Impact of awareness programme on knowledge related to Menopausal Osteoporosis and Its Prevention among women in selected rural area

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Abstract

The current study has been undertaken to assess knowledge score regarding Menopausal Osteoporosis and Its Prevention among women by awareness programme in Vill- Khudel, Indore. The research design used for study was pre- experimental in nature. The tool for study was self-structured knowledge questionnaire which consists of 2 parts-PART- I consisted questions related to Socio-demographic data, PART-II consisted of self -structured knowledge questionnaire to assess knowledge score regarding Menopausal Osteoporosis and Its Prevention among women. The data was analyzed by using descriptive & inferential statistical methods. The most significant finding was that 20.5% of women were having average knowledge regarding Menopausal Osteoporosis and Its Prevention whereas 79.5% had fair knowledge after post-test. It was suggested that nurses must educate women regarding Menopausal Osteoporosis and Its Prevention.

Keyword- Impact, awareness programme, knowledge & Menopausal Osteoporosis and Its Prevention.

1. INTRODUCTION

Osteoporosis is a major public health concern, especially among postmenopausal women. It is a silent disease characterized by low bone mass and increased bone fragility, leading to a higher risk of fractures. Estrogen deficiency following menopause accelerates bone loss, making women more susceptible to osteoporosis. With the increasing life expectancy, osteoporosis-related fractures are becoming a significant cause of morbidity and mortality in elderly women. Early diagnosis and preventive strategies can help reduce the burden of this condition. Osteoporosis is a systemic skeletal disorder characterized by low bone mass, deterioration of bone tissue, and increased bone fragility, leading to a higher risk of fractures. The World Health Organization (WHO) defines osteoporosis based on bone mineral density (BMD) measurements, with a **T-score of ≤ -2.5** on a dual-energy X-ray absorptiometry (DEXA) scan.

2. NEED FOR STUDY

Osteoporosis is a disease characterized by low bone mass and microarchitectural deterioration of bone tissue, leading to enhanced bone fragility and a consequent increase in fracture risk. The most frequent sites of fracture are the vertebral bodies, distal radius, and femoral neck. Osteoporosis has become a global health issue. It is at epidemic proportions in the United States, affecting more than 20 million people. Most osteoporotic patients are postmenopausal women.

Osteoporosis in postmenopausal women is a function of advancing age and estrogen deficiency. Seventy-five percent or more of the bone loss in women during the first 15 years after menopause is attributed to estrogen deficiency rather than to aging. For the first 20 years after the cessation of ovarian estrogen secretion, postmenopausal osteoporosis accounts for a 50% reduction in trabecular bone and 30% loss of cortical bone. Vertebral bone is especially vulnerable because the trabecular portion of the vertebral bodies is metabolically very active and decreases dramatically in amount in response to estrogen deficiency. Vertebral bone mass is already significantly decreased in perimenopausal and early postmenopausal women who have rising FSH and decreasing estrogen levels, whereas bone loss from the radius is not detected until at least 1 year after menopause.

3. OBJECTIVE OF THE STUDY

1. To assess the pre-test & post-test Knowledge score regarding Menopausal Osteoporosis and Its Prevention among women.
2. To assess impact of awareness programme on knowledge regarding Menopausal Osteoporosis and Its Prevention among women.
3. To find out association between pre-test knowledge score regarding Menopausal Osteoporosis and Its Prevention among women with their selected demographic variables.

4. HYPOTHESES:

RH₀: There will be no significant difference between pretest & post-test knowledge score on Menopausal Osteoporosis and Its Prevention among women.

RH₁: There will be significant difference between pretest & post-test knowledge score on Menopausal Osteoporosis and Its Prevention among women.

RH₂: There will be significant association between pre-test score on Menopausal Osteoporosis and Its Prevention among women with their selected demographic variables.

5. ASSUMPTION

1. Women may have deficit knowledge regarding Menopausal Osteoporosis and Its Prevention.
2. Awareness programme will enhance knowledge of women regarding Menopausal Osteoporosis and Its Prevention.

