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Original Research Article.

Knowledge, Attitude and Practice in Female Primary Health Care Physician About Breast Cancer Screening in Makkah City

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ABSTRACT

Background: Breast cancer is major impact on health of women in worldwide with no exception in Saudi Arabia. Significant improvement in breast cancer survival was observed in Western countries over the last 20 years, and the reason being early detection through screening and prompt treatment.

Objectives: To assess Knowledge, attitude and practice of breast cancer screening recommendation among female primary health care physicians in Makkah.

Subjects and Methods: A cross sectional analytic study design was adopted. It included all female physicians in primary health care centers (n=30) primary health care centers, Makkah who are currently working at the time of study conduction. Self-administered questionnaire was utilized for data collection. It consists of two parts; demographic characteristics of physicians and the second part was adopted from national cancer institute (breast and cervical cancer screening questionnaire) to measure the awareness of physicians regarding breast cancer screening recommendations.

Results: Out of 89 female primary health care physicians recruited for the study, 62 (69.7%) returned a completed questionnaire. Those aged between 31 and 35 years represent 45.2% of the participants whereas those aged between 25 and 30 years represent 38.7% of them. Most of them were residents (71%). The overall knowledge of female primary health care physicians regarding BC screening recommendations was sufficient among only 16.1% of them. Specialist physicians had better knowledge compared to resident physicians (33.3% versus 9.1%). The difference was statistically significant, p = 0.028. Physicians who had small number of patients seen in a typical week (≤50) and those having an average number (76-100) reported higher significant knowledge than those have seen a high number of patients (>100), p=0.021. Most of them (79% and 80.6%) reported that mammography is very effective in reducing mortality in average risk women aged 40-49 and 50 and over years, respectively. Almost two-thirds of the physicians (66.1%) refereed from one to 10 patients for screening mammography during a typical month whereas 27.4% of them did not refer any case for screening mammography.

Conclusion: Overall knowledge of female primary health care physicians in Makkah regarding BC screening recommendations was mostly insufficient. On the other hand, their attitude and practice regarding breast cancer screening were satisfactory.

Keywords: Breast Cancer, Screening, Female Physicians, Primary Health Care, Knowledge, Attitude, Practice.

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INTRODUCTION

Breast cancer (BC) is the second most common cancer in the world and the most common cancer in females accounting to 23% of all cases.[1] It is estimated that approximately one million cases of female breast cancer are diagnosed worldwide. It is the most frequent cause of death in females. An earlier report according to Saudi National Cancer Registry reported an increasing proportion of BC among women of different ages from 10.2% (2000) to 24.3% (2005).[2] Between January 1998 and December 2004-2004, 6,882 cases were reported from all Gulf Council Countries (GCC) states accounting to 11.8% from all cancers and 22.7% from cancers in females. ASR/100,000 women were 46.4 from Bahrain, 44.3 from Kuwait, 35.5 from Qatar, 19.2 from UAE, 14.2 from Oman and 12.9 from KSA.[3]

Though the increase in incidence and mortality was observed until early 1980s all over world, significant improvement in survival was observed in Western countries over the last 20 years, and the reason being early detection through screening, SBE and prompt treatment. Recent data from National Health Breast screening program in UK indicates that women diagnose with early stage breast cancer detected through screening who then go on to receive treatment have Same life expectancy as the UK female population as a whole.[4]

In Saudi Arabia, the number of new cases of cancer is 2741 including about 19.9% of breast cancer in women that is ranked first figures. Numbers between the United States and Saudi Arabia are not varying, but the difference is apparent in the age of patient and the stage of disease when it was discovered.[5]

In the United States, 50% of new breast cancer cases occur in women over the age of 65 years, while in the Arab countries, including Saudi Arabia, it usually occurs in women at the age of 52.[5] As for the stage of disease in developed countries, the disease is discovered in early stages, while in developing countries there are still large numbers diagnosed in late stages.[5]

Breast cancer is major impact on health of women in worldwide with no exception in Saudi Arabia. It considered the most common malignancy and represents the second leading cause of cancer death after lung cancer.[6]

Early detection of breast cancer can be achieved by performed by breast self-examination (BSE), clinical breast examination (CBE) and mammography.[7] Arabic women currently face a significant risk of high mortality rate from breast cancer due to frequent diagnosis in the advanced stages of the disease.[8,9] In the Middle East and Gulf region, the incidence of breast cancer is rising and affecting a younger population compared to the West. In the Arab world, there are very few breast cancer awareness programs.[10,11]

As it is known that female healthcare professionals have greater influence on women's positive perception of breast cancer and motivation to practice screening methods for early detection of the disease. Therefore, female health care providers should play a major role in educating counseling and advising their own patients on screen for early detection of breast cancer. Thus, this study was carried out to assess the level of Knowledge, attitude and practice of breast cancer screening recommendation among female primary health care physician in Makkah, Saudi Arabia.

