

A survey of the perceived lifestyle risks of breast cancer in menopausal and postmenopausal women in Hong Kong

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Abstract: Breast cancer ranks as the most common cause of cancer death in women. If menopausal and postmenopausal women know the lifestyle risks associated with breast cancer and its preventive measures, they will make appropriate choices in order to enjoy their life and have a better chance of preventing this disease. This study attempted to explore perceived beliefs with regard to the lifestyle risks associated with breast cancer among menopausal and postmenopausal women in Hong Kong. A survey was designed that used a self-reporting questionnaire to assess the perceived beliefs of 223 women. Results showed that more than half of the participants held misconceptions about lifestyle breast cancer risks. Only those women who were well-educated and were worried about having breast cancer performed breast screening for cancer. The findings of this study suggest that health care professionals should channel resources to educate menopausal and postmenopausal women about the risks of breast cancer and to promote awareness of breast wellness and the value of breast cancer screening.

Keywords - breast cancer; lifestyle risks, menopause; postmenopause, misconception; health practice; breast cancer screening

I. INTRODUCTION

The incidence of breast cancer among women is increasing globally [1, 2]. Breast cancer ranks as the No. 1 cause of cancer death in women aged over 50—which is the average age a woman starts menopause [3, 4]. It is well documented that the link between modifiable lifestyle behaviors and the risks of breast cancer is strong [5, 6, 7]. If menopausal and postmenopausal women can identify the lifestyle factors of this fatal disease and modify their behaviors accordingly, there will be a better chance to reduce its occurrence. On the other hand, if menopausal and postmenopausal women hold misconceptions about lifestyle factors that increase breast cancer risks, their risk of developing breast cancer may be increased and their quality of life may be adversely affected. Therefore, the perceptions and beliefs of menopausal and postmenopausal women about the lifestyle risk factors of breast cancer are important both in preventing the disease and improving quality of life. A number of studies have been conducted to assess the beliefs regarding causal attributions

for breast cancer among the affected women in overseas countries [8, 9, 10, 11]. Results show that most of them held misconceptions about the causes of breast cancer. Few such studies assessing the perceived lifestyle risks of breast cancer in menopausal and postmenopausal women have been done in Hong Kong [12]. This study attempted to explore the perceptions of Hong Kong Chinese menopausal and postmenopausal women about lifestyle risks for breast cancer. The findings of this study can help health care professionals to develop appropriate measures to educate Hong Kong Chinese women about the lifestyle risks for breast cancer, and thereby reduce its incidence and improve their quality of life.

II. METHODS

A. Design and sampling

A descriptive survey using questionnaires was designed to achieve the research objective. Sample size was estimated based on the number of breast cancer cases diagnosed in Hong Kong in 2013, which was 3,524 [13]. Epi-Info version 7 was used to calculate the sample size. A sample of 186 women was required to have the desired 95% confidence interval with 7% confidence limits. The study was carried out in Hung Hom—an urban district in the Kowloon region of Hong Kong. Convenience sampling was used to recruit the study participants from the residents attending a health talk at a community centre and from residents living in the study district. Menopause usually starts at the age of 50. The transition usually has three parts: perimenopause, menopause, and postmenopause. As changes usually begin with perimenopause—which can begin several years before the last menstrual period, the inclusion criteria were women aged at or above 45. Those who had history of breast cancer or could not respond clearly were excluded from the study. Data were collected during March and April 2013.

B. Data collection

A questionnaire was developed by the researchers based on a review of literature. The purpose of the questionnaire

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was to explore perceptions regarding lifestyle risks for breast cancer and general beneficial health behaviors for women during perimenopause. The content of the questionnaire was validated by a gynecologist.

There was a total of 16 questions. Nine questions were specifically constructed to assess misconceptions about the risks of developing breast cancer. The respondents were asked to indicate their answers with 'yes', 'no', or 'not sure' since the study was not intended to measure the level of knowledge about breast cancer. The study assumes that misconceptions about the risks of developing breast cancer represented the participants' knowledge about breast cancer. Two general questions were added to further assess their perceived level of knowledge about breast cancer and its preventive measures. Seven questions were constructed to assess participants' general health practices that help prevent breast cancer. A question was constructed to assess if the respondents were worried about having breast cancer after menopause with response "yes" or "no". The socio-demographic characteristic data included age, level of education, family income, and marital status. The questionnaire was self-administered but questions were read by the research assistant to those participants who could not read. The internal consistency of the questionnaire was tested with Cronbach alpha, and was 0.723.