6. METHODOLOGY:

An evaluative approach was used and research design pre-experimental one group pre-test post-test research design was used for the study. The samples consisted of 44 women selected by Non probability convenient sampling technique. The setting for the study was Vill- Khudel, Indore. Data was gathered with help of demographic variables & administering a self-structured knowledge questionnaire by analyst prior & after awareness programme. Post-test was done after seven days of pre-test. Data were analysis using descriptive & inferential statistics.

7.ANALYSIS AND INTERPRETATION

SECTION-I Table -1 Frequency & percentage distribution of samples according to their demographic variables.
n = 44

S. No	Demographic Variables	Frequency	Percentage
1	**Age in Years**		
a.	18-27	6	13.6
b.	28-37	23	52.3
c.	≥38	15	34.1
2	**Types of family**		
a.	Extended	1	2.3
b.	Nuclear	19	43.2
c.	Joint	24	54.5
3	**Occupation**		
a.	House maker	13	29.5
b.	Heavy worker	26	59.1
c.	Employee	5	11.4
4	**Educational Status**		
a.	No formal education	16	36.4
b.	Primary	15	34.1
c.	Secondary	13	29.5
d	Higher secondary	0	0.0
e	Graduate and above	0	0.0
5	**Previous knowledge related to menopausal osteoporosis**		
a.	Yes	5	11.4
b.	No	39	88.6

SECTION-II- Table- 2.1.1- Frequency and percentage distribution of Pre-test scores of studied subjects:

Category and test Score	Frequency (N=44)	Frequency Percentage (%)
POOR(1-10)	39	88.6
AVERAGE (11-20)	5	11.4
GOOD (21-30)	0	0.0
TOTAL	44	100.0

The present table 2.1.1 concerned with the existing knowledge regarding Menopausal Osteoporosis and Its Prevention among women were shown by pre-test score and it is observed that most of the women 39 (88.6%) were poor (01-10) knowledge & some women have 5 (11.4%) were from average category.
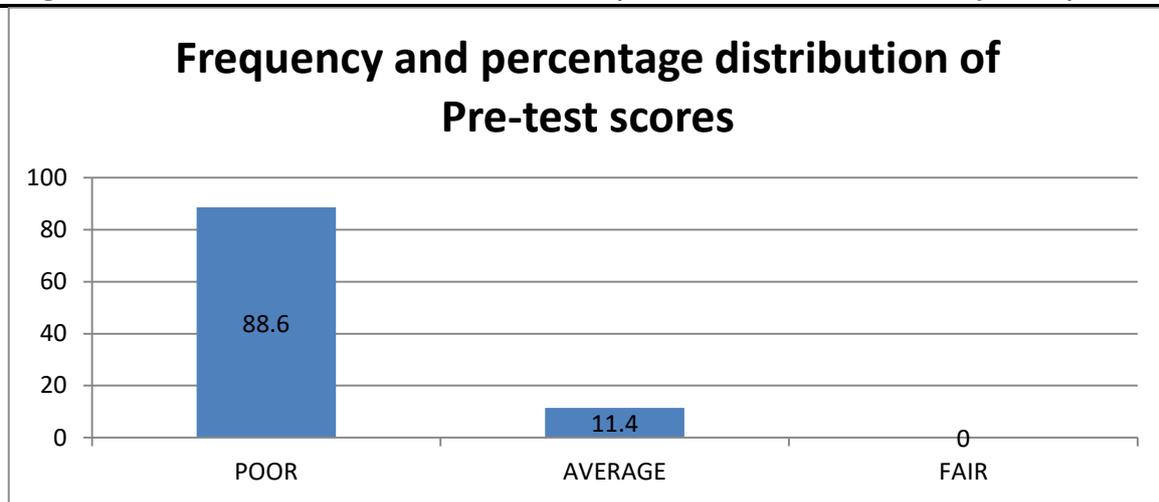
Frequency and percentage distribution of Pre-test scores

FIG.-2.1.1- **Frequency and percentage distribution of Pre-test scores of studied subjects**

Table-2.1.2. - Mean ($\overline{X}$) and standard Deviation (s) of knowledge scores:

Knowledge Pre –test	Mean ($\overline{X}$)	Std Dev (S)
Pre-test score	1.11	0.32

The information regarding mean, percentage of mean and standard deviation of test scores in shown in table 2.1.2 knowledge in mean pre-test score was 1.11± 0.32 while in knowledge regarding Menopausal Osteoporosis and Its Prevention among women in Vill- Khudel, Indore.

