Journal of Scientific and Innovative Research 2019; 8(2): 52-55
Available online at: www.jsirjournal.com


**Research Article**

ISSN 2320-4818
JSIR 2019; 8(2): 52-55

Received: 14-05-2019
Accepted: 25-06-2019

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# Knowledge of middle-aged women regarding the prevention of osteoporosis

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## Abstract

Women constitute the most important segment of our population. Most of the middle-aged women are affected with Osteoporosis which is one of the most prevalent bone diseases in the world. The objective of the study is to assess the knowledge of middle aged women regarding the prevention of osteoporosis. Osteoporosis affects 55% aged 50 and above of this approximately 80 % are women one in three women and one in twelve men over the age of 50 years worldwide are estimated to have osteoporosis. Primary prevention of osteoporosis is the first and most important one especially among the middle-aged women, as they are going to attain menopause soon. As a part of primary prevention they should follow a balanced diet, calcium and vitamin D3 supplements, physical activity, prevents falls, hormone replacement therapy. Calcium and vitamin D exert a positive effect on a muscular tissue which helps in building up the mass and strength of muscles thereby promotes osteoporosis prevention. By using non experimental univarient descriptive design 60 women who met inclusion criteria were selected with convenient sampling technique. Out of 60 sample 23 (38%) had very good knowledge, twenty one had (35%) had average knowledge, nine (15%) had excellent knowledge, seven (12%) of them had good knowledge and none of them had poor knowledge. As a middle aged women attains menopause it is necessary to boost their knowledge regarding osteoporosis, where the main study focused to assess the knowledge of middle aged women on osteoporosis.

**Keywords:** Osteoporosis; Menopause; Middle aged women; Hormone replacement therapy.

## INTRODUCTION

"Invest in Your Bones, Prevents First Fracture" - World Osteoporosis Theme (2012).

Women constitute the most important segment of our population. The woman who attained menopausal is most at risk for hypocalcaemia. As a woman ages, the intake of calcium typically declines. The parathyroid glands recognize this decrease and stimulate bone to release some of its stored calcium into blood for replacement. When calcium is released into the blood the bones get depleted and results in a condition called as osteoporosis. Estrogens amount is less in menopausal women, hormones that help to prevent bone loss in younger woman [1]. Osteoporosis literally means "porous bone" and is characterized by reduction in bone density which results in a 'silent disease'.

Bones will become weak and fragile due to osteoporosis and thereby increasing the chance of getting fractures [2]. Osteoporosis is the most prevalent bone disease in the world. Osteoporosis affect 55% aged 50 and above of these approximately 80% are women one in three women and one in twelve men over the age of 50 worldwide are estimated to have osteoporosis. It is responsible for millions of fractured annually mostly including lumbar vertebra, hip, and wrist. Fragility fractures of ribs are also common in Men. More than 10 million Americans have osteoporosis. It is projected that one of every two caucarion women and one of every five men will have an osteoporosis related fracture [3]. Public awareness of osteoporosis remains low, especially in under-developed/ developing countries. Hence, it is necessary to assess the knowledge of middle aged women regarding the prevention of osteoporosis.

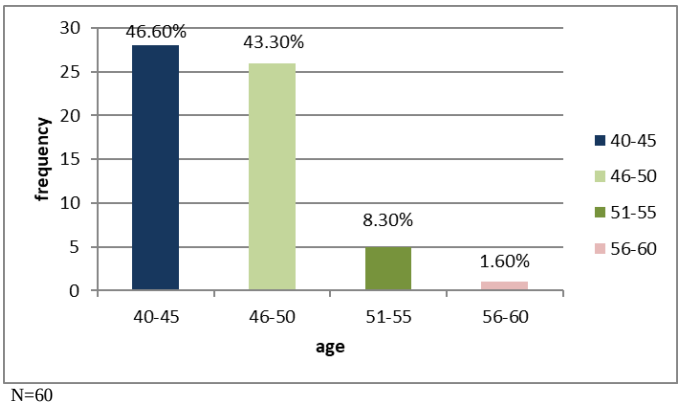
## MATERIALS AND METHODS

The study was conducted in Vazhayoor gramapanchayath Malappuram district, Kerala. Non experimental univarient descriptive design was used to conduct the study. As per inclusion criteria 60 sample were taken from the population of middle aged women using convenient sampling technique.

