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Effectiveness of a Self-Instructional Module on Knowledge Regarding Osteoporosis among Post-Menopausal Women Residing in Rural Community Areas of Bidadi, Bengaluru

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Abstract: ***Background**: Menopause reduces estrogen levels, leading to higher osteoporosis risk in women. **Objective**: To evaluate the effectiveness of a Self-Instructional Module (SIM) on knowledge about osteoporosis among postmenopausal women. **Methods**: A pre-experimental one-group pre-test/post-test design was used. A structured knowledge questionnaire was administered to 60 randomly selected postmenopausal women in rural Bengaluru. The SIM addressed general information, causes, signs/symptoms, diagnosis, treatment, and prevention. **Results**: Pre-test knowledge was 40.4%, increasing to 83.3% post-intervention (mean gain: 42.9%, $p < 0.05$). Significant associations were found between knowledge gain and education, occupation, and income. **Conclusion**: The SIM significantly improved osteoporosis knowledge among postmenopausal women, showing its potential for community health education.*

Keywords: Osteoporosis, Self-Instructional Module, Post-Menopausal Women, Rural Health, Health Education

1. Introduction

Osteoporosis is a progressive skeletal disease-causing bone fragility and fracture risk. Postmenopausal women are especially vulnerable due to reduced estrogen levels. Knowledge gaps and limited preventive practices compound the risk in rural populations. This study evaluates the effectiveness of a SIM in enhancing awareness among this vulnerable group.

Objectives

1) Assess baseline knowledge of osteoporosis.
2) Evaluate post-intervention knowledge.
3) Compare pre-and post-intervention scores.
4) Identify associations between knowledge levels and demographics.

2. Methodology

A one-group pre-test/post-test pre-experimental design was adopted. Sixty postmenopausal women were selected using simple random sampling. A structured questionnaire was used before and after administering a Self-Instructional Module (SIM).

Parameter	Description
Design	One-group pre-test/post-test
Sample Size	60 postmenopausal women
Sampling Technique	Simple Random Sampling
Instrument	Structured knowledge questionnaire
Intervention	Self-Instructional Module (SIM)
Statistical Tools	Paired t-test, Chi-square test

3. Results

The study revealed a substantial improvement in knowledge post-intervention. A comparison of pre-and post-test scores showed a mean knowledge increase from 40.4% to 83.3%. This gain of 42.9% was statistically significant ($t=34.61$, $p<0.05$).

Table 1: Pre-test and Post-test Knowledge Levels

Knowledge Level	Pre-test (%)	Post-test (%)
Inadequate (≤50%)	73.3	0.0
Moderate (51–75%)	26.7	31.7
Adequate (>75%)	0.0	68.3

Table 2: Aspect-wise Knowledge Score Comparison

Aspect	Pre-test (%)	Post-test (%)	Gain (%)	t-value
General Information	47.5	77.5	30.0	13.13*
Etiology, Signs & Symptoms	39.9	84.2	44.3	24.87*
Diagnosis, Treatment & Prevention	38.9	84.3	45.4	26.05*
Overall	40.4	83.3	42.9	34.61*

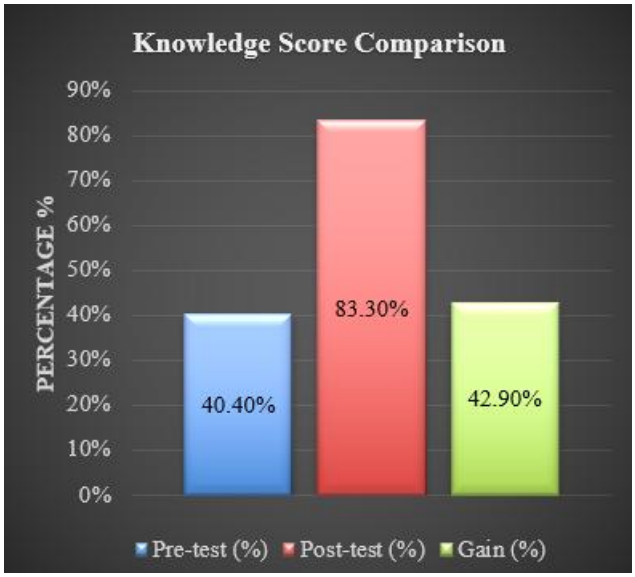

Figure 1: Knowledge Improvement Chart

4. Discussion

The findings confirm that the Self-Instructional Module significantly improved osteoporosis knowledge among postmenopausal women. The highest gain was in understanding diagnosis and prevention. Educational status, occupation, and income were significantly associated with knowledge levels. These results align with similar studies showing educational interventions improve health literacy among rural populations.

5. Conclusion

This study establishes that a Self-Instructional Module is an effective tool for enhancing awareness of osteoporosis among postmenopausal women in rural areas. It provides a cost-effective strategy to support public health education and potentially reduce osteoporosis-related morbidity.

6. Summary

A one-group pre/post-test study involving 60 women demonstrated the effectiveness of a Self-Instructional Module in improving osteoporosis knowledge. Statistically significant knowledge gains were observed post-intervention. The study suggests broader application of SIM in community nursing education.

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