

A Survey of Osteoporosis and Breast Cancer Risk Perception among Menopausal and Postmenopausal Women in Hong Kong

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Objectives: A lack of understanding in menopausal and postmenopausal women's (PMW) risk perception towards osteoporosis and breast cancer still exists, which is explored in this study. This information might allow health professionals to conduct interventions to improve health behaviors before menopause-related diseases are imminent.

Methods: Between 10 December 2015 and 31 January 2016, 573 menopausal or PMW were successfully interviewed on 17 questions, comprising separate sections for osteoporosis and breast cancer. The target respondents were menopausal or PMW aged 45 to 60 years, with no previous diagnosis of osteoporosis or breast cancer, who attended private clinics across Hong Kong for annual physical examination.

Results: Regarding menopausal issues, the top three concerns were osteoporosis and fracture (72%), breast cancer (44%), and sleep disorder/insomnia/headache (40%). Among 314 respondents (55%) who tried to prevent osteoporosis, 74% of them began to do it after they were 40 years old. On the other hand, 65% of respondents never had a bone density test. For respondents who said "I'm too young, so I don't need to check", their mean age was 52 years old. Ninety percent of respondents mistakenly believed that regular breast examination, regular breast massage, drink soy milk, or vaccine can prevent breast cancer.

Conclusions: This survey revealed osteoporosis and breast cancer as the top concerns among menopausal and PMW in Hong Kong. Inadequate health behaviors and misconceptions still exist despite widespread health education in the recent years. (J Menopausal Med 2017;23:102-107)

Key Words: Breast cancer · Osteoporosis · Postmenopausal · Risk perception · Survey

Introduction

Risk perception, defined as the subjective assessment of the probability of a specified type of accident happening and how concerned we are with the consequences,¹ is a key component to consider in managing menopause-related diseases. Women were generally aware of menopause- and age-related diseases such as osteoporosis and breast can-

cer, however, they may not consider themselves to be at an elevated risk.² Some women may also have inaccurate perceptions affecting their health behavior early in life, e.g. bone loss is a natural process that cannot be prevented from becoming worse. The Asian Menopause Survey also reported that half of the respondents were concerned about breast cancer; however, most of them had never received a mammogram.³ Similar behavior towards osteoporosis and breast

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cancer has been reported by previous studies regardless of the sample's age.⁴⁻⁷

In Hong Kong, higher education level may be associated with adequate patient knowledge.⁸ Nevertheless, adequate health behavior and risk perception cannot be guaranteed, since women tend to look to other women from their generation for menopause-related information.⁵ A lack of understanding in menopausal and postmenopausal women's (PMW) risk perception towards osteoporosis and breast cancer still exists, which is explored in this study. This information might allow health professionals to conduct interventions to improve health behaviors before menopause-related diseases are imminent.

Materials and Methods

1. Survey respondents

The survey was conducted from 10 December 2015 to 31 January 2016. The target respondents were menopausal or PMW aged 45 to 60 years, with no previous diagnosis of osteoporosis or breast cancer, who attended private clinics across Hong Kong for annual physical examination. PMW Health Alliance, a Hong Kong-based concern group of physicians from various medical disciplines, organized the survey by assigning interviewers for data collection. Face-to-face interview was performed with respondents from each clinic, in accordance to the prepared questionnaire. All respondents were interviewed in their native language.

All respondents were informed about the purpose of the survey, their right to refuse to participate, and confidentiality of survey data. Verbal consent to participate in this survey was obtained from all respondents.

2. Data collection

During the interview, respondents were asked about their education level and anthropometric profile, which included age, height, and weight. From a list of common menopause symptoms and risks, respondents were asked to select three items that concerned them the most. Respondents were also categorized according to the osteoporosis self-assessment tool for Asians (OSTA) score to assess their risk for osteoporosis.⁹ OSTA score is calculated by subtracting age from

weight and multiplying by 0.2.

