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Original Research Article

Awareness and knowledge of a silent thief-osteoporosis in Karachi's people

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Abstract

Osteoporosis is a bone disorder. It is a silent disease which makes bone weak or cause increase chances of bone fracture. The bone becomes brittle and fragile from loss of tissue, due to hormonal changes or deficiency of calcium and vitamin D. This was a survey based study. A cross sectional quantitative study was conducted and data collection was done using questionnaire comprising of 18 questions. A total of 100 males and 100 females were selected for the study from different areas of Karachi. According to our result, only 30.33% of females and 20% of males had knowledge regarding the prevention of osteoporosis. Presence of symptoms and risk factors like feeling pain in the joints, history of osteoporosis in family, excessive use of drinks, lack of exercise, dietary intake of dairy products, calcium or vitamin D were evaluated. Osteoporosis in today's world has become a common disease mostly in females due to hormonal changes. In our study we observed inappropriate Calcium intake in diet and excessive consumption of tea, coffee and aerated drinks. There is a need to create awareness in public for the prevention of the osteoporosis. Ensuring appropriate calcium and vitamin D intake, regular exercise and cutting down the use of beverages can milestone prove effective in the prevention of osteoporosis.

Key words: Awareness, Bone fracture, Osteoporosis, Silent thief

INTRODUCTION

According to WHO Osteoporosis is defined as "a disease characterized by low bone mass and micro architectural worsening of bone tissue leading to enhanced bone fragility and a consequent rise in fracture risk" (WHO, 1994).

Osteoporosis leads to abnormally porous bone that is compressible, like a sponge. This physical malfunction of the skeleton weakens the bone and may culminate in frequent fractures (breaks) of the bones. Normal bone is consists of protein, collagen, and calcium, which gives the bone its strength. Bones that are affected by osteoporosis can crack (fracture) with comparatively minor injuries that would not cause a normal bone to fracture. The fracture can be present in the form of cracking (as in a hip fracture) or collapsing (as in a compression fracture of the vertebrae of the spine). The spine, hips, ribs, and wrists are frequent sites of bone fractures from osteoporosis although osteoporosis-related fractures can occur in almost any skeletal bone (William, 2014).

A study shows that osteoporosis related fracture occurs in about 1/3 of the western female population above the age of 65 years (Duyff, 1998). It is estimated that over 200 million people worldwide suffer from this disease (Nutrition action health letter, 2005). Study shows that a high prevalence of fragility fractures has been described in white population, especially in non- Hispanic Caucasians and lower rates have been

observed in black populations (Guise, 2006).

Bone mass and bone density increase the most during childhood and adolescence in both sexes, and peak bone mass is reached by the age of 30 years (Recker, 1996). Therefore, young adults are a targeted group for osteoporosis prevention. If individuals in their adolescence and early adult life attain maximum bone density, they can prevent or delay the development and severity of osteoporosis. Hence, the possible community burden of osteoporotic fractures can be reduced. One of the most significant factors in prevention of osteoporosis is the attainment of an optimal peak bone mass during adolescence and young adulthood (Masi,1997).

Osteoporosis is sometimes confused with osteoarthritis, because the names are similar. Osteoporosis is a bone ailment; osteoarthritis is an ailment of the joints and surrounding tissue. Osteoporosis is increasingly becoming a public health problem, and effective measures to prevent fragility fractures are needed. Osteoporosis imaging is of serious immense significance in analyzing persons at risk for fractures who would require pharmacotherapy to diminish fracture hazard and also in monitoring. Dual X-ray absorptiometry is currently the state-of-the-art procedure to determine bone mineral density and to diagnose osteoporosis according to the World Health Organization guidelines (Thomas M. Li., 2012).

Drug-induced osteoporosis is common and has a significant impact on the prognosis of patients sickened from chronic unbearable diseases. Glucocorticoids, aromatase inhibitors, anti-androgen therapy, thyroxine, (Lakatos P, 2003), thiazolinediones calcineurin inhibitors, antiretroviral drugs, particular inhibitors of serotonin reuptake, anticonvulsants, loop diuretics, heparin, oral anticoagulants, and proton pump inhibitors are the drugs which can hasten development of osteoporosis (Gherardo, 2010).

METHODOLOGY

This was the survey based study involving a door to door survey over a period of two months, from October 2015 to November 2015.A cross sectional quantitative study was conducted and data collection was done using questionnaire comprising of 18 questions. A total of 100 males and 100 females were selected for the study from different areas of Karachi. The variables generated from the questionnaire were coded appropriately for statistical analysis and data was recorded.

