

A Study to Assess the Effectiveness of Structured Teaching Programme on the Knowledge of Women (Between the Age Group of 30-75 Years) Regarding Prevention and Management of Osteoporosis in the Selected Community of Sangati, District Shimla, Himachal Pradesh, in 2018-19

Keerat

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Abstract: Introduction: Osteoporosis is defined as a systemic skeletal disorder characterized by a compromised bone strength predisposing to an increased risk of fracture. The risk of developing osteoporosis depends on how much bone mass is achieved in the ages 25-35, and how much is lost later. Both men and women are susceptible to osteoporosis as they age but women have significantly higher risk for manifestations and complications of osteoporosis because their peak bone mass is 10% to 15% less than that of man. Estrogen is a hormone that helps regulate a woman's reproductive cycle. At the same time, it plays a role in keeping bones strong and healthy, in both men and women. While premenopausal women have more estrogen than men, they will experience dramatic drops in estrogen production due to menopause, and are more likely to experience bone loss and osteoporosis at that time. Objective: The main objective of the study was to assess and compare the knowledge of women regarding prevention and management of Osteoporosis in the pre-test and post-test and also to assess the effectiveness of Structured Teaching Programme on the knowledge. Methodology: A Pre-Experimental study was conducted in May, 2019 evaluate the effectiveness of Structured Teaching Programme on knowledge of women (between the age group of 30-75 years) regarding prevention and management of Osteoporosis living in the selected community of Sangati, District Shimla, Himachal Pradesh by Keerat for the partial fulfillment of the degree in Masters in the Science of Nursing from Himachal Pradesh University, during the year 2017-2019. The conceptual framework adopted for the study was based on Imogene King theory of goal attainment. The total sample selected was 60 women. The data was collected using Structured Interview Schedule comprised on 28 questions related to prevention and management of Osteoporosis. The data obtained was analyzed using both descriptive and inferential statistics in terms of frequency, percentage and distribution, mean, median, standard deviation, t value and chi square. Results: The study results revealed that the in the pre-test the mean knowledge score (7.35 ± 3.861) of women was less than the post-test mean knowledge score (23.05 ± 3.422). The calculated t value was 32.142 which was more than the table value at $p \leq 0.05$. Conclusion: Based on the findings the study concluded that the Structured Teaching Programme was effective in improving knowledge of the women regarding prevention and management of Osteoporosis.

Keywords: Structured Teaching Programme, Osteoporosis and Estrogen

1. Introduction

Bones have many functions. They support the body structurally, protect our vital organs, and allow us to move. Osteoporosis is defined as a systemic skeletal disorder characterized by a compromised bone strength predisposing to an increased risk of fracture. It is considered as the major health issue in many parts of the country and its occurrence increases as the population age advances. Both men and women are susceptible to osteoporosis as they age but women have significantly higher risk for manifestations and complications of osteoporosis because their peak bone mass is 10% to 15% less than that of man.

Objectives

- 1) To assess the prior knowledge of women regarding prevention and management of Osteoporosis.
- 2) To develop and administer Structured Teaching Programme on prevention and management of Osteoporosis.

- 3) To evaluate the effectiveness of Structured Teaching Programme on knowledge of women regarding prevention and management Osteoporosis.
- 4) To identify the association of knowledge of women regarding prevention and management of Osteoporosis with the selected Socio-demographic variables.

2. Methodology

The Pre-experimental (one group pre-test post-test) design was used in the study and the data was collected from 60 women (between the age group of 30-75 years), who were willing to participate in the study and were available at the time of data collection. The study was conducted in the selected community of Sangati, District Shimla (HP).

Convenience sampling technique was used and a structured interview schedule was prepared to collect data. The tool comprised of two sections: section one included questions related to socio-demographic variables of the subjects such as age, marital status, educational status, monthly income, occupation, type of family and source of information.

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Section two had knowledge questions regarding Osteoporosis classified under various areas like definition, causes, sign and symptoms, prevention and management.

To ensure the content validity of the tool, it was submitted to 14 experts. The reliability of the tool as measured using Karl Pearson’s correlation coefficient formula (test-retest formula) and was found to be 0.9.

Ethical approval was taken from the Pradhan of the village to conduct the research study. A written informed consent was obtained from the subjects before data collection and the confidentiality of the information was maintained.

