Pakistani Women Knowledge, Beliefs and Attitudes towards Osteoporosis

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Abstract

The purpose of the present study was to assess knowledge of risk factors, identify beliefs and attitudes about osteoporosis, and delineate the healthy behaviors associated with osteoporosis in Pakistani women. This cross sectional study was conducted from Jan till June 2015 by adopting a pre validated questionnaire distributed to women between the age of 18 to 55 years, who had agreed and given consent to participate in the study. Descriptive statistics were used to demonstrate respondents’ demographic information and their response to the questionnaire items. Pearson’s chi-squared test was executed to evaluate the association of age, marital and educational status of respondents on their response to the questionnaire (p value < 0.05 was considered as significant). The present study revealed the response rate of 65%. Our findings revealed that majority of the participated women knew about osteoporosis and considered it to be a serious disease. Inspite of having knowledge the respondents are not practicing appropriate lifestyle and dietary habits to decrease their risk of osteoporosis. Such behaviors include inadequate physical activity, inadequate calcium and vitamin D intake. The current study identifies that there is a need of standardized approach coupled with the well-structured health education programs to promote healthy behaviors, identify women at-risk, and encourage early diagnosis and treatment.

Keywords: Osteoporosis; Pakistani women; Knowledge

Introduction

Osteoporosis is systemic skeletal disease affecting bone density and its quality leading to bone strength weakening. It is now an established fact that low bone mineral density increases the frequency of bone fractures [1]. National guide lines for osteoporosis and its management are often available but early screening is not prevalent among many countries resulting in asymptomatic and undetected disease until fracture occurs [2]. Osteoporosis is one of the life threatening disease compromising quality of life among aging populations across the globe affecting both sexes particularly females irrespective of their race or ethnicity [3-5]. Studies conducted nationally have shown that osteoporosis is mostly prevalent in Pakistan observed after measuring the bone mineral density through ultrasound reports. There is tendency of developing osteoporosis among young and premenopausal Pakistani women diagnosed with osteopenia. Life style factors are the important parameters that assist in determination of the peak bone mass posing female at verge of developing osteoporosis [6,7]. Exercise levels, low vitamin D levels and poor nutrition are the contributing factors in the aggravation of condition. It is now a common practice across worldwide as well as in Pakistan that masses have shifted towards the consumption of carbonated beverages and fast food that lacks nutritious value and depriving the people with appropriate calcium intake offering low calcium intake.

Osteoporosis disease can be prevented and lessened by adopting specific healthy behaviors and by carrying out specific screening test that assist in diagnosis and its treatment [7,8]. Studies have suggested that osteoporosis can be prevented by taking adequate calcium intake and physical activity [9-11]. Lowe et al. carried out a study in 2011 and found out that mean calcium intake among Pakistani population was less than 50% of the WHO recommended daily intake [11]. One of the challenges faced by Pakistani population includes inadequate knowledge, these may be due to lack of guidelines, standards and low number of physicians specializing in osteoporosis prevention, diagnosis and treatment [12,13].

Various researchers from different countries have already addressed on significance of knowledge awareness and perception of people about osteoporosis [14-18]. Mixed results were observed by the researchers and they were unable to develop a relationship between osteoporosis knowledge levels and its preventive behaviors [19-21]. There has been increase in the awareness of disease among the population throughout the world with the passage of time. Less is known about the perceptions, awareness, and knowledge of osteoporosis among Pakistani population. Pakistan is under developed country therefore it is necessary to minimize healthcare expenditure burden among the Pakistani population by raising the knowledge and adopting preventable measures of osteoporosis. It may be acquired by first determining the levels of knowledge and attitude of Pakistani population and then developing and implementing effective education programs [22]. Therefore; the purpose of the current study was to assess knowledge of osteoporosis, risk factors, identify beliefs and attitudes about the disease, and delineate the presence and/or absence of healthy behaviors associated with osteoporosis in Pakistani women.

Materials and Methods

Study design and setting

This cross sectional study was conducted from Jan till June 2015 by adopting a pre validated questionnaire distributed to female individuals in Karachi, Pakistan. Inclusion criteria were Pakistani female adults aged 18 to 55 years, who had agreed and given verbal consent to the study. Considering the focus of study as prevention, females younger...
than 18-years or more than 55 years and not willing to participate were excluded [5]. Overall n=325 female individuals participated in this study. Respondents were motivated to respond to given questionnaire on spot. After completion the questionnaires were consequently collected for further analysis.

Data collection

A pretested questionnaire comprising of 30 questions developed by the researchers from different published sources was administered to participants. The questionnaire was structured to obtain the demographics of the respondents, their knowledge of osteoporosis, risk factors, identify beliefs and attitudes about the disease, and delineate the presence and/or absence of healthy behaviors associated with osteoporosis.