The questionnaire consisted of 17 questions, comprising separate sections for osteoporosis and breast cancer. In an attempt to minimize response bias due to question design,¹⁰ we tried to formulate a questionnaire that contains non-ambiguous and simple questions, with the minimum use of medical terms. An interviewer was deemed necessary to reduce the tendency of participants to say yes or no to all questions. The section for osteoporosis was developed in consideration of the 2013 Osteoporosis society of Hong Kong (OSHK) guideline for clinical management of postmenopausal osteoporosis in Hong Kong.¹¹ The section for breast cancer was developed in consideration of the 2015 American Cancer Society (ACS) document on breast cancer prevention and early detection.¹² The correct technique for breast self-exam (BSE) was based on the description by the Eastern Mediterranean Regional Office of the World Health Organization (WHO/EMRO).¹³

Results

1. Characteristics of survey respondents

Between 10 December 2015 and 31 January 2016, 573 menopausal or PMW were successfully interviewed (mean age 53.9 years, range 42-62 years). The demographic profile of respondents is presented in Table 1. Mean body mass index (BMI) was 23.13 ± 5.17 . A total of 123 respondents (21.5%) had BMI greater than 24.9, categorized as overweight according to WHO classification. Around 1 in 5 respondents had bachelor's degree or higher. Based on T-score, 66% of respondents were classified as having normal bone density, 25% with low bone mass, and 9% with osteoporosis. The OSTA score categorization was then matched with the T-score. Sixty percent of respondents in the OSTA moderate-risk group had normal bone density, 27% had low bone mass, and 14% had osteoporosis. As for OSTA low-risk, 71% had normal bone density, 23% had low bone mass, and 6% had osteoporosis. Regarding menopausal issues, the top three concerns were osteoporosis and fracture (72%), breast cancer (44%), and sleep disorder/insomnia/headache (40%).

2. Perception towards osteoporosis prevention

Fifty-nine percent of respondents did not know about the median age of onset for osteoporosis; 17% thought it is over 66 years old. Among 314 respondents (55%) who tried to prevent osteoporosis, 74% of them began to do it after they were 40 years old. Sixty-eight percent included eating bean

products or food therapy as one of their prevention methods. Other prevention methods mentioned by respondents were exercise (72%), sunbathe (54%), drink high-calcium milk (47%), take supplements (42%), or take prescription drugs from doctors (2%). Only 23% thought what they did is sufficient to prevent osteoporosis, the rest said they were not doing enough or they did not know if they were doing enough to prevent osteoporosis. The survey result regarding the personal habit of respondents to prevent osteoporosis is shown in Figure 1.

Table 1. Demographics of respondents

| | Percentage (n = 573) |
|------------------------------|----------------------|
| Age (years) | |
| < 45 | 0.3 |
| 45-55 | 66.0 |
| > 55 | 33.7 |
| BMI | |
| < 18.5 | 9.4 |
| 18.5-24.9 | 69.0 |
| 25-29.9 | 16.5 |
| ≥ 30 | 5.1 |
| T-score | |
| -1.0 or higher | 66.0 |
| Between -1.0 and -2.5 | 25.1 |
| -2.5 or lower | 8.9 |
| Education | |
| Upper secondary or below | 64.5 |
| Sixth form to post-secondary | 15.9 |
| University/postgraduate | 19.6 |

BMI: body mass index

3. Perception towards bone density and bone loss

Forty-five percent of respondents knew about the rapid bone loss in PMW, whereas 28% said it happens during menopause; the rest of respondents said it happens before menopause. Regarding bone density, the most recent bone density test taken by 35% of respondents who did it was on average 5.4 years ago. The rest of respondents (65%) never had a bone density test; their reasoning can be seen in Figure 2. For those who said “I’m too young, so I don’t need to check”, their mean age was 52 years old. In addition, 53% of all respondents agreed to the claim “If we lose bone density, adequate intake of calcium and exercise should be enough to prevent osteoporosis”. Three out of four respondents said they had low chance of osteoporosis, had no chance, or did not know.