Data was analyzed using descriptive and inferential statistics i.e. frequency and percentage distribution, mean percentage, median and chi square to determine the results.

3. Results

The frequency and percentage distribution of the subjects according to their socio-demographic variables revealed that the majority of the subjects i.e. 21 (35%) were found in the age group of 30-40 years. Majority of the subjects i.e. 45

(75%) were married. The level of education of majority of subjects i.e. 26 (43.3%) was primary to secondary. Majority of the subjects i.e. 21 (35.0%) had income above Rs 10000-15000. Majority of the subjects i.e. 46 (76.7%) were homemaker. Most of the subjects i.e. 33 (55%) were living in the joint family. Majority of subjects i.e. 37 (61.7%) were health professionals as the source of information regarding prevention and management of Osteoporosis.

Table 1: Pre-test knowledge score of the subjects regarding prevention and management of Osteoporosis, N=60

Criteria for assessing the Pre-test knowledge score of the subjects			
Sr. no.	Score level	Pre-test score(f)	Percentage (%)
1.	Poor (0-9)	45	75
2.	Average (10-18)	15	25
3.	Good (19-28)	0	0

Maximum score = 28; Minimum score = 0

Table 1 revealed that majority of subjects i.e. 45 (75%) had poor knowledge regarding prevention and management of Osteoporosis followed by 15 (25%) with average knowledge score while 0 (0%) had good knowledge.

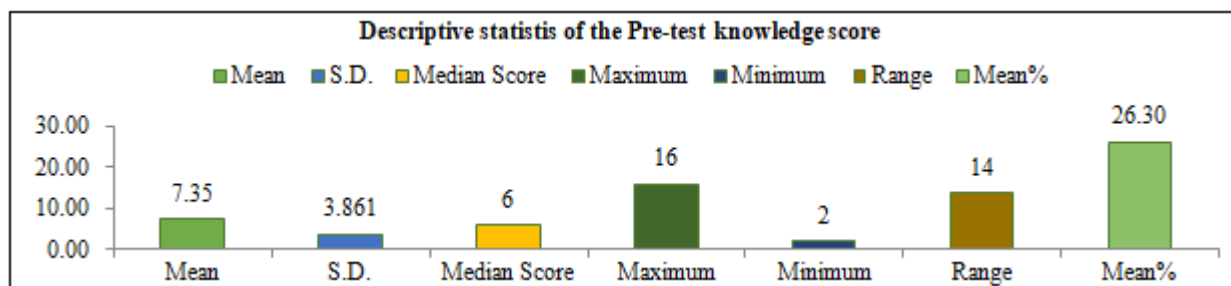


Figure 1: Descriptive statistics of Pre-test knowledge scores of the subjects regarding prevention and management of Osteoporosis

As per the mentioned figure, mean knowledge score of the group was 7.35 with standard deviation 3.861. Maximum score obtained in the group was 16 whereas the minimum score obtained was 2. The median score found in the group was 6, range was 14 and the mean percentile was 26.30.

Table 2: Post-test knowledge scores of the subjects regarding prevention and management of Osteoporosis, N=60

Criteria for assessing the post-test knowledge score of the subjects			
Sr. No.	Score level	Post-test score (f)	Percentage (%)
1.	Poor (0-9)	0	0
2.	Average (10-18)	10	16.7
3.	Good (19-28)	50	83.3

