

ORIGINAL ARTICLE

Knowledge, attitude and practice of General Medical Practitioners and Nursing professionals regarding osteoporosis

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Abstract

Background: Osteoporosis is a disease of bones that leads to an increased risk of fracture. In osteoporosis, the bone mineral density is reduced. Globally osteoporosis constitutes a public health problem. The current study was designed to assess the extent of knowledge attitude and practice (KAP) about the disease among general medical practitioners and nursing professionals.

Methods: The study was done on 75 general medical practitioners and 120 nursing professionals. The study was done with the help of 30 specially prepared questionnaires. All the responses were collected and tabulated. The statistical analysis was done using IBM SPSS statistics version 20 by using student's t test. **Results:** On comparison of the scores of the general medical practitioners and nursing professionals, it was found that general medical practitioners has more knowledge, attitude and practice orientation towards osteoporosis than nursing participants and the difference was found to be statistically significant. (Student's t test, $p < 0.001$) **Conclusion:** Though general medical practitioners were having more knowledge, attitude and practice than nursing participants, it was found in the present study that they also do not having sufficient knowledge. Various educational programme, seminars or symposiums should be planned to increase the awareness and knowledge regarding osteoporosis.

Key words: Knowledge, Medical practitioner, Nurses, Osteoporosis

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Introduction

Osteoporosis is a chronic progressive disease that was defined as "a systemic skeletal disease characterized by low bone density and micro-architectural deterioration of the bone tissue with a consequent increase in bone fragility that greatly increases the risk of fractures."^{1,2,3} Fractures related to osteoporosis are a major economic concern in many of the developed as well as developing countries.⁴ It is generally believed that osteoporosis is the most common metabolic disease affecting bone. It was also considered as one of the major contributors of mortality and morbidity among elderly people.⁵ General medical practitioners are considered to play principle roles for implementing preventive

measures, early detection and management of chronic disease within any health care system. Also, screening for disease, identifying the most prevalent risk factors and maintaining follow-up practices could be applied easily within the process of general practice. However, some chronic diseases such as osteoporosis are more likely to be misdiagnosed and undertreated in general practice. This could be attributed to its prolonged course, lack of warning signs prior to fracture, cross-diagnosis and insufficient knowledge about the disease pathway. Knowledge, attitude and practice surveys can assess communication processes and sources that are essential for defining effective activities in prevention and control. These types of studies may be used to evaluate needs, problems and barriers in health care program, as well as

solutions to improve quality and accessibility of services. In order to plan for osteoporosis national (screening, awareness, prevention or control) programs, information regarding knowledge, health beliefs and practice of osteoporosis in general medical practitioners is necessary so that adequate strategies can be formulated accordingly.⁵

Nursing professionals are the key link in the chain of multidisciplinary approach to the management of this potentially preventable disease, and in educating patients about the various aspects of its evaluation and management.⁶ However; most nurses believe that osteoporosis is a problem for postmenopausal and elderly women. In fact, aging men are also at risk because physiological and anatomical changes occur with increasing age in both sexes, increasing the risk for osteoporosis. Thus, a care gap might exist between the health service applied and the need for education of the population.⁷ Therefore this study was planned to evaluate the knowledge, attitude and practice of general medical practitioners and nurses about the osteoporosis.

Materials and Methods

This study was consisted of 75 general medical practitioners and 120 nursing professional staff of various hospitals and private clinics. The study was done with the help of 30 specially prepared questionnaires which were validated by doing pilot study. The questionnaires were given to the participants by personal meeting with them and the responses were collected. Each of the participants was well informed about the study and informed consent was taken from each participant before start of the study. Approval from the ethical committee was taken. The study was completed in duration of 6 months.

The questionnaires were in the form of true or false type. Each correct answer was given score 1 and incorrect answer was given score zero. All the scores of the participants were tabulated and analyzed.

Inclusion criteria:

1. General medical practitioner.
2. Nursing professionals.
3. Participants willing to participate in the study.

Exclusion criteria:

Practitioners with any specialization of medical field.

