



Original Article

ISSN : 2277-3657
CODEN(USA) : IJPRPM

Practice, Perception and Satisfaction Regarding Mammography among Saudi Females

Bandar Salem Mana Alhindi^{1*}

¹College of Medical Science, University of Bisha, Saudi Arabia.

*Email: Awshaemah@gmail.com

ABSTRACT

The leading cause of death for women in developing nations is breast cancer. Mammography is a reliable screening technique for detecting breast cancer in its early stages. To measure Saudi females' satisfaction, perception, and level of practice regarding their mammography experience. Between January 2021 and March 2021, a descriptive cross-sectional study was conducted. Participants' information was gathered using an electronic pre-structured questionnaire. Through the use of social media, it was posted online. Everyone who could participate in the study and was eligible was asked to complete the attached form. Exact of 270 (66.7%) of the females underwent mammography. Generally, 58.1% of the females were highly satisfied regarding their mammography experience, while only 13.7% had a poor satisfaction level. The current study revealed that women's levels of mammography practice and satisfaction were moderate (more than half were satisfied and about two thirds had underwent mammography). Also, women's intent to undergo mammography for breast cancer screening was also less than expected due to stress feelings and long distance.

Key words: *Practice, Perception, Satisfaction, Mammography, Saudi females*

INTRODUCTION

Breast cancer is nearly 25% of all cancers with an average annual incidence of about 1.7 million new cases [1]. The number of newly diagnosed cases of breast cancer is highest in developed nations, with rates ranging from 92 per 100,000 in North America to 27 per 100,000 in Eastern Asia and the Middle of Africa [1]. The leading cause of death for women in developing nations is breast cancer, which is also the fifth leading cause of death for all cancers [2]. Breast cancer is a common malignancy in Saudi Arabian women. According to estimates, 21.8 percent of Saudi females will develop breast cancer [3]. Breast cancer is the ninth-leading cause of death among Saudi women, according to recent studies assessing cancer-related mortality [4-6]. In a study conducted by Al-Qahtani *et al.*, it was discovered that breast cancer is the second most prevalent malignancy in Saudi women [7]. Muhammad *et al.* However, Ibrahim *et al.* predict that as the population ages and grows, breast cancer incidence in Saudi Arabia will increase over the coming decades [8].

Regular screening for early breast cancer detection is a highly significant predictor of higher survival rates [9, 10]. Recent studies have confirmed the importance of mammography as a screening tool for early breast cancer detection in asymptomatic women. With reductions of 20% to 35%, it has been the most effective method for reducing disease-related mortality, especially in women 50 years or older [11-14]. On the other hand, these studies revealed that study women practiced mammography at various rates [11]. The national Saudi Health Interview Survey (NSHIS) in 2015 revealed a very low rate of MS utilization as 92 percent of eligible women reported not having a mammogram in the previous year, despite the fact that mammography screening has been established

throughout Saudi Arabia since 2005 [15]. The purpose of the current study was to evaluate Saudi females' practice levels, perceptions of the procedure, and levels of satisfaction.

MATERIALS AND METHODS

Between January 2021 and March 2021, a descriptive cross-sectional study was conducted among Saudi women to evaluate practices, perceptions, and female satisfaction regarding mammography. The study survey was distributed to 500 females in total. A total of 405 respondents completed the survey, with an 81 percent response rate. Data collection began after receiving approval from the institutional ethics committee. Participants' information was gathered using an electronic pre-structured questionnaire. Following a thorough literature review and expert consultation, the researchers created the questionnaire. A panel of three experts examined the questionnaire for validity and applicability. The satisfaction and perception section of the pilot study with 15 participants yielded a reliability coefficient (α -Cronbach's) of 0.71. The following information was included in the survey: Age, marital status, employment, education, and family history of breast cancer are examples of sociodemographic information about women. The second section discussed mammography screening practices for women. Nine questions in the third section used a Likert scale with a range of 1-6 points to gauge how satisfied females were with mammography. The last section discussed how women perceive their mammogram experiences. Between January 1 and March 15, 2021, the researchers and their friends uploaded the questionnaire to the internet using social media platforms. Everyone who could participate in the study and was eligible was asked to complete the attached form.

Data analysis

The data was revised, coded, and fed into the statistical software IBM SPSS version 22 after being extracted (SPSS, Inc., Chicago, IL). Use of two-tailed tests was applied to all statistical analysis. P value less than 0.05 was considered statistically significant. The discrete summation of the various items' discrete scores was computed for the satisfaction items. A female with a score of less than 50% of the total score was considered to have poor satisfaction, a score of 50- <75% of the total score was considered fair satisfaction, and a score of 75% of the total score was considered to have high satisfaction. All variables, including demographic information, mammogram screening practice, frequency and challenges faced by women, and satisfaction with the screening experience, were subjected to a descriptive analysis based on frequency and percent distribution. Crosstabulation was used to determine the distribution of females' satisfaction with their mammogram experiences based on their individual and perceptual information. Because the frequencies were so low, relationships were tested using an exact probability test.

RESULTS AND DISCUSSION

405 females participated in the study and answered the questionnaire. The average age of the females, who ranged in age from 40 to 69, was 42.9 ± 12.7 years. A total of 319 women (78.8%) were married, compared to 40 (9%), who were unmarried. In terms of education, 243 (60%) of the female population had a university degree, but 247 (61%) were housewives, and 139 (34.3%) were employed. A total of 151 (37.3%) females with monthly incomes under 5000 Sr and 295 (72.8%) without health insurance. Among 25.9% of females, breast cancer in the family had been reported (**Table 1**).

Table 1. Bio-demographic data of study females, Alhasa, Saudi Arabia

Bio-demographic data	No	%
Age in years		
40-45	214	52.8%
46-50	100	24.7%
51-60	76	18.8%
> 60	15	3.7%
Marital status		
Single	40	9.9%
Married	319	78.8%

Divorced / widow	46	11.4%
Educational level		
Below secondary	78	19.3%
Secondary	84	20.7%
University / above	243	60.0%
Work		
Housewife	247	61.0%
Working	139	34.3%
Retired	19	4.7%
Income		
< 5000 SR	151	37.3%
5000-10000 SR	115	28.4%
> 10000 SR	139	34.3%
Health insurance		
No insurance	295	72.8%
Private	110	27.2%
Family history of cancer breast		
Yes	85	21.0%
May be	20	4.9%
No	300	74.1%

Table 2 shows reported practice regarding mammography among surveyed females in Alhasa, Saudi Arabia. Exact of 270 (66.7%) of the females underwent mammography. It was for 2 years or less among 50% of those females, while 17.8% had underwent the test more than 5 years ago. Exactly 33.7% of women underwent mammograms once and 23% annually. Regarding the problems of women undergoing mammogram, long distance was reported by 12.2% of women, transportation problems (8.9%), while 68.5% had no problems. Exact of 155 (57.4%) of the females who underwent mammography were stressed before doing the test.

Table 2. Reported practice regarding mammography among females in Alhasa, Saudi Arabia

Mammogram practice	No	%
Previously underwent mammogram		
Yes	270	66.7%
No	135	33.3%
Duration since last mammogram (n=270)		
< 2 years	135	50.0%
3 years	56	20.7%
4 years	31	11.5%
5 or more years	48	17.8%
Frequency of mammogram (n=270)		
Irregularly	80	29.6%
One time	91	33.7%
Annually	62	23.0%
Every two years	37	13.7%
Had difficulties reaching investigation setting (n=270)		
None	185	68.5%
Long distance	33	12.2%
Transportation problems	24	8.9%
Others	28	10.4%
Suffered from stress before doing the test? (n=270)		

Yes	155	57.4%
No	115	42.6%

Table 3 illustrates satisfaction among study females regarding mammography Experience in Alhasa, Saudi Arabia. The highest satisfaction score was for the fact that privacy was maintained during the examination (4.76 out of 6), followed by satisfaction level regarding the test result report (4.62 out of 6), radiology technician co-operation (4.60 out of 6), and security cooperation (4.59), while the least satisfaction was for the feeling of stress caused by the tool (3.74 out of 6). Totally, the females mean satisfaction score was 39.1 out of 54 (72.4%). Generally, 58.1% of the females were highly satisfied regarding their mammography experience, while only 13.7% had a poor satisfaction level (**Figure 1**).

Table 3. Satisfaction among study females regarding mammography Experience, Alhasa, Saudi Arabia

Satisfaction items	Range	Mean	SD
Security cooperation	1-6	4.59	1.54
Radiology technician co-operation	1-6	4.60	1.52
Privacy is maintained during the examination	1-6	4.76	1.54
The radiologist provides you with sufficient information about the examination	1-6	4.06	1.70
The feeling of stress caused by the tool	1-6	3.74	1.62
Stress while waiting for the test result	1-5	3.93	1.62
Satisfaction regarding the waiting time to obtain the test result	1-6	4.16	1.67
Satisfaction level regarding the test result report	1-6	4.62	1.59
General satisfaction regarding the examination procedure as a whole	1-6	4.57	1.53
Overall satisfaction score	9-54	39.1	11.6

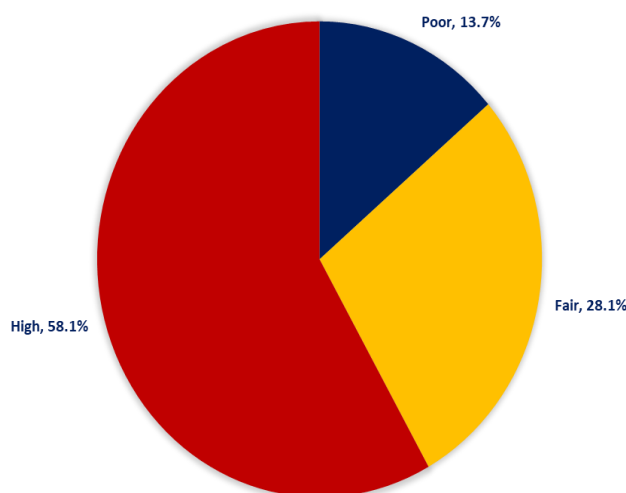


Figure 1. Overall Mammography Experience Satisfaction among Saudi Females, Alhasa region

Table 4 reveals females' perception and decision regarding mammography experience. On asking about "What bothered you the most during the examination", 165 (61.1%) females said "nothing", while 11.9% talked about pain sensation due to the procedure, 11.5% talked about pressure on their breast, 9.6% reported fear of the process, and 1.5% were shy due to being bared.

Table 4. Females' perception and decision regarding mammography experience

Mammography experience perception	No	%
What bothered you the most during the examination		
None	165	61.1%
Pain	32	11.9%
Pressure on breast	31	11.5%
Fear	26	9.6%
Mammogram machine	6	2.2%
Others	6	2.2%
Being shy due baring	4	1.5%
Based on your experience, will you ever have the mammogram done again?		
Yes	179	66.3%
May be	63	23.3%
No	28	10.4%

Table 5 reveals the distribution of females' satisfaction regarding mammography experience by their personal and perception data. In the married female group, 63.7 percent reported high satisfaction, compared to 46.7 percent of the single group, with statistical significance ($P=.003$). Additionally, 68.7% of females with private insurance reported high levels of satisfaction compared to 53.5% of those without insurance ($P=.019$). Exact of 62% of females who intended to undergo the experience again were highly satisfied compared to 46.4% of those who will not ($P=.049$). All other factors were insignificantly related to the satisfaction level of female.

Table 5. Distribution of females' satisfaction regarding mammography experience by their personal and perception data

Factors	Overall satisfaction level				P-value
	Poort / fair		High		
	No	%	No	%	
Age in years					
40-45	47	42.0%	65	58.0%	.133
46-50	29	38.2%	47	61.8%	
51-60	27	39.7%	41	60.3%	
> 60	10	71.4%	4	28.6%	
Marital status					
Single	14	51.9%	13	48.1%	.003*
Married	74	36.3%	130	63.7%	
Divorced / widow	25	64.1%	14	35.9%	
Educational level					
Below secondary	32	53.3%	28	46.7%	.115
Secondary	24	40.7%	35	59.3%	
University / above	57	37.7%	94	62.3%	
Work					
Housewife	70	41.2%	100	58.8%	.956
Working	36	42.9%	48	57.1%	
Retired	7	43.8%	9	56.3%	
Health insurance					
No insurance	87	46.5%	100	53.5%	.019*
Private	26	31.3%	57	68.7%	
Family history of cancer breast					.926

Yes	37	43.5%	48	56.5%	
May be	8	40.0%	12	60.0%	
No	68	41.2%	97	58.8%	
Based on your experience, will you ever have the mammogram done again?					
Yes	68	38.0%	111	62.0%	.049*
May be	30	47.6%	33	52.4%	
No	15	53.6%	13	46.4%	

P: Exact probability test

* P < 0.05 (significant)

The current study aimed to evaluate satisfaction with mammography experience among Saudi females in Al-Asha city. Also, to detect the impact of their experience in seeking mammogram examination again. The concept of patient satisfaction is a personal and individualized one. The term "satisfaction" refers to a patient's positive assessment of the medical care they receive, and it implies that this assessment is influenced by how well the service meets the patients' expectations [16]. In breast screening, the issue of patient satisfaction is particularly important because women who appear to be in good health and who are not motivated by illness are invited to the examination [17, 18]. According to Marshall *et al.*, half of females who skip subsequent mammography screening exams cite their first visit experience as the primary deterrent [19, 20]. Pain and discomfort were the main reasons for not going. Although stress and embarrassment were also linked to absences, they paled in significance next to pain. Women's decisions to return to the center are thus influenced by their memories of their prior experiences there. Therefore, satisfaction is a sign of later compliance [21].

More than two-thirds of the study's female participants had previously underwent mammography screening, with half having done so within the previous two years, according to the current research. Also, one third of the females underwent mammography screening irregularly, but one fifth did it annually. The main reported difficulties were related to distance and transportation to the screening setting, and stress was reported by more than half of the females. In contrast to the findings of Qin *et al.* who found that 14.3 percent of females had ever had a mammogram, this estimated practice for mammography screening was much higher [22]. Women aged 35 to 39 years old had the highest prevalence of mammography use (31 percent). According to a second survey of Arab Americans, about 58 percent said they had a mammogram every one to two years, and 70 percent had one at some point [23]. The percentage of women between the ages of 40 and 75 who had a mammogram in Saudi Arabia was 4.9%, compared to 8.9% in Oman, 13.9% in the UAE, and 14.6% in Kuwait [24]. Marital status, wealth, education, nationality, and place of residence are all related to screening uptake, with the unmarried, poor, and those with lower levels of education having the lowest uptake rates [25].

Considering mammography experience satisfaction among the study females, it was clear that more than half of the females were highly satisfied regarding their experience while only 13% had poor satisfaction. The highest satisfaction areas were for setting privacy, reporting provisions, and manpower cooperation, including security and radiologist attitude. The main factors that bothered females during their examination were pain due to the screening procedure and fear. Regardless of their pain and due to their high satisfaction, more than 80% of the females showed their intention to repeat the experience again. Satisfaction was higher among married females than in the single group, which makes sense given that married females may have undergone the procedures multiple times and are aware of the expected difficulties and procedure sequence. Also, females who had insurance in the private sectors showed higher satisfaction, mostly due to the high quality of provided services, less waiting time, more privacy, and more staff cooperation. As for the intention to repeat the experience, the more satisfied group showed a higher intention to do it again. In order to gauge patient satisfaction with the King Abdulaziz Medical City's breast cancer screening program, Wali *et al.* conducted a study in Jeddah [26]. Prior to mammography, the majority of patients (80.9%) expressed satisfaction with their appointment wait times; however, they felt anxious while they waited (51 percent). Most patients felt at ease in the examination room's physical surroundings during mammography (weighted mean 4.19), which included undressing there (weighted mean 4.16). Patients were generally happy with their mammography experiences. Numerous studies also showed that a variety of factors, such as pain during or following the procedure, embarrassment, discomfort, fear, and inconvenience, can affect women's readiness to participate in breast cancer screenings [27, 28]. A deeper comprehension of these elements might aid in the creation of tactics to motivate women to take part in breast

cancer screenings. Therefore, ongoing assessments of patient satisfaction are required to guarantee the provision of high standards of care and enable adjustments that better meet patient needs [29].

CONCLUSION

The current study concluded that women had a moderate level of mammography practice and satisfaction (more than half were satisfied and about two thirds underwent mammography). Also, women intent to undergo mammography for breast cancer screening was also less than expected due to stress feeling and the long distance. Improved women's knowledge, attitudes, and screening mammography practices are crucial for the successful fight against breast cancer. This includes encouraging behaviour changes in women and health professionals, particularly those who provide care to the underprivileged.

ACKNOWLEDGMENTS : None

CONFLICT OF INTEREST : None

FINANCIAL SUPPORT : None

ETHICS STATEMENT : Permission to conduct the study was obtained from the Research Ethics Committee of the Directorate of Health Affairs, Najran, Saudi Arabia.

REFERENCES

1. Huang J, Chan PS, Lok V, Chen X, Ding H, Jin Y, et al. Global incidence and mortality of breast cancer: a trend analysis. *Aging (Albany NY)*. 2021;13(4):5748.
2. Li NA, Deng Y, Zhou L, Tian T, Yang S, Wu Y, et al. Global burden of breast cancer and attributable risk factors in 195 countries and territories, from 1990 to 2017: results from the Global Burden of Disease Study 2017. *J Hematol Oncol*. 2019;12(1):1-2.
3. Alotaibi RM, Rezk HR, Juliana CI, Guure C. Breast cancer mortality in Saudi Arabia: Modelling observed and unobserved factors. *PloS one*. 2018;13(10):e0206148.
4. Registry N. Cancer Incidence Report Saudi Arabia 2002. Riyadh; 2007.
5. Lozano R, Naghavi M, Foreman K, Lim S, Shibuya K, Aboyans K. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012;380(9859):2095-128.
6. Mokdad AH, Jaber S, Aziz MI, AlBuhairan F, AlGhaithi A, AlHamad NM. The state of health in the Arab world, 1990-2010: an analysis of the burden of diseases, injuries, and risk factors. *Lancet*. 2014;383(9914):309-20.
7. Al-Qahtani MS. Gut metastasis from breast carcinoma. *Saudi Med J*. 2007;28(10):1590-2.
8. Ibrahim EM, Zeeneldin AA, Sadiq BB, Ezzat AA. The present and the future of breast cancer burden in the Kingdom of Saudi Arabia. *Med Oncol*. 2008;25(4):387-93.
9. Kalager M, Zelen M, Langmark F, Adami HO. Effect of screening mammography on breast-cancer mortality in Norway. *N Engl J Med*. 2010;363(13):1203-10.
10. Bleyer A, Welch HG. Effect of three decades of screening mammography on breast-cancer incidence. *N Engl J Med*. 2012;367(21):1998-2005.
11. Humphrey LL, Helfand M, Chang BK, Woolf SH. Breast cancer screening: a summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med*. 2002;137(5 Part 1):347-60.
12. Nyström L, Andersson I, Bjurstam N, Frisell J, Nordenskjöld B, Rutqvist LE. Long-term effects of mammography screening: updated overview of the Swedish randomized trials. *Lancet*. 2002;359(9310):909-19.
13. Elmore JG, Armstrong K, Lehman CD, Fletcher SW. Screening for breast cancer. *JAMA*. 2005;293(10):1245-56.
14. Niell BL, Freer PE, Weinfurter RJ, Arleo EK, Drukteinis JS. Screening for breast cancer. *Radiol Clin*. 2017;55(6):1145-62.
15. El Bcheraoui C, Basulaiman M, Wilson S, Daoud F, Tuffaha M, AlMazroa MA, et al. Breast cancer screening in Saudi Arabia: free but almost no takers. *PLoS One*. 2015;10(3):1-10.

16. Mahon PY. An analysis of the concept 'patient satisfaction' as it relates to contemporary nursing care. *J Adv Nurs.* 1996;24(6):1241-8.
17. Ng JH, Luk BH. Patient satisfaction: Concept analysis in the healthcare context. *Patient Educ Couns.* 2019;102(4):790-6.
18. Calong KA, Soriano GP. Caring behavior and patient satisfaction: Merging for satisfaction. *Int J Caring Sci.* 2018;11(2):697-703.
19. Marshall G. The radiographer's role in ensuring women reattend breast screening programmes. *Radiogr Today.* 1993;59(676):17-8.
20. Marshall G. A comparative study of re-attenders and non-re-attenders for second triennial National Breast Screening Programme appointments. *J Public Health Med.* 1994;16(1):79-86.
21. Bakker DA, Lightfoot NE, Steggle S, Jackson C. The experience and satisfaction of women attending breast cancer screening. *Oncol Nurs Forum.* 1998;25(1):115-21.
22. Qin J, White MC, Sabatino SA, Febo-Vázquez I. Mammography use among women aged 18–39 years in the United States. *Breast Cancer Res Treat.* 2018;168(3):687-93.
23. Schwartz K, Bartoces M, Fakhouri M. Mammography screening prevalence and predictors among Arab American women in metropolitan Detroit. *AACR International Conference: The Science of Cancer Health Disparities.* 2007.
24. Alshammari SA, Alhazmi AM, Alenazi HA, Alshammari HS, Alshahrani AM. Mammography uptake among the female staff of King Saud University. *J Fam Med Prim Care.* 2020;9(1):221.
25. So VH, Channon AA, Ali MM, Merdad L, Al SS, Al HS, et al. Uptake of breast and cervical cancer screening in four Gulf Cooperation Council countries. *Eur J Cancer Prev.* 2019;28(5):451-6.
26. Wali RM, Alganawi AM, Alzahrani AA, Ibrahim AB, Mahdi MM, Alloqmani RM, et al. Patients Satisfaction with the Breast Cancer Screening Program in King Abdulaziz Medical City, Jeddah. *Ann Med Health Sci Res.* 2021.
27. McNoe B, Richardson AK, Elwood JM. Factors affecting participation in mammography screening. *N Z Med J.* 1996;109(1030):359-61.
28. 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(349):320-2.
29. Doyle CA, Stanton MT. Significant factors in patient satisfaction ratings of screening mammography. *Radiography.* 2002;8(3):159-72.