Maximum score = 28; Minimum score = 0

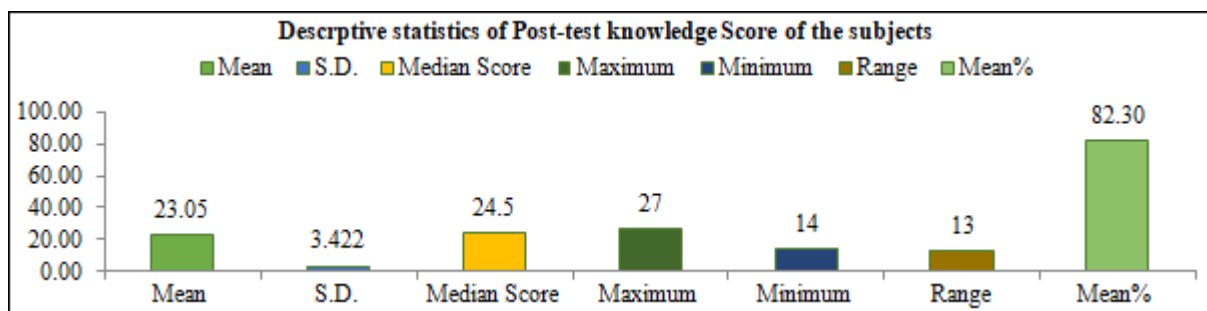


Figure 2: Descriptive statistics of Post-test knowledge score of the subjects regarding prevention and management of Osteoporosis

As per the above mentioned figure, mean knowledge score of the group was 23.05 with standard deviation 3.422. The maximum score obtained was 27 whereas minimum score

obtained was 14. The median score found in the group was 24.5, range was 14 and the mean percentile was 82.30.

Table 3: Comparison of Pre-test knowledge score and Post-test knowledge score within the group using paired t test, N=60

Paired t Test	Mean±SD	df	Mean%	Range	Mean Diff.	Paired t Test	Table Value at 0.05
Pre-test Knowledge	7.35±3.861	59	26.30	2-16	15.700	32.142 *Sig	2.00
Post-test Knowledge	23.05±3.422	59	82.30	14-27			

** Significance at $p \leq 0.05$

Maximum Score = 28; Minimum Score = 0

Data presented in table 4.6 depicted that by using paired t-test, it was found that there is **significant** change in post knowledge score of the group with **t value 32.142**. The **degree of freedom is 59** at $p \leq 0.05$ level of significance.

Table 4: Association of Pre-test knowledge scores with Socio-demographic Variables of the subjects, N=60

Variables	Good	Average	Poor	df	χ^2	P value	Table value
1.Age in years							
a) 30 - 40		9	12	3	8.000*	0.046	7.815
b) 41 - 50		4	10				
c) 51 - 60		2	14				
d) 61 - 75		-	9				

Variables	Good	Average	Poor	df	χ^2	P value	Table value
3.Educational Qualification							
a) No formal education		-	8	3	20.415*	0	7.815
b) Primary to Senior secondary		4	22				
c) Graduate		3	13				
d) Post-graduate and Above		8	2				

Table No. 4 showed that the association between the level of score and socio demographic variable. Based on the 3rd objectives used to Chi-square test used to associate the level of knowledge and selected demographic variables. The Chi-square value shows that there is **significant association** between the knowledge score level and age and educational

qualification of the subjects. There is **no significant association** between the level of scores and other demographic variables i.e. marital status, income per month, occupation, type of family and source of information. The calculated chi-square values were less than the table value at the $p \leq 0.05$ level of significance.

Table no 5: Association of post-test knowledge score with Socio-demographic Variables of the subjects, N=60

Variables	Good	Average	Poor	df	χ^2	P value	Table value
3.Educational Qualification							
a)No formal education	3	5		3	15.381*	0.002	7.815
b) Primary to Senior secondary	22	4					
c) Graduate							
d) Post-graduate and Above							

Table No. 5 showed that the association between the posttest knowledge score and socio demographic variable. Based on the 3rd objectives used to Chi-square test used to associate the level of knowledge and selected demographic variables. The Chi-square value shows that there is **significance association** between the score level and educational qualification. There is **no significance association** between the level of scores and other demographic variables i.e. age, marital status, income per month, occupation, type of family and source of information. The calculated chi-square values were less than the table value at the **0.05 level of significance**.

4. Conclusion

On the basis of total mean score, the findings revealed the pre-test knowledge score of women (between the age group of 30-75 years) regarding prevention and management of Osteoporosis where mean was 7.35, median was 6, standard deviation was 3.861, range was 14, maximum score was 12, minimum score was 2 and mean percentage was 26.30. In post-test mean was 23.05, median was 24.5, standard deviation was 3.422, range was 13, maximum score was 27, minimum score was 14, and mean percentage was 82.30.

The study findings showed that the mean post-test knowledge score was higher than the mean pre-test knowledge score. Hence, it can be concluded that the structured teaching programme was effective in increasing knowledge of women regarding prevention and management of Osteoporosis.

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