Hence, it is confirmed from the tables of section-II that there is a significant difference in mean of test scores which partially fulfill first objective of the present study.
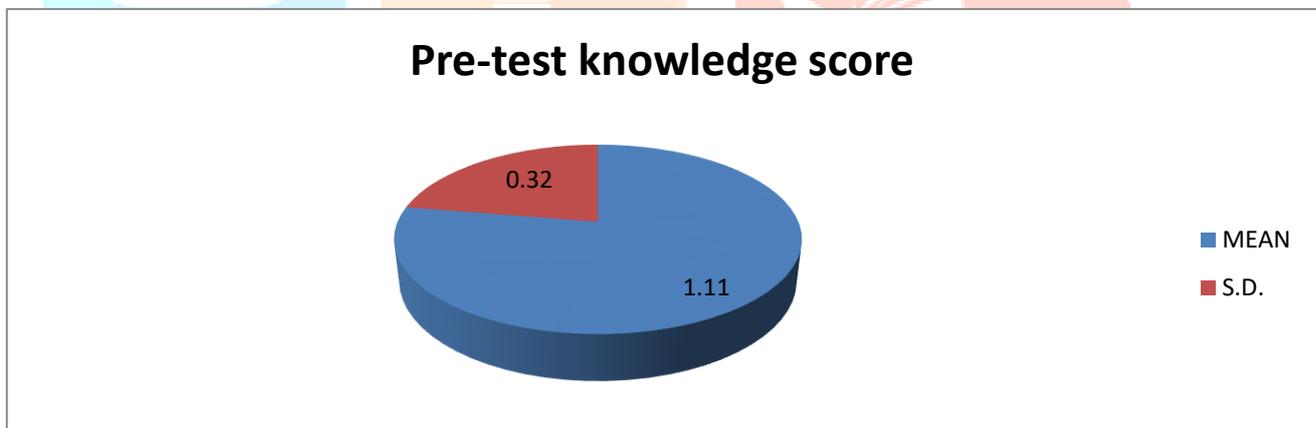

FIG.-2.1.1. - **Mean ($\overline{X}$) and standard Deviation (s) of knowledge scores**

Table-2.2.1- Frequency and percentage distribution of Post test scores of studied subjects:

Category and post-test Score	Frequency (N=44)	Frequency Percentage (%)
POOR (01-10)	0	0.0
AVERAGE (11-20)	9	20.5
GOOD (21-30)	35	79.5
TOTAL	44	100%

The present table 2.2.1 concerned with the existing knowledge regarding Menopausal Osteoporosis and Its Prevention among women was shown by post test score and it is observed that most of the women 35 (79.5%) were **FAIR** (21-30) knowledge & other women have 9 (20.5%) category which are **AVERAGE** (11-20) posttest knowledge score in present study.
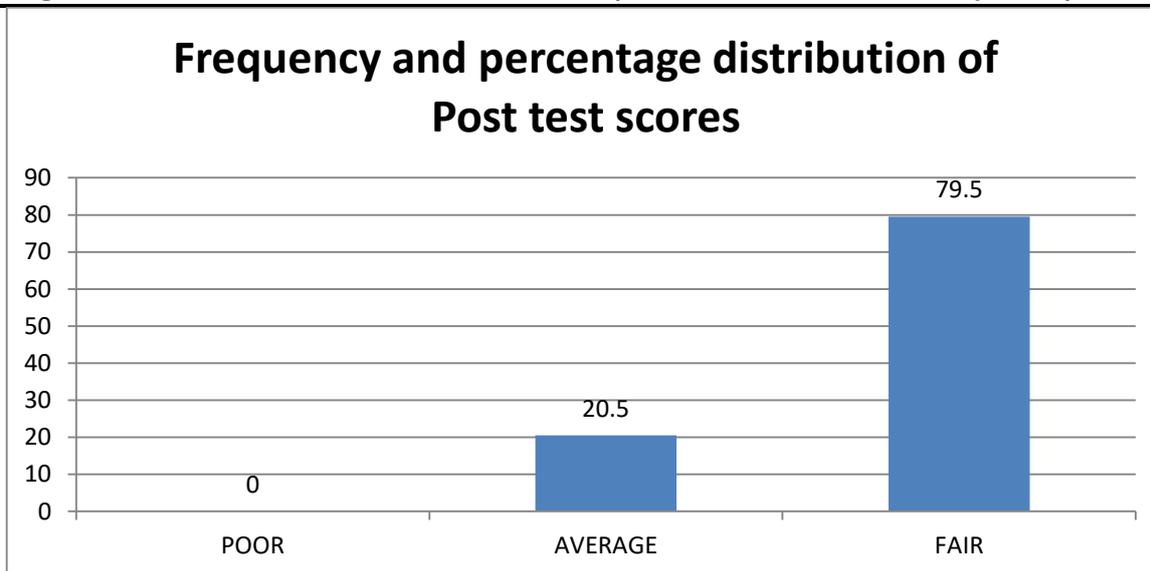
Frequency and percentage distribution of Post test scores