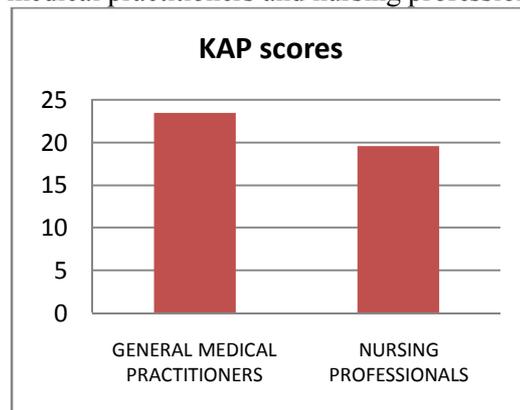
Results

All of the general medical practitioner and nursing professionals had given their responses. On comparison of the scores of the general medical practitioners and nursing professionals, it was found that general medical practitioners has more knowledge, attitude and practice orientation towards osteoporosis than nursing participants and the difference was found to be statistically significant. (Student's t test, $p < 0.001$) But, it was found that the knowledge was still not sufficient in case of general medical practitioners.

Table 1: Comparison of the scores of the general medical practitioners and nursing professionals using student's t test.

Participants	N	Score Mean \pm SD	T value	P value
General medical practitioner	75	23.53 \pm 2.47	5.1325	<0.001*
Nursing professionals	120	19.60 \pm 1.64		

Graph 1: Comparison of the knowledge, attitude and practice (KAP) scores of the general medical practitioners and nursing professionals.



Questionnaires:-

1. Physical activity increases the risk of osteoporosis? (True/false)
2. High-impact exercise (weight training) improves bone health? (True/false)

3. Most people gain mass after 30 years of age? (True/false)
 4. Lower weight women have osteoporosis > heavy women? (True/false)
 5. Most important time to build bone strength is between 9 and 30 years of age? (True)
 6. Any type of physical activity is beneficial for osteoporosis. (True/false)
 7. Normally, bone loss speeds up after menopause? (True/false)
 8. Low calcium with high caffeine intake increases the risk? (True/false)
 9. There are many ways to prevent osteoporosis? (True/false)
 10. A fall is just as important as low bone strength in causing fractures. (True/False)
 11. Family history of osteoporosis strongly predisposes a person to osteoporosis. (True/false)
 12. Without preventive measures, 20% of women older than 50 years will have a fracture due to osteoporosis in their lifetime? (True/false)
 13. It is easy to tell whether I am at risk of osteoporosis by my clinical risk factors. (True)
 14. There are treatments for osteoporosis after it develops? (True/False)
 15. A lifetime of low intake of calcium and vitamin D does not increase the risk of osteoporosis? (True/False)
 16. Having a higher peak bone mass at the end of childhood gives no protection against the development of osteoporosis in later life. (True/False)
 17. Alcohol in moderation has little effect on osteoporosis. (True/False)
 18. Cigarette smoking does not increase the risk of osteoporosis? (True/False)
 19. White women are at highest risk of fracture as compared to other races. (True/False)
 20. A high salt intake is a risk factor for osteoporosis. (True/False)
 21. Hormone therapy prevents further bone loss at any age after menopause. (True/False)
 22. Walking has a great effect on bone health? (True/False)
 23. Sardines and broccoli are good sources of calcium for people who cannot take dairy products. (True/False)
 24. After menopause, women not on estrogen need about 1500 mg of calcium (for example, 5 glasses of milk) daily? (True/False)
 25. Osteoporosis affects men and women? (True/false)
 26. Osteoporosis usually causes symptoms (e.g. pain) before fractures occur. (True/False)
 27. Early menopause is not a risk factor for osteoporosis? (True/False)
 28. Children 9–17 years of age get enough calcium from one glass of milk each day to prevent osteoporosis? (True/False)
 29. Low back pain, fractures, loss of height and loss of teeth are complications of osteoporosis? (True/False)
- There is a small amount of bone loss in the ten years following the onset of menopause. (True/False)

Discussion

The purpose of our study was to examine the knowledge level of general medical practitioners and nurses with regard to osteoporosis. A self-administered questionnaire was selected as the tool of assessment. Our decision to employ a questionnaire as the method of data collection was also influenced by the knowledge that questionnaires have been shown to be one of the simplest and most cost-effective means of collecting data, and they can be utilized effectively to measure attributes, beliefs, knowledge and behavior. Nurses have a major responsibility to initiate as well as impart primary and secondary osteoporosis prevention education to patients and the public. Thus, education of healthcare professionals has been shown to be the most important element if changes in practice related to prevention and treatment of osteoporosis are to be implemented.⁶

Osteoporosis is defined by the World Health Organization (WHO) as a bone mineral density of 2.5 standard deviations or more below the mean peak bone mass (average of young, healthy adults) as measured by dual-energy X-ray absorptiometry.⁸

The disease may be classified as primary type 1, primary type 2, or secondary. The form of osteoporosis most common in women after

menopause is referred to as primary type 1 or postmenopausal osteoporosis. Primary type 2 osteoporosis or senile osteoporosis occurs after age 75 and is seen in both females and males at a ratio of 2:1. Where secondary cause related to certain diseases or usage of specific drugs.^{1,8}

