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ORIGINAL ARTICLE

# Effectiveness of Self Instructional Module on Knowledge Regarding Osteoporosis among Post-Menopausal Women Residing at Rural Community Area, Bengaluru

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## Abstract

Menopause is a natural life event which results in lower level of estrogen and leads to osteoporosis and heart disease. The present study was undertaken to assess the existing knowledge of post-menopausal women and the effectiveness of self-instructional module (SIM) regarding osteoporosis and to find the association between selected demographic variables.

**Methods:** Pre- experimental design was selected and pre-test & post-test design was considered most suitable to assess the evaluation of self-instructional module on osteoporosis. About 60 post-menopausal women were present and probability simple random sampling technique was used at selected rural areas of Bidadi. Data was collected, compiled, tabulated and analyzed using descriptive and inferential statistics.

**Results:** Regarding effectiveness of SIM, 40.4% was the pre-test mean knowledge score followed by post-test score of 83.3% with mean enhancement of knowledge score of 42.9% which was statistically significant. The Paired 't' test was computed and it was 34.61 which was higher than the table value and was significant at 5% level. There was significant association between pre-test scores and demographic variables like education, occupation and family income at 5% level.

**Keywords:** Osteoporosis, Self-instructional module, Knowledge, Postmenopausal women

## Statement of the Problem

Effectiveness of self-instructional module (SIM) on knowledge regarding Osteoporosis among post-menopausal women residing at a rural community area, Bengaluru.

## Objectives

1. To assess the pre-test level of knowledge regarding osteoporosis among post-menopausal women

2. To assess the post-test level of knowledge among post-menopausal women regarding osteoporosis

3. To compare the pre-test and post-test knowledge scores regarding osteoporosis among post-menopausal women.

4. To find the association between the pre-test knowledge score regarding osteoporosis in postmenopausal women and their selected demographic variables.

## Research Hypotheses

H1: There will be significant difference between the mean pre-test and post-test knowledge regarding prevention of osteoporosis in post-menopausal women in selected rural community area.

H2: There will be significant association between the pre-test knowledge regarding prevention of osteoporosis among post-menopausal women in selected rural community area and their selected demographic variables.

## Research Methodology

One group pre-test and post-test pre-experimental design was is adopted for the present study.

| Pre-Test ($O_1$) | Intervention (X) | Post Test ($O_2$) |
|---|---|---|
| Assessment of knowledge | Self-Instruction Module | Assessment of knowledge |

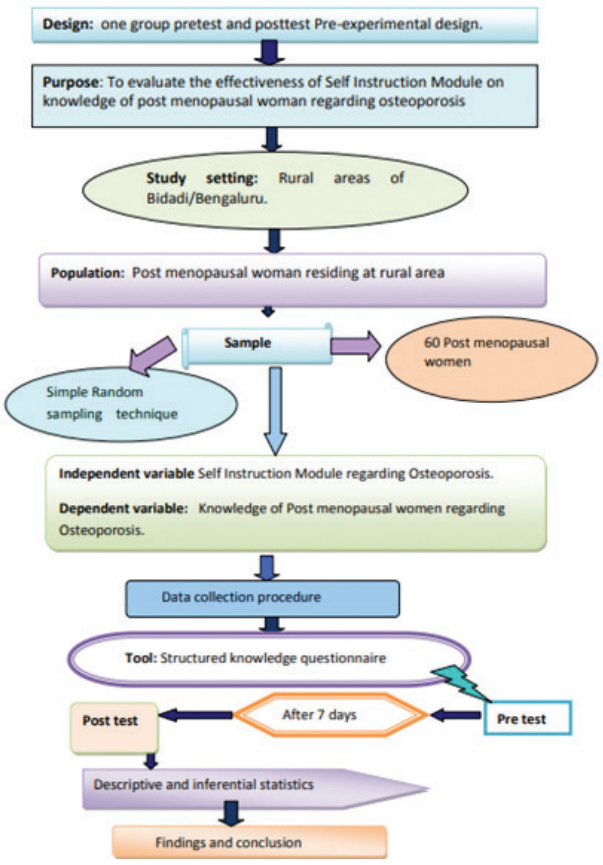


**Figure 1:** Schematic Representation of Research Design

## Setting

Setting is a physical location in which data collection takes place in a study. Based on the geographical proximity, feasibility of conducting the study and availability of the samples, the present study was conducted in rural areas of Bidadi/Bengaluru.