SUBJECTS AND METHODS

A cross sectional analytic study design was adopted among all primary health care female physicians in Makkah city (n=100). Makkah city is the center of the Islamic World. Its citizens are exposed to globalization by the pilgrims coming to worship Allah. It is located in the western region of the Kingdom of Saudi Arabia in a valley near the Red Sea Coast. The population is very heterogeneous as most of them are originating from different cultures for centuries. They constitute about 2millions including Saudi and non-Saudi according to Makkah Principality. It has 5 big hospitals and 30 primary health care centers.

Out of 100 female PHC physicians, 11 were on vacation for different reasons. So, we invited 89 physicians to fill in the study questionnaire.

Self-administered questionnaire was utilized for data collection. It consists of two parts. Demographic characteristics of physicians and the second part was adopted from national cancer institute (breast and cervical cancer screening questionnaire) to measure the awareness of physicians regarding breast cancer screening recommendations.[12] The questionnaire is available freely online. We took only the part concerning with breast cancer screening. Modifications were done in part D to suit our situation in KSA.

A pilot study was done in the National Guard primary care center to assess the feasibility of the study and clearness of the questionnaire. It was clear and no modifications were done.

Permissions were taken from joint program of family medicine and the Ministry of Health in Makkah to conduct the research.

Data were entered on the researcher's computer using SPSS version 20 software. Variables were described in the form of frequency and percentage. Responses of the physicians to knowledge questions regarding BC screening recommendations were scores as the right answers were given a score of 1 while wrong answers were given a score of zero. Total knowledge score was computed for comparison between physicians. It ranged between 0 and 10.

The percentage of correct answers was computed. Physicians who had a percentage of 60 and more were considered as having sufficient knowledge whereas those having a percentage less than 60% were considered as having insufficient knowledge. Chi-square test was applied to examine the association between categorical variables. Fisher exact test was used instead in case of small frequencies. P-value at or less than 0.005 was considered statistically significant.

Table 1: Demographic characteristics of the participants (n=62)

		Number	Percentage
Age in years	**25-30**	24	**38.7**
	31-35	28	**45.2**
	≥35	10	**16.1**
Position	**Resident**	44	**71.0**
	Specialist	18	**29.0**
Nationality	**Saudi**	31	**50.0**
	Non-Saudi	31	**50.0**
Number of physicians in the PHCC	**1**	2	**3.3**
	2-5	57	**91.9**
	>5	3	**4.8**
Average number of patients seen in a typical week	**≤50**	9	**14.5**
	51-75	17	**27.4**
	76-100	5	**8.1**
	>100	31	**50.0**

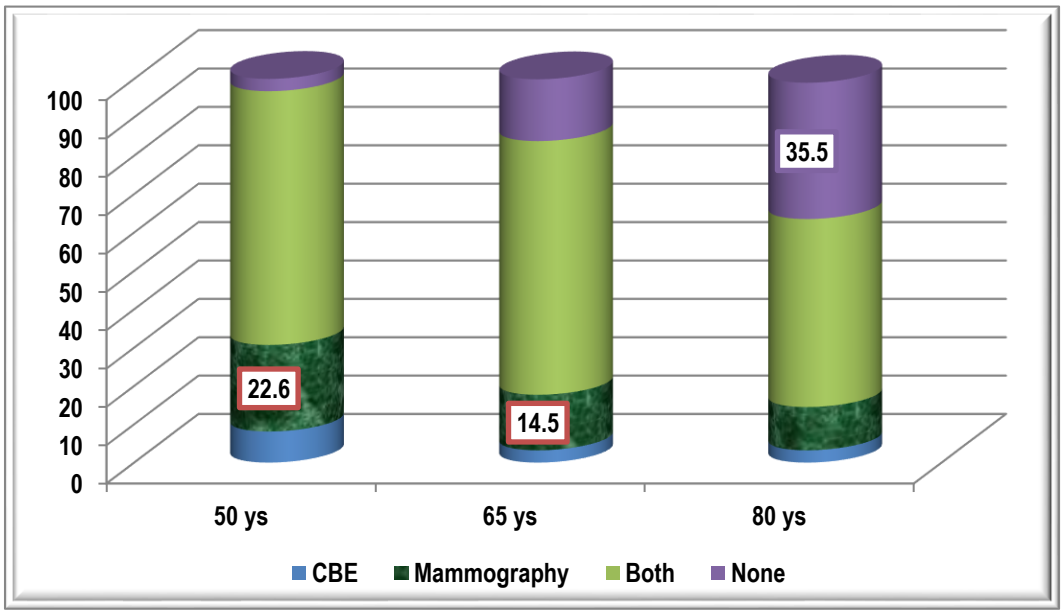

Figure 1: Recommended breast cancer screening test for healthy asymptomatic and at average risk women according to their age by female primary health care physicians.

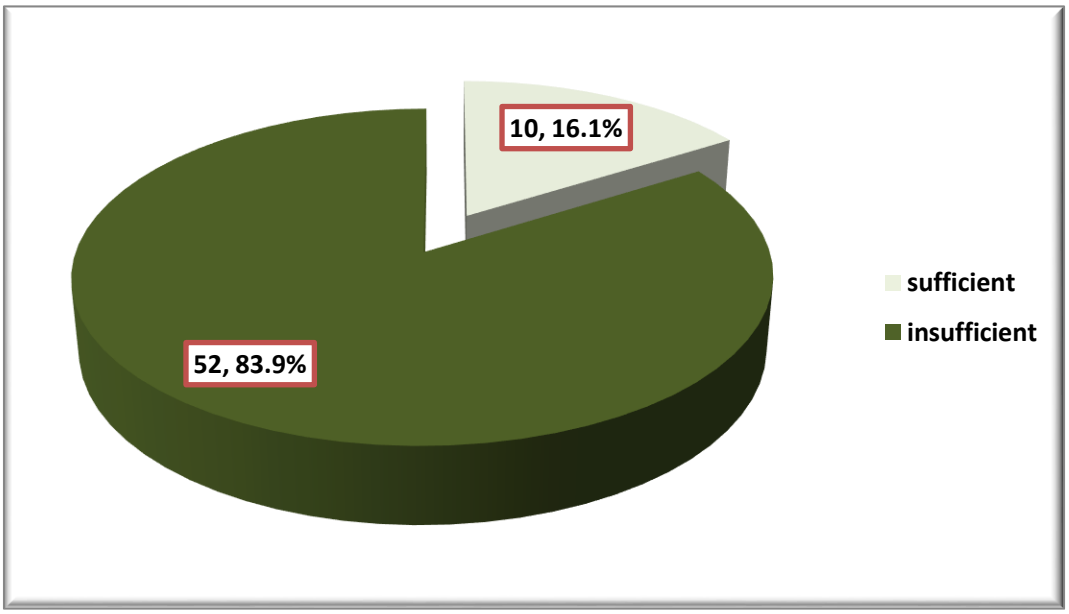

Figure 2: Overall Knowledge of female primary health care physicians regarding breast cancer screening recommendations

RESULTS

Out of 89 female primary health care physicians recruited for the study, 62 (69.7%) returned a completed questionnaire.

Table 1 presents the demographic characteristics of the participants. Female primary health care physicians aged between 31 and 35 years represent 45.2% of the participants whereas those aged between 25 and 30 years represent 38.7% of them. Most of them were residents (71%). Exactly half of them were Saudis. In the vast majority of primary health care centers (91.9%), the number of female physicians ranged between 2 and 5. Average number of patients seen in a typical week was over 100 among half of the participants.

Ten female physicians (16.1%) reported that they implemented guidelines for breast cancer screening in their practice at PHCC.

Knowledge of Breast Cancer Screening Recommendations

As seen in figure 1, 22.6% of the female primary health care physicians will recommend correctly healthy asymptomatic, on average risk 50 years old women to do mammography only as a screening test for breast cancer. Only 14.5% of them will recommend correctly healthy asymptomatic, on average risk 65 years old women to do mammography only as a screening test for breast cancer. More than a third of them (35.5%) correctly will not recommend breast cancer screening test for healthy asymptomatic, on average risk 80 years old women.

Regarding women with unrespectable non-small cell lung cancer, most of the female physicians (82.3% and 77.4%) will recommend correctly both clinical breast examination and mammography for breast cancer screening among those aged 50 years and 65

years, respectively. Almost two-thirds of them (67.7%) will recommend correctly both clinical breast examination and mammography for breast cancer screening among those aged 80 years. When female physicians were asked what BC screening test they will recommend for women aged 40-49 years, 41.9% will recommend CBE whereas 53.2% and 38.7% will recommend mammography and BSE respectively.

When they were asked what BC screening test they will recommend for women aged 50 years and over, almost two-thirds of them (67.7%) will recommend mammography whereas 50% and 45.2% will recommend CBE and BSE respectively.

Figure 2 shows that overall knowledge of female primary health care physicians regarding BC screening recommendations was sufficient among only 16.1% of them.

Table 2 summarizes the factors that could be associated with the knowledge level of breast cancer screening recommendations among female primary health care physicians. The significant factors were physician`s position and number of patients seen. Specialist physicians had better knowledge compared to resident physicians (33.3% versus 9.1%). The difference was statistically significant, p=0.028. Physicians who had small number of patients seen in a typical week (≤50) and those having an average number (76-100) reported higher significant knowledge than those have seen a high number of patients (>100), p=0.021. Other studied factors (age, nationality, number of physicians in PHC, average number of patients seen and implemented guidelines for BC screening at PHCC) were not significantly associated with physicians` knowledge regarding BC screening recommendations.

Table 2: Factors associated with knowledge of female primary health care physicians regarding breast cancer screening recommendations.

		Knowledge of BC screening recommendations		χ^2	p-value
		Insufficient N (%)	Sufficient N (%)		
Age (years)	**25-30 (n=24)**	21 (87.5)	3 (12.5)	1.09	0.579
	31-35 (n=28	22 (78.6)	6 (21.4)		
	>35 (n=10)	9 (90.0)	1 (10.0)		
Position	**Resident (n=44)**	40 (90.9)	4 (9.1)	0.028*	
	Specialist (n=18)	12 (66.7)	6 (33.3)		
Nationality	**Saudi (n=31)**	25 (80.6)	6 (19.4)	0.366*	
	Non-Saudi (n=31)	27 (87.1)	4 (12.9)		
Number of physicians in the PHCC	**1 (n=2)**	2 (100)	0 (0.0)	1.05	0.593
	2-5 (n=57)	48 (84.2)	9 (15.8)		
	>5 (n=3)	2 (66.7)	1 (33.3)		
Average number of patients seen in a typical week	**≤50 (n=9)**	5 (55.6)	4 (44.4)	9.71	0.021
	51-75 (n=17)	16 (94.1)	1 (5.9)		
	76-100 (n=5)	3 (60.0)	2 (40.0)		
	>100 (n=31)	28 (90.3)	3 (9.7)		
Implemented guidelines in practice	**Yes (n=10)**	8 (80.0)	2 (20.0)	0.511*	
	No (n=52)	44 (84.6)	8 (15.4)		

*p-value of Fisher exact test

Table 3: Believing of female primary health care physicians towards effectiveness of different screening procedures in reducing cancer mortality in average-risk women.

Breast Cancer Procedures	Very Effective N (%)	Somewhat Effective N (%)	Not Effective N (%)	Effectiveness Not Known N (%)	Not Sure N (%)
Clinical breast exam (performed by practitioner)	21 (33.9)	31 (50.0)	9 (14.5)	0 (0.0)	1 (1.6)
Breast self-examination (performed by patient)	10 (16.1)	21 (33.9)	22 (35.5)	5 (8.1)	4 (6.5)
Screen-film mammography for women 40-49 years	49 (79.0)	10 (16.1)	0 (0.0)	2 (3.2)	1 (1.6)
Screen-film mammography for women 50+ years	50 (80.6)	9 (14.5)	0 (0.0)	0 (0.0)	3 (4.8)
Digital mammography	29 (46.8)	7 (11.3)	0 (0.0)	1 (1.6)	25 (40.3)

Attitude Towards Breast Cancer Screening

Form table 3, it is realized that almost a third of female physicians (33.9%) reported that CBE is very effective in reducing BC mortality in average risk women whereas only 16.1% cited that BSE is very effective in this regard. Most of them (79% and 80.6%) reported that mammography is very effective in reducing mortality in average risk women aged 40-49 and 50 and over years, respectively. Less than half of them (46.8%) reported that digital mammography is very effective in reducing mortality in average risk women.

Practice of Breast Cancer Screening

From table 4, it is shown that almost two-thirds of the physicians (66.1%) refereed from one to 10 patients for screening mammography during a typical month whereas 27.4% of them did not refer any case for screening mammography.

Almost a quarter of female physicians (28.9%) claimed that they sometimes referred patients for digital mammography whereas 44.4% never did that.

Table 5 presents responses of female physicians regarding different situations encountered while talking to asymptomatic, average-risk female patient about breast cancer screening. Almost two-thirds of the physicians (61.3%) reported that they sometimes had no enough time to discuss screening with patients and 16.1% of them usually had no time for that. Only 9.7% of female physicians claimed that patients usually don`t want to discuss BC screening and had difficulty in understanding the information given about BC screening. Almost two-thirds of them (61.3%) reported that patients sometimes were unaware of BC screening and 8.1% reported that patients usually were unaware of BC screening. Most of them (80.7%) reported that patients rarely or sometimes perceive BC as a serious health threat. More than third of the physicians (40.7%) reported that patients never lack adequate insurance coverage for screening mammography.

Table 6 presents breast cancer screening components and follow up care practiced by female primary health care physicians.

Most of the physicians (71%) Discussing the risk and benefit of breast cancer screening by themselves. Almost two thirds of them (62.9%) refer patients for mammography themselves. Majority of them (82.3%) perform breast self-examination by themselves. 41.9% of female physicians claimed that discussing mammography result with patient was done by another physician to whom they refer their patients. 30.6% of family physicians recommended follow-up care with positive clinical breast examination by them whereas this care is provided by another physician to whom they refer their patients as claimed by 29% of the female family physicians. 21.0% of family physicians recommended follow-up care with positive mammography results by them whereas this care is provided by another physician to whom they refer their patients as claimed by 41.9% of the female family physicians. More than half of the physicians (56.5%) teaching breast self-examination by themselves whereas a quarter of them (25.8%) reported that they are not involved in this care.

Table 4: Referral of asymptomatic average risk females for breast cancer screening by female primary health care physicians

		Frequency	Percentage
Number of asymptomatic average-risk female patients refereed for screening mammography during a typical month	**0**	17	27.4
	1-10	41	66.1
	11-20	1	1.6
	21-30	0	0.0
	31-40	2	3.2
	>40	1	1.6
Referral of asymptomatic average-risk female patients for screening with digital mammography	**Never**	20	44.4
	Rarely	10	22.2
	Sometimes	13	28.9
	Usually	2	4.5

Table 5: Responses of female health care physicians to the question "While talking to asymptomatic, average-risk female patient about breast cancer screening, how often encounter the following situations?

	Never N (%)	**Rarely N (%)**	**Sometimes N (%)**	**Usually N (%)**
Not having enough time to discuss screening with patients	5 (8.1)	9 (14.5)	38 (61.3)	**10 (16.1)**
Don`t want to discuss BC screening	6 (9.7)	22 (35.5)	28 (45.2)	**6 (9.7)**
Have difficulty understanding the information given about BC screening	7 (11.3)	19 (30.6)	30 (48.4)	**6 (9.7)**
Are unaware of BC screening	5 (8.1)	14 (22.6)	38 (61.3)	**5 (8.1)**
Don`t perceive BC as a serious health threat	10 (16.1)	28 (45.2)	22 (35.5)	**2 (3.2)**
Can't afford or lack adequate insurance coverage for screening mammography (n=54)	22 (40.7)	20 (37.0)	11 (20.4)	**1 (1.9)**

Table 6: Breast cancer screening components and follow up care practiced by female primary health care physicians, Makkah

	I do this myself	Another medical care provider do this and I share responsibility	Another medical care provider do this care	Another physician to whom I refer my patient provide this care	I am not involved in this care
	N (%)	N (%)	N (%)	N (%)	N (%)
Discuss the risk and benefit of breast cancer screening	44 (71.0)	5 (8.1)	2 (3.2)	7 (11.3)	4 (6.5)
Refer for mammography	39 (62.9)	6 (9.7)	3 (4.8)	8 (12.9)	6 (9.7)
Perform clinical breast examination	51 (82.3)	0 (0.0)	3 (4.8)	4 (6.5)	4 (6.5)
Discuss mammography result with patient	8 (12.9)	17 (27.4)	6 (9.7)	26 (41.9)	5 (8.1)
Recommend follow-up care with positive clinical breast examination	19 (30.6)	8 (12.9)	13 (21.0)	18 (29.0)	4 (6.5)
Recommend follow-up care with positive mammography results	13 (21.0)	9 (14.5)	10 (16.1)	26 (41.9)	4 (6.5)
Teach breast self-examination medication	35 (56.5)	4 (6.5)	4 (6.5)	3 (4.8)	16 (25.8)

DISCUSSION

Despite the relatively low incidence of breast cancer in Saudi Arabia compared to other countries, it has been the most common cancer among Saudi females for the consecutive years 1994-2005 (Saudi Cancer Registry, 1994-2005).[13] More than 50% were stage II and III, while ductal carcinoma in situ represented <5% of this population.[14-18] Although breast cancer is more common in women older than 50 years worldwide, it is frequently diagnosed in younger women in Saudi Arabia. In fact, breast cancer is the single leading cause of cancer death for women 20 to 59 years of age,[19] thus posing a major public health concern. The high incidence of breast cancer in young Saudi women should be addressed by evaluating the roles of early detection and prevention programs.