The tool used for the study consists of two parts –Part I & Part II. Part I consist of demographic data which includes age, religion, educational status, occupation, monthly income, age of menarche, age at married, type of family, & previous knowledge & source of information. Part II consists of Structured questionnaire comprised of 25 items to assess the knowledge regarding prevention of osteoporosis. The multiple choice questions had four alternatives each with one right answer which was allotted a score of one & every wrong answer have given a score of zero. The maximum score was 25 and minimum score was 0. A total score of 21 and above indicates excellent knowledge. A score between 16-20 indicates Very good knowledge, whereas as a score between 11-15 indicates good knowledge, 6-10 shows average Knowledge and a score less than 5 shows poor knowledge. Content Validity of tool was done from various experts of nursing and medical field. Prior to data collection permission was obtained from Vazhayoor gramapanchayath. Informed consent was obtained from the participants and confidentiality of data was ensured to the sample under study. A pilot study was conducted among 6 middle aged women at Vazhayoor Panchayath. It revealed that the study was feasible. Data was analyzed after the data collection procedure to find out the suitability of statistical method. The main study was conducted among the 60 middle aged women who met the inclusion criteria. Duration of data collection process was 7 days. The sample were selected using convenient sampling technique. A good rapport was established with the participants and the purpose of the study was explained to them and the doubts were cleared. Informed, written consent was obtained from the entire sample. The structured questionnaire was used to assess their knowledge on prevention of osteoporosis and provided a leaflet containing brief description of Osteoporosis – focusing mainly on prevention and management to the middle aged women under the study after collection of data.

## RESULTS

**Section I:** Distribution of middle aged women Based on demographic variables




N=60

**Figure 1:** Distribution of sample based on age

The data presented in figure 1 show majority of the sample 46.60% belongs to the age group of 40-45years. Most of the sample (43.3%) belongs to age group of 46-50years. 8.3% of sample fall into the category of 51-55years and least no. of sample belongs to category of 56-60years.

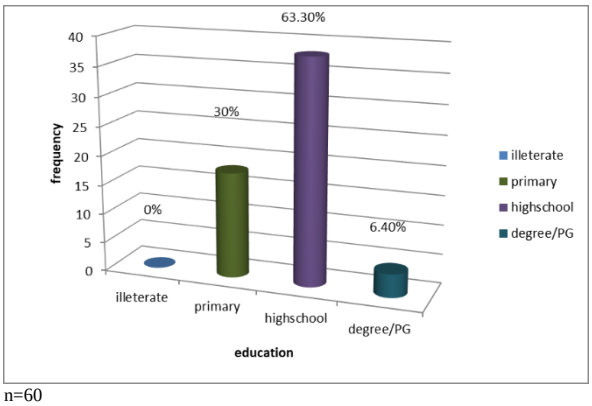
### Distribution of middle aged based on religion

**Table 1:** Distribution of sample based on religion

| Religion | Frequency (f) | Percentage (%) |
|---|---|---|
| Hindu | 46 | 76.66 |
| Muslim | 14 | 23.33 |
| Christian | 0 | 00 |
| Other | 0 | 0 |

n=60

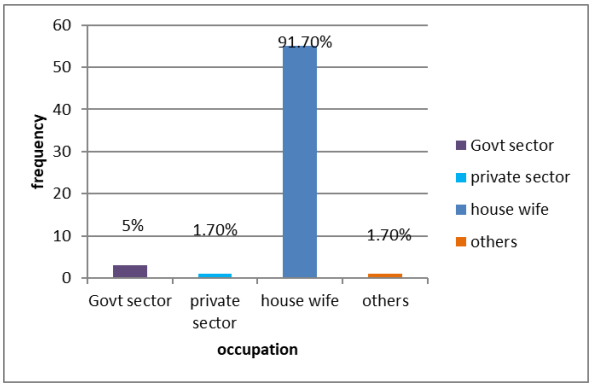
The data presented in table 1 shows that 76.6% of the subject belongs to Hindu religion and 23.3% belongs to Muslim




n=60

**Figure 2:** Distribution of sample based on education

The presented data in figure 2 shows that majority of sample 63.3% have High School Education, 30% of sample have primary education and only 6.4% had degree/PG.




n=60

**Figure 3:** Distribution of sample according to occupation

The presented data in figure 3 shows that 91.7% are house wives and 1.7% are working in private sector.