III. ETHICAL CONSIDERATIONS

Ethical approval was obtained from the Human Research Ethics Committee at the Tung Wah College. Verbal consent was obtained from each participant before she answered the questionnaire. The participants were assured that all information would be kept strictly confidential and used only for research purposes.

IV. DATA ANALYSIS

Computerized Statistical Package of Social Science, version 19 was used for data entry and analysis. Descriptive statistics and Pearson's correlation coefficient was used to examine the relationships between variables.

V. RESULTS

A total of 304 female participants were invited to participate in the study. Two hundred and twenty-three (73.3%) participants responded and completed the questionnaire.

A. Demographic data

78.2% (n=237) of participants were aged 50 or older, and most were from 50 to 55 years old (32.2%). The majority were married (78.6%) and retired or housewives (40.1%). 37.1% had primary or lower education, and 56.9% of them had secondary or above education. The majority of participants (63.2%) had passed menopause (post-menopause). 6.7% of participants had family history of breast cancer. Detailed demographic data are presented in Table I.

TABLE I. DEMOGRAPHIC DATA

Variables	Number	Percentage
Age		
45-50	58	26
50-55	75	33.6
56-60	30	13.5
61-70	32	14.3
71-80	17	7.6
>80	11	4.9
Postmenopausal status		
Yes	141	63.2
No	82	36.8
Family history with breast cancer		
Yes	15	6.7
Occupation		
Management/Professional	15	6.7
Executive	7	3.1
General	45	20.2
Retired/Housewife	97	43.5
Unemployment/Volunteer	10	4.5
Others	49	22.0
Income		
<10,000	47	21.1
10,000-30,000	88	39.5
30,001-50,000	32	14.3
>50,000	18	8.1
Unknown	38	17.1
Marital status		
Unmarried	50	22.4
Married	173	77.6
Educational level		
None	15	6.7
Primary	52	23.3
Secondary	100	44.8
University degree or above	38	17.0
Others	18	8.1

B. Perceived lifestyle risks and health practices relevant to breast cancer

Most participants perceived that their knowledge about breast cancer (86.6%) and its preventive measures (85.9%) was not adequate. Only 13.5% and 14.3% of the participants claimed that they had adequate knowledge about breast cancer and its preventive measures, respectively. The survey revealed that more than a few of the participants held misconceptions that lifestyle behaviors such as wearing brassières with wire (13.5%), using breast enhancement cream (27.4%) and using deodorant (20.2%) were associated with breast cancer risks. More often, they were not sure or did not know the answers (ranging from 13.5% to 51.1%). Details of the misconceptions regarding the lifestyle risks of breast cancer are presented in Table II. More than 60% of the participants would like to have further information about preventive measures for breast cancer.

Table II also shows the health practices of the participants. More than half of participants (56.5%) had never sought breast examination from a doctor in the previous year. The majority were non-drinkers (65%) and non-smokers (92.4%). More than half took an oral calcium supplement (60.5%). Nearly half did not engage in regular exercise (42.6%), nor receive regular exposure to sunlight (52.5%). However, 48% of the participants were worried about having breast cancer after menopause. A significant relationship was noted between worrying about having breast cancer and having a family history of breast cancer ($p=0.035$) (Table III).

C. Relationship between educational level and misconceptions regarding lifestyle risks for breast cancer

Table IV shows that there was no significant relationship between misconceptions regarding lifestyle risks for breast cancer and education level of the participants.

D. Breast examination practice

Table V shows the relationship between breast examination practice and various variables. There was a significant relationship between breast examination practice and family history with breast cancer. No significant relationship was noted between women who performed breast examination and other demographic characteristics, nor with their perceived knowledge about breast cancer and its preventive measures

For women who were worried about having breast cancer, the practice of breast examination was significantly related with education and income level. Table VI shows a significant relationship between breast examination practice and tertiary education ($p=0.035$) and monthly family income at a range from HK\$10,000 – 30,000 ($p=0.022$) was noted.