FIG.-2.2.1- Frequency and percentage distribution of Post test scores of studied subjects

Table-2.2.2. - Mean ($\overline{X}$) and standard Deviation (s) of knowledge scores:

Knowledge Test	Mean ($\overline{X}$)	Std Dev (S)
Post-test score	2.79	0.40

The information regarding mean, percentage of mean and SD of post test scores in shown in table 2.2.2 knowledge in mean post test score was 2.79 ± 0.40 while in knowledge regarding Menopausal Osteoporosis and Its Prevention among women in Vill-Khudel, Indore.
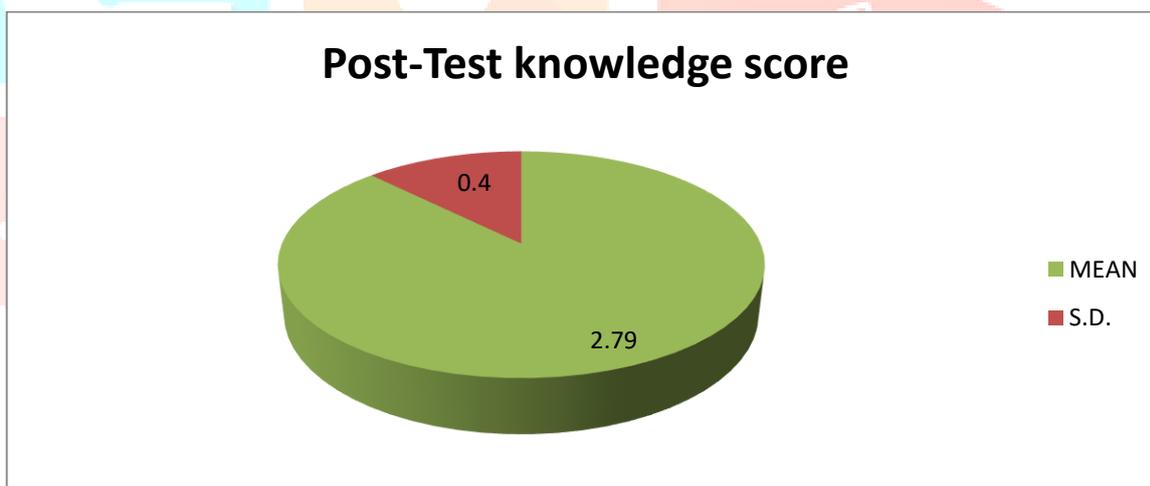

FIG.-2.2.2. - **Mean ($\overline{X}$) and standard Deviation (s) of knowledge scores:**

TABLE 2.2.3: Impact of awareness programme by calculating Mean, SD, Mean Difference and 't' Value of Pre-test and Post-test knowledge.

Knowledge Score of Women	Mean ($\overline{X}$)	S. D. (s)	Std. Error of Mean	D. F.	t-value	Significance
Pre-test	1.11	0.32	0.07812	43	-21.53	P<0.05
Post-test	2.79	0.40				

When the mean and SD of pre-test & post-test were compared & 't' test was applied. It can be clearly seen that the 't' value was -21.53 and p value was <0.05 which clearly show that awareness programme was very effective in enhancing the knowledge of women.

