ABSTRACT

**Background:** Globally, osteoporosis is one of the major health concerns as there is a drastic increase in incident of osteoporotic related fractures. It is a silent bone disease which is characterized by a progressive decrease in bone mass and density (2). In Pakistan, occurrence of osteoporosis is quite common among females and negatively affects patient’s quality of life.(6)

**Aims and Objectives:** The aim of current study is to associate the osteoporosis prevalence in both pre and post menopause, and also to evaluate quality of life and its awareness.

**Methodology:** A survey based study was conducted and data was collected from patients by using a questionnaire and analyzed by the application of statistics.

**Results:** The results of current study have revealed that incidence of osteoporosis is greater in post menopausal women as compared to pre menopausal women. High occurrence of disease in post menopausal is due to a direct relationship between levels of estrogen and osteoporosis. In post menopausal women decrease level of estrogen enhances bone reabsorption which causes increase bone fragility. Hence, all the post menopausal women should be evaluated for osteoporosis.

**Conclusion:** Lack of understanding about disease, imbalance diet, poor treatment and diagnosis increase the risk for developing osteoporosis. Furthermore severe pain, deprive of sleep and inability to do work also adds to the demotion in patient’s quality of life. So in order to reduce incidence rate and for the betterment in quality of patient’s life having osteoporosis, it is necessary to promote awareness, modification in life style, patient counseling, accessibility to treatment and prior diagnosis of disease.

**Keywords:** Osteoporosis, Pre-menopausal, Post-menopausal, Estrogen, Fractures
Introduction

Premenopausal osteoporosis is the most common disease between the age group of women over 30 to 40 years. Physicians claim that almost all women have to suffer from osteoporosis up to a certain limit in their life history (1). In America, the bone disease (osteoporosis) affects more than 44 million people. Symptoms are normally non-existent and can be more dangerous if not given any attention. Premenopausal osteoporosis is commonly a degenerative bone disease or disorder (9.) Up to the age of 30 years, the process of bones build up and break down continue consistently; however after age of 30, our bodies do not able to respond bone forming process or build or make up for the bone that is being broken down. Postmenopausal osteoporosis may occur after ceasing or stopping of menstrual period (8).

Usually bone loss occurs more rapidly in women, going through menopause, but premenopausal osteoporosis is normally not uncommon. In weak bones, the process of bone dissolving happen more easily and women lose the ability to maintain the level optimum health to perform at their best(6)(12). There are so many reasons to develop or suffer from osteoporosis(10). The major cause is hormonal imbalance and also the most common cause of pre menopausal osteoporosis due to lack of estrogen level in the body. Estrogen is also responsible for maintaining the levels of osteoclasts (11). When estrogen level drops, the body will not able to regenerate the impaired bones(5). To overcome this reason, women must stay informed about the risks or dangers of premenopausal osteoporosis and however diet, exercise, healthy lifestyle and nutritional supplements may help to prevent most problems(3)(4).

Material and Method

Study design

A case control study is done. Data is collected form Naseer hospital and community. It is retrospective observational study.

Study approval

Stud approval is taken from dean of University College of Pharmacy, Punjab University Lahore. Afterwards study is conducted in Naseer Hospital with the approval of ethical committee of that hospital.

Study center
We have conducted a survey on osteoporosis. first of all, randomized some individuals from Naseer orthopedic hospital, who already know about their disease, took data from patient of osteoporosis and done their BMD test(7).

**Results**

If the t-score is between -1 to -2.5 the patients may have early bone loss or above -2.5 the patients likely have osteoporosis.

At Naseer hospital most of postmenopausal women having -1 to -2.5 BMD value or many of them already have fracture in their bone.

Most of our data is community based, from premenopausal and postmenopausal women. Many of them have no idea that they are or may suffer with osteoporosis. The prevalence rate is shown in figure 1.

![Graph showing percentage of pre and post menopausal osteoporosis.](image)

**GRAPH SHOWS PERCENTAGE OF PRE AND POST MENOPUSAL OSTEOPROSIS.**

Figure 1: The prevalence rate of osteoporosis among females.
Discussion

Our research was with the aim of measuring the risk of osteoporosis in pre-menopausal and postmenopausal women especially in Pakistan. We randomized some individuals and performed case control or retrospective studies. According to our survey a significant apparent bone loss was found in post-menopausal as compared to pre-menopausal women. Change in bone mass occurred usually after 35 years of age and it will become a rapid process after the age of 45 years or especially after menopause because of unbalanced diet or unbalanced hormonal level which is main cause of osteoporosis.

In a group of healthy pre-menopausal women we found no evidence of significant age related apparent bone loss. After menopause, bone mass decreased at all skeletal sites. Year since, menopause were a better predictor of measuring bone mass than age. The apparent bone loss indicates rapid decrease in bone mass within 10 years of menopause. Then after that there is a slower phase, a further apparent increase in bone loss in elderly, which begins 25 years of age after menopause. In previously published studies osteoporosis is very slow process in which especially in menopause bone mass decreased at all skeleton sites.

The cross sectional deign of our study does not allow us to conclude on the rate of bone loss according to post menopausal years, because osteoporosis is characterized by a gradient of risk for decreasing BMD values. According to our survey the %age of postmenopausal women with low BMD varied from 36-56% and 10-45% was found in premenopausal women. According to measurements the %age of women with osteoporosis (according to age) between 50-59years, 22.5% of these women were osteoporotic at one site or between 60-69 years it is 54% and in elderly it is 71%

In conclude, there is great risk of osteoporosis in post menopausal women than premenopausal. According all retrospective and case control studies the basic reason is malnutrition severe lack of calcium intake. As we know that osteoporosis occurred due to hormonal imbalance, which is more common in post menopausal women than premenopausal. The women with hysterectomy (with or without removal of ovaries) have great risk of osteoporosis even in early age. They may suffer from osteoporosis before the age of menopause which is 45 years according to WHO.
Conclusion
As the statistical analysis of data are shows that the chances of occurring of osteoporosis are greater in post menopausal females than pre menopausal females. The incidence is higher after menopause because of hormonal imbalance. The results show after collection of data that about 51% females have osteoporosis after post menopause and about 49% have pre menopausal osteoporosis. Most of them have pain and discomfort during standing and bending. Back pain may be severe and patient feel difficulty in carrying household activity. Majority of females take imbalance diet. They have not taken any calcium and vitamins supplements. None of them have taken any hormonal therapy.

Authors’ contributions
WI contributed to study concept; AT, and AF contributed to data analysis, literature review, write and critically review the manuscript. All the authors read and approved the final manuscript.

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Declarations

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Not applicable.

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Competing interests
The authors declare that they have no competing interests.
References:


