

# Patients Satisfaction with the Breast Cancer Screening Program in King Abdulaziz Medical City, Jeddah

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## Abstract

**Background:** Breast cancer is the primary cause of cancer deaths among women worldwide. It is also the most prevalent malignancy among Saudi Arabian women, accounting for 25.8% of all female malignancies. A mammogram is a screening intervention that can detect breast cancer before clinical signs or symptoms are evident, and they can thus help decrease breast cancer-related mortality. In 2018, King Abdulaziz Medical City (KAMC) launched a pilot program for breast cancer screening among women  $\geq 40$ -year-old age. The present study's purpose was to assess patient satisfaction with this pilot program. **Materials and Methods:** A cross-sectional study was conducted in the Specialized Polyclinic of the Primary Healthcare Center of KAMC in Jeddah, Saudi Arabia, to assess women  $\geq 40$ -year-old age satisfaction with a new breast cancer screening program. Data analysis was conducted using Statistical Packages for Social Sciences (SPSS) software version 24.0. **Results:** A total of 209 patients met the inclusion criteria, and 141 of those (67.46%) consented to participate and included in the final analysis. Patients were mostly in the 51- to 60-year-old age range ( $n=61$ , 43.3%), and obese ( $n=79$ , 56.0%). Before mammography, the majority of patients expressed satisfaction with their appointment wait times (80.85%); they nonetheless experienced anxiety during the waiting (51.00%). During mammography, most patients felt comfortable in the physical environment of the examination room (weighted mean 4.19), including undressing themselves there (weighted mean 4.16). Overall, patients expressed satisfaction with their mammography experiences. **Conclusion:** The majority of patients expressed satisfaction with the breast cancer screening service provided. Two major aspects were shown to need further improvement: (1) Anxiety management for patients waiting for their appointment and (2) Public education campaigns to disseminate appropriate information among women about the importance of breast cancer screening.

**Keywords:** Breast cancer; Mammography; Screening primary health; Satisfaction

## Introduction

Breast cancer is the most frequently diagnosed cancer and is the primary cause of cancer deaths worldwide. [1] It is also the most prevalent malignancy among Saudi Arabian women, accounting for 25.8% of all female malignancies. [2] Breast cancer primarily develops initially in lobules or duct cells and more rarely in stromal tissues. Although a small percentage of breast cancer cases are due to inherited genetic abnormalities [3]. 85%-90% of breast cancer cases can be attributed to the aging process, and routine breast cancer screenings are essential among older women. Risk factors for breast cancer can be categorized into four different groups: 1) Family history of breast cancer (evident in about 15% of all breast cancer cases) [4]; 2) High breast density [5]; 3) Exposure to endogenous or exogenous hormones, related to either earlier menarche or later menopause [6]; and 4) Patient history of benign proliferative breast disease. [7]

Breast cancer screening programs offer several advantages, such as early detection, mortality reduction, and diagnosis confirmation. A mammogram is a screening intervention that

can detect breast cancer before clinical signs or symptoms are evident, and they can thus help decrease breast cancer-related mortality. [2] Although breast cancer screening programs can present some risks, such as false positives, overdiagnosis, and increased risk of radiation [8], the high incidence of breast cancer in Saudi Arabia suggests the need for a national screening program. In 2010, a study was conducted in Jeddah to assess local willingness to adopt a breast cancer screening program. Overall, 1,167 women had mammograms over 52 working days, indicating that breast cancer screening was considered socially acceptable. [9] However, another study conducted in 2013 assessed breast cancer screening practices among Saudi women  $\geq 50$  and found that 92% had never had a mammogram

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**How to Cite this Article:** Razaz MW, et al. Patients Satisfaction with the Breast Cancer Screening Program in King Abdulaziz Medical City, Jeddah. *Ann Med Health Sci Res* 11: S1 01-04.

and 89% had not had a clinical breast examination within the past year. [2] Public education campaigns and reassessments of existing screening programs' quality are therefore essential.

To this end, in 2018, King Abdulaziz Medical City (KAMC) launched a pilot program for breast cancer screening among women  $\geq$  40-year-old age. Initial patient assessments and mammogram referrals were conducted in the primary care center, while the mammogram themselves were performed in the main hospital. The present study's purpose was to assess patient satisfaction with this pilot program.

