

EVALUATION OF BREAST CANCER AWARENESS AMONG SAUDI FEMALES IN  
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**ABSTRACT**

cause of death in women worldwide. In Saudi Arabia, breast cancer ranks first among cancerous diseases in females. **Objectives:** To investigate the level of breast cancer awareness among Saudi females in Tabuk, focusing on the knowledge of breast cancer signs, associated risk factors and breast self-examination. **Methods:** Cross-sectional survey of 400 women attending the outpatient clinics of King Khalid Hospital in Tabuk city was carried out between 15 July and 30 August 2015 using self-administered questionnaire. **Results:** 35% of the Participants in this study aged between 26 and 35 years. The most widely known risk factor for breast cancer was family history (50%). The lowest level of knowledge of risk factor was regarding early menarche (3%) and late menopause (4%) and old age (14%). Other risk factors got moderate response, including lack of breast feeding, smoking, obesity (48%, 38%, and 37.5%, respectively). Most of the participants (97.5%) identified breast mass as a symptom for breast cancer. However, non-lump symptoms were also known and more than half of the participants were aware of other warning signs such as bloody nipple discharge, skin change, change or retraction of nipple and change in shape/size of breast, accounting for 90%, 75 %, 71 %, and 68% respectively. Furthermore, as many as 71% of subjects identified breast self examination as an early detection measure for breast cancer. 98% of the Participants mentioned that they heard about breast self-examination (BSE). Only 74% of the participants correctly identified that BSE should be performed monthly but 38% had performed it. **Conclusion:** This study has shown that the participants have poor knowledge about breast cancer and its associated risk factors as well as breast self examination.

**KEYWORDS:** Breast cancer, Breast self-examination, awareness**INTRODUCTION**

Breast cancer is the most common malignancy of women worldwide. It is the leading cause of female cancer related disability and mortality.<sup>[1]</sup> More than one million women are estimated to be diagnosed with breast cancer every year.<sup>[2]</sup> There is scarcely of data regarding breast cancer in the Arab world and developing countries, one can speculate that the incidence of breast cancer to be very high and is rising at a faster rate.<sup>[3]</sup> In Saudi Arabia, breast cancer is the most common cancer in females accounted for more than 25% of newly diagnosed cancer among them.<sup>[4]</sup>

Breast cancer is influenced by multiple risk factors, which can be classified into 4 groups: firstly, family history/genetic background, which accounts for approximately 15% of all breast cancer cases.<sup>[5]</sup> Secondly, and the most well-known risk factor for breast cancer, can be linked to the hazardous effects of hormonal exposures such as early age at menarche, late age at menopause, null parity and late age at first birth. Other factors include lack of exercise, poor diet, alcohol consumption, pollution, and the use of contraceptives.<sup>[6]</sup>

<sup>7]</sup> Numerous study conducted in different regions in Saudi Arabia such as Riyadh, Buraidah, ALKhubar, have explored female knowledge and attitude towards, breast cancer,<sup>[8-10]</sup> discovered lack of knowledge about the common risk factors for breast cancer; and lack of understanding of the importance of breast self-examination (BSE), under-utilized mammography screening. In Saudi Arabia, studies reported unsatisfactory knowledge about breast cancer and its early detection measures which have a negative influence on the practice of BSE among female Saudi teachers of Buraidah.<sup>[9]</sup>

Although the importance of BSE is controversial,<sup>[11]</sup> the American Cancer Society recommends it for early detection of breast cancer as it assists women in two main ways; first by becoming familiar with both the appearance and the sense of their breasts and second by helping them to detect any changes in their breasts as soon as possible.<sup>[11]</sup> This study aimed to determine knowledge of breast cancer risk factors, signs and early detection measures in addition to identify knowledge and

practice of breast self-examination among Saudi female in Tabuk city.

### Subjects and methods

This was a cross sectional study conducted from 15 July to 30 August, 2015 in the outpatient department of King Khalid Hospital in Tabuk city, Saudi Arabia. A random sample comprised of 400 Saudi females aged 16 years and older living in Tabuk city was chosen. A structured questionnaire was designed for data collection by the researchers based up on review of literature. It included three parts; Socio-demographic data such as age, marital status, occupation, educational level and family history of breast cancer. The second part inquired about knowledge of risk factors for breast cancer and was determined with 7 questions. The answers were "true", "false" and "do not know". This part assessed the knowledge of breast cancer risk factors using the guidelines of the American Cancer Society (2015) as well as knowledge of breast cancer signs, and early measures to detect breast cancer. The last part concerned with knowledge of Breast Self Examination (BSE) and correct time to perform it as well as practicing BSE and reasons for not performing it.

All participants were informed that their participation in the study is voluntary. In addition the purpose of the study was explained to all participants and confidentiality was assured, a verbal informed consent was obtained and the survey tool was anonymous. Data collected were revised, tabulated, coded and computerized. Data entry using Statistical Package for Social Science (SPSS) version 20 was used.

### RESULTS

Table 1 showed that 35% of the Participants in this study aged between 26 to 35 years, 75 % completed their university education, 50% were married, and 45% were house wives. Only 25.5% of the participants reported a family history of breast cancer. The most widely known risk factor for breast cancer as illustrated from table 2 was family history (50%). The lowest level of knowledge of risk factors observed were early menarche (3%), late menopause (4%) and old age (14%). Other risk factors got moderate responses, including lack of breast feeding, smoking, and obesity (48%, 38%, and 37.5%, respectively).

Table 3 demonstrated that the majority of the participants (97.5%) identified breast mass as a symptom for breast cancer. However, non-lump symptoms were well known as more than two-thirds of the participants were aware of other warning signs such as bloody nipple discharge (90%), skin change (75%), change or retraction of the nipple (71%) and change in shape or size of the breast (68%). Furthermore, as many as 71% of the subjects identified breast self examination as an early detection measure for breast cancer. The majority of the participants (98%) mentioned that they heard about BSE. Almost three-quarters of the participants (74%) correctly identified that BSE should be performed monthly. However, only 38% had performed it. The most common reasons for not practicing BSE were ignorance how to perform it (45%), forgetting (39%), and non- importance (16%) (Table 4).

**Table 1: Distribution of the study sample according to their socio-demographic characteristics (N=400)**

Socio-demographics	Frequency (%)
<b>Age (years)</b>	
16-25	86 (21.5)
26 -35	140 (35)
36-45	50 (12)
46-55	100 (25)
> 55	24 (6)
<b>Education level</b>	
Illiterate	14 (3.5)
Primary	20 (5)
Intermediate	6 (1.5)
Secondary	30 (7.5)
University or above	300 (75)
<b>Marital status</b>	
Single	120(3)
Married	200 (50)
Divorced	24 (6)
Widow	56 (14)
<b>Occupation</b>	
Student	80 (20)
Employee	140 (35)
House wife	180 (45)
<b>Family History of breast cancer</b>	
Yes	102 (25.5)
No	298(74.5)

**Table 2: Knowledge of breast cancer risk factors among participants**

Risk factor	True N (%)	False N (%)	Do not know N (%)
Old age	56 (14.0)	160 (40.0)	184 (46.0)
Family history of breast cancer	200 (50.0)	196 (49.0)	4 (1.0)
Obesity	150(37.5)	182 (45.5)	68 (17)
Smoking	154 (38.5)	180 (45.0)	66 (16.5)
Lack of breast feeding	192 (48.0)	122 (30.5)	86 (21.5)
Early menarche <12 years	12 (3.0)	288 (72.0)	100 (25)
Late menopause >55 years	16 (4.0)	354 (89.0)	30 (7.5)

Table 3: knowledge of breast cancer signs and early detection measures

	True N (%)	False N (%)	Do not know N (%)
<b>Signs of breast cancer</b>			
Breast mass	390 (97.5)	0 (0.0)	10 (2.5)
Change in shape or size of breast	274 (68.5)	84 (21.0)	42 (10.5)
Change in shape or retraction of nipple	284 (71.0)	16 (4.0)	100 (25.0)
Change of breast skin	300 (75.0)	82 (20.5)	18 (4.5)
Bloody nipple discharge	360 (90.0)	28 (7.0)	12 (3.0)
<b>Early detection measures</b>			
Breast self examination	284 (71.0)	28 (7.0)	88 (22.0)
Breast U\S	180 (45.0)	66 (16.5)	154 (38.5)
Mammogram	122 (30.5)	86 (21.5)	192 (48.0)

Table 4: Knowledge about Breast Self Examination (BSE)

Variables	Frequency (%)
<b>Heard about BSE</b>	
YSE	392 (98.0)
NO	8 (2.0)
<b>How often should BSE be performed?</b>	
Daily	10 (2.5)
Weekly	90 (22.5)
Monthly	296 (74.0)
yearly	4 (1.0)
<b>Performing BSE</b>	
Yes	152 (38.0)
No	248 (62.0)
<b>Reason for not performing BSE</b>	
Do not know how to perform	180(45.0)
Forgetting	156 (39.0)
Not important	64 (16.0)

## DISCUSSION

The present study findings confirmed the previous researches<sup>[12-15]</sup> that the deficit in knowledge of risk factors and screening procedures might be the reasons for the advanced presentation of breast cancer in developing countries including Saudi Arabia. However, in developed nations where there is a diminution in mortality secondary to early detection and improved treatment modalities,<sup>[16, 17]</sup> delayed presentation remains a problem for older women as seen in UK,<sup>[18]</sup> USA,<sup>[19]</sup> and Australia.<sup>[20]</sup>

The common late presentation of breast cancer among Arab women has been related to their low participation rates in breast cancer screening activities.<sup>[21]</sup>

In the current study, only 14% of the respondents recognized old age as a risk factor for breast cancer. It has been reported that older women should not be expected to seek medical help despite symptoms of disease, since these symptoms may not cause them any pain or affect their function.<sup>[12]</sup> It is also noteworthy that women in the older age group, who are at increased risk of developing breast cancer lack sufficient knowledge about risk factors and symptoms of breast cancer.

Overall, the knowledge of the participants in the present study regarding breast cancer risk factors is deficient with the exception of family history that defined by half of the participants. However, this is lower than those reported from UK by Grunfeld et al<sup>[22]</sup> and even in Saudi Arabia in Taif city.<sup>[13]</sup> It is comparable to that reported in a study conducted in Yemen,<sup>[23]</sup> Buraidah,<sup>[24]</sup> and Jeddah<sup>[25]</sup> in Saudi Arabia.

Overall, contrary to our findings, sufficient knowledge regarding risk factors of breast cancer has been reported in a similar study conducted recently in Taif city, Saudi Arabia.<sup>[13]</sup> This result may be due to the fact that in recent years, Ministry of Health, Taif city has intensified its campaign to promote breast cancer awareness and screening among women to decrease the prevalence of breast cancer in the city. They are primarily focusing on the younger generation to fight against breast cancer and have recommended regular practice of BSE for early detection, reporting and treatment of this type of cancer. Therefore, the same procedure is recommended in Tabuk city.

In the present survey, most women respondents were aware of BSE, which is comparable with the other studies,<sup>[13, 26-28]</sup> however this is in contrast with the findings of a Malaysian study,<sup>[29]</sup> in which only 24.4% of

women practiced BSE once a month. This variation can be explained by the difference in the study population and the time of the study. On the other hand, the effectiveness of BSE in reducing mortality is controversial, since clinical trials<sup>[30, 31]</sup> did not find any evidence that practicing it is beneficial in reducing mortality. However, some scholars argue that practicing BSE make women more “breast aware” and consequently more liable to detect tumors since many breast tumors are discovered by women themselves.<sup>[32]</sup> In developing countries, like Saudi Arabia, where there is no nationwide population-based breast screening mammography program, BSE is considered to be a simple, inexpensive, noninvasive, and non-hazardous intervention, which is not only acceptable, cost-effective and appropriate, but also encourages women to take an active responsibility in preventive health.

In accordance with others,<sup>[12, 13, 33]</sup> this study reported that the study participants were having better knowledge of common symptoms of breast cancer than the risk factors.

In the current survey, the knowledge about the different methods of screening of breast cancer except BSE was generally poor. The same has been documented in other studies.<sup>[13, 26-28]</sup> Radi<sup>[19]</sup> highlighted that, lack of understanding of the importance of breast self-examination, may be due to underutilization of mammogram screening.

In conclusion, the present study has shown that the participants have good knowledge about breast cancer signs but poor awareness and knowledge regarding risk factors as well as breast self examination. The earlier detection through screening, the increased awareness and improved treatment, are believed to have decreased the breast cancer mortality rate. Therefore, we recommend promotion of awareness of the women about screening procedure through breast companion and social media as this is the only hope for breast cancer early detection and prevention.

## REFERENCES

1. World Health Organization. Breast cancer: Prevention and control, 2011.
2. Coughlin SS, Ekwueme DU. Breast cancer as a global health concern. *Cancer Epidemiology.*, 2009; 33: 315-318.
3. Bray, F., MacCarron, P. and Maxwell Parkin, D. (2004) The Changing Global Patterns of Female Breast Cancer Incidence and Mortality. *Breast cancer Research*, 2004; 6: 229-239. <http://dx.doi.org/10.1186/bcr932>.
4. Saudi Cancer Registry. Annual report, 2008.
5. Martin A M, Weber BL. Genetic and hormonal risk factors in breast cancer. *J Nat l Cancer Inst.* 2009; 92: 1126-35.
6. Eshre Capri Workshop Group. Hormones and breast cancer. *Human Report Update.* 2004; 10: 281-93
7. Albrektsen G, Heuch I, Hansen S, Kvale G. Breast cancer risk by age at birth, time since birth and time intervals between births: Exploring interaction effects. *Br J Cance.r.* 2005; 92: 167-75.
8. Alam A. Knowledge of breast cancer and its risk and protective factors among women in Riyadh. *Ann Saudi Med.*, 2006; 26: 272-7.
9. Abdel Hadi M. Breast cancer awareness among health professionals. *Ann Saudi Med.* 2000; 20: 135-6.
10. Dandash K, Al-Mohaimeed A. Knowledge, attitudes, and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia. *Int J Health Sciences.* 2007; 1: 61-71.
11. American Cancer Society. Cancer facts and figures, 2008. Available at: <http://www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2008/index>
12. Hadi MA, Hassali MA, Shafie AA, Awaisu A. Evaluation of breast cancer awareness among female university students in Malaysia. *Pharmacy Practice (Internet)* 2010 Jan-Mar; 8(1): 29-34.
13. Mohammed R, Mansour MAM, Dorgham LSH. Breast cancer awareness among Saudi females in Taif, Saudi Arabia *International Journal of Science and Research (IJSR).*, 2014 Nov; 3(11): 439-445
14. Rashidi A, Rajaram SS. Middle Eastern Asian Islamic women and breast self-examination. *Needs assessment. Cancer Nurs.*, 2000; 23: 64-70.
15. Okobia MN, Bunker CH, Okonofua FE, Osime U. Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross-sectional study. *World J Surg Oncol.*, 2006; 4(11): 1477-7819.
16. Peto R, Boreham J, Clarke M, Davies C, Beral V. UK and USA breast cancer deaths down 25% at ages 20 – 69. *Lancet.* 2000; 355: 1822.
17. Ramirez AJ, Westcombe AM, Burgess CC, Sutton S, Johns LP, Richards MA. Factors predicting delayed presentation of symptomatic breast cancer: a systematic review. *Lancet.*, 1999; 353: 1127-1131.
18. Grunfeld EA, Ramirez AJ, Hunter MS, Richards MA. Women's knowledge and beliefs regarding breast cancer. *Br J Cancer.*, 2002; 86: 1373-1378.
19. Breslow RA, Sorkin JD, Frey CM, Kessler LG. American's knowledge of cancer risk and survival. *Prev Med.*, 1997; 26: 170-177.
20. Paul C, Barratt A, Redman S, Cockburn J, Lowe J. Knowledge and perceptions about breast cancer incidence, fatality and risk among Australian women. *Aust NZ J Public Health.*, 1999; 23: 396-400.
21. Donnelly TT, Al Khater A, Al-Bader B S, Al Kuwari M, Al-Meer N, Malik M, et al. Arab women's breast cancer screening practices: A literature review *Asian Pac J Cancer Prev.*, 2013; 14(8): 4519-4528.
22. Grunfeld EA, Ramirez AJ, Hunter MS, Richards MA, 2002, Women's knowledge and beliefs

- regarding breast cancer, *Br J Cancer.*, 2002 May 6; 86(9): 1373-8.
23. Ba' Amer A. Awareness of breast cancer and BSE among Yemeni university students. *Asian Pacific Journal of Cancer Prevention.*, 2010; 11: 101-105.
  24. Dandash K, Al-Mohaimeed A. Knowledge, attitudes, and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia. *Int J Health Sciences.*, 2007; 1: 61-71.
  25. Yakout M.S., El-Shatby M.A., Moawad S and Salem O. Awareness, knowledge and practice of breast self examination among groups of female nursing students, Riyadh, Kingdom of Saudi Arabia, *international research journal of biological sciences.*, 2014; 3(2): 58-63.
  26. Oluwole OC, Awareness, knowledge and practice of Breast-Self Examination amongst Female Health Workers in A Nigerian Community, Sudan, *JMS.*, 2008; 3(2): 99-104.
  27. Al-Dubai SA, Ganasegeran K, Alabasi A, Manaf M, Ijaz S, Kassim S. Exploration of barriers to breast-Self Examination among Urban Women in Shah Alam, Malaysia: A cross Sectional study, *Asian Pacific Journal of Cancer Prevention.*, 2012; 13: 1627-32.
  28. Radi M.S., breast cancer awareness among Saudi females in Jeddah, *Asian pac J cancer prev.* 2013; 14(7): 4307-4312.
  29. Chee HL, Rashidah S, K Shamsuddin Intan O. Factors related to the practice of breast self examination (BSE) and Pap smear screening among Malaysian women workers in selected electronics factories. *BMC Women's Health*, 2003; 3: 3.
  30. Baxter N; Canadian Task Force on Preventive Health Care. Preventive health care, 2001 update: should women be routinely taught breast self-examination to screen for breast cancer? *CMAJ.*, 2001; 164(13): 1837-1846.
  31. Thomas DB, Gao DL, Ray RM, Wang WW, Allison CJ, Chen FL, Porter P, Hu YW, Zhao GL, Pan LD, Li W, Wu C, Coriaty Z, Evans I, Lin MG, Stalsberg H, Self SG. Randomized trial of breast self-examination in Shanghai: final results. *J Natl Cancer Inst.*, 2002; 94(19): 1445-1457.
  32. Larkin M. Breast self-examination does more harm than good, says task force. *Lancet.*, 2001; 357: 2109.
  33. Aljunaibi M R, Khan AS. knowledge and awareness of breast cancer among women female student in Muscat, Sultanate of Oman-Apilot study, *journal of applied pharmaceutical science.*, 2011; 1(10): 146-149.