### Distribution of participants based on type of family

**Table 2:** Distribution of sample based on type of family

| Type of Family | Frequency (f) | Percentage (%) |
|---|---|---|
| Nuclear | 48 | 80 |
| Joint | 12 | 20 |
| Others | 0 | 00 |

n=60

The presented data in table 2 shows that 80 % of the sample are having nuclear family and 20% are in joint family.

### Distribution of participants based on monthly income

**Table 3:** Distribution of samples based on monthly income

| Monthly income (in rupees) | Frequency (f) | Percentage (%) |
|---|---|---|
| <1500 | 34 | 56.66 |
| 1501-3000 | 14 | 23.33 |
| 3001-6000 | 5 | 8.33 |
| 6001-10000 | 7 | 11.66 |

n=60

The presented data in table 3 shows that 56.66% have monthly income of <1500 rupees and 8.33% have monthly income between 3001-6000 rupees.

**Distribution of participants based on age at marriage**

**Table 4:** Distribution of sample based on age at marriage

| Age at marriage (in years) | Frequency (f) | Percentage (%) |
|---|---|---|
| 20 years or below | 33 | 55 |
| 21-25 | 21 | 35 |
| 26-30 | 4 | 6.6 |
| 30years or above | 2 | 3.33 |

n=60

The presented data in table 4 shows that 55% of samples are married at the age of 20 years or below and 3.33% are married at the age of 30years or above. Thirty percentage got married between 21-25years and only 6.6% got married between 26-30years.

**Distribution of participants based on age at menarche**

**Table 5:** Distribution of samples based on age at menarche

| Age at menarche (in years) | Frequency (f) | Percentage (%) |
|---|---|---|
| 10 years and below | 0 | 0 |
| 11-14 years | 42 | 70 |
| 15-18years | 18 | 30 |
| 19 years and above | 0 | 0 |

n=60

The presented data in table 5 shows 70% attained menarche at the age between 10-14 years and 30% attained menarche between the ages of 15-18 years.

**Distribution of participants based on source of previous knowledge**

**Table 6:** Distribution of samples based on source of knowledge based on previous knowledge

| Source of Knowledge | Frequency (f) | Percentage (%) |
|---|---|---|
| Relatives | 27 | 45 |
| Friends | 3 | 5 |
| Media | 7 | 11.66 |
| No previous knowledge | 23 | 38.33 |

n=60

The presented data in table 6 shows that 45% have previous knowledge from relatives,11.6% of the sample had knowledge source from media, 38.33% had no previous knowledge and 5% had got knowledge from friends.

**Section II:** Knowledge of middle aged women regarding prevention of osteoporosis

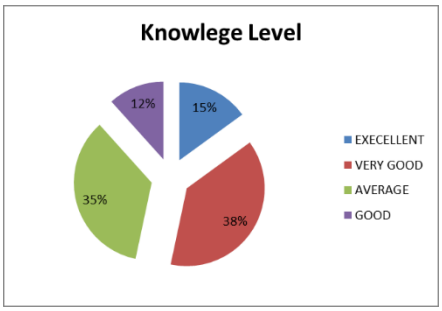



**Figure 4:** Distribution of sample based on level of knowledge

The presented data in figure 4 shows majority of sample (38%) are having very good knowledge, 35% have average knowledge, 15% have excellent knowledge and 12% have good knowledge regarding prevention of osteoporosis.

**Section III:** Association between selected demographic variable and Knowledge of middle aged women regarding prevention of osteoporosis

**Table 7:** Association between selected demographic variables and Knowledge of middle aged women regarding prevention of osteoporosis

