Ann. For. Res. 65(1): 9235-9243, 2022
ISSN: 18448135, 20652445

ANNALS OF FOREST RESEARCH
https://www.e-afr.org/

A STUDY TO ASSESS THE EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE ON PREVENTION OF OSTEOPOROSIS AMONG POSTMENOPAUSAL WOMEN.

Miss. Sumaiya Sayyed, Mrs. Manisha Gholap, Mrs. Manda Phuke, Mr. Sangram Shewale, Mr. Sagar Shelke, Mr. Nikhil Shewale.

2 Associate Professor, Krishna Institute Of Nursing Sciences, Karad
3 Assistant Professor, Krishna Institute Of Nursing Sciences, Karad
1,4,5,6 final year students , Krishna Institute Of Nursing Sciences, Karad

Corrosponding author - Mrs. Manda Phuke, Assistant Professor, Krishna Institute Of Nursing Sciences, Karad

Back ground of the study

During the menopausal transition period, the drop of estrogen leads to more bone resorption than formation, resulting in osteoporosis. Prevalence of osteoporosis ranging from 8% to 62% in Indian women of different age groups has been reported by several studies. So researcher Intense to find the way for the prevention of osteoporosis among postmenopausal women.

Materials and methods: An evaluative research approach was selected using one group pretest post-test design was used to evaluate the effectiveness of self-instructional module on knowledge and practices about the prevention of osteoporosis. Total 60 post-menopausal women selected by using convenient sampling technique. A Self structured questionnaire was used for data collection from the subjects. Data were analyzed by using descriptive and inferential statistics.

Result: **Major** findings of the study shows that mean knowledge and SD score before intervention is 4.75 ± 2.080, which was increased after intervention 8.91± 1.239, and paired 't value is 12.516 and 'p' value is > 0.0001.Where as mean practice score and standard deviation is 6.1 ± 1.884 , which was increased to 7.516 ±1.662 after intervention and paired 't value is 4.211 and 'p' value is > 0.0001

Conclusion

postmenopausal women had gain adequate knowledge and improved practices after self instructional module on Prevention of osteoporosis. Thus self-instructional module on prevention of osteoporosis among postmenopausal women was an effective method for providing knowledge and help to enhance knowledge and improve their practices on prevention of osteoporosis.

INTRODUCTION-

The most common bone disease in the world is osteoporosis. Every year, there are more than 1.5 million osteoporosis fractures. Over the past two decades, the number of fractures needing hospitalization has increased dramatically (National Osteoporosis Foundation [NOF], 2013). In addition, 33.6 million Americans have osteopenia. More than 10 million Americans have osteoporosis. (Low bone mineral density [BMD]), a condition that precedes osteoporosis. Bone fracture is an outcome of osteoporosis.[1]

© ICAS 2022

30 percent of postmenopausal women have osteoporosis, according to data provided by the world health organization (WHO). 80 percent of the 61 million Indians who suffer osteoporosis are women, according to the statistics. The peak incidence of osteoporosis strikes 10-20 years sooner in India than in western nations, which has a severe negative impact on the country's health and financial resources. [2]

Osteoporosis has lately been identified by India's government and department of health research as one of the non-communicable diseases affecting the community's key regions[3].

Osteoporosis cause a large amount of morbidity in the elderly and postmenopausal women. Knowing the public level of disease awareness is prudent before beginning the study on the scope of the health issues. Postmenopausal women and senior men must be aware of it and learn how to manage it if it is to be prevented.[4]

Low bone mass and deteriorating bone structure are symptoms of osteoporosis (porous bone), a metabolic condition. Resulting in bones that are brittle and susceptible to breaking. All bones can be impacted, however the spine, wrist, and hip are the most frequently affected.[5]

In many parts of the world, osteoporosis is a significant public health issue, and as the population ages, its prevalence will rise. About 20% of White postmenopausal women in the US are affected. 52% more people have osteopenia at the hip. Every second women will suffer from a fracture at some point in her lifetime. Osteoporotic fractures can also affect non-white women and men, however their risk is smaller than that of white women.[6]

Women are more vulnerable than men, particularly those who are skinny or have a petite frame, as well as those who are older. A women's risk increases if she is postmenopausal, has experienced an early or surgically induced menopause, or has irregular or no menstrual cycles. Smoking, eating disorders like bulimia or anorexia nervosa, inadequate calcium intake, binge drinking, a sedentary lifestyle, and the use of specific drugs like corticosteroids and anticonvulsants are all risk factors for osteoporosis.[7]

