

Knowledge, Attitude, and Practice of Breast Self-Examination Among Adult Females in Bisha, Saudi Arabia

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ABSTRACT

Objective: This study aims to assess the knowledge, attitude, and practice of BSE among adult females living in Bisha city.

Methods: A cross-sectional study was conducted between May and July 2022 among adult females in Bisha City by using a self-administered questionnaire developed based on similar previous studies.

Results: Four hundred and ninety-nine respondents participated in this study, of which 467 women fulfilled the inclusion criteria (response rate = 93.6 %). The mean age of our sample was 36.3 (SD ± 8.77) years. The cumulative frequency of a good level of awareness was (74.74%). The level of the good attitude toward BSE was (77.09%), unlikely, the good practice was only (49.04%). Only marital status showed a significant association with the high level of knowledge among married women (P= 0.022). Occupational existence is associated with a good level of attitude and practice of BSE (P= 0.025) and (P= 0.044) respectively.

Conclusions: We found a low practice of BSE, most of the participants didn't perform BSE or perform it irregularly. We believe in promoting BSE in our community as a need to raise the practice of BSE among our population in the future.

Keywords: Breast cancer, Breast self-examination, Screening, Saudi Arabia

INTRODUCTION

Breast cancer (BC) is responsible for 685 thousand deaths and 2.26 million cases worldwide in 2020¹. Internationally, regionally, as well as locally, breast cancer is the most common of all cancers. In the Kingdom of Saudi Arabia (KSA), breast cancer is the most common cancer among women². According to the Saudi Cancer Registry (SCR) in 2017, breast cancer ranked first among women in Saudi Arabia as it represented 18.1% of all newly diagnosed cancers and 32.2% of all cases reported among adult women³.

Early detection of breast cancer is essential for treating the disease, raising the potential for cure by over 95%, and reducing mortality by up to 30%². More than half of breast cancer cases in KSA were detected at late stages, compared to developed countries². This caused higher breast cancer mortality, less potential for cure, as well as higher treatment cost. As a result, most people, unfortunately, presented after the condition became symptomatic.

Breast self-examination (BSE) is one of the methods that helps females to report any abnormalities in their breasts in the early stages to do further diagnostic evaluation and it is suitable for young females in their early 20s⁴. BSE could be done by a female by looking and feeling her own breast for any swelling, lumps, or abnormal changes. BSE, clinical breast examination, and mammography were the three main screening methods that used for breast cancer screening in KSA⁵. Mammography was the preferred approach for detecting breast cancer at any stage. However, because of its high cost and limited access in the

peripheral area, BSE is a convenient and cost-effective method but less accurate⁶. BSE is recommended to be practiced routinely monthly for all adult women 18 years and older⁶. Fortunately, about 25% of the BC cases⁴, and more than 65% of breast masses could be detected in early stages by BSE⁷. It was used to be a diagnostic approach because it was an effective, safe, and non-invasive method⁶. BSE had a role in raising females' knowledge of breast masses and risk factors of Breast cancer⁸.

In KSA, about 73% of cases were diagnosed at an advanced stage, compared with 30% of cases in developed countries⁹. Up to date, knowledge and practice of BSE among adult females who is living in Bisha has not been assessed. This study aims to assess the knowledge, attitude, and practice of BSE among adult females living in Bisha, Saudi Arabia.

METHODS AND MATERIALS

Study Design and Participation: This cross-sectional study was conducted between June and August 2023. Bisha governorate is located in Asir region, in the southern part of Saudi Arabia. The population in this area was about 204,491 according to the General Saudi Authority for Statistics in 2017, and about 48% of them were females¹⁰. The study participants were Saudi adult females aged 18 – 60 years living in Bisha city, and willing and agreed to participate in this study. We excluded any subjects younger than 18 years or older than 60 years, and who lived outside Bisha city. By using a non-random convenient sampling technique because of limited time and manpower, the sample size was calculated by using online open-source software [Sample Size

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Calculator by Raosoft]. The minimum sample size was 383 subjects at 95% confidence level and 5% margin of error.