Statistical analysis

The filled questionnaires were analyzed by using SPSS 20.0. Descriptive statistics were used to demonstrate respondents’ demographic information and their response to the questionnaire items. Pearson’s chi-squared test was executed to evaluate the association of age, educational and marital status of respondents on their response to the questionnaire. A p value < 0.05 was considered as significant.

Results

Demographic characteristics

In the present study out of 500 survey questionnaires, 378 were returned back and only 325 were in useable form. Hence the response rate was 65%. The demographic data is shown in Table 1. Majority of the participants (64.93%) belonged to the age between 36-55 years. Among the study population, 86.15% and 70.76% were married and housewives respectively. Only 37.23% were postmenopausal women.

Source of information

On inquiring about the information source regarding health issues 39.69% considered physicians to be the best and most reliable source. Television (23.08%), books (20.31%) and internet (9.54%) were also believed to be the reliable sources of information (Figure 1).

General knowledge regarding osteoporosis

Responses of participants regarding the knowledge of osteoporosis are depicted in Table 2. Majority 71.48% of the participated population knew about osteoporosis and 69.5% considered it to be a serious disease. 58.15% knew that bone loss speeds up after menopause. 47.69% and 44.61% did not know that osteoporosis affect women more commonly as compared to men and is there any diagnostic test available for osteoporosis respectively.

Lifestyle and nutrients intake

Mass population (68.92%) knew that exercise improves bone health however 58.9% exercised rarely. Near about 66% have included caffeine in their daily intake whereas, 42.76% did not know the role of smoking and caffeine in increasing the risk of osteoporosis. It was good to observed that more than 85% knew about the calcium and vitamin D rich foods and 61.53% women knew that they need more calcium after menopause than in their thirties. More than 65% did not know that estrogen replacement therapy may help decrease chances of developing osteoporosis. More than half participants 52.9% have daily direct exposure of their faces and hands to sunlight. Majority 76% did not include cheese in their daily diet and eat cheese rarely. Only 35.4% and 23.4% eat green leafy vegetables and eggs respectively on daily basis. Whereas only 35.4% agreed that they drink milk daily basis (Figure 2).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers (Percentages)</th>
</tr>
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<tbody>
<tr>
<td>Age 18-25</td>
<td>31 (9.54)</td>
</tr>
<tr>
<td>26-35</td>
<td>65 (20)</td>
</tr>
<tr>
<td>36-45</td>
<td>105 (32.31)</td>
</tr>
<tr>
<td>46-55</td>
<td>106 (32.62)</td>
</tr>
<tr>
<td>&gt;55</td>
<td>18 (5.54)</td>
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<tr>
<td>Marital status</td>
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</tr>
<tr>
<td>Married</td>
<td>280 (86.15)</td>
</tr>
<tr>
<td>Unmarried</td>
<td>45 (13.84)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>43 (13.23)</td>
</tr>
<tr>
<td>Elementary</td>
<td>43 (13.23)</td>
</tr>
<tr>
<td>Intermediate</td>
<td>68 (20.92)</td>
</tr>
<tr>
<td>High school graduated</td>
<td>41 (12.61)</td>
</tr>
<tr>
<td>University educated</td>
<td>130 (40)</td>
</tr>
<tr>
<td>Working status</td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>230 (70.76)</td>
</tr>
<tr>
<td>Career women</td>
<td>95 (29.23)</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>121 (37.23)</td>
</tr>
<tr>
<td>No</td>
<td>204 (62.76)</td>
</tr>
</tbody>
</table>

Table 1: Characteristics of study population.
thought that bones cannot rebuild once they thin from osteoporosis and
a woman may have osteoporosis for years but did not come to know
until she breaks a bone. More than 60% assumed that if a woman has
osteoporosis, something as simple as lifting a bag of groceries can break
a bone. 92.2% of the population thought that milk can be the best source
to prevent them from osteoporosis.

Pearson’s chi-squared test was executed to evaluate the association
of age and educational status of respondents on their responses.
There was a very highly significant association between education and
knowledge of women regarding osteoporosis (p < 0.0001). There was
also a significant association between age and knowledge of women
regarding osteoporosis i.e what is osteoporosis (p=0.016), serious
disease (p=0.044), bone loss speeds up after menopause (p=0.012),
knowledge of diagnostic tests (p=0.003), smoking and caffeine increase
the risk of osteoporosis (p=0.013) and major risks factors (p=0.001).
No association was found between the marital status and knowledge of
participants.

Discussions

There is no cure for osteoporosis, primary disease prevention
through increased knowledge of risk factors and preventive behaviors
is potentially important. However, our results suggest that Pakistani
women are not well versed in promoting behaviors and maintain
optimal bone mass and therefore not practicing the lifestyle and eating
habits enough to reduce the risk of osteoporosis.

