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Assessment of knowledge on osteoporosis among menopausal women residing at rural areas of Kutch: A cross-sectional study

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Abstract

Background and Aim: Menopause can increase a woman's risk of developing osteoporosis. The drop in oestrogen levels that occurs around the time of menopause results in increased bone loss. Hence the aim of the study was to determine the level of knowledge of pre-menopausal women regarding osteoporosis residing at rural area of Kutch.

Material and Methods: Population in this study consists of pre-menopausal women who are in the age group of 30-45 years residing at rural area of Kutch. Sample for the study consists of 120 pre-menopausal women in the age group of 30-45 years and are residing in selected rural community areas of Kutch. Risk test and Knowledge questionnaire were administered to 60 subjects [BMI was checked with the help of the formula weight (kg)/height (meter) ²]. Weight and height were measured by the help of standardized weighing machine and inch tape.

Results: The data depict that equal number of (35% each) premenopausal women are having primary and high school education, whereas rest (30%) of the pre-menopausal women are having college education. Less than half of the premenopausal women (38%) are having an income from Rs. 2001-4000 and Rs. 4001- 6000 (35%). Most of the women are (48%) at moderate risk of osteoporosis, 32% are at high risk, and the rest (20%) are at low risk of osteoporosis.

Conclusion: Most of the women had poor knowledge regarding osteoporosis. Most of the women are at moderate risk of osteoporosis. Knowledge had significant association with demographic variables such as educational status and monthly income.

Keywords: Knowledge, osteoporosis, oestrogen, premenopausal women

Introduction

Osteoporosis is a skeletal disease in which bones become brittle and prone to fracture. In other words, the bone loses density. Osteoporosis is diagnosed when bone density has decreased to the point where fractures occur with mild stress ^[1,2].

Until a healthy adult is around age 40, the process of breaking down and building up bone by cells called osteoclasts and osteoblasts is a nearly perfectly coupled system, with one phase balancing the other. As a person ages, or in the presence of certain conditions, this system breaks down and the two processes become out of sync ^[3]. The reasons why this occurs during aging are not clear, but declining levels of sex hormone is one factor. Some individuals have a very high turnover rate of bone, some have a very gradual turnover, but the breakdown of bone eventually overtakes the build-up ^[4].

Menopause can increase a woman's risk of developing osteoporosis. The drop in oestrogen levels that occurs around the time of menopause results in increased bone loss. It is estimated that the average woman loses up to 10 percent of her bone mass in the first five years after menopause. If a woman's peak bone mass before menopause is less than ideal, any bone loss that occurs during menopause may result in osteoporosis ^[5,6].

Osteoporosis is an increasing public health problem. Expert groups peg the number of osteoporosis patients at approximately 26 million with the numbers projected to increase to 36 million by 2013 in India ^[7]. In a study among Indian women aged 30-60 years from low income groups, Bone Mineral Density (BMD) at all the skeletal sites were much lower than values reported from developed countries, with a high prevalence of osteoporosis (29%). The various risk factors which lead to osteoporosis are age, gender, race, bone structure, body weight, and Family history.

It is essential to check and rule out the modifiable risk factors among pre-menopausal women. Hence the aim of the study was to determine the level of knowledge of pre-menopausal women regarding osteoporosis residing at rural area of Kutch.

Materials & Methods

Considering the purpose of the study, descriptive approach is used to assess the risk and knowledge regarding osteoporosis among pre-menopausal women. Population in this study consists of pre-menopausal women who are in the age group of 30-45 years residing at rural area of Kutch. Sample for the study consists of 120 pre-menopausal women in the age group of 30-45 years and are residing in selected rural community areas of Kutch. Pre-menopausal women of the selected rural community area who meet the inclusion criteria and available during the period of data collection were selected for the study. A total of 120 subjects were be selected.

Prior to the data collection, the investigator explained the purpose of the study and requested the participants for their full cooperation and assured about the confidentiality of the data. Written consent is taken from the participants. As the study setting is community area, door to door survey is undertaken to select the premenopausal women for data collection procedure. Risk test and Knowledge questionnaire were administered to 60 subjects [BMI was checked with the help of the formula weight (kg)/height (meter) 2]. Weight and height were measured by the help of standardized weighing machine and inch tape. The average time taken for each subject was 30 minutes. All subjects cooperated well with the investigator during data collection. An information pamphlet is distributed to the samples at the end of data collection.

Results

The data depict that equal number of (35% each) premenopausal women are having primary and high school education, whereas rest (30%) of the pre-menopausal women are having college education. (Table 1) Less than half of the premenopausal women (38%) are having an income from Rs. 2001-4000 and Rs. 4001-6000 (35%). (Table 2)

In this section, risk score obtained by the women has been categorised into different levels such as low risk, moderate risk and high risk and it is analysed using frequency, percentage, mean, median, and SD. most of the women are (48%) at moderate risk of osteoporosis, 32% are at high risk, and the rest (20%) are at low risk of osteoporosis.

Table 1: Distribution of study population according to Education level

Education	Number	Percentage (%)
Primary	42	35
High-School	42	35
College	36	30
Total	100	

Table 2: Frequency of distribution of risk score of pre-menopausal women

Category	Score	Percentage
Low	0 - 4	20
Moderate	5 - 9	50
High	10 - 15	30

Discussion

Most of the women (53%) are in the age group of 41-45 years; 30% are in the age group of 30-35 years, and the remaining 17% belong to 36-40 years. The above findings are consistent with a

cross-sectional study conducted to determine the risk factors and prevalence of osteoporosis in Pakistani women. The study concluded that the prevalence of osteoporosis and osteopenia is high, especially among young Pakistani women, and is associated with modifiable risk factors [8]. A previous study has likewise found that osteoporosis-related knowledge is independent of age [9]. Educational status of the pre-menopausal women revealed that most of the women (35%) have only primary school education and high school education, 30% of women have college education. With regard to the monthly income, most of the women (38%) had monthly income of Rs. 2001-4000, 35% of them have monthly income of Rs. 4001-6000, rest of women have an income of less than Rs. 2000 (2%), Rs. 6001- Rs. 8000 (10%), more than Rs. 8000 (15%).

Most of the women (48%) are at moderate risk of osteoporosis, 32% are at high risk, and the rest (20%) are at low risk of osteoporosis. The results are consistent with the study conducted in Spanish women. The prevalence of osteoporosis risk factors was 67.6%. A high prevalence of women taking osteoporosis risk-related medication was observed in our study. There was correlation between the menopausal symptoms' degree of severity and the risk of suffering from osteoporosis.

Majority of the women (67%) have poor knowledge and only a few (18%) have excellent knowledge regarding osteoporosis. The findings are consistent with a cross-sectional study was conducted to determine the knowledge, attitude and behaviour regarding osteoporosis among three age groups. The study concluded that 15-30% of women didn't know what osteoporosis is. The total knowledge about osteoporosis was low. The findings the present study also correlates with another study conducted by Mohamed *et al.*, [10] in Egypt where the nutritional knowledge among slum women was found to be very poor (53%). Another study conducted by Ungan *et al.*, [11] in 2001 in Turkey, 33% women had told that, osteoporosis was the direct cause of fracture which is similar to the findings of our study.

The symptoms of osteoporosis submerged in the population like a tip of ice berg which is expressed only in the form of fracture or serious complications. Also the literacy does not make any difference as per our observation.

Conclusion

The following conclusions were drawn based on the findings of the study: Most of the women had poor knowledge regarding osteoporosis. Most of the women are at moderate risk of osteoporosis. Knowledge had significant association with demographic variables such as educational status and monthly income.

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