4. Perception towards breast cancer risk

Among all respondents, only 63% did regular breast examination; the reasoning from those who did not do it is shown in Figure 3. Ninety percent of respondents mis-

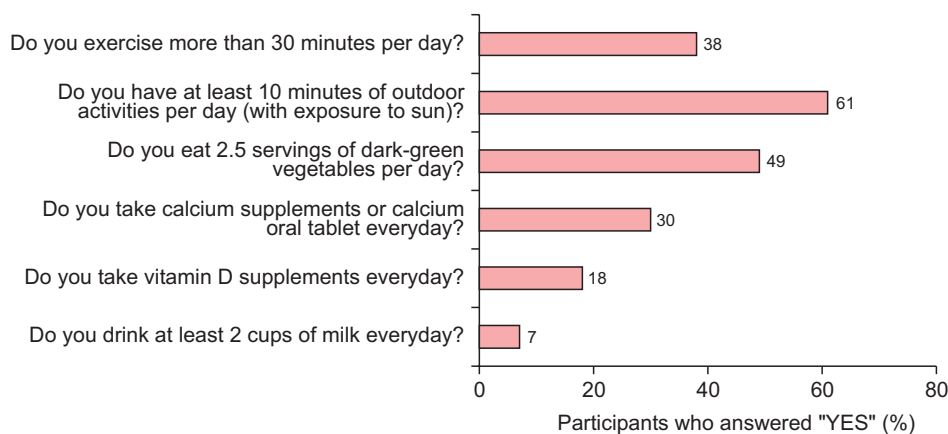


Fig. 1. Personal habit of respondents to prevent osteoporosis (n = 314).

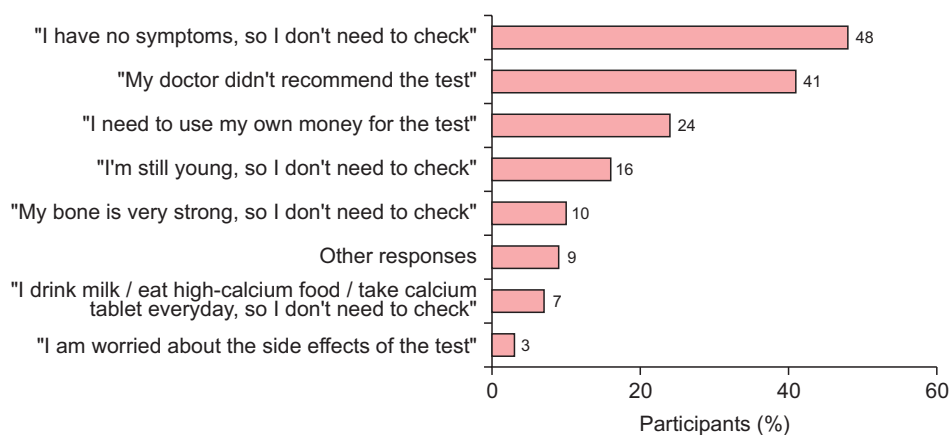


Fig. 2. Reasons why 65% of respondents never had a bone density test (respondents were allowed to choose more than one response; n = 374).