It is significant to adopt a diet rich in calcium and vitamin D owing
to the fact that these nutrients work together to support healthy bone
growth and maintenance. Calcium supports healthy bones, and vitamin
D helps efficiently to absorb calcium [6,10]. With regard to vitamin D,
numerous studies found widespread deficiency. A study in Karachi
observed that 82.8% of premenopausal women were vitamin D deficient
(<20 ng/mL) [6]. In another study, 90.1% of the younger women were
vitamin D deficient (<50 nmol/L) [7]. Increasingly, vitamin D deficiency
appears more common in younger than older women suggesting that
peak bone mass may not be achieved, predisposing to osteoporosis later
in life [7]. In current study more than 85% knew about the calcium and
vitamin D rich foods and 61.53% women knew that they need more
calcium after menopause than in their thirties. Exercise levels among
this sample of women were inadequate to promote and maintain good
bone health. Research has shown that exercise levels have been low in
Pakistan and sedentary living is high which could be due to greater
hours spent indoors with computers and watching television [4]. The
elderly in Pakistan also lead a mainly sedentary lifestyle. The lack of
exercise and physical activity may play a significant role in low bone
mass, immobility disorders, loss of muscle mass and falls, all of which
contribute to osteoporosis and related fractures [10]. In present study,

<table>
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<th>Items</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone loss speeds up after menopause</td>
<td>189 (58.15)</td>
<td>42 (12.92)</td>
<td>94 (28.92)</td>
</tr>
<tr>
<td>Osteoporosis affect men and women equally</td>
<td>58 (17.84)</td>
<td>112 (34.27)</td>
<td>155 (47.69)</td>
</tr>
<tr>
<td>Know any diagnostic tests</td>
<td>98 (30.15)</td>
<td>82 (25.23)</td>
<td>145 (44.61)</td>
</tr>
<tr>
<td>Exercise improves bone health</td>
<td>224 (68.92)</td>
<td>32 (9.84)</td>
<td>68 (20.29)</td>
</tr>
<tr>
<td>Smoking and caffeine increase the risk of osteoporosis</td>
<td>135 (41.53)</td>
<td>51 (15.69)</td>
<td>139 (42.76)</td>
</tr>
<tr>
<td>Know ways to prevent osteoporosis</td>
<td>138 (42.46)</td>
<td>66 (20.30)</td>
<td>121 (37.23)</td>
</tr>
<tr>
<td>Know calcium and vitamin D rich foods</td>
<td>277 (85.23)</td>
<td>15 (4.61)</td>
<td>33 (10.15)</td>
</tr>
<tr>
<td>Women need more calcium after menopause than in their thirties</td>
<td>200 (61.53)</td>
<td>53 (16.30)</td>
<td>72 (22.15)</td>
</tr>
<tr>
<td>Estrogen replacement therapy may help decrease your chances of developing osteoporosis</td>
<td>52 (16)</td>
<td>59 (18.15)</td>
<td>213 (65.53)</td>
</tr>
<tr>
<td>Health problems caused by osteoporosis can be life-threatening</td>
<td>125 (38.46)</td>
<td>74 (22.76)</td>
<td>126 (38.76)</td>
</tr>
</tbody>
</table>

Table 2: Responses of participants regarding their knowledge of osteoporosis.
Menopause is manifested by a steep drop in estrogen, which is a female sex hormone that protects bones. When estrogen levels decrease, bones may lose density and become prone to fractures. It was good to observe that more than 50% of the participants knew that bone loss speeds up after menopause. Estrogen is vital to female bone health because it promotes the activity of osteoblasts, which are cells that produce bone. When estrogen levels drop during menopause, the osteoblasts aren’t able to effectively produce bone [11]. Estrogen replacement therapy is used to be the only FDA-approved treatment to prevent osteoporosis [13]. There are now many other drugs and medications for osteoporosis, but estrogen remains a fairly common treatment to conserve bone mass and prevent osteoporosis-related fractures in post-menopausal women [3]. In present study more than 65% did not know that estrogen replacement therapy may help decrease chances of developing osteoporosis. A bone mineral density (BMD) test effectively detects osteoporosis. The test determines T-score, which indicates osteoporosis risk [7]. However significant proportion of study participants did not know that about this diagnostic test available for osteoporosis.

In current study 42.76% did not know the role of smoking in increasing the risk of osteoporosis. Smoking increases the risk of osteoporosis for a number of reasons. First, the chemicals found in cigarettes interfere with the normal functioning of bone cells. Also, smoking may inhibit proper calcium absorption. And lastly, smoking prevents estrogen in women from protecting their bones as it should [18].

Conclusions

The current study indicates that majority of respondents showed awareness regarding osteoporosis and its related consequences. Yet, there are some conflicts in attitudes and behavior toward factors which may contribute to the progression of disease. It identifies a more standardized approach coupled with the well-structured health education programs pointing out such gaps between knowledge and practices.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

References