## Population

The population referred to as the target population, represents the entire group or all the elements like individuals or objects that meet certain criteria for inclusion in the study. Target population in the present study included post-menopausal women of rural areas of Bidadi/Bengaluru.

### Sample

Post-menopausal women of rural areas of Bidadi/ Bengaluru.

### Sample size

Overall the sample size consisted of 60 post-menopausal women of rural areas of Bidadi/Bengaluru.

### Sampling technique

Sampling refers to the process of selecting a group of people or other elements with which a study is conducted.

The sampling technique adopted for the study for selection of subjects was a simple random sampling technique through non-probability sampling approach.

**Section 1:** Assessment of demographic variables of the post-menopausal women N=60

**Table 1:**

| S. No | Characteristics | Category | Respondents | |
|---|---|---|---|---|
| | | | Number | Percent |
| 1 | Age (years) | 41-45 years | 29 | 48.3 |
| | | 46-50 years | 27 | 45.0 |
| | | 51-55 years | 4 | 6.7 |
| 2 | Religion | Hindu | 55 | 91.7 |
| | | Muslim | 5 | 8.3 |
| 3 | Education | No formal education | 6 | 10 |
| | | Middle school | 8 | 13.4 |
| | | High school | 24 | 40 |
| | | P. U. C and above | 22 | 36.6 |
| 4 | Occupation | House wife | 24 | 40 |
| | | Cooli | 24 | 40 |
| | | Private job | 6 | 10 |
| | | Government job | 6 | 10 |

| S. No | Characteristics | Category | Respondents | |
|---|---|---|---|---|
| | | | Number | Percent |
| 5 | Family monthly income | <10,000 | 18 | 30 |
| | | 10,001-15,000 | 24 | 40 |
| | | 15,001-20,000 | 12 | 20 |
| | | >20,000 | 6 | 10 |
| 6 | Type of family | Nuclear | 17 | 28.3 |
| | | Joint | 43 | 71.7 |
| 7 | No. of children | One | 11 | 18.4 |
| | | Two | 40 | 66.6 |
| | | More than two | 9 | 15 |
| 8 | Previous knowledge about Osteoporosis | Yes | 30 | 50.0 |
| | | No | 30 | 50.0 |
| 9 | Source of health information | Friends & family | 4 | 6.7 |
| | | Health professional | 16 | 60.0 |
| | | Mass media | 4 | 6.7 |
| | | No information | 6 | 10.0 |

**Section 2: Overall and aspect wise knowledge scores of respondents on osteoporosis**

**Table 2:** Classification of Respondents based on Pre-test Knowledge levels on Osteoporosis

| Knowledge Level | Category | Respondents | |
|---|---|---|---|
| | | Number | Percent |
| Inadequate | ≤ 50 % Score | 44 | 73.3 |
| Moderate | 50-75 % Score | 16 | 26.7 |
| Adequate | > 75 % Score | 0 | 0.0 |
| **Total** | | 60 | 100.0 |