TABLE II. MISCONCEPTION OF LIFESTYLE RISKS, PERCEIVED KNOWLEDGE AND HEALTH PRACTICE ABOUT BREAST CANCER

Perceived Lifestyle risks about breast cancer	Yes (%)	No (%)	Not sure/don't know (%)
Have undergone breast cosmetic surgery	58(26.0)	99(44.4)	66(29.6)
Using breast enhancement cream	61(27.4)	65(29.1)	97(43.5)
Wearing brassiere with wire	30(13.5)	87 (39.0)	106(47.5)
Stress	113(50.7)	35(15.7)	75(33.6)
Breastfeeding	3(1.3)	166(74.4)	54(23.2)
Using deodorant	45(20.2)	64(28.7)	114(51.1)
Using perfume	25(11.2)	95(42.6)	102(45.7)
Taking oral contraceptive	87(39.0)	30(13.5)	115(47.5)
Regular exercise	9(4.0)	184(82.5)	30(13.5)
Perceived knowledge about breast cancer	Good (%)	30 (13.5)	
	Fair (%)	105 (47.1)	
	Poor (%)	88 (39.5%)	
Perceived knowledge in prevention of breast cancer	Good (%)	32 (14.3)	
	Fair (%)	98 (43.9)	
	Poor (%)	93 (41.7)	
Worried about having breast cancer	Yes (%)	107 (48%)	
Like to receive further information about preventive measures for breast cancer	Yes (%)	143 (64.1%)	
Health practice	Never practice (%)		
Breast examination by doctor in the previous year	126 (56.5)		
Drinking	145(65.0)		
Smoking	206(92.4)		
Oral calcium supplement	135(60.5)		
Regular exposure to sunlight	117(52.5)		
Regular exercise	95(42.6)		

TABLE III. RELATIONSHIP BETWEEN WORRY ABOUT RISK AND FAMILY HISTORY WITH BREAST CANCER

	Family history with breast cancer		
	Value	df	Chi-Square (P-Value)
Worried about having breast cancer	6.679	2	0.035*

*Correlation is significant at 0.05 level (2-tailed)

TABLE IV. RELATIONSHIP BETWEEN EDUCATION LEVEL AND MISCONCEPTION ABOUT BREAST CANCER

Perceived Lifestyle risks about breast cancer	Education level		
	Value	df	Chi-Square (P-Value)
Breast surgery	2.906	6	0.821
Breast enhancement cream	0.641	3	0.887
Bra with wire	4.581	3	0.205
Stress	1.635	3	0.652
Breastfeeding	4.097	3	0.251
Deodorant	3.327	3	0.344
Perfume	4.802	3	0.187
Oral contraceptive	3.419	3	0.331
Regular exercise	3.380	3	0.337

VI. DISCUSSION

The results of this study show that a majority of participants had misconceptions regarding lifestyle behaviors associated with breast cancer risks, indicating that their knowledge about breast cancer risks was inadequate. The findings are consistent with previous literature that reports a knowledge deficit regarding the risks of breast cancer among menopausal and postmenopausal women in Hong Kong [12] and overseas countries [6]. The participants mistakenly believed that lifestyle behaviors including wearing brassieres with wire, and using deodorant, breast enhancement cream or perfume were associated with breast cancer risks. Hong Kong Chinese women believe that such lifestyle practices increased their risks for getting breast cancer. Surprisingly, nearly half of the women in this study responded to these questions with uncertainty and indicated that they “don’t know” or were “not sure”. Their misconceptions about lifestyle risks were consistent with their perceived lack of knowledge about breast cancer and its preventive measures. Over 80% of the participants perceived that their knowledge regarding breast cancer and its preventive measures was inadequate. It indicates that misconceptions about breast cancer risks are widespread in this population. Women having such beliefs may have reservations about adopting these lifestyle practices and eventually their quality of life will be compromised.