Osteoporosis is aggravated by oestrogen insufficiency in women once they reach menopause. Oestrogen aids in osteogenesis and preserving a healthy calcium balance. The rate of bone loss is accelerated by 2% to 5% after menopause, and this may persist for the following ten years. In a recent study, it was discovered that 50% of ambulatory postmenopausal women had osteoporosis. [8]

Over the course of their lives, women may alter their exercise habits. Participation in physical exercise is influenced by a number of variables, including overall health, body mass index, smoking status, and socioeconomic standing. Fracture risk has been proven to be correlated with current low-level physical activity. Exercise with a strong impact rather than one that focuses on endurance, which is crucial in the prevention of cardiovascular illnesses, is more beneficial to bone health. The best chance of maintaining physical activity during the crucial years of bone loss in early postmenopausal years may be with interventions and exercise programmes geared toward women in the per-menopausal stage.[9]

When youngsters are growing, adequate calcium consumption helps enhance the benefits of physical activity on bone health. In postmenopausal women, calcium supplementation has been

© ICAS 2022

found to improve bone mineral density. In older male and female individuals, calcium and vitamin D prevent bone loss and fracture rates; particularly in institutionalized women, this combination of supplements is quite beneficial. In individuals who have experienced an osteoporotic fracture, good nutrition is crucial to a successful rehabilitation programme since poor nutritional status can impede recovery and increase vulnerability to subsequent fractures.[10]

Therefore, the investigator wants to assess effectiveness of self-instructional module on prevention of osteoporosis among postmenopausal women in relation to prevent osteoporosis among postmenopausal women

AIM OF THE STUDY:

Aim of the study to increased knowledge regarding osteoporosis among postmenopausal women. So, they can utilized there knowledge and prevent them self from getting osteoporosis.

OBJECTIVES:

a) To assess the effectiveness of self-instructional module on knowledge and practices of osteoporosis.
b) To find out an association between socio demographic variables and pre-test knowledge among postmenopausal women.

MATERIALS AND METHODS:

An evaluative research approach with one group pretest post-test design were used to evaluate the effectiveness of self-instructional module on knowledge and practices about the prevention of osteoporosis. Total 60 post-menopausal women selected by using non-probability convenient sampling technique from Jakhinwadi village at rural area from , Karad. Women's age group above 40 years forms a chosen a Jakhinwadi village make up the studies accessible population. A Self structured questionnaire was used for data collection from the subjects. Self- structured questionnaire with three section as follows

Section I:

It included demographic variables such as age, religion, education, marital status, occupation, diet pattern, tobacco use, postmenopausal period age, height and weight.

Section II:

This part consist 10 multiple choice questions regarding the knowledge of osteoporosis.

Section III:

This part consist yes, no type Likert scale on practices regarding prevention of osteoporosis.

After obtaining ethical clearance prior permission from the concerned authorities and informed written consent from subjects, pre test were taken and provided Self-instructional module. Post test were taken after 7 days and data were analyzed in terms of descriptive and inferential statistics.

RESULTS

Table no. 1 Distribution of frequency percentage of knowledge score of women regarding prevention of osteoporosis before and after intervention among postmenopausal women. N=60

Knowledge	Before intervention		After intervention	
	F	%	F	%
Poor(0 to 3)	16	26.66%	-	-
Average(4 to 7)	40	66.67%	8	13.33%
Good(8 to 10)	04	6.66%	52	86.33%

The findings of the table no. 1 depicts that majority 40 (66.67%) women had average knowledge, 04 (6.66%) had good where as 16 (26.66%) women had poor knowledge regarding prevention of osteoporosis among postmenopausal women before intervention which is increased as 52 (86.33%)women had good knowledge and 08 (13.33%)had average knowledge regarding prevention of osteoporosis.

Table no. 2 Mean and standard deviation and paired 't' test value of knowledge regarding prevention of osteoporosis among the post-menopausal women. N=60

Knowledge	Before intervention	After intervention	't'value	'p'value
Mean	4.75	8.91	12.516	<0.0001
SD	2.080	1.239		

The findings of table no. 2 shows that mean difference between before and after intervention is 4.16 and in SD 0.851 and paired t test value is 12.516 and 'p' value is > 0.0001 which is extremely significant, indicates significant improvement in total knowledge and self-instructional module on prevention of osteoporosis among postmenopausal women is effective to improve knowledge.