Data collection: Data were collected through self-administered questionnaires developed based on similar previous studies^{11,12}. The questionnaire was designed by using the Google Form platform and was distributed online through local WhatsApp groups and we used social influencers to promote the participation among local people. All participants reported their sociodemographic data and then answered questions that assessed their knowledge, attitude, and practice about BSE.

Measure

Sociodemographic information: Demographic variables included age, marital status (single, married, divorced, widowed), occupation (housewife, businesswoman, student, employed, or not working), marital status (married, single, widowed, or divorced), educational level (primary, intermediate, secondary, university, or postgraduate). BSE knowledge, attitude, and practice

A total of 26 questions measure the knowledge, attitude, and practice. One point was given for each correct answer, and zero point was given for each incorrect or uncertain answer. The knowledge aspect was evaluated by twelve questions, participants with knowledge scores \geq nine points were considered to have excellent knowledge (quite understood), a score between eight and five points was considered average (generally understood), and \leq four points was considered poor (did not understand). The attitude section was evaluated by nine questions, \geq five points were considered to have a good attitude, and \leq four points were considered a poor attitude. Finally, the practice section was assessed by five questions, \geq three points were considered to have good practice, and \leq two points were considered poor practice.

Data analysis: Data entry and statistical analyses were conducted by using SPSS (Statistical Package of Social Sciences) version 23 (SPSS Inc., Chicago, IL, USA). Descriptive analyses were conducted by calculating frequencies, percentages, means, and standard deviations (SD). Chi-square test (χ^2) was used to measure the association between sociodemographic factors and knowledge, attitude, and practice about BSE. The P-value of less than 0.05 was considered statistically significant.

Ethical clearance: Ethical clearance was obtained from the local permanent committee of bioethics research - University of Bisha with Ref No.: UB-RELOC H-06-BH-087/ (0601.23). Electronic informed consent was obtained from each participant prior to starting the investigation. To assure anonymity, participant's names were not collected. They could withdraw from the survey at any moment without providing any justification.

RESULTS

Four hundred and ninety-nine respondents participated in this study, of which 467 women fulfilled the inclusion criteria (response rate = 93.6 %). The mean age of our sample was 36.3 (SD \pm 8.77) years. Most of the participants were employed 239 (51.18%), housewives 132 (28.27%), students 54 (11.56%), not working 36 (7.71%), and businesswomen 6 (1.28%). The majority were married 360 (77.1%), singles 72 (15.42%), divorced 29 (6.21%), and widowed 6 (1.28%), as shown in Table 1.

Table 1. Sociodemographic data

Variable	Categories	Frequency	Percent
Age	Mean \pm SD	36.31 \pm 8.77	
	Housewife	132	28.27
	Businessperson	6	1.28
Occupation	Student	54	11.56
	Employed	239	51.18
	Not Work	36	7.71
	Married	360	77.09
Marital Status	Single	72	15.42
	Widowed	6	1.28
	Divorced	29	6.21
	Primary	19	4.07
Educational Level	Intermediate	15	3.21
	Secondary	86	18.42
	University	322	68.95
	Postgraduate	25	5.35

The levels of knowledge, attitude, and practice toward BSE are shown in Table 2. The cumulative frequency of a good level of awareness was (74.74%). The level of a good attitude toward BSE was (77.09%), unlikely, the good practice was only (49.04%).

Table 2. Levels of Knowledge, Attitude, and Practice toward BSE

Variable	Levels	Frequency	Percent
Knowledge level	Poor	118	25.27
	Average	207	44.33
	Excellent	142	30.41
Attitude level	Poor	107	22.91
	Good	360	77.09
Practice Level	Poor	238	50.96
	Good	229	49.04
Total		467	100.00

Table 3. The association between the Knowledge about breast self-examination (BSE) and sociodemographic variables

Variable	Categories	Good Knowledge n (%)	Poor Knowledge n (%)	Exp(B)	CI	P value
Age	Less than 40	208 (75.4)	68 (24.6)	0.14	0.393 - 0.746	0.706
	40 and more	141 (73.8)	50 (26.2)			
Occupation	Work	191 (78)	54 (22)	2.84	0.057 - 0.110	0.092
	Not work	158 (71.2)	64 (28.8)			
Marital Status	Married	260 (72.2)	100 (27.8)	5.24	0.013 - 0.023	0.022*
	Not married	89 (83.2)	18 (16.8)			
Educational Level	Primary to Secondary	89 (74.2)	31 (25.8)	0.03	0.479 - 0.903	0.869
	High education	260 (74.9)	87 (25.1)			

* Statistically significant (P-values <0.05).