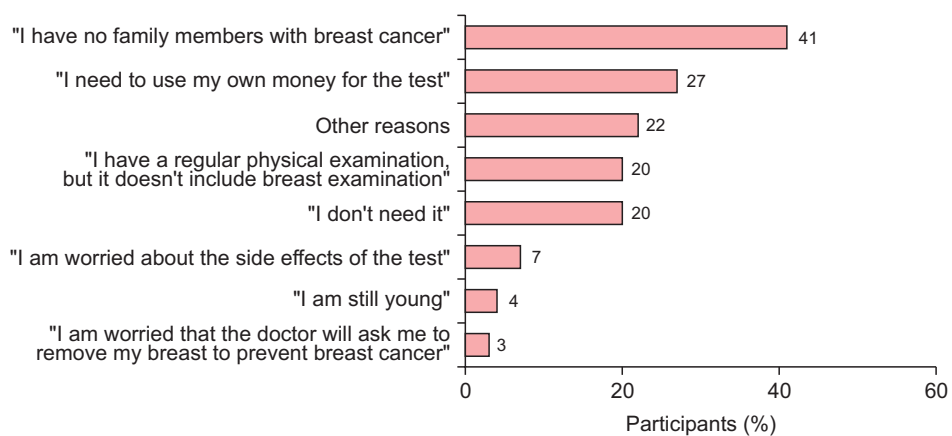


Fig. 3. Reasons why 37% of respondents did not do regular breast examination (respondents were allowed to choose more than one response; n = 210).

takenly believed that regular breast examination, regular breast massage, drink soy milk, or vaccine can prevent breast cancer. Among 363 respondents with regular breast examination, 40% did regular BSE every month, 54% were checked by their doctor every year, and 49% had screening mammography every 1 to 2 years. Only 0.7% of 146 respondents who had regular BSE were able to describe the correct technique.

Around 65% of all respondents agreed that they have a low chance for breast cancer if no one from their families has suffered from breast cancer, 58% agreed that regular screening is enough as long as she doesn't have genes associated with high-risk for breast cancer, 30% agreed that the removal of both breasts is the most thorough method to prevent breast cancer, and 37% agreed that breast removal to prevent breast cancer is worse than death.

Discussion

A Hong Kong survey conducted as far back as 1995 showed that there was a lack of awareness for osteoporosis in PMW – none of the 100 respondents were aware of it.¹⁴ The present study demonstrated that there was a considerable improvement over the past 20 years, around 3 out of 4 respondents were concerned for osteoporosis and fracture post-menopause. However, despite their concern over osteoporosis, almost half of the respondents did not try to prevent osteoporosis. Respondents seem to perceive osteoporosis as the “old-women disease” and did not realize that bone loss may occur gradually over the years without symptoms. Among those who never had a bone density test, 16% of them thought that they were still too young to receive it, yet their average age was 52 years old.

Respondents tried to prevent osteoporosis by adopting lifestyle interventions, such as exercise or consuming a diet

rich in calcium, indicating their knowledge on osteoporosis prevention. Despite this, a further enquiry revealed that most of them did not do it regularly. In Hong Kong, health education regarding osteoporosis prevention has been widely promoted by health talks, posters, or campaigns; however, it is reasonable to consider health motivation to effectively sustain behavioral changes as well. To directly quote from an article by Lau and Woo¹⁵, “It may be useful to educate the public about the risk factors for osteoporosis but it would be naive to assume that individuals will change their behavior dramatically as a result of health education”. Emphasis should be placed on addressing barriers towards osteoporosis prevention behaviors, since this is predictive of health motivation.¹⁶

Regarding breast cancer risk perception, a study conducted 16 years ago among 110 high risk Chinese women in Hong Kong, i.e. with a positive family history, has revealed that only half of them practiced BSE in their life-time.¹⁷ Those who practiced BSE were reported to be between 35 to 50 years of age, due to their growing knowledge of breast cancer.¹⁷ Nevertheless, the percentage of respondents in the present survey who practiced BSE regularly was relatively low; only 4 in 10 respondents practiced regular BSE every month. A more recent survey conducted in 2014, with a much wider age bracket of 18 to 80 years for its respondents, also reported that only 33.3% of their respondents performed BSE monthly.¹⁸

Several explanations have been provided by previous studies regarding the consistently low rates of BSE throughout the years. Ng and colleagues¹⁷ suggest thought barriers, such as fear for breast cancer and cultural taboo among Chinese women, contributed to the poor compliance of BSE. Kwok and Fong¹⁸ also suggest how culture may play a vital role in determining preventive health behavior in Hong Kong population. In addition, we suspect inconsistent guidelines from local and various international organizations regarding breast cancer screening may contribute significantly to the breast screening practice as well.

