

An Effectiveness of an Educational Programme on Knowledge Regarding Prevention of Osteoporosis Among Postmenopausal Women in a Selected Community Area of Dehradun, Uttarakhand

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Abstract: *The present study aims to assess the effectiveness of an educational programme on knowledge regarding prevention of osteoporosis among postmenopausal women residing in selected areas of Dehradun, Uttarakhand. The researcher has adopted a quantitative research approach and one group pre-test post-test pre-experimental research design. Samples were selected by non-randomized purposive sampling technique by the investigator. Sample size selected for this study was 60 postmenopausal women. The tool consists of demographic data and questions related to osteoporosis prevention among postmenopausal women using Osteoporosis Knowledge Assessment Tool (OKAT). After the pre-test, an educational programme was administered to the samples and post-test was conducted after seven days. The study can conclude that the mean pre-test knowledge score was 7.83 ± 2.57 , which increased to 16.40 ± 2.09 in the post-test. The paired t-test value was 19.920 with $p < 0.001$, indicating a statistically significant improvement in knowledge after the educational programme. The findings suggest that the educational programme was effective in improving the knowledge regarding prevention of osteoporosis among postmenopausal women. Therefore, educational programmes can be incorporated into community health education to improve awareness regarding prevention of osteoporosis among postmenopausal women.*

Keywords: Osteoporosis, Educational Programme, Postmenopausal Women, Knowledge, Prevention

1. Introduction

Health and nutrition play a vital role in determining the overall welfare and quality of life of individuals and the broader community. In India, the present status of women's health and nutrition remains a major public health concern. Women's health is influenced by a complex interaction of biological, social, and cultural factors. Although women are generally expected to have a longer life expectancy than men, longevity does not necessarily ensure a better quality of life [1].

Women generally spend nearly 30% of their lives in the post-menopausal. A study conducted on the global prevalence of menopausal symptoms included 321 studies comprising 482,067 middle-aged women. Joint and muscular discomfort was the most common symptom (65.43%), while formication was the least common (20.5%) [2].

A study conducted through a systematic review and meta-analysis included 86 studies to estimate the global prevalence of osteoporosis. The overall prevalence of osteoporosis worldwide was reported as 18.3% (95% CI: 16.2–20.7). Among women, the prevalence was 23.1% (95% CI: 19.8–26.9) [3]. Osteoporosis is a major public health concern, particularly among post-menopausal women. The prevalence of osteoporosis among Indian women ranges widely from 8% to 62% [4].

2. Literature Survey

A literature review is a survey of scholarly sources on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research that you can later apply to your paper, thesis, or dissertation topic [5].

Sarika Aher and Manisha Gadade A pre-experimental study in selected areas of Pune city to assess the effectiveness of a structured teaching programme on knowledge regarding menopausal osteoporosis among premenopausal women aged 30–45 years. The study employed a quantitative research approach with a quasi-experimental research design involving a sample of 200 participants. Data were collected using a structured tool during pre-test and post-test, and a non-probability purposive sampling technique was used to select the participants. The data were analysed using descriptive and inferential statistical methods. The findings revealed that there was an improvement in knowledge regarding menopausal osteoporosis among premenopausal women after the structured teaching programme. Educational qualification was found to have a significant association with knowledge regarding menopausal osteoporosis ($p < 0.05$).

Uppara Veerendra, L. Deepthi Reddy et al. A cross-sectional study at Anantapur, Andhra Pradesh, the study was carried out over a period of six months using the Revised Osteoporosis Knowledge Test to evaluate participants understanding of osteoporosis. Socioeconomic status was

Classified according to the Kuppuswamy scale. The total of 553 participants were included in the study, among which 217 (39.24%) were males and 336 (60.75%) were females. The findings indicated that most participants belonged to the upper middle socioeconomic followed the lower middle class. The overall results revealed inadequate knowledge and poor understanding regarding osteoporosis and its associated risk factors among the study population.

Kaur et al. A pre-experimental study at Jamalpur Awana, Ludhiana. The study included 60 participants selected through purposive sampling Technique. A structured questionnaire was Used the knowledge of participants regarding menopausal osteoporosis and its preventive measures. A pretest was Conducted to assess baseline knowledge, followed by the administration of a structured teaching programme on the same day. Post test was conducted on the 7th day after the intervention. The findings of the study revealed that the mean post-test Knowledge score (20.05 ± 5.14) was higher than the mean pre-test knowledge score (14.86 ± 4.36). The calculated Mean difference was 5.18. The obtained 't' value was 6.773 and the 'p' value was <0.0001 , indicating a statistically significant improvement in knowledge after the intervention. The study concluded that the planned teaching programme was effective in improving knowledge regarding menopausal osteoporosis and its prevention among perimenopausal women.

Amit Kale, Nitish Khandelwal et al. A cross-sectional study at the military hospital in Ambala India assessed osteoporosis. The study involved a total of 1326 women aged between 45 and 70 years who attended the outpatient department of orthopedics and had previously undergone bone mineral density (BMD) measurement or estimation the osteoporosis knowledge assessment tool (OKAT) was used to assess their level of knowledge attitudes and behavior towards osteoporosis. . The result of the study revealed that the average osteoporosis awareness score among participants 6 out of 20 points a total of 983 women (73.13%) demonstrated no knowledge of osteoporosis while 221 women (16.66%) showed a higher level of awareness overall knowledge about osteoporosis was found to be low with a mean score of 7.44 ± 3.16 End a median score of 7.2.

3. Problem Definition

A study to assess the knowledge regarding prevention of osteoporosis among postmenopausal women in selected community area of Dehradun, Uttarakhand.

4. Objectives of the Study

- 1) To assess the pre and the posttest level of knowledge regarding prevention of osteoporosis among postmenopausal women.
- 2) To evaluate the effectiveness of educational program regarding prevention of osteoporosis among postmenopausal women.
- 3) To find the association between pre-test level of knowledge with selected socio demographic variables among postmenopausal women.

5. Methods/Approach

Research methodology is the systematic framework that explains the rationale behind a study, including the selection of research design and methods used to achieve the research objectives. Research methods are the specific techniques used to collect and analyze data [10].

The present study aims to assess the knowledge regarding prevention of osteoporosis among postmenopausal women at Dehradun. The researcher has adopted the experimental research approach. Research design is the planned, structured and strategy of investigation of answering the research question is the overall plan. In this study the researcher has adopted pre-experimental research design.

Sampling is the process of selecting a portion of the population who represent the entire population.

In present study, samples were selected by purposive sampling technique by the investigator. Sample size selected for this study was 60 as it is pre-experimental study.

6. Results

This chapter deals with the analysis and interpretation of data collected from 60 community people at Dehradun, by purposive sampling method in pre-experimental descriptive study to assess the knowledge regarding prevention of osteoporosis in postmenopausal women. The data collected was coded and analyzed as per objectives and hypothesis of the study.

Section 1: - Description of socio-demographic data.

Section 2: - Findings related to the pretest and posttest knowledge regarding prevention of osteoporosis among postmenopausal women.

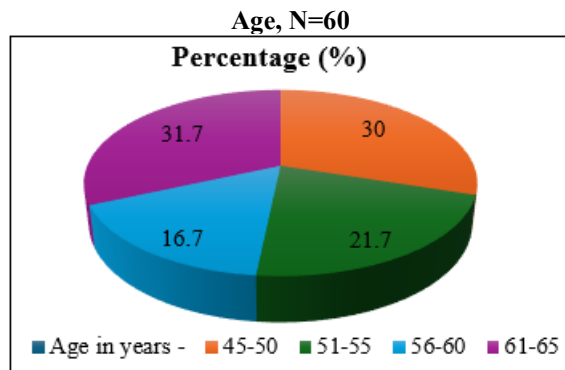
Section 3: - Findings related to the effectiveness of the educational programme regarding prevention of osteoporosis among postmenopausal women.

Section 4: Association between pre-test knowledge levels regarding prevention of osteoporosis and selected socio-demographic variables among postmenopausal women.

Section 5: Frequency and percentage distribution of pre-test and post-test responses regarding prevention of osteoporosis among postmenopausal women.