## Materials and Methods

A cross-sectional study was conducted in the Specialized Polyclinic of the Primary Healthcare Center of KAMC in Jeddah, Saudi Arabia, to assess patient satisfaction with a new breast cancer screening program. All women  $\geq$  40-year-old who underwent mammogram screening were eligible to participate unless they had been previously diagnosed with breast pathology. Of the 386 patients who were eligible and agreed to participate, 234 were randomly selected using Raosoft® software, accessed from [www.raosoft.com/samplesize.html](http://www.raosoft.com/samplesize.html). This sample size was used to achieve an estimated 95% confidence level with a  $\pm$  5% margin of error.

Patient data were collected from patients' electronic charts using the best care platform and assessed for patient eligibility. Verbal consent to participate in the study was obtained from all participants. All eligible participants who consented were then interviewed using the MammoGraphy Questionnaire [10], a pre-validated, structured interview questionnaire that consists of 20 questions assessing women's satisfaction perspectives on and feelings about the acceptability of a breast cancer screening program. Specifically, it considers patients' physical and psychological comfort with the procedures and their perceptions of staff skills and expertise, and the program's convenience. Participant responses are measured using a Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). In the present study, percentage, frequency, mean, and weighted

mean were used for data analysis, which was conducted using Statistical Packages for Social Sciences (SPSS) software version 24.0.

## Results

Of the 386 women who had mammography, 209 met the inclusion criteria, and 141 of those women (67.46%) consented to participate in the survey and were thus included in the final analysis. The largest number of patients were in the 51- to 60-year-old age range ( $n=61$ , 43.3%) and the majority were also obese ( $n=79$ , 56.0%). Most ( $n=102$ , 72.3%) had breastfed their children. Nine participants (6.4%) were currently taking contraceptives, and 12 participants (8.5%) had family histories of breast cancer. One participant (0.7%) smoked, and three participants (2.1%) were nulliparous. Full participant demographics are presented in Table 1.

Table 2 shows participants' responses to questions about their experiences before their mammography. Although the majority of participants disagreed with the statement "I had to wait for a long time for my appointment" ( $n=114$ , 80.85%; weighted mean 2.35), the waiting period nonetheless caused some participants to feel anxious ( $n=71$ , 51.00%; weighted mean 3.19). However, most participants strongly agreed with the statement that "the doctor explained the need for an early breast cancer screening" ( $n=96$ , 68%; weighted mean 4.18).

As shown in Table 3, participants also largely agreed with the statements that during mammography, "the examination room was comfortable" and "I was able to undress myself comfortably," which had weighted means of 4.19 and 4.16, respectively.

Table 4 shows that most participants ( $n=97$ , 68.79%) also agreed with the statements that "I was satisfied with the overall provided service" (weighted mean 4.31), "I was satisfied with the waiting time" (weighted mean 4.22), and "the doctor reported the results in a professional manner" (weighted mean 4.29). However, the majority ( $n=82$ , 58.15%) were still unwilling to recommend the examination to other women.

Table 1: Participants' demographics.

Demographics	Frequency (n)	Percentage (%)
<b>Age (52.51=mean age)</b>		
40 to 50 years old	51	36.2
51-60 years old	61	43.3
61-70 years old	12	8.5
above 70 years old	5	3.5
<b>Body mass index (BMI) (31.94=mean BMI)</b>		
Underweight= $<18.5$	0	0
Normal weight= $18.5-24.9$	17	12.1
Overweight= $25-29.9$	33	23.4
Obesity= $30$ or greater	79	56
Smoking	1	0.7
Family history of breast cancer	12	8.5
Using contraceptive	9	6.4
Nulliparous	3	2.1
Breastfeeding	102	72.3

**Table 2: Participants' experiences before the mammography.**

Items	(1) Strongly Disagree	(2) Disagree	(3) Don't Know	(4) Agree	(5) Strongly agree	Weighted Mean
The doctor explained the need for an early breast cancer screening.	0	6	1	96	38	4.18
Doing the scan in another center was a great concern for me.	2	44	4	80	6	3.32
I had to wait for a long time for my appointment.	1	114	7	13	6	2.35
I become anxious while I was waiting for the appointment.	0	59	3	71	7	3.19