Conclusion

In conclusion, this survey revealed osteoporosis and breast

cancer as the top concerns among menopausal and PMW in Hong Kong. Inadequate health behaviors and misconceptions still exist despite widespread health education in the recent years.

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Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

1. Sjöberg L, Moen BE, Rundmo T. Explaining risk perception. An evaluation of the psychometric paradigm in risk perception research. Trondheim, NO: C Routunde Publikasjoner; 2004.
2. Ballard K. Understanding risk: women's perceived risk of menopause-related disease and the value they place on preventive hormone replacement therapy. *Fam Pract* 2002; 19: 591–5.
3. Huang KE, Xu L, I NN, Jaisamrarn U. The Asian Menopause Survey: knowledge, perceptions, hormone treatment and sexual function. *Maturitas* 2010; 65: 276–83.
4. Hsieh C, Novielli KD, Diamond JJ, Cheruva D. Health beliefs and attitudes toward the prevention of osteoporosis in older women. *Menopause* 2001; 8: 372–6.
5. Pan HA, Wu MH, Hsu CC, Yao BL, Huang KE. The perception of menopause among women in Taiwan. *Maturitas* 2002; 41: 269–74.
6. Sayakhot P, Vincent A, Teede H. Breast cancer and menopause: perceptions of diagnosis, menopausal therapies and health behaviors. *Climacteric* 2012; 15: 59–67.
7. Puttakitpong P, Chaikittisilpa S, Panyakhamlerd K, Nimnuan C, Jaisamrarn U, Taechakraichana N. Inter-correlation of knowledge, attitude, and osteoporosis preventive

- behaviors in women around the age of peak bone mass. *BMC Womens Health* 2014; 14: 35.
8. You JH, Yau B, Choi KC, Chau CT, Huang QR, Lee SS. Public knowledge, attitudes and behavior on antibiotic use: a telephone survey in Hong Kong. *Infection* 2008; 36: 153–7.
 9. Koh LK, Sedrine WB, Torralba TP, Kung A, Fujiwara S, Chan SP, et al. A simple tool to identify asian women at increased risk of osteoporosis. *Osteoporos Int* 2001; 12: 699–705.
 10. Choi BC, Pak AW. A catalog of biases in questionnaires. *Prev Chronic Dis* 2005; 2: A13.
 11. Ip TP, Cheung SK, Cheung TC, Choi TC, Chow SL, Ho YY, et al. The osteoporosis society of Hong Kong (OSHK): 2013 OSHK guideline for clinical management of postmenopausal osteoporosis in Hong Kong. *Hong Kong Med J* 2013; 19 Suppl 2: 1–40.
 12. American Cancer Society. *Breast cancer early detection and diagnosis*. Atlanta, GA: American Cancer Society, 2015. [Cited by 2016 Oct 19]. Available from: <http://www.cancer.org/acs/groups/cid/documents/webcontent/003165-pdf>.
 13. Khatib OMN, Modjtabei A. *Guidelines for the early detection and screening of breast cancer*. Cairo, EG: World Health Organization; 2006.
 14. Haines CJ, Rong L, Chung TK, Leung DH. The perception of the menopause and the climacteric among women in Hong Kong and southern China. *Prev Med* 1995; 24: 245–8.
 15. Lau EM, Woo J. Osteoporosis—is it really preventable? *Hong Kong Med J* 1998; 4: 395–9.
 16. Gammage KL, Klentrou P. Predicting osteoporosis prevention behaviors: health beliefs and knowledge. *Am J Health Behav* 2011; 35: 371–82.
 17. Ng KK, Fung SY, Chow LW. Practice of breast self-examination among high risk Chinese women in Hong Kong. *Chin Med J (Engl)* 2000; 113: 1100–3.
 18. Kwok C, Fong DY. Breast cancer screening practices among Hong Kong Chinese women. *Cancer Nurs* 2014; 37: 59–65.