



## Research Article

# Women's Awareness and Beliefs of Breast Cancer at Al-Baha, Saudi Arabia

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### Abstract

**Background:** Women's awareness and beliefs about breast cancer in Saudi Arabia were not fully investigated. The aim of this descriptive study was to assess women's awareness and beliefs toward breast cancer in Al-Baha, Saudi Arabia.

**Methods:** This is a descriptive cross-sectional study; it was conducted among women attending the Women and Child Care Center at Alawi Royal Mall in Alaqiq for mammogram screening of breast cancer. A convenient sampling technique was used; it included women who attended the center in the period from September 2021 to December 2021, and who agreed to participate. The data were collected using a questionnaire consisting of questions on awareness and beliefs toward breast cancer. The data were analyzed using SPSS software.

**Results:** The current study showed that the level of awareness in women was high toward breast cancer general information (42.9%), the meaning of malignancy (54.3%), and ways for detecting breast cancer (42.9%), it was also shown that they had fair awareness on myths related to breast cancer (45.7%), and signs and symptoms of breast cancer (51.4%). The study also showed that the women have a high level of beliefs toward breast cancer health services (48.6%), the ability of breast cancer to be prevalent in some families (45.7%), the ways of breast cancer self-detection (34.3%), and mammogram role in early detection of breast cancer (34.3%). It was found that the occupation of women and women's level of education significantly improved the awareness in women. It was shown that the occupation of women and their level of education were significantly related to the level of beliefs toward breast cancer (21.4%) compared to 16.7% for women working in the private sectors.

**Conclusion:** Women in Al-Baha have a high level of awareness and beliefs about breast cancer. The occupation of women and women's level of education are associated with a high level of awareness and beliefs toward breast cancer.

**Keywords:** awareness, beliefs, breast cancer, women, screening, Saudi Arabia

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## 1. Introduction

Recently, life expectancy has been positively changed, maternal and child health has been improved, and the transmission of infectious diseases is controlled [1]. Although, the countries have controlled the transmission of infectious diseases, but the spread of cancer is still uncontrolled [2, 3]. It is expected that by the year 2040, the cases of cancers will be more than 27 million annually [4].

However, due to the high rate of breast cancer (BC) morbidity and mortality, the global initiatives and activities toward this condition are low especially in the developing countries [5]. Furthermore, the promotive and preventive activities remain a great challenge in providing appropriate care for communities in low-income countries [6].

BC in Saudi Arabia is increasing as shown in one report investigating the trend of BC in the country [7], it also showed the increase in the incidence by 17% between 2004 and 2016 [7]. Although Saudi Arabia provides a free and high-quality breast care services, the incidence of BC and its mortality and morbidity are still increasing. Husband's knowledge and attitudes toward BC screening are not satisfactory in Saudi Arabