RESEARCH ARTICLE

Mammography Screening Uptake among Female Health Care Workers in Primary Health Care Centers in Palestine - Motivators and Barriers

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Abstract

Background: Early detection remains the cornerstone of breast cancer control in terms of outcome and survival. Thus far the only breast cancer screening method proven effective is mammography. The awareness of female health care workers (HCW) about breast cancer prevention is of vital importance, as their beliefs and behavior may have a major impact on other women. This study was designed to assess mammography screening uptake among female healthcare workers at primary healthcare centers, and to identify the primary motivators and barriers that affect uptake results. Materials and Methods: A cross sectional study design was used to assess mammography screening by 299 female healthcare workers who completed a self-administered questionnaire that assessed demographics, screening uptake, motivators and barriers. Results: The mean age was 46 years (within age of risk). The majority (95.1%) demonstrated adequate knowledge about breast cancer and mammography screening and 50% of the participants reported having at least one mammogram; however only 21% of them had regularly scheduled mammograms. The most frequent reported motivator was the perceived benefit that early detection of breast cancer is important for its management (89.6%), followed by the belief that mammography can detect breast cancer before its symptoms appear (84.4%). On the other hand, the most frequent barrier reported was being busy (46.7%), followed by the lack of perceived susceptibility (41.5%). Conclusions: Mammography screening was found to be sub-optimal in a population of HCW's with 50 % stating that they received a mammogram at least once, and a minority reported regular screening. There is a pressing need for educational programs aimed at removing the barriers that limit compliance with recommendations for mammography screening, and to emphasize the importance of early detection in breast cancer treatment. Ensuring the availability and accessibility of screening services, particularly for healthcare workers within their work settings are other important factors that would improve the acceptance and compliance for mammography screening programs.

Keywords: Mammography screening - health care workers - uptake - motivators - barriers - Palestine

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Introduction

Breast cancer is the most common cancer in women (WHO, 2014), and is the second leading cause of cancer deaths among females; after Lung Cancer (American Cancer Society, 2014). Since 2008, estimates of the World Health Organization (WHO) showed that, worldwide, the incidence of breast cancer has increased by more than 20%, and mortality has increased by 14% (International Agency for Research on Cancer, 2013). It is the number one cancer in females and the number one cancer of all reported cancer cases in Palestine in 2014 (Palestinian Health Information Center, 2015).

Primary prevention is the best strategy to decrease breast cancer related morbidity and mortality, and early detection remains the cornerstone of breast cancer control in terms of outcome and survival (WHO, 2014). Currently the only breast cancer screening method that has proven to be effective is mammography (WHO, 2014).

A mammogram is an x-ray of the breast that uses a very small amount of radiation. A screening mammogram is used to look for breast diseases in women who have no present indication for breast problems (American Cancer Society, 2014). Combined results from randomized screening trials suggest that mammography reduces the risk of mortality from breast cancer by 15% to 20% (Pace et al., 2014; Loberg et al., 2015). Whereas studies of modern mammography screening programs in Europe found that the risk of breast cancer death was reduced by more than one-third (American Cancer Society, 2014).

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Early detection of breast cancer by mammography also leads to a greater range of treatment options (American Cancer Society, 2014).

The American Cancer Society (ACS) recommends that women receive an annual mammogram beginning at age 40 (American Cancer Society, 2014). In Palestine, a national program for mammography screening was initiated in 2009/2010 at Primary Health Care (PHC) Centers of the Palestinian Ministry of Health (MoH), providing mammography screening, free of charge, for females of the general population who are at age 40 or above. It was accompanied by a wide scale awareness campaign including lectures, workshops, posters… etc. However, despite all efforts, a large percentage of Palestinian women are not following the mammography screening recommendations.

Many studies have examined the role of health care workers (HCWs) such as physicians and nurses in promoting breast cancer screening (Trigoni et al., 2008; Akhigbe et al., 2009; Abdullah et al., 2011). The awareness of female HCWs about breast cancer prevention is of vital importance, as their beliefs and behaviors have an increased impact on other women (Akpinar et al., 2011; PAHO and WHO, 2014). Studies from developed countries have shown that attitudes and orientation of HCWs are critical determinants of the use of breast screening programs, and play an important role in creating an environment supportive of screening behaviors by offering positive role models (Akhigbe et al., 2009; Akpinar et al., 2011).

Several studies have identified a number of barriers that have a negative impact on mammography screening uptake. For example: embarrassment, cancer-related fear, being busy, fear of pain during procedure, and feeling under risk regarding breast cancer have all been indicated in presenting obstacles to women participating in mammography screenings (Lamyian et al., 2007; Kim et al., 2008; Akpinar et al., 2011; Abu-Helalah et al., 2015).

On the other hand, factors shown to encourage women to complete a mammography screening are knowledge and trust regarding early detection, personal responsibility for own health, family history of breast cancer, fear of cancer and its consequences, advice from family or friends, free screening services and convenient location, adequate medical recommendations, and confidence in mammography screening (Lamyian et al., 2007; Kim et al., 2008).

This study aimed to assess mammography screening uptake among female HCWs who were ≥40 years old at PHC centers of the Palestinian MoH in West Bank, and to identify the major motivators and barriers that impact mammography screening uptake among HCW's. To our knowledge, no previous study of this issue has been conducted in the West Bank.

Materials and Methods

This cross sectional study was conducted among female HCWs at PHC centers in West Bank from April 2015 to Aug 2015. The governorates were grouped into three regions; North, Middle and South West Bank.

The total number of eligible female HCWs was 656. Using the Raosoft Sample size calculator, the minimum sample size required to achieve the study objectives was249 female HCWs. An additional 50 subjects were added (≈20%) to compensate for non-or incomplete responses. The total number of questionnaires that were delivered was 299.

Study participants were selected using convenient sampling technique. However, great care was taken to select HCWs from all districts equal to their proportion in the total eligible study population. Participants who performed diagnostic mammography for a breast inflammation, suspected mass or other breast abnormalities were excluded from the study.

A self-administered, anonymous questionnaire was used as a study instrument. It was constructed based on a review of the literature related to breast cancer and mammography (Oche et al., 2012; American Cancer Society, 2014; WHO, 2014). The section on motivators and barriers affecting mammography screening participation was designed based on the constructs of the health belief model (Aboyoun, 2009; Boston University School of Public Health, 2013).

The instrument covered the following: *i*). Demographic data including participants: age, governorates, occupation, duration of employment, education, income, and marital status; *ii*). Knowledge about mammography screening (a total of 14 questions were included). For each correct answer a score of 1 was given (a score of 0 for incorrect answers). The total score ranged from 0-14. The scores were transformed into a percentage of correct answers. Those having less than 70% were considered to have poor knowledge, between 70-79% to have fair knowledge, and between 80-100% excellent knowledge; *iii*). The extent and regularity of mammography screening by female HCWs. In the assessment of regularity of mammography screening uptake, the ACS guidelines of 2014 were used as reference which recommends an annual mammogram to be done starting at the age of 40 (American Cancer Society, 2014); *iv*). The motivators and barriers influencing mammography screening uptake such as; embarrassment, cancer-related fear, being busy, feeling under risk regarding breast cancer, knowledge and trust about early detection, family history of breast cancer, and fear of cancer and its consequences.

Before using the questionnaire, it was pilot tested on a convenient sample of 20 female HCWs at the PHC center in the Nablus governorate to ensure clarity and ease of administration and to approximate the time required to complete the questions by participants. Refinements were made on the basis of feedback from the pilot test. Those who participated in the pilot test were excluded from the study.

Statistical Package for Social Sciences (SPSS) version 22 was used for data entry and analysis. Descriptive statistics of the responses were generated. Chi-square test was used to assess statistical significant difference between groups. P values of <0.05 were considered significant.

Ethical approval to conduct the study was obtained from the Institutional Review Board (IRB) of An-Najah National University. Approval from the Palestinian MoH was also obtained. The privacy and confidentiality of participants were assured. A written consent and study objectives were attached to each questionnaire, and the participants were informed that participation in the study was voluntary.

Results

In this study a total of299female HCWs were approached to assess their knowledge and compliance in the area of mammography screening. A total of 287participants completed and returned the questionnaire (response rate 96.1%). Additionally, 16 questionnaires were excluded due to the following reasons: 9 participants had breast pathology, 7 questionnaires were incomplete.

The mean age of the participants was 46 years (min-max: 40-59). Table 1 presents, in more details, the characteristics of the participants.

Knowledge about breast cancer and mammography screening was computed for each participant per percentage of correct responses. The results showed that 63.4% of the participants had excellent knowledge, 31.7% of them had a moderate level of knowledge, and 4.8% of them tested as poor.

Mammography screening uptake was reported by 50% of the female HCWs aged ≥ 40years. When viewing the frequency of mammography screening, 70% of the participants who had a mammogram indicated that they had only one. Furthermore, only 20.9% of those who had a mammogram screening did it regularly (Figure 1).

The factor that mostly motivated female HCWs to have a mammogram was the perceived benefit that early detection of breast cancer is important for its management (89.6%), followed by the perceived benefit that mammography can detect breast cancer before its symptoms appear (84.4%). On the other hand, the factor that mostly hindered female HCWs from having a mammogram was being busy (46.7%), followed by the lack of perceived susceptibility with (41.5%) believing that they are not at risk of developing breast cancer. Table 2 presents the most common motivators and barriers reported by the participants.

Mammography screening uptake was variable in relation of the characteristics of the participants (Table 3). Comparing Mammography screening uptake among participants, the results showed that about 63% of the Participants in South West Bank had had a Mammogram at least once, while the uptake was about 47% of the Participants in Middle West Bank, and 44.4% of the Participants in North West Bank, and those differences were statistically significant (P-value=0.04).

Doctors had mammography screening more than nurses. The uptake was higher among married participants. However, these differences between different groups were not found to be statistically significant.

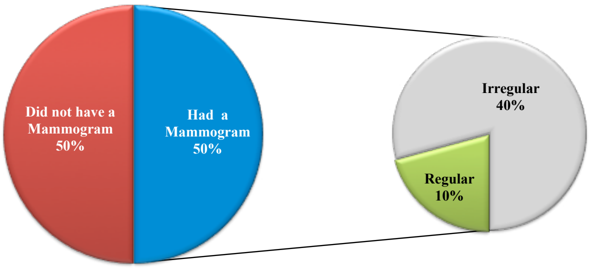

Figure 1. Mammography screening Uptake among FHCWs who are ≥ 40 years old (n= 271)

Table 1. Demographic Characteristics of the Participants (n=271)

Characteristic	No. (%)
Regions	
North West Bank	135 (49.8%)
South West Bank	72 (26.6%)
Middle West Bank	64 (23.6%)
Profession	
Doctors	15 (5.7%)
Nurses	229 (86.4%)
Other Professionals*	21 (7.9%)
Academic degree	
Diploma or less	160 (60.2%)
Higher education	106 (39.8%)
Duration of work in PHCs	
Less than 5 years	7 (2.6%)
5-10 years	14 (5.2%)
More than 10 years	248 (92.2%)
Marital status	
Single	19 (7.1%)
Married	239 (88.8%)
Divorced or widow	11 (4.1%)

*a*Other Professionals Include: pharmacists (8), and Lab technicians (13)

Discussion

Table 2. Motivators and Barriers for Mammography Screening

Motivators (n= 135)	Frequency (%)
Early detection of breast cancer is important for its management	121 (89.6%)
Mammogram can detect breast cancer before its symptoms appear	114 (84.4%)
Breast cancer is dangerous	95 (70.4%)
Ease of access to primary health care services	85 (63.4%)
Mammography is safe	82 (61.2%)
Mammography is free	78 (51.7%)
There is a probability that I might have a breast cancer	74 (54.8%)
One of my relatives had breast cancer	35 (26.1%)
Barriers (n= 136)	Frequency (%)
I'm very busy	63 (46.7%)
I don't think that I might have a breast cancer	56 (41.5%)
Health and sickness are determined by God	47 (34.8%)
I don't have symptoms	43 (31.9%)
I don't want to know whether I have breast cancer or not	36 (26.7%)
I'm very shy to expose my breasts	28 (20.7%)
Mammography is painful	23 (17%)
Mammography causes adverse effects	10 (7.4%)

Table 3. Characteristics of Participants in Relation to Mammography Screening Uptake (n=271)

Characteristic	Uptake	No uptake	P-value*
	n=135 (%)	n=136 (%)	
Regions			0.04
South West Bank	45 (62.5%)	27 (37.5%)	
Middle West Bank	30 (46.9%)	34 (53.1%)	
North West Bank	60 (44.4%)	75 (55.6%)	
Profession			0.5
Nurses	112 (48.9%)	117 (51.1%)	
Doctors	10 (66.7%)	5 (33.3%)	
Other Professionals	11 (52.3%)	10 (47.6%)	
Academic degree			0.62
Diploma or less	82 (51.3%)	78 (48.7%)	
Higher education	51 (48.1%)	55 (51.9%)	
Duration of work in PHCs			0.46
< 5 years	2 (28.6%)	5 (71.4%)	
5-10 years	8 (57.1%)	6 (42.9%)	
> 10 years	124 (50%)	124 (50%)	
Marital status			0.29
Single	7 (36.8%)	12 (63.2%)	
Married	124 (51.9%)	115 (48.1%)	
Divorced or widow	4 (36.4%)	7 (63.6%)	
Knowledge			0.84
Poor	6 (46.2%)	7 (53.8%)	
Fair	45 (52.3%)	41 (47.7%)	
Excellent	84 (48.8%)	88 (50.2%)	

* Chi-square test

For women of all ages at average risk, mammography screening was associated with a reduction in breast cancer mortality of approximately 20% (American Cancer Society, 2014). It is obvious that health will improve in a society where HCWs play an active role in health education and are a good role model in the society, especially for women (Trigoni et al., 2008; Akpinar et al., 2011; Fotedar et al., 2013).

According to the ACS and WHO, it is important to counsel women regarding breast cancer and the potential benefits, limitations, and harms of screening mammography (PAHO and WHO, 2014; Oeffinger et al., 2015).

According to the findings of the current study, 50% of female HCWs aged ≥ 40 years stated that they had had a mammogram for screening at least once, which was higher than the results of similar studies conducted in Nigeria/ urban city (3.1%) (Akhigbe et al., 2009), India (7%) (Fotedar et al., 2013), Tertiary Health Institution in Northern Nigeria (9%) (Oche et al., 2012), and Turkey (39.4%) (Akpinar et al., 2011). But lower than a tertiary hospital in Kuala Lumpur (80.3%) (Abdullah et al., 2011).

In studies performed among the general population aged ≥ 40 years in Turkey, mammography screening uptake was similar to that among female HCWs, indicating that despite their status as a health personnel, women were still resistant to screenings (Akpinar et al., 2011). Only 10.5% of the participants in the present study who were ≥40 had mammography screening regularly. This finding is consistent with studies, in the general population, which have shown that women do not have mammograms done on a regular basis (Amin et al., 2009; Parsa et al., 2010; Akpinar et al., 2011).

Comparison between the participants' knowledge and practice (actually having a mammogram screening) in this study indicated that there was a clear gap. Although the majority of the participants (91%) had adequate knowledge about breast cancer and mammography screening, only 50%of them had received a mammogram at least once in lifetime. It should be mentioned that although knowledge is essential for having mammography, it is not adequate, as was shown in this and other studies (Moodi et al., 2012; Oche et al., 2012; Fotedar et al., 2013).

According to the results of this study, there was no significant difference in compliance with mammography screening when comparing participants' profession, academic degree, duration of work at PHCs, and marital status.

An individual's perception, feelings and thoughts regarding health and illness, determine their psychological attitude and openness towards preventive health measures. If people are aware of a danger and believe they might be at risk, they are more likely to engage in a positive healthy behavior (Akpinar et al., 2011; Boston University School of Public Health, 2013).

Understanding the barriers to and facilitators of mammography screening by female HCWs is essential to overcome the low compliance. The results showed that the factor that mostly motivated a female HCWs to have a mammogram was the perceived benefit that early detection of breast cancer is important for its management (89.6%), followed by the perceived benefit that mammography can detect breast cancer before its symptoms appear (84.4%). However results of similar study conducted in Turkey revealed that the main reason for having mammography screening was perceived susceptibility (Akpinar et al., 2011). This detail is important to be taken into consideration when designing future breast cancer awareness campaigns and promotion programs in order to focus more on the specific patterns of motivation in Palestine.

The results showed that the factor that mostly hindered female HCWs from having a mammogram was being busy (46.7%), followed by the lack of perceived susceptibility as 41.5% believed that they were not at risk of developing breast cancer. Similar results were obtained in a study conducted in Iran, in which the primary barriers to taking action on screening were determined to be competing concerns, such as taking time to care for their families and hectic daily schedules (Lamyian et al., 2007).

Religious faith may act as a facilitating or a hindering factor for complying with mammography screening. In this study, 34.8% of the participants who had never had a mammogram indicated that faith in God was a barrier. This was similar to a study done in United Arab Emirates, in which faith in God attenuated the women's fear and reduced the perceived threat of breast cancer (Bener et al., 2002). Similar results were found in women of faith in the United States (Mitchell et al., 2002). Faith as a facilitating factor can be encouraged and supported by the health care system in health promotion messages that are tailored to appeal to those who have faith, that God wishes people to take responsibility for themselves (Mitchell et al., 2002; Lamyian et al., 2007).

Mammography screening uptake was significantly higher in South West Bank when compared to Middle West Bank and North West Bank (P-value= 0.04), where breast cancer awareness campaigns were conducted by a private organization during the year 2014.This could support the evidence that well organized awareness campaigns can positively affect people's behaviors

Despite the fact that the response rate was good, the current study has some limitations. All results were based on self-reported information therefore making it liable to self-desirability bias. However it is unlikely that participants spent time giving unreliable and biased views of their behaviors given the results, their level of professionalism, and the anonymity of the survey.

As the researchers did not have access to the entire list of names of HCW across Palestine, selecting the sample randomly was not possible, which could affect the generalization of the results.

In conclusion, mammography screening uptake of female HCWs aged ≥ 40 years was sub-optimal (50 % stating they had at least one mammography screening; of those, only 21% (10.5% of all participants) complied with regularly scheduled annual mammograms. Early detection of breast cancer is important for its management was reported as the main motivator to have a mammogram. On the other hand, the factor reported as most hindering female HCWs from having a mammogram was being busy, followed by the lack of perceived susceptibility.

A comprehensive, concerted joint effort should be initiated by healthcare institutions, voluntary organizations and regulatory authorities, to improve and sustain female HCWs compliance with mammography screening at optimal levels. Educational programs aimed at removing the barriers that limit compliance to recommendations for mammography screening uptake are strongly needed, with a greater emphasis on the important role of early detection of breast cancer.

Ensuring the availability and accessibility of mammography screening, particularly for HCWs at their work places are additional critical factors that would improve compliance with mammography screening programs.

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