Section 6: Distribution of item wise analysis of pre-test and post-test responses regarding knowledge on prevention of osteoporosis among postmenopausal women.

Section 1: Description of socio-demographic data

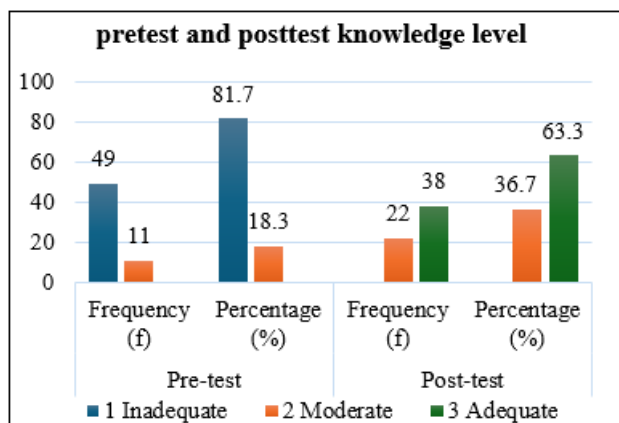
Demographic data

Percentage wise distribution of people according to their age that the highest number of respondents, 31.7%, were in the age group of 61-65 years, followed by 30% in the age group of 45-50 years, 21.7% in the age group of 51-55 years, and 16.7% in the age group of 56-60 years.

Section 2: Findings related to the pre-test and post-test knowledge regarding prevention of osteoporosis among postmenopausal women.

Table: Percentage and frequency distribution of pre-test and post-test level of knowledge regarding prevention of osteoporosis, (N=60)

S. No.	Knowledge Level	Pre-test		Post-test	
		(f)	(%)	(f)	(%)
1.	Inadequate	49	81.7	-	-
2.	Moderate	11	18.3	22	36.7
3.	Adequate	-	-	38	63.3

**7. Discussion**

The present study revealed that 31.7% of postmenopausal women were aged 61–65 years, 95% were married, 40% had no formal education, and 95% had no family history of osteoporosis. Furthermore, 66.7% had no previous knowledge regarding osteoporosis. In comparison, the study reported that 44% of menopausal women were aged 45–50 years, 48% were multiparous, and 56% had secondary education. Hospital staff were the main source of information for 65.3% of participants, whereas family and electronic media were the main sources among women with previous knowledge in the present study (40% each). These findings highlight differences in demographic characteristics and

sources of osteoporosis information across study populations.[11]

The present study revealed that, in the pre-test, 81.7% of participants had inadequate knowledge and 18.3% had moderate knowledge, whereas none had adequate knowledge. In the post-test, 63.3% achieved adequate knowledge and 36.7% had moderate knowledge, with no participants having inadequate knowledge. Similarly, the study reported that pre-test knowledge was inadequate in 33.3% of participants, moderate in 60%, and adequate in 6.7%. Following the planned teaching programme, 61.7% achieved adequate knowledge, 38.3% had moderate knowledge, and none had inadequate knowledge. This demonstrated an improvement in knowledge regarding osteoporosis prevention following an educational intervention [12].

The mean knowledge score increased from 7.83 to 16.40 ($t = 19.920$, $p < 0.001$), demonstrating the effectiveness of the educational programme.

8. Conclusion

In conclusion, the present study demonstrated that the educational programme was effective in improving knowledge regarding prevention of osteoporosis among postmenopausal women. The findings revealed a significant improvement in knowledge from pre-test to post-test, indicating the effectiveness of the educational programme. No significant association was found between pre-test knowledge and the selected socio-demographic variables. The study highlights the importance of providing structured health education to improve awareness regarding osteoporosis prevention among postmenopausal women.

9. Future Scope

The present study can be improved by conducting similar research with a larger sample size, different geographical settings along with a control group and long term follow up to strengthen the validity of findings. The limitations include the small sample size, single setting and one group pretest posttest design. Despite these limitations, the study showed that structured education is a simple and effective approach to improving knowledge regarding prevention of osteoporosis among postmenopausal women.

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