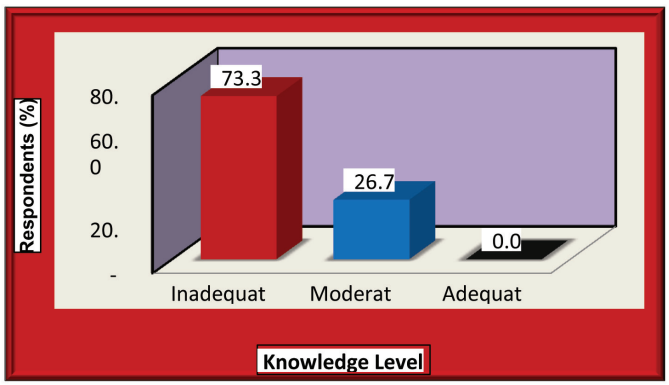


**Figure 2:** Percentage of Respondents based on Pre-test Knowledge levels on Osteoporosis

**Table 3:** Overall Pre-test and Post-test Mean Knowledge on Osteoporosis N=60

| Aspects | Max. Score | Respondents Knowledge | | | Paired 't' Test |
|---|---|---|---|---|---|
| | | Pre-test | Post-test | Enhancement | |
| Mean | 30 | 12.13 | 25 | 12.87 | 34.61* |
| SD | 30 | 2.7 | 2.4 | 2.9 | |
| Mean (%) | 30 | 40.4 | 83.3 | 42.9 | |

Significant at 5% level, t (0.05, 59df) = 1.96

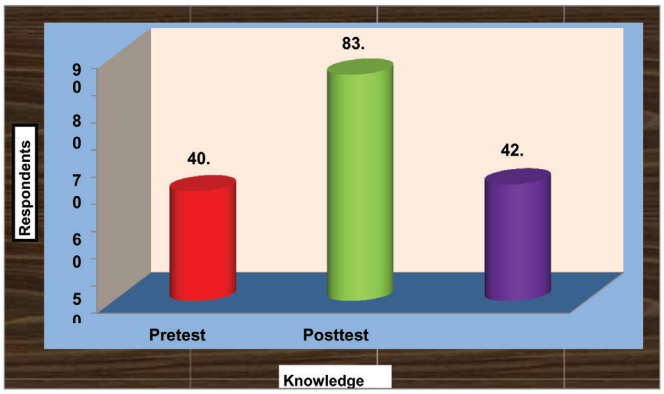


**Figure 3:** Overall Pre-test and Post-test Mean Knowledge on Osteoporosis

The figure 3 depicts that in pre-test, the mean score was 40.4% and in post-test, it was 83.3% with the enhancement of 42.9%, with paired "t" test value of 34.61 which was significant at 5% level.

**Table 4:** Classification of Respondents based on Knowledge levels on Osteoporosis

| Knowledge Level | Category | Classification of Respondents | | | | $\chi^2$ Value |
|---|---|---|---|---|---|---|
| | | Pre-test | | Post-test | | |
| | | Number | Percent | Number | Percent | |
| Inadequate | ≤ 50 % Score | 44 | 73.3 | 0 | 0.0 | 85.26* |
| Moderate | 51-75 % Score | 16 | 26.7 | 19 | 31.7 | |
| Adequate | > 75 % Score | 0 | 0.0 | 41 | 68.3 | |
| Total | | 60 | 100.0 | 60 | 100.0 | |

Significant at 5% level $\chi^2$ (0.05, 2df) = 5.991

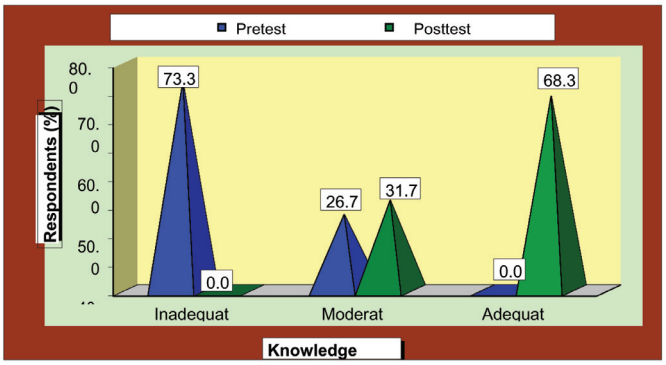


**Figure 4:** Percentage of Respondents based on Knowledge levels on Osteoporosis

Table 4 & figure 4 depicts that in pre-test, 73.3% of the subjects had inadequate knowledge, 26.7% of them had moderate knowledge and none of them had adequate knowledge. In post-test, none of them had inadequate knowledge, 31.7% had moderate knowledge and 68.3% had adequate knowledge. With Chi square value of 85.26, it was significant at 5 % level.