| Variables | Knowledge Level | | | | df | Chi-square | P value |
|---|---|---|---|---|---|---|---|
| | Excellent | Very good | Good | Average | | | |
| **Age** | | | | | | | |
| 1. 40-45 | 4 | 16 | 1 | 7 | 3 | 0 | NS |
| 2. 46-50 | 5 | 7 | 2 | 12 | | | |
| 3. 51-55 | 0 | 0 | 3 | 2 | | | |
| 4. 56-60 | 0 | 0 | 1 | 0 | | | |
| **Religion** | | | | | | | |
| 1. Hindu | 7 | 17 | 6 | 16 | 1 | 0.42 | 0.93 |
| 2. Muslim | 2 | 6 | 1 | 5 | | | |
| **Education** | | | | | | | |
| 1. Primary | 1 | 9 | 1 | 7 | 2 | 4.08 | 0.66 |
| 2. High school | 7 | 13 | 5 | 13 | | | |
| 3. Degree/PG | 1 | 1 | 1 | 1 | | | |
| **Occupation** | | | | | | | |
| 1. Government | 0 | 0 | 1 | 2 | 3 | 0 | NS |
| 2. Private | 0 | 0 | 0 | 1 | | | |
| 3. Home maid | 8 | 23 | 6 | 18 | | | |
| 4. Others | 1 | 0 | 0 | 0 | | | |
| **Type of Family** | | | | | | | |
| 1. Nuclear | 5 | 22 | 2 | 19 | 1 | 19.89 | 0.00* |
| 2. Joint | 4 | 1 | 5 | 2 | | | |
| **Monthly income** | | | | | | | |
| 1. <1500 | 2 | 15 | 3 | 14 | 3 | 8.5 | 0.48 |
| 2. 1501-3000 | 3 | 4 | 2 | 5 | | | |
| 3. 3001-6000 | 2 | 1 | 1 | 1 | | | |
| 4. 6001-10000 | 2 | 3 | 1 | 1 | | | |
| **Age at Marriage** | | | | | | | |
| 1. <20 years | 4 | 17 | 2 | 10 | 3 | 0 | NS |
| 2. 21-25 years | 4 | 4 | 4 | 9 | | | |
| 3. 26-30 years | 1 | 2 | 0 | 1 | | | |
| 4. >30 years | 0 | 0 | 1 | 1 | | | |
| **Age at Menarche** | | | | | | | |
| 1. 11-14 years | 6 | 18 | 4 | 14 | 1 | 1.45 | 0.69 |
| 2. 15-18 years | 3 | 5 | 3 | 7 | | | |
| **Source of knowledge** | | | | | | | |
| 1. Relatives | 3 | 19 | 1 | 4 | 3 | 0 | NS |
| 2. Friends | 0 | 2 | 1 | 0 | | | |
| 3. Media | 2 | 2 | 1 | 2 | | | |
| 4. No previous 5. knowledge | 4 | 0 | 4 | 15 | | | |

(*p < 0.05 level of significance)

Data in the table 7 reveals that type of family has got association with knowledge of middle aged women regarding osteoporosis

## DISCUSSION

The present study shows that 38% of middle aged women have very good knowledge, 35% have average knowledge, 15% 0f sample have excellent and 12% have good knowledge regarding prevention of osteoporosis.

A study done by Giangregori L etal in the year 2010 to evaluate osteoporosis knowledge among patients with fractures. The sample were patients with fragility fractures and they participated through telephonic interview. Participants were asked what they thought osteoporosis was. Unadjusted odds ratios (OR, 95% CI) were calculated to identify factors associated with a correct definition. The results showed that One hundred twenty-seven patients (82% women) participated in the study, with mean (SD) age being 67.5 (12.7%) years. Ninety-five (75%) respondents gave correct osteoporosis definitions. The odds of an individual providing a correct definition of osteoporosis were higher for those who reported a diagnosis of osteoporosis or those who reported higher education levels, but the odds decreased with increasing age. A total of 49 (39%) respondents completed the Facts on Osteoporosis Quiz; the average score was 13.6 (3.8%) of 21. Areas that respondents scored poorly on were related to key risk factors [4].

Pal B outlined the results of his questioner survey study that before sustaining a fracture, 42% of patients were aware of osteoporosis and its risk. The source of information was mainly from the media (70.5%) and only occasionally from their doctors (29.5%) [5].

A prospective cohort study conducted by Juby AG & Davis P to evaluate the Awareness, Knowledge, Risk Factors and Current Treatment of Osteoporosis in a Cohort of Elderly Subjects, it was found that television, newspapers and friends were identified as the main source of information with physicians ranking fifth as a source of information [6].

Main limitation observed in the study is generalization of findings is limited as sample size was small. Only single sample assessment of participants was due to shortage of time.

## CONCLUSIONS

The finding of this study shows that the knowledge of osteoporosis among middle aged women in selected grama panchayath may be inadequate. There are considerable gaps in the existing knowledge, especially in the preventive and treatment aspects. So, the investigators provided a leaflet to improve their knowledge.

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