Table 4. The association between the Attitude toward breast self-examination (BSE) and sociodemographic variables

Variable	Categories	Good Attitude n (%)	Poor Attitude n (%)	Exp(B)	CI	P value
Age	Less than 40	214 (77.5)	62 (22.5)	0.77	0.433 - 0.823	0.782
	40 and more	146 (76.4)	45 (23.6)			
Occupation	Work	199 (81.2)	46 (18.8)	4.99	0.017 - 0.028	0.025*
	Not work	161 (72.5)	61 (27.5)			
Marital Status	Married	276 (76.7)	84 (23.3)	0.16	0.4 - 0.793	0.691
	Not married	84 (78.5)	23 (21.5)			
Educational Level	Primary to Secondary	86 (71.7)	34 (28.3)	2.69	0.067 - 0.103	0.101
	High education	274 (79)	73 (21)			

* Statistically significant (P-values <0.05).

Table 5. The association between the Practice of breast self-examination (BSE) and sociodemographic variables

Variable	Categories	Good Practice n (%)	Poor Practice n (%)	Exp(B)	CI	P value
Age	Less than 40	136 (49.3)	140 (50.7)	0.02	0.488 - 0.925	0.901
	40 and more	93 (48.7)	98 (51.3)			
Occupation	Work	131 (53.5)	114 (46.5)	4.05	0.027 - 0.052	0.044*
	Not work	98 (44.1)	124 (55.9)			
Marital Status	Married	180 (50)	180 (50)	0.58	0.257 - 0.509	0.445
	Not married	49 (45.8)	58 (54.2)			
Educational Level	Primary to Secondary	57 (47.5)	63 (52.5)	0.15	0.388 0.751	0.696
	High education	172 (49.6)	175 (50.4)			

* Statistically significant (P-values <0.05).

Univariate analysis of sociodemographic factors with levels of knowledge, attitude, and practice toward BSE were shown in Tables 3,4 and 5. Only marital status showed a significant association with the high level of knowledge among married women (P= 0.022). The occupational existence associated with a good level of attitude and practice of BSE (P= 0.025) and (P= 0.044) respectively.

DISCUSSION

The good levels of knowledge, attitude, and practice toward BSE play an important role in the prevention of breast cancer which is the most common cancer in women over the world. Women in Saudi Arabia especially and over Arab countries generally are likely to develop BC earlier than women from other nations. In a peripheral area such as Bisha city and its villages, access to advanced tests is still a challenge. Regular BSE has been suggested as a part of the overall breast health promotion concept. Teaching BSE empowers women to discover any abnormalities in their breasts either in the structure or the composition. Women should be aware of how their breasts normally look and feel to report any new changes to their physician as soon as they discovered¹³. Despite the controversy in the literature around BSE, the American Cancer Society still encourages women to be mindful to be able to detect any changes rapidly and report them promptly to their healthcare provider¹⁴.

The present study showed a high level of knowledge about BSE among our participants (74.74%). Due to the efforts of public health promotion programs, the open source of information, and even the high educational level of our participants. These findings were comparable with many studies that were conducted in KSA. For comparison, the level of knowledge about BSE among adult women in the Asir region was (93.93%)¹⁵, female students at King Saud University in Riyadh (52.2%)⁶, and female medical students in Taif city (68.3%)¹⁶.

Regionally, it is consistent with a study conducted in Palestine among Palestinian women (76.7%)¹⁷, and university female students in Sharjah, United Arab Emirates (UAE) it was (68.5%)¹⁸.

We reported that most women had a good attitude toward BSE (77.09%). Usually, because the attitude is mannered by level of the knowledge. The good attitude toward the BSE has been attributed by the authors to the participants' high educational background. This result was similar to findings reported among female students in Abha¹⁹, as well as, in Riyadh among female students⁶, and female medical students in Taif¹⁶. All previous findings showed a high positive attitude level.

Even though most of the participants had a good level of knowledge about BSE as mentioned before, however, only (49.04%) practiced BSE on a regular basis, and (35.33%) did it monthly. This percentage was higher than what was reported in earlier studies as in the central region⁶, the southern region^{19,20,21}, the western region^{16,22}, the northern region²³, and in the eastern region of KSA^{24,25}. Similarly in Palestine and Malaysia, most women were often aware of cancer screening methods but did not practice them^{17,26}. This minimal rate of inadequate practice of BSE might be because of the lower rate of previous history of exposure to breast cancer among our study participants because the majority of them are still young.

Our results showed a significant association between the level of knowledge and the marital status, as well as the occupational status associated with a good level of attitude and practice of BSE. The level of knowledge was higher among married women compared with unmarried. This might be because of their concerns about their breast changes due to the pregnancy and during breastfeeding. The worker women had a better level of practice of BSE than those who did not work. Similar to a previous study that used a health belief model to predict breast the self-self-examination among Saudi women showed that employment was a predictor of BSE performance²⁷, as well as

among Ethiopian women²⁸. Another study reported that working in the health-care field was a predictor of doing BSE more²⁵. Other variables did not show any relationship with knowledge, attitude, and practice of BSE among our participants.

This study had some limitations. First, since this study is a descriptive cross-sectional study, therefore causal inferences cannot be drawn. Second, because we used a non-probability convenient sampling method for recruiting the participants, thus, it limits the generalization of the results. Third, even the age is the main determinant of BC, we could not include a significant number of elderly women possibly due to the decreased use of smartphones among them.

CONCLUSION

The total knowledge on average tends to be good, also there is a positive attitude toward breast self-examination and willingness to do BSE which are good indicators. However, we found low practice of BSE, most of the participants didn't perform BSE or perform it irregularly. We believe in promoting the BSE in our community as a need. Using social media platforms, health promotion campaigns, and introducing educational material in the schools' curriculum are recommendations to raise the practice of BSE among our population in the future.

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Competing Interest: None

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REFERENCES

1. Ferlay J, Colombet M, Soerjomataram I, et al. Cancer statistics for the year 2020: An overview. *Int J Cancer*. 2021; 149(1): 778–89.
2. Alqahtani W, Almufareh N, Domiaty D, et al. Epidemiology of cancer in Saudi Arabia thru 2010-2019: a systematic review with constrained meta-analysis. *AIMS Public Health*. 2020; 7(3): 679–96.
3. Almutlaq B, Almuazzi R, Almuhayfir A, et al. Breast cancer in Saudi Arabia and its possible risk factors. *Journal of Cancer Policy*. 2017; 12: 83–9.
4. World Health Organization. WHO position paper on mammography screening. 1st ed. Switzerland: WHO, 2014.
5. Alsaleh K. Efficacy of breast cancer screening program in Kingdom of Saudi Arabia. *Saudi Med J*. 2022; 43(4): 428–30.
6. Alomair A, Felemban D, Felemban M, et al. Knowledge, attitude, and practice of breast self-examination toward breast cancer among female students at King Saud University in Riyadh, Saudi Arabia. *International Journal of Medicine in Developing Countries*. 2020; 4(2): 429–34.
7. Khiyali Z, Aliyan F, Kashfi S, et al. Educational intervention on breast self-examination behavior in women referred to health centers: Application of health belief model. *Asian Pacific Journal of Cancer Prevention*. 2017; 18(10): 2833–8.
8. Alamri A. Breast self-examination awareness, perceptions, and practice among students and staff at Najran University, Saudi Arabia. *International Journal of Medicine in Developing Countries*. 2020; 4(5): 915–21.
9. Waheed N, Hameed M, Alendijani Y, et al. Breast Cancer Diagnosis and Survival among Patients Diagnosed by a Structured Community Based Screening Program Compared to Opportunistic Diagnosis: A Case Control Study. *Asian Pac J Cancer Prev*. 2023; 24(3): 923–27.
10. General Authority for Statistics. The Sixteenth Services Guide 2017: Aseer Region. Saudi Arabia, 2017.
11. Doshi D, Reddy B, Kulkarni S, et al. Breast self-examination: Knowledge, attitude, and practice among female dental students in Hyderabad city, India. *Indian J Palliat Care*. 2012; 18(1): 68–73.
12. Rosmawati N. Knowledge, attitudes and practice of breast self-examination among women in a suburban area in Terengganu, Malaysia. *Asian Pacific Journal of Cancer Prevention*. 2010; 11: 1503–8.
13. Plesničar A, Kovač V, Kralj B. Breast cancer and breast health awareness as an evolving health promotion concept. *Radiol Oncol*. 2004; 38(1): 27–34.
14. Bcheraoui C, Basulaiman M, Wilson S, et al. Breast cancer screening in Saudi Arabia: free but almost no takers. *PLoS One*. 2015; 10(3): 1–10.
15. Alqahtani T, Alqahtani A, Alshahrani S, et al. Assessment of knowledge and practice of mammography and breast self-examination among the general female population in Asir region of KSA. *Eur Rev Med Pharmacol Sci*. 2021; 25(23): 7231–7.
16. Nemenqani D, Abdelmaqsoud S, Al-Malki A, et al. Knowledge, attitude and practice of breast self-examination and breast cancer among female medical students in Taif, Saudi Arabia. *Open J Prev Med*. 2014; 04(02): 69–77.
17. Baloushah S, Salisu W, Elsous A, et al. Practice and Barriers toward Breast Self-Examination among Palestinian Women in Gaza City, Palestine. *Scientific World Journal*. 2020; 2020: 1–7.
18. Rahman S, Al-Marzouki A, Otim M, et al. Awareness about breast cancer and breast self-examination among female students at the University of Sharjah: A cross-sectional study. *Asian Pacific Journal of Cancer Prevention*. 2019; 20(6): 1901–8.
19. Paulsamy P, Alshahrani S, Qureshi A, et al. Breast Self-Examination: Knowledge, Attitude and Practice among Female College Students. *J Pharm Res Int*. 2021; 33(43B): 460–5.
20. Alshahrani M, Alhammam S, AlMunyif H, et al. Knowledge, Attitudes, and Practices of Breast Cancer Screening Methods Among Female Patients in Primary Healthcare Centers in Najran, Saudi Arabia. *Journal of Cancer Education*. 2019; 34(6): 1167–72.
21. Salih S, Al-Madkhali E, Khormi A, et al. Knowledge, Attitude and Practice Study of Breast Cancer and Breast Self-Examination among Females in Jazan, Saudi Arabia. *International Journal of Sciences: Basic and Applied Research*. 2016; 25(2): 180–90.
22. Al Thoubaity F. Assessment of knowledge, attitudes and practices of women on breast cancer detection, screening and breast self-examination: A public awareness study. *Biomedical Research*. 2019; 30(6): 839–44.
23. Gonzales A, Alzaatreh M, Mari M, et al. Beliefs and Behavior of Saudi Women in the University of Tabuk Toward Breast Self Examination Practice. *Asian Pac J Cancer Prev*. 2018; 19(1): 121–6.
24. AL-Mulhim F, Bakr R, Almedallah D, et al. Screening mammography and breast self-examination: Attitudes and practices of women in the Eastern Province of Saudi Arabia. *Saudi J Health Sci*. 2018; 7(2): 89–100.
25. Rasheed P, Al-Sowielem L. Knowledge and Perception of Breast Cancer and Practice of Breast Self-Examination among Female Patients Attending Primary Health Care Centers. *The Journal of the Kuwait Medical Association*. 2013; 45(2): 123–9.
26. Gutnik L, Matanje-Mwagomba B, Msosa V, et al. Breast Cancer Screening in Low- and Middle-Income Countries: A Perspective From Malawi. *J Glob Oncol*. 2015; 2(1): 4–8.

27. Abolfotouh M, Banimustafa A, Mahfouz A, et al. Using the health belief model to predict breast self examination among Saudi women Health behavior, health promotion and society. *BMC Public Health*. 2015;15(1): 1163.
28. Lera T, Beyene A, Bekele B, et al. Breast self-examination and associated factors among women in Wolaita Sodo, Ethiopia: a community-based cross-sectional study. *BMC Womens Health*. 2020; 20(1): 167.