**Section 3:** Association between demographic variables and knowledge levels of respondents on osteoporosis

**Table 5:** Association between Demographic variables and Pre-test Knowledge levels on Osteoporosis N=60

| Sl No | Characteristics | Category | Sample | Knowledge | | $\chi^2$/ P Value |
|---|---|---|---|---|---|---|
| | | | | Mode rate | Adequ ate | |
| 1 | Age (years) | 41-45 years | 29 | 9 | 20 | |
| | | 46-50 years | 27 | 9 | 18 | $\chi^2$ =0.12 |
| | | 51-55 years | 4 | 1 | 3 | **p>0.05** |
| 2 | Religion | Hindu | 55 | 18 | 37 | $\chi^2$=0.34 |
| | | Muslim | 5 | 1 | 4 | **p>0.05** |
| 3 | Education | No formal education | 6 | 4 | 2 | |
| | | Middle school | 8 | 4 | 4 | $\chi^2$ =13.7* |
| | | High school | 24 | 8 | 16 | **p<0.05** |
| | | P. U. C and above | 22 | 2 | 20 | |
| 4 | Occupation | House wife | 24 | 7 | 17 | $\chi^2$ =15.7* |
| | | Cooli | 24 | 10 | 17 | **p<0.05** |
| | | Private job | 6 | 0 | 6 | |
| | | Government job | 6 | 0 | 6 | |
| 5 | Family monthly income | <10,000 | 18 | 4 | 14 | $\chi^2$ =10.95* |
| | | 10,001-15,000 | 24 | 5 | 19 | |
| | | 15,001-20,000 | 12 | 4 | 8 | **p<0.05** |
| | | >20,000 | 6 | 1 | 5 | |
| 6 | Type of family | Nuclear | 17 | 07 | 10 | $\chi^2$ =1.09 |
| | | Joint | 43 | 13 | 20 | **p>0.05** |
| 7 | No. of children | One | 11 | 4 | 7 | $\chi^2$ =2.14 |
| | | Two | 40 | 05 | 35 | |
| | | More than two | 9 | 2 | 7 | **p>0.05** |
| 8 | Source of health information | Friends & family | 4 | 1 | 3 | $\chi^2$ =1.35 |
| | | Health professional | 16 | 3 | 13 | |
| | | Mass media | 4 | 1 | 3 | **p>0.05** |
| | | No information | 6 | 2 | 4 | |

*Significant at 5%

The data presented in table 5 shows that $\chi^2$ values, calculated to determine the association between the post-menopausal women knowledge levels and five of the selected demographic variables viz, age, religion, type of family, number of children and source of health information were less than the table value under

respective degrees of freedom. But the $\chi^2$ values, calculated to determine the association between the knowledge level and education, occupation and family monthly income was more than the table value (7.82) under df =3, at 0.05 level of significance. Hence the hypothesis ($H_2$) was accepted and concluded that there is a significant association between religion, education, occupation and family monthly income of the post-menopausal women ($p<0.05$).

## Conclusion

The study concluded that the SIM on osteoporosis was effective in enhancing the knowledge of post-menopausal women and helped in the improvement of quality of life. On the basis of these findings, it is recommended a similar study may be replicated using large number of participants. It is also recommended that other methods of teaching along with use of frequent re-enforcement should be implemented for improving the knowledge of post-menopausal women regarding osteoporosis.

## Conflict of Interest

None.

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