SECTION-III Association of knowledge scores between test and selected demographic variables:

Table- 3.1 Association of age of women with pre-test scores:

Age	Test scores			Total
(in years)	POOR (1-10)	AVERAGE (11-20)	FAIR (21-30)	
18-27	4	2	0	6
28-37	20	3	0	23
≥38	15	0	0	15
Total	39	5	0	44
X^2=4.86 p>0.05 (Insignificant)				

The association of age test scores is shown in present table 3.1. The probability value for Chi-Square test is 4.86 for 2 DF which indicated insignificant value (p>0.05). Hence, it is identified that there is a insignificant association between age & test scores. Moreover, it is reflected that age isn't influenced with current problem.

Table- 3.2 Association of types of family with pre-test scores:

Types of family	Test scores			Total
	POOR (1-10)	AVERAGE (11-20)	FAIR (21-30)	
Extended	1	0	0	1
Nuclear	15	4	0	19
Joint	23	1	0	24
Total	39	5	0	44
X^2=3.13 p>0.05 (Insignificant)				

The association of types of family & test scores is shown in present table 3.2. The probability value for Chi-Square test is 3.13 for 2 degrees of freedom which indicated a insignificant value (p>0.05). Hence, it is identified that there is a insignificant association between types of family & test scores.

Table-3.3. Association of Occupation with pre-test scores:

Occupation	Test scores			Total
	POOR (1-10)	AVERAGE (11-20)	FAIR (21-30)	
House maker	12	1	0	13
Heavy worker	25	1	0	26
			0	
Employee	2	3	0	5
Total	39	5	0	44
X^2= 13.37 p>0.05 (Insignificant)				

The association of Occupation & test scores is shown in present table 3.3. The probability value for Chi-Square test is 13.37 for 2 degrees of freedom which indicated insignificant value (p>0.05). Hence, it is identified that there is a insignificant association between Occupation & test scores. Moreover, it is reflected that Occupation isn't influenced with present problem.

Table- 3.4 Association of educational status with pre-test scores:

Educational Status	Test scores			Total
	POOR (1-10)	AVERAGE (11-20)	FAIR (21-30)	
No formal	16	0	0	16
Primary	11	4	0	15
Secondary	12	1	0	13
Higher sec.	0	0	0	0
Graduate & above	0	0	0	0
Total	39	5	0	44
X^2= 5.71 p>0.05 (Insignificant)				

The association of educational status & test scores is shown in present table 3.4. The probability value for Chi-Square test is 5.71 for 2 degrees of freedom which indicated educational & test scores. Moreover, it is reflected that educational isn't influenced with present problem.

Table- 3.5 Association of previous knowledge related to cervical cancer with pre-test scores:

Previous Knowledge	Test scores			Total
	POOR (1-10)	AVERAGE (11-20)	FAIR (21-30)	
Yes	4	1	0	5
No	35	4	0	39
Total	39	5	0	44
X=0.41 p>0.05 (Insignificant)				

The association of previous knowledge related to cervical cancer test scores is shown in present table 3.5. The probability value for Chi-Square test is 0.41 for 1 degrees of freedom which indicated previous knowledge related to cervical cancer & test scores. Moreover, it is reflected that previous knowledge Menopausal Osteoporosis and Its Prevention isn't influenced with current problem.

8.RESULTS

The result of this study indicates that there was a significant increase in post-test knowledge scores compared to pre-test scores of Menopausal Osteoporosis and Its Prevention. The mean percentage knowledge score was observed 1.11 ± 0.32 in pre-test & after implementation of awareness programme post-test mean percentage was observed with 2.79 ± 0.40.

9.CONCLUSION

Thus after the analysis and interpretation of data we can conclude that the hypothesis RH1 that, there will be significance difference between pre-test knowledge score with post-test knowledge score at ($P<0.05$) is being accepted.

Furthermore, awareness programme related to Menopausal Osteoporosis and Its Prevention among women may consider as an effective tool when there is a need in bridging & modifying knowledge.

10.LIMITATIONS-

- This was limited to Vill- Khudel, Indore.
- This was limited to 44 women.

11.REFERENCE-

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