Table no. 3 Distribution of frequency percentage of practices score of women's regarding prevention of osteoporosis before and after intervention among postmenopausal women. N=60

Practices	Before intervention		After intervention	
	F	%	F	%
Poor(0 to 4)	10	16.67	02	3.33
Average(5to8)	42	70	38	63.33
Good(9 to 10)	08	13.33	20	33.33

© ICAS 2022

The findings of the table no. 3 depicts that majority 42 (70%) women had average practices, 08 (13.33%) had good where as 10 (16.67%) women had poor practices regarding prevention of osteoporosis among postmenopausal women before intervention which is improved and only 02 (3.33%)women had poor practices regarding prevention of osteoporosis after intervention.

Table no. 4 Mean and standard deviation and paired 't' test value of practices regarding prevention of osteoporosis among the post-menopausal women. N=60

Practices	Before intervention	After intervention	't'value	'p' value
Mean	6.1	7.516	4.211	<0.0001
SD	1.884	1.662		

Table no 4 shows significant improvement in practices after intervention and paired t value is 4.211 indicates significant improvement in practices and self instructional module on prevention of osteoporosis among postmenopausal women effectively improved practices of women in relation to prevention of osteoporosis.

Table no 5 Association Between Knowledge Scores Of Prevention Of Osteoporosis Among Postmenopausal Women With Selected Demographic Variables Before Intervention .

Sr. No	Demographic Data	Poor	Average	Good	Chi Squre	P Value	Result
		0 To 3	4 To 7	8 To 10			
1	Age 40 To 50 50 To 60 60 To 70 Above 70	 4 7 5 0	 10 19 11 0	 1 3 0 0	1.867	0.7602	N.A D.F 4
2	Weight Below 50 51 To 62 Above 63	 7 8 1	 3 32 5	 2 2 0	12.027	0.0172	S* D.F 4
3	Height Below 146 147 To 162 Above 163	 2 11 3	 2 34 4	 2 2 0	9.575	0.0482	S* D.F 4

© ICAS 2022

4	Under Nourish (Below 18.5) Normal (18.6 To 24.99) Obeys (25 To 29.99) Obesity (Above 30	3 10 2 1	2 28 9 1	0 2 2 0	5.965	0.4271	NA D.F6
5	Religion Hindu Muslim Chriacian Other	15 1 0 0	39 1 0 0	4 0 0 0	0.6466	0.7238	N.A D.F2
6	Educaton Illitrate Primary Secondary Graduate/PG	 3 12 0 1	 3 30 7 0	 0 3 1 0	7.688	0.2619	N.A D.F 6
7	Marrital Status Married Single Divorced Widow	 15 0 0 1	 37 1 0 2	 4 0 0 0	0.7723	0.9421	N.A D.F 4
8	Occupatoin Farmer Service Bussiness Housewife	 4 11 1 0	 8 30 1 1	 2 2 0 0	2.897	0.8217	N.A D.F 6
9	Diet Veg Non-Veg Both	 4 2 10	 10 2 28	 4 0 0	11.066	0.0558	S* D.F 4

© ICAS 2022

10	Smoking Yes No Occationally Frequency	 8 7 1 0	 9 28 2 1	 1 3 0 0	5.002	0.5435	N.A D.F 6
11	Menopausal Age Below 43 44 To 51 Above 52	 0 16 0	 1 37 2	 0 3 1	0.423	0.3169	N.A D.F 4
12	Past Med And Surg., Yes No	 9 7	 28 12	 3 1	1.106	0.5751	N.A D.F2
13	Genetic History Yes No	 7 9	 11 29	 2 2	1.894	0.388	N.A D.F2

Table no 5 Shows significant association with weight, height and dietary pattern rest all variables are not associated with knowledge score.

DISCUSSION:

The present study findings shows that pre test knowledge mean and SD before intervention is4.75 and 2.080 and after intervention 8.91 and 1.239 with paired t test value is 12.516 and 'p' value is > 0.0001 which is extremely significant. Consisted findings seen in study conducted by **Barati Sachdeva Sahni** in A study to assess of self-instructional module regarding prevention of osteoporosis among working women in selected institutions of Bangalore represent the pre-test knowledge mean 12.45 and SD 2.05 and post-test there was a significant mean knowledge gain of 22.55 and SD 0.60 .[10] Similar findings seen in study conducted **by Ravi Kumar KH** in Effectiveness of self-instructional module on knowledge regarding osteoporosis among post-menopausal women residing at rural area represent the pre-test knowledge mean 12.13 and SD is 2.7 and Post-test there was a significant mean knowledge gain of 25 and SD 2.4 [11]

Association between knowledge scores of prevention of osteoporosis among postmenopausal women with selected demographic variables before intervention .

Present study Shows significant association with weight, height and dietary pattern rest all variables are not associated with knowledge score. Where as study conducted by **Ms. Neha Tanwar** to assess the effectiveness of structured teaching programme on knowledge regarding

osteoporosis and its prevention among pre-menopausal women residing in selected area of district solan, (H.P), reported that there is no significant association found between the knowledge regarding osteoporosis and its prevention among premenopausal women with age, marital status, educational status, occupation, the type of family, religion from which they belong, their number of children, monthly income, dietary pattern, whether they have any orthopaedic disease, any family history of orthopaedic disease, previous knowledge regarding osteoporosis, source of information and the BMI of premenopausal women.[4]

CONCLUSION

The result of the study showed that postmenopausal women had inadequate knowledge regarding osteoporosis during pre-test and self-instructional module was found to be effective in improving their knowledge and practices which has been depicted in post-test evaluation.

Financial support & Sponsorhip: none

Conflicts of Interest – none

Reference

1. Janice L. Hinkle Kerry H. Cheever, BRUNNER & SUDDARTH'S Textbook of Medical-Surgical Nursing, Volume 2, 13th Edition ,p-1141
2. Rubanpal Khinda, Srishti Valecha, Nitin Kumar,J . P. S. Walia, Kuldeep Singh, Sudhir Sethi, Avtar Singh, Monica Singh, Puneetpal Singh, and Sarabjit Mastana, Prevalence and Predictors of Osteoporosis and Osteopenia in Postmenopausal Women of Punjab, India, . *International Journal of Environmental Research and Public Health*, 2022 Mar; 19(5): 2999
3. Neha Tanwar, Mrs. Poonam & Madhuri Kashyap. (2022): A pre-experimental study to assess the effectiveness of structured teaching programme on knowledge regarding osteoporosis and its prevention among premenopausal women residing in selected areas of district Solan, (H.P.) *Int Aca. J Adv Prct. Nurs. 3*(2) 44-49
4. Omna shaki, sanjay K. Rai, Tej P. Gupta, Barun k. Chakraborty and R.S. Negi, "to study the Awareness of osteoporosis in postmenopausal Indian women in a Northeast part of India: An Evaluation of the Osteoporosis Health Belief Scale" 2021 may 10(5).
5. Linda s. Williams, Paula D. Hopper, Medical surgical nursing, jaypee, fourth edition, page no 10080.
6. Joyce M. Black, Jane Hokanson Hawks, Medical Surgical Nursing, Clinical Management for Positive Outcomes, 8th Edition, Volume1, page no 487.
7. Mr. Sujin Thomas, A Study to Assess the Effectiveness of Self Instructional Module on Knowledge Regarding Prevention of Osteoporosis Among the Middle Aged Women in Selected Hospital, Bangalore, (2021) 11(1):November 2021.
8. Manickavasagam Senthilraja, Kripa Elizabeth Cherian,1 Felix K. Jebasingh,1 Nitin Kapoor, Thomas Vizhalil Paul and Hesarghatta Shyamasunder Asha, Osteoporosis knowledge and beliefs among postmenopausal women: A cross-sectional study from a teaching hospital in southern India, (2019-April) 8(4): 1374–1378

9. Natalie M. Schmitta, Jochen Schmittb, Martina Dörenc, The role of physical activity in the prevention of osteoporosis in postmenopausal women—An update, (20 May 2009) 63(1), 34-38
10. Bharti Sachdeva Sahni (April 2018), A Study to Assess the Effectiveness of Self Instructional Module Regarding Prevention of Osteoporosis among Working Women in Selected Institutions of Bangalore, IJRR, 5(4).
11. KH Ravikumar, SRG Singh ,I Clement, Chetan Kumar MR(2022),to assess the effectiveness of self-instructional module on knowledge regarding osteoporosis among post –menopausal women Residing at rural community area , Bengaluru,12(1).

© ICAS 2022