This study evaluates the knowledge, attitude and practice of female primary health care physician in Makkah towards about breast cancer screening.

It shows a high support for mammography screening by Saudi female doctors as 79- 80% of them reported that it is very effective in screening of women in the age groups 40-49 and 50+, respectively. In addition, almost two-thirds of them referred themselves patients for mammography. In a study conducted in Yemen,[20] almost a third of female physicians did not send patients for routine mammography screening. Also, in a study conducted by Bello et al. (2007),[21] he reported that 64% of the Nigerian doctors did not send asymptomatic women for screening. In Yemen,[20] they reported that the reason for non referral of asymptomatic women for mammogram screening was mainly the high cost. Similar findings reported by Bello et al2007 in which thirty-two doctors (23.7%) believed the cost is high.[21] This may be due to mammography screening service where it is neither provided free nor covered by the Ministry of Health; the high cost of mammography screening may influence the decision of the female doctors not to refer the patients for screening in the two countries. Similar to their findings were reported by Grady et al (1996)[22] where the cost of mammography is undoubtedly the major factor influencing the doctors' referrals. This fact is not the case in our study as mammography was provided free in Ministry of Health and other governmental hospitals (Armed forces and National Guard) in the Kingdom. This could explain the higher rate of referral in our study compared to the aforementioned studies.

In the present study, knowledge of female primary health physicians regarding BC screening recommendations was insufficient. The only significant factors for having sufficient knowledge was the physician`s position as specialists showed better knowledge than resident physicians and number of patients seen in a typical week as those seeing smaller number had better knowledge. Therefore, female primary care providers should be alerted to adhere to medical guidelines in breast cancer screening, especially residents.

The USPSTF now recommends against routine screening of women aged 40 to 49 years (C recommendation), recommends biennial screening mammography for all women aged 50 to 74years (B recommendation), and provides an I statement regarding screening of women older than 75 years. The USPSTF now recommends against teaching BSE (D recommendation), replacing the previous statement of insufficient evidence. The evidence for CBE continues to be assessed as insufficient. Digital mammography and MRI as screening tools were not addressed in the 2002 recommendation statement; the USPSTF concluded that the evidence is insufficient to assess the harms or benefits of these methods for screening.[23] In the current study, 53.2% and 38.7% of female physicians recommend mammography and BSE for routine BC screening for women age 40-49 years. For women aged 50 years and over, almost two-thirds of them (67.7%) recommend mammography whereas 50% and 45.2% recommend CBE and BSE respectively.

Women may rely on their primary care providers to provide adequate breast cancer screening, especially those who lack a supplemental gynecologist provider. Our findings suggested that most of female primary health care physicians had no enough time to discuss screening with patients and claimed that patients don`t want to discuss BC screening, having difficulty understanding the information given about BC screening, unaware of BC screening and don`t perceive BC as a serious health threat. The conclusion of that will be inadequate breast cancer screening. Because provider examinations and recommendations on preventive breast care are important predictors of compliance with mammography, our findings suggested that specialty-directed provider interventions may be an effective mechanism to improve adherence to guidelines.

LIMITATIONS

One of the study limitations is self-selection bias in which these doctors are better educated or more professionally involved than other doctors who refused to complete the questionnaire (our response rate was approximately 69.7%). The other limitation is that since this study was conducted in Ministry of Health primary health care centers in Makkah city and only the female doctors on duty were invited to participate, this study may not represent the entire female doctors in KSA.

In conclusion, the overall knowledge of female primary health care physicians in Makkah regarding breast cancer screening recommendations was mostly insufficient. Specialist physicians had better knowledge than residents. Those having smaller or average number of patients seen had better knowledge than those having high number of patients seen. There is a need to increase awareness among female health care providers of their role in the fight against breast cancer through focused education and training programs as they are the main health service providers for the community at large and have to be equipped for this important task.

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