On the other hand, several measures are known to increase bone mineral density and decrease the risk of fractures. Osteoporosis is an under-diagnosed disease. Yet prevention is better than treatment and osteoporosis is a preventable disease; the first step in its prevention is to increase the awareness of the risk factors.¹

Risk factors of osteoporosis include female gender, Asian or Caucasian race, advancing age, family history of osteoporosis or fragility fractures. In addition to a low body mass index menopause before age 45 years, prolonged amenorrhea unconnected to menopause, and nulliparity, or prolonged lactation. Furthermore, a diet low in calcium and vitamin D, or poor intestinal absorption of calcium, and lactose intolerance. Special habits like excessive caffeine or alcohol consumption, smoking, and sedentary lifestyle. Certain conditions as prolonged treatment with thyroid hormones, glucocorticoids, anticonvulsants, aluminum antacids, and use of anticoagulants.^{9,10,11}

Furthermore, it is regarded as the “silent disease” because bone mass loss occurs without any symptoms and it is known after fracture occurs (National Osteoporosis Foundation, 2007). Osteoporosis causes serious medical complications, not only restricted to the immediate pain resulted from fractures, but also may cause wide range of serious medical consequences and affects total quality of life.¹²

Although it is general agreed that osteoporosis is considered as a disease that manifested during old age, however, a growing body of evidence indicate that osteoporosis may have its origins at an earlier stage in life by failure to achieve optimal peak bone mass during childhood and adolescence. For instance, the quantity of bone when reaching peak bone mass is regarded as a major determinant of the risk of osteoporotic fractures later in life. Indeed, the adolescence years determine lifelong skeletal health because this period represents the time of greatest skeletal growth, during which bone mass is largely accrued. Therefore, osteoporotic fractures related to bone loss in later life may

perhaps be prevented by strategies to promote bone mineralization during adolescence.¹² Although there is an increased interest in the level of knowledge and believes among general medical practitioners about osteoporosis, it remains a sidelined issue in the clinical practice field. Moreover, osteoporosis prevention and control needs multi-disciplinary team effort because up till now it is still unlinked to a single specific medical subspecialty. Orthopedics, endocrinologists and rheumatologists seems to be in charge of osteoporosis management. Various clinical guidelines (both national and international) for osteoporosis prevention and treatment diagnostic have been inaugurated which varied widely regarding details and outlines. Proper diagnosis has been long linked to better disease outcome especially risk of fracture, notwithstanding the fact that osteoporosis risk reduction depends mainly on the knowledge and attitudes of physicians toward detection of cases, early proper diagnosis and management.⁵ In the present study the knowledge, attitude and practice scores of the general medical practitioners and nursing professionals were compared and found that the general medical practitioners were having more knowledge, attitude and practice scores as compared to nursing professionals and the difference was found to be statistically significant. But, still it was found that the general medical practitioners were lacking in the sufficient knowledge. Similar results were present in the study done by Saeedi MY et al⁵, where primary health care physicians were found to be having insufficient knowledge about osteoporosis. Also found in the study by Chen IJ et al⁷ and Zhang RF et al⁶, where nursing population were observed to be having lack of knowledge, attitude and practice of the osteoporosis.

Osteoporosis risks can be reduced with lifestyle changes and sometimes medication; in people with osteoporosis, treatment may involve both. Lifestyle change includes diet and exercise, and preventing falls. Medication includes calcium, vitamin D, bisphosphonates and several others. Fall-prevention advice includes exercise to tone deambulatory muscles, proprioception improvement exercises; equilibrium therapies may be included. Exercise with its anabolic effect, may at the same time stop or reverse

osteoporosis.⁸ Our study has some limitations. The number of participants in this study was small. Also, since it was a convenience sample, the population that was studied does not represent the total general medical practitioners and nursing population. Moreover, the questionnaire did not allow for subjects to elaborate on their views and answers. These limitations notwithstanding, this study were the first of its kind in more than a decade conducted and the first to employ a well-validated questionnaire to assess a wide variety of aspects related to knowledge of osteoporosis.

Conclusion

In conclusion, the findings from this study indicate that the knowledge of osteoporosis among general medical practitioners and nursing professionals is inadequate and that there are considerable gaps in the existing knowledge, especially in the preventive and treatment aspects. Our study will hopefully shed light on this neglected aspect of healthcare education and encourage attempts to address these gaps in knowledge.

Conflict of Interest: None declared

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Ethical Permission: Obtained

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