RESULT AND DISCUSSION

Genetic and lifestyle factors can affect bone mass. The genetic factors are non-modifiable and include age, gender, family history, and race/ethnic background and hormone status. Lifestyle factors are modifiable and require increased calcium intake, regular physical activity, low alcohol and caffeine consumption, cigarette smoking and eating disorders (Valimaki M, 1994).Younger can follow steps to promote long-term bone health, and reduce the risk of disease later in life by following a balanced diet including calcium-abundant food, physical activity and healthy lifestyle practices (Mark S,1997).

It has been suggested that low bone mineral mass is considered as the major factor underlying osteoporotic fracture (Prentice A, 1997).

The need of efficient treatments for degenerative conditions such as osteoporosis has increased importance as a preventative step, including dietary strategies (Kevin, 2007).

Calcium has been comprehensively studied nutrient related to bone metabolism, osteoporosis, and fractures. Several clinical studies have confirmed that calcium intakes of osteoporotic patients are lower than those of the normal controls (Nordin, 1961 and Hurxthal, 1969).

Positive effects of supplementary calcium, with or without other agents, upon bone mass have been reported in many studies (Aloia, 1982 and Lee Cl, 1981).

The WHO states that strategies for osteoporosis prevention should emphasize proper nutrition for example sufficient calcium ingestion and vitamin D, resistance exercises and exposure to sunlight. More than 99% of calcium in the body is used and present in bones and teeth (Wardlaw, 1997). Deficiency is the mostly a result of reduced calcium ingestion. A chronic insufficient calcium intake through diet or supplementation is one factor in the etiology of osteoporosis and is positively associated to bone mineral density in children and adolescents. (Valimaki, 1994)

Vitamin D plays a vital part in bone fitness and increases calcium's capability to fabricate and maintain bones. Studies indicate that vitamin D in combination with calcium has been shown to increase bone density (Ooms M.E 1995).The daily requirement is obtained from diet or from synthesis in the skin, and the suggested dose is 400–800 IU per day (Woo J. 1998).

Caffeine intake was also inversely related to BMD of the distal radius and ulna in women. In studies of the effects of nitrogen, phosphorus, and caffeine intakes on calcium balance in normal middle-aged women caffeine intake was associated with an increase in both urinary and intestinal excretion of calcium, resulting in negative calcium balance (Heaney RP,1982 and K Yano, 1985).

Table 1. showing results of our study related to osteoporosis

		MALE	FEMALE
AGE	<20 years	10%	7%
	20-40 years	35%	80%
	>40 years	55%	13%
Weight	35-45 Kg	8%	14%
	45-70 Kg	34%	66%
	>70 Kg	58%	20%
Feeling Pain In Joints		60%	67%
Family history of osteoporosis		40%	27%
Recently bone broken due to minor bump or fall or during normal activity.		40%	34%
Using different medications		60%	27%
Calcium and Vitamin D intake is a cause behind osteoporosis		80%	87%