**Table 3: Participants' experiences during the mammography.**

Items	(1) Strongly Disagree	(2) Disagree	(3) Don't Know	(4) Agree	(5) Strongly agree	Weighted Mean
It was easy to sign-in at the reception.	0	2	2	120	17	4.08
The staff told me all I wanted to know.	0	0	0	121	20	4.14
The staff used words that were easy to understand.	0	0	0	121	20	4.14
I felt free to ask about anything.	0	0	0	121	20	4.14
The examiner seemed to be professional.	0	1	0	118	22	4.14
I was able to undress comfortably.	0	1	0	116	24	4.16
The examination room was comfortable.	0	2	0	108	30	4.19
The examination made me feel embarrassed.	0	90	2	42	5	2.73
I was worried in case my body could be injured.	1	91	3	42	4	2.7
I found this examination painful.	0	83	1	50	7	2.87
I had to wait too long before getting the next appointment.	0	101	10	17	2	2.38
I will repeat this examination.	3	11	5	93	29	3.95
I would not advise others to do the examination.	30	26	1	82	2	3

**Table 4: Participants' experiences after the mammography.**

Items	(1) Strongly Disagree	(2) Disagree	(3) Don't Know	(4) Agree	(5) Strongly agree	Weighted Mean
I was satisfied with the waiting time before knowing the results.	1	1	2	98	38	4.22
The doctor reported the result in a professional matter.	0	1	0	97	42	4.29
I was satisfied with the overall provided service.	0	0	0	97	43	4.31

## Discussion

Mammography is still the primary tool used for early diagnoses of breast cancer [11,12]. It has been estimated that one death is prevented for every 250 women who undergo breast cancer screening [13]. However, several factors can affect women's willingness to participate in breast cancer screenings, including pain during or after the procedure, embarrassment, discomfort, fear, and inconvenience [14,15]. A greater understanding of these factors could help lead to the development of strategies to encourage women to participate in breast cancer screenings. Continuous evaluations of patient satisfaction are thus necessary to ensure that high standards of care are provided and enable modifications that better meet patient needs [16].

The present study sought to assess participants' satisfaction with a 2018 breast cancer screening program in KAMC. The survey assessed participants' perceptions of their physical and psychological comfort before, during, and after mammography,

their physician's skills and competence, and the screening's convenience. Although most participants expressed satisfaction with their appointment wait times, they nonetheless experienced anxiety during the waiting. This finding is consistent with Engelman et al., which observed that women wanted minimal wait times primarily so that they would have less time to worry [17]. Several other studies have also reported that patients deem wait times to be more acceptable when the actual appointment only takes 20 minutes and when they feel that the appointment is quick, organized, and efficient [18,19]; however, patients report more irritation when wait times extend significantly beyond a scheduled appointment [17]. Other literature has also indicated that women may experience negative emotions and psychological distress related to breast cancer screenings [20,21], including feeling worried and anxious about and unprepared for any possible negative results. This was most likely the case for most participants in the present study who expressed anxiety about waiting for their appointments. Also, some participants

expressed concern about experiencing pain or physical injury during the examination.

Patient perceptions of staff professionalism, competence, and communication have also been important for overall patient experiences of breast cancer screenings. For instance, one study about patient satisfaction among American Indian and Alaska Native women found that having a mammogram technologist who was perceived by patients as being friendly, knowledgeable, respectful, competent, and doing an excellent job of explaining the test was a determining factor in patients' overall satisfaction with their mammogram experiences [22]. Interventions to enhance the professionalism, empathy, and cultural awareness of mammogram technologists could improve patient satisfaction and compliance with screening procedures [23]. However, the present study found that participants were mostly satisfied with staff professionalism and communication skills, suggesting that these were not significant concerns for most participants.

The physical environment of breast cancer screening examinations and waiting rooms can also significantly affect overall patient satisfaction with mammography experiences [16,17]. Waiting rooms should ideally be perceived as neat, relaxing, and comfortable. They should offer a selection of current magazines, educational material, comfy chairs, and flowers to help put patients "at ease" [17]. However, while a cozy, personal, non-clinical atmosphere is essential for a comfortable waiting room, overly limited space is perceived as reducing patient privacy [19]. Engelman et al. also noted that poor breast cancer screening waiting room environments were overcrowded and mixed mammography patients with other patients and children [17]. In the present study, most participants stated that they felt comfortable in the physical environment of the examination room, including undressing themselves there.

## Conclusion

This study's results can serve as a basis for informing and improving future breast cancer screening delivery in KAMC-Jeddah. Although the majority of study participants expressed satisfaction with the overall breast cancer screening service provided, two significant aspects were shown to need further improvement: (1) Anxiety management for patients waiting for their appointment and (2) Public education campaigns to disseminate appropriate information among women about the importance of breast cancer screening, and that emphasizes the low risk of pain or injury during the screening. This could provide women with a better understanding of breast cancer screenings' benefits and risks, thereby improving their willingness to comply with medical recommendations for routine screenings.

## References

- Breast cancer. World Health Organization. 2018.
- El Bcheraoui C, Basulaiman M, Wilson S. Breast cancer screening in Saudi Arabia: free but almost no takers. *PLoS One*. 2015;10: e0119051.
- What Is Breast Cancer? 2018.
- Martin AM, Weber BL. Genetic and hormonal risk factors in breast cancer. *J Natl Cancer Inst* 2000;92: 1126-1135.
- Kerlikowske K, Shepherd J, Creasman J, Tice JA, Ziv E, Cummings SR. Are breast density and bone mineral density independent risk factors for breast cancer? *J Natl Cancer Inst* 2005;97: 368-374.
- Collins JA, Blake JM, Crosignani PG. Breast cancer risk with postmenopausal hormonal treatment. *Hum Reprod Updat*. 2005;11: 545-60.
- Wang J, Costantino JP, Tan-Chiu E, Wickerham DL, Paik S, Wolmark N. Lower-category benign breast disease and the risk of invasive breast cancer. *J Natl Cancer Inst* 2004;96: 616-20.
- Heywang-Köbrunner SH, Hacker A, Sedlacek S. Advantages and disadvantages of mammography screening. *Breast Care (Basel)* 2011;6: 199-207.
- Baslaim M, Baroum IH, Salman BA. Breast cancer screening program in Jeddah, Saudi Arabia: Is there a need for a national program?. *Int J Womens Health Wellness* 2016;2: 042.
- Brédart A, Kop JL, Fall M. Perception of care and experience of examination in women at risk of breast cancer undergoing intensive surveillance by standard imaging with or without MRI. *Patient Educ Couns* 2012;86: 405-413.
- Towards a strategy for cancer control in the eastern mediterranean region. 2009.
- Breast cancer screening' harming thousands. 2012.
- Independent UK Panel on breast cancer screening. The benefits and harms of breast cancer screening: An independent review. *Lancet*. 2012;380: 1778-1786.
- McNoe B, Richardson AK, Elwood JM. Factors affecting participation in mammography screening. *N Z Med J* 1996;109: 359-361.
- Orton M, Fitzpatrick R, Fuller A, Mant D, Mlynek C, Thorogood M. Factors affecting women's response to an invitation to attend for a second breast cancer screening examination. *Br J Gen Pract* 1991; 41: 320-322.
- Doyle CA, Stanton MT. Significant factors in patient satisfaction ratings of screening mammography. *Radiography*. 2002;8: 159-172.
- Engelman KK, Cizik AM, Ellerbeck EF. Women's satisfaction with their mammography experience: results of a qualitative study. *Women Health* 2005;42: 17-35.
- Drossaert CH, Boer H, Seydel ER. Monitoring women's experiences during three rounds of breast cancer screening: results from a longitudinal study. *J Med Screen* 2002;9: 168-175.
- Hamilton EL, Wallis MG, Barlow J, Cullen L, Wright C. Women's views of a breast screening service. *Health Care Women Int* 2003;24: 40-48.
- Breast cancer screening 'no longer justified' and causes 7,000 women a year to have unnecessary diagnosis. 2012.
- Montgomery M, McCrone SH. Psychological distress associated with the diagnostic phase for suspected breast cancer: systematic review. *J Adv Nurs* 2010;66: 2372-2390.
- Ndikum-Moffor FM, Braiuca S, Daley CM, Gajewski BJ, Engelman KK. Assessment of mammography experiences and satisfaction among American Indian, Alaska Native women. *Womens Health Issues* 2013;23: e395-402.
- Brett J, Bankhead C, Henderson B, Watson E, Austoker J. The psychological impact of mammographic screening. A systematic review. *Psychooncology* 2005;14: 917-38.