TABLE V. RELATIONSHIP BETWEEN BREAST EXAMINATION PRACTICE AND VARIABLES

Variables	Breast examination practice		
	Value	df	Chi-Square (P-Value)
Occupation	6.729	10	0.751
Marital status	4.288	6	0.638
Age	5.910	10	0.823
Menopause status	2.824	2	0.244
Family history with breast cancer	9.759	4	0.045*
Family income	7.664	8	0.467
Education level	7.744	6	0.257
Perceived knowledge about breast cancer	8.482	4	0.075
Perceived knowledge in preventive measures	7.020	4	0.135
Worried about having breast cancer	3.424	2	0.181

*Correlation is significant at 0.05 level (2-tailed)

The educational level of the participants in this study was considered to be good, with approximately 60% having attained secondary school level. However, no significant relationship was found between educational level and misconceptions. Well-educated women in Hong Kong also held misconceptions about lifestyle breast cancer risks. Previous studies have showed that women from Asia commonly hold fatalistic beliefs with regard to the causes of breast cancer, disregarding scientific evidence [9, 14]. Like the women living in Western countries, the participants in this study also attributed the cause of breast cancer to stress [14].

TABLE VI. BREAST EXAMINATION PRACTICE IN WOMEN WHO WORRIED ABOUT HAVING BREAST CANCER BY EDUCATION LEVEL AND FAMILY INCOME

		Breast examination practice		
		Value	P-Value	
Worried about having breast cancer	Education level	Nil	-0.237	0.396
		Primary	-0.011	0.940
		Secondary	0.166	0.100
		Tertiary	0.834	0.035*
	Family income	<10,000	0.053	0.723
		10000-30000	0.246	0.022*
		30001-50000	0.033	0.860
		>50000	0.134	0.597
		Not sure	-0.061	0.748

*Correlation is significant at 0.05 level (2-tailed)

More than half of the participants were non-drinkers and more than 90% did not smoke. The findings are consistent with a previous review of studies on breast cancer survivors who indicated that they had a healthy lifestyle [6]. However, nearly half of the participants in this study did not engage in regular exercise. This may be attributed to the urban environment and the amount of walking involved in daily life in Hong Kong. They may assume that the amount of walking is good enough to maintain their physical health. In this study, a high percentage of women were housewives who mainly perform house care activities and enjoy “yum cha” (morning tea in a Chinese restaurant) and thus they may have less chance to participate in regular exercise. Chinese people enjoy “yum cha” usually spend the entire morning chatting with friends.

It is noteworthy that more than half of the participants in this study have sought breast examination from a doctor in the previous year. This health-seeking behavior may not be due to

the awareness of breast cancer risk as there was no significant relationship between breast examination behavior and their breast cancer worry (Table III). This may be attributed to the high-risk family history (Table V). However, this finding is not consistent with previous studies which found that both the surveillance behaviors of breast cancer [15, 16] and the awareness of breast cancer risks of women with high-risk family histories of breast cancer were low [16].

When further investigation was conducted of those who were worried about having breast cancer after menopause, women with tertiary education and with monthly family income in a range from HK\$10,000-30,000 had sought breast examination from a doctor in the previous year (Table VI). It is understandable that women who are well-educated will have more access to information about healthcare choices to prevent breast cancer. This study suggests that well-educated women with perceived breast cancer risk will increase their surveillance behavior for breast cancer. The women who worried about having breast cancer after menopause, with family income in a range from HK\$10,000-30,000—though not high in socio-economic status—also had sought breast examination from doctor in the previous year. This study suggests that financial considerations are not a deterrence for women who have awareness of breast cancer risk to breast cancer screening.

VII. CONCLUSION

Results of the present study reveal that menopausal and postmenopausal women in Hong Kong have misconceptions as to what lifestyle factors increase their risk for breast cancer. We cannot assume well-educated women have a clear concept of the risks for breast cancer; this group of women should be included in the health education and promotion of breast wellness programme. If women have accurate and sufficient knowledge about lifestyle factors that increase their chance of getting breast cancer, they can make appropriate changes and enjoy their life.

The findings of this study also showed that the majority of the participants did not seek professional medical assistance for breast cancer screening. Screening increases the chance for early detection and early treatment of breast cancer. If women have access to information about breast risks and thus have greater awareness, they can make appropriate choices to prevent breast cancer.

This study highlights the gap in health education to be filled by health care professionals for the prevention of breast cancer in menopausal and postmenopausal women. It further suggests that channeling resources to promote awareness of breast wellness and screening of breast cancer would significantly benefit an important segment of the population, namely menopausal and postmenopausal women.

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