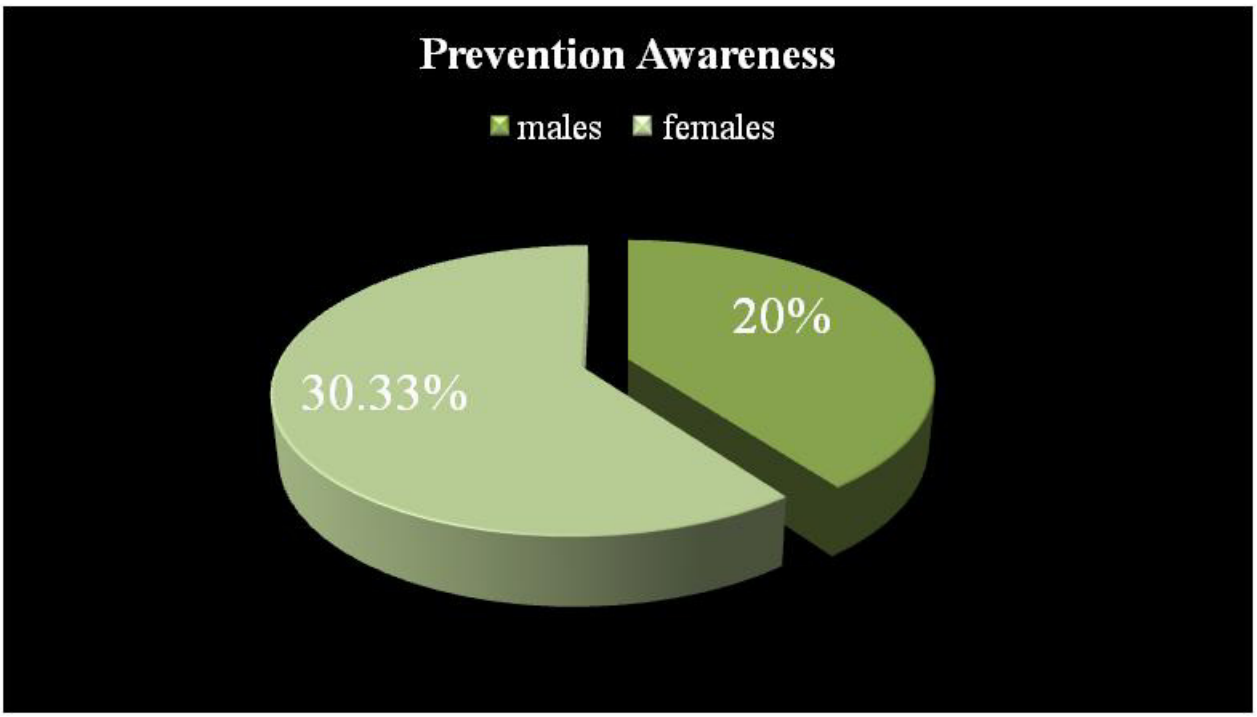

Figure 1. Awareness Regarding Prevention Of Osteoporosis

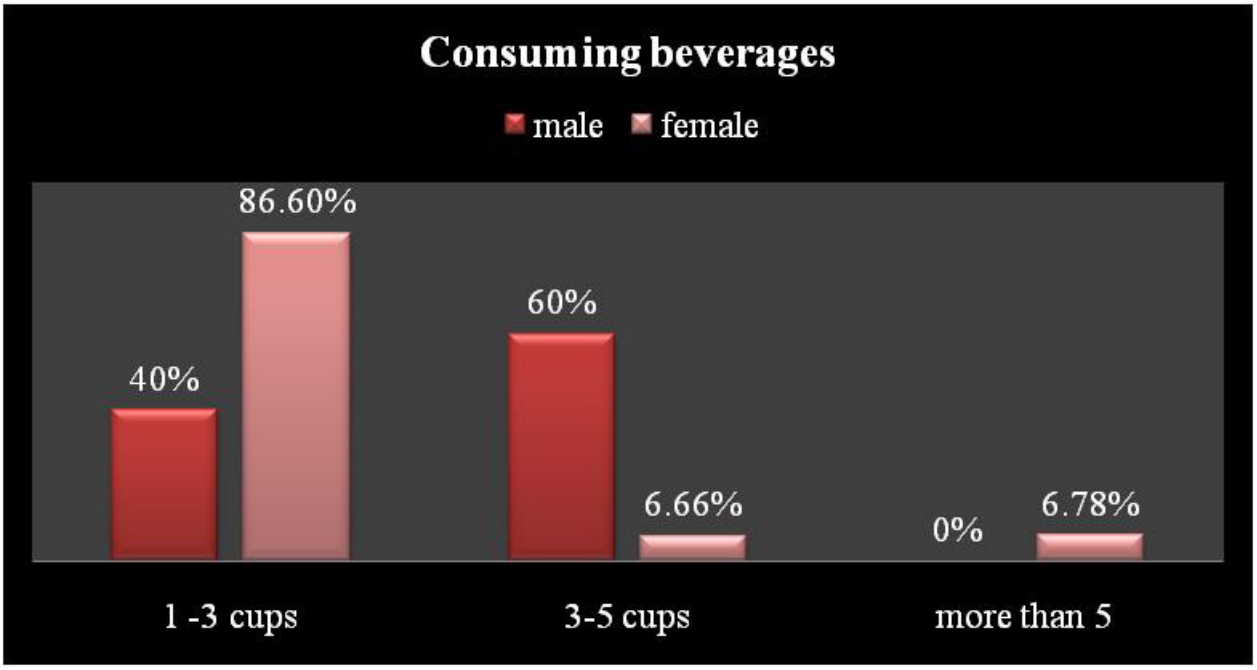

Figure 2. Daily Consumption Of beverages

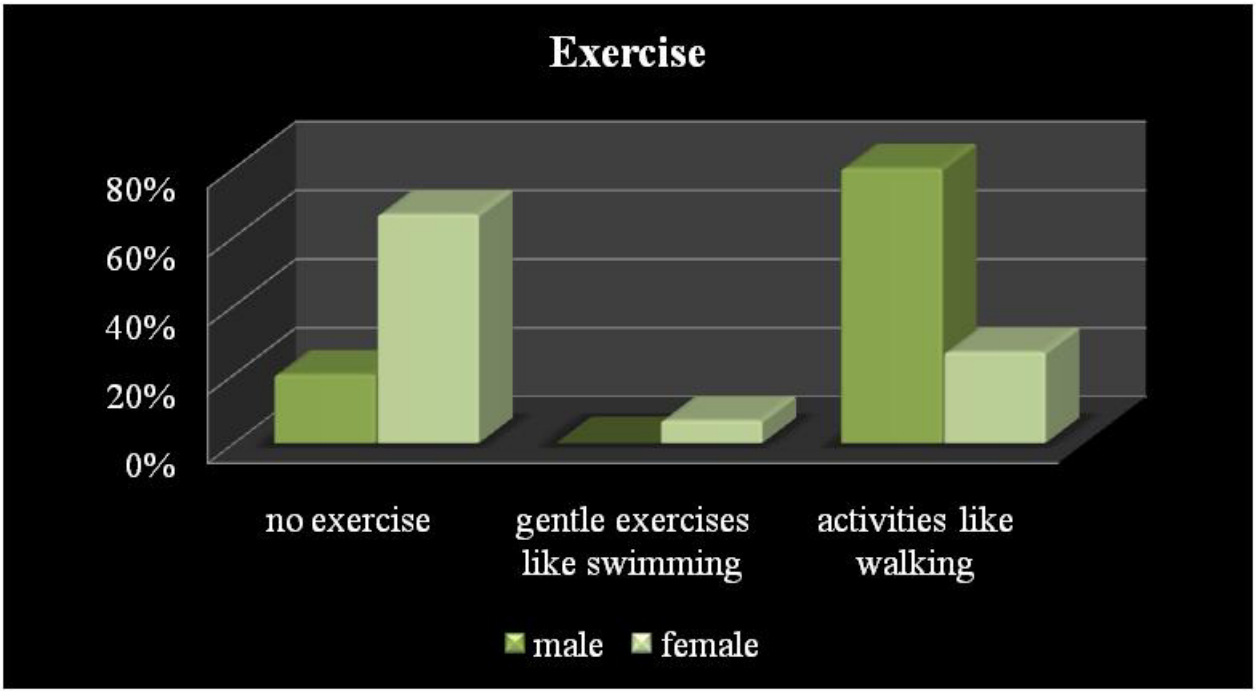

Figure 3. Exercise

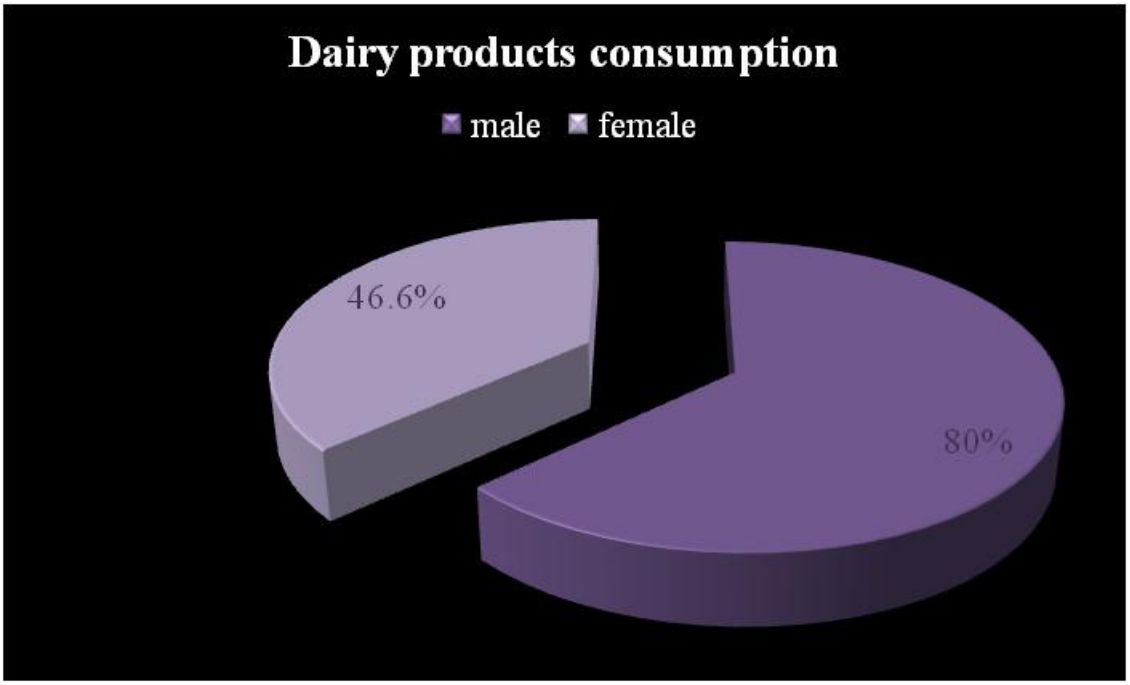

Figure 4. Dairy Product Consumption

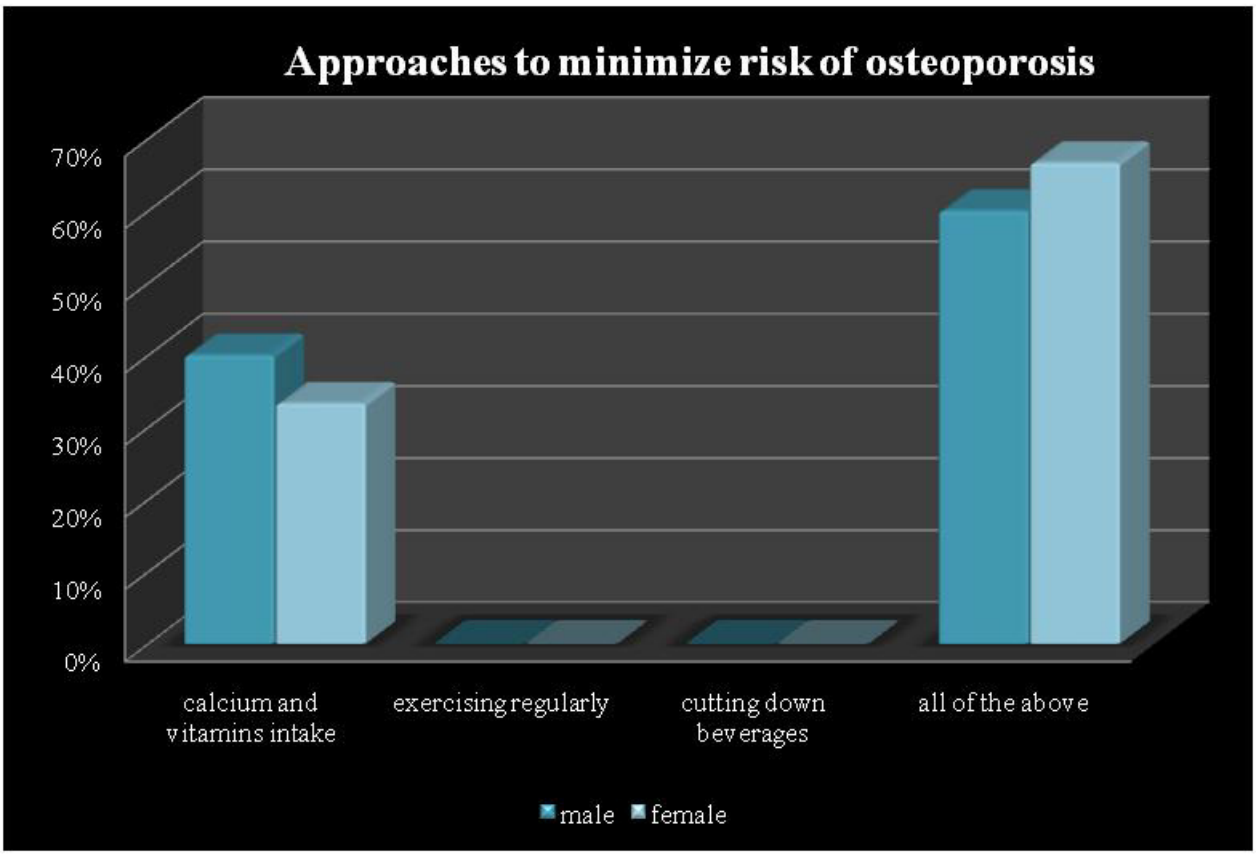

Figure 5. Approaches to minimize osteoporosis risk

CONCLUSION

Osteoporosis can never be reversed ,so the most powerful tool to reduce the incidence of osteoporosis is prevention through education via knowledgeable seminars, awareness programs . Most of the peoples are taking inappropriate diet causing depletion of required calcium. Consumption of beverages is very common in our society which can lead to osteoporosis. The intake of calcium and vitamin D is necessary as they are the key factors for bone development so diet should be proper and rich in calcium. Our study revealed that females are consuming less dairy products like milk, yogurt as compare to male while women are more susceptible to osteoporosis due to their daily life responsibilities, menstrual cycles etc. Additionally, lack of physical activity is recognized in our survey so physical activity can reduce the evidence of osteoporosis and there is need to spread knowledge and awareness regarding these approaches to minimize risk of osteoporosis and improves quality of life.

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