) and post-test (9.1±2.3). Meanwhile in experimental group, however, shows a huge increase in mean knowledge and standard deviation from 8.7±1.85 to 21.7±3.91 Hence, it was interpreted that the huge difference in knowledge in experimental group was due to an effect of Structured Teaching Module. Whereas a slight knowledge variation in Control group was negligible as that might have occurred by chance

**Section D:** effect of stm on prevention of menopausal osteoporosis among women in experimental and control group

- a. Effect of STM on prevention of menopausal osteoporosis among women in experimental and control group

**Testing of hypothesis**

**H01:** There is no significant difference between pretest and post-test knowledge score on Prevention of menopausal osteoporosis among women in experimental and Control group.

**Table 1:** Effect of STM on prevention of menopausal osteoporosis among women in experimental and control group *n*=174

Group	Test	Mean±SD	Mean difference	df	't' value	p value
Control	Pretest	9.28±2.11	0.13±0.26	86	0.4994	NS, p>0.05
	Posttest	9.15±2.37				
Experimental	Pretest	8.78±1.87	12.93±2.07	86	27.6739	S, p<0.05
	Posttest	21.71±3.94				

S- not significant NS- not significant

Paired 't' test was used to test the significance of difference between the pre- test and post-test knowledge scores of women in experimental and control group. The data presented in Table shows the significant 't' value in experimental group. However, no significant difference in knowledge was seen in control group. These findings highlight the effectiveness of Structured Teaching Module in increasing the knowledge of the women regarding prevention of menopausal osteoporosis. Therefore, the STM on Prevention of menopausal osteoporosis among women was considered as effective. Whereas a slight variation of value in Control group was negligible as that might have

Occurred by chance and not by choice. However, the difference observed between pre-test & post-test knowledge score value in experimental group was true difference; hence the hypothesis

**H01:** There is no significant difference between pretest and post-test knowledge score on Prevention of menopausal osteoporosis among women in experimental and Control group was rejected.

**b.** Significant difference in post-test knowledge scores on prevention of menopausal osteoporosis among women in comparison & experimental group.

**Testing of hypothesis**

**H02:** There is no significant difference in post-test knowledge scores of women in experimental and control group regarding prevention of menopausal osteoporosis.

**Table 2:** Significant difference between the post-test knowledge scores of control and experimental group n=174

Group	Test	Mean ±SD	Mean difference	df	't' value	p value
Comparison	Post-test	9.28±2.18	12.43±1.76	86	26.18	0.0001 S, p<0.05
Experimental	Post-test	21.71±3.94				

Paired 't' test was used to test the significance of difference between the post- test knowledge scores of women in experimental and control group. The data presented in Table shows the Significant 't' value.

Therefore, the STM on Prevention of menopausal osteoporosis among women was considered as effective. Hence the hypothesis

**H02:** There is no significant difference in post-test knowledge scores of women in experimental and control group regarding prevention of menopausal osteoporosis was rejected

**Section E**

Association between post-test knowledge scores and demographic variables of women in experimental group.

**Testing of hypothesis**

**H03:** There is no significant association between the post-test knowledge score on Prevention of menopausal osteoporosis and demographic variables of women in experimental group.

**Table 1:** Association between post-test knowledge scores and demographic variables of women in experimental group n=87

Sr. No	Demographic Variable		Level of Knowledge					χ <sup>2</sup> value	P Value
			Very Poor	Poor	Avg.	Good	Very good		
1	AGE of the women	19 - 25 years	0	0	6	10	6	4.377	0.9756 NS; p >.05 (df=12)
		26 – 32years	0	0	4	7	11		
		33 – 39 years	0	0	3	8	4		
		40-46 years and above	0	0	4	14	10		
2	Religion	Hindu	0	0	13	28	19	5.382	0.9439 NS; p >.05 (df=12)
		Muslim	0	0	1	3	1		
		Buddhist	0	0	2	4	9		
		Other	0	0	1	4	2		
3	Education	Primary education	0	0	2	11	9	3.528	0.9905 NS; p >.05 (df=12)
		Secondary education	0	0	7	14	11		
		Higher Secondary education	0	0	6	10	10		
		Degree and above	0	0	2	4	1		
4	Per capita family income monthly	Rs. 10000/- 15000/-	0	0	4	11	9	7.421	0.8285 NS; p >.05 (df=12)
		Rs. 15001/- Rs 20000/-	0	0	10	11	14		
		Rs. 20001/- and above	0	0	2	9	6		
		No income	0	0	1	8	2		
5	Occupation	Government job	0	0	1	1	3	13.142	0.3588 NS; p >.05 (df=12)
		Private job	0	0	9	14	9		
		House Wife	0	0	7	15	18		
		Other	0	0	0	9	1		

Chi- square test was used to find out the association between post-test knowledge scores on Prevention of menopausal osteoporosis and selected demographic variables of women in experimental group. The finding of Chi- square test value shows that there is no significant association (p>0.05) between post-test knowledge scores and selected demographic variables like Age of the women, Religion, Education, Per capita family income, and Occupation. Therefore, the research hypothesis;

**H03:** There is no significant difference between post-test knowledge scores of women in experimental and Control

group regarding Prevention of Menopausal Osteoporosis, is accepted.

**Discussion**

In the present study, distribution of women according to their age reveals that the highest percentage (34.5% & 25.3%) was belonged to the age group of 26– 32 years in Control & experimental group respectively. In addition, more or less similar percentages (25.3% & 32.2%) were in the age group of 40 years and above in control & experimental group respectively. Further, (17.2% & 25.3%) of women were in the age group of 19-25 years in control &

experimental group respectively. Further, 23% & 17.2% of women were in the age group of 33-39 years in control & experimental group respectively.

The findings of present study support the cross-sectional study conducted Rubanpal Khinda (2022) where the percentage of women (38%) for the age group of 21–30 years was slightly higher when compared to present study. Further, the percentage of women in the age group of 41-50 years was more or less similar (22%). However, the findings of both the studies have shown that majority of women were aged less than 30 years revealing the places of studies have dominated by young women.

The findings of another study conducted by Manickavasagam Senthilraja (2019) support the findings of present study where more or less percentages (39.8% and 43.1%) of women were with secondary education in experimental & comparison group respectively. However, the results revealed a slight difference with respect to the percentage of women with degree or higher qualification (8.1% and 4.60%, respectively) in experimental and control group.

### Conclusion

From the findings of present study, it was concluded that the pre- intervention demographic variables of women in comparison and experimental group were more or less similar revealing both the groups had similar characteristics. Percentage of knowledge and the mean scores of women were more or less similar in both the groups before intervention. However, after an intervention, the percentage of knowledge and the mean scores of women were significantly increased in experimental group whereas it was remained unchanged in comparison group. There was a significant difference between pretest and post-test knowledge scores in experimental group. And, there was also a significant difference between the post tests of comparison and experimental group. Thus, it was concluded that the STM on Prevention of Menopausal Osteoporosis as a method of teaching was effective among women.

### Acknowledgement

By being grateful to god you acknowledge that nothing is gained by your power alone. This dissertation would not have been possible without the inspiration and support of a number of wonderful people – my thanks and appreciation to all of them for being part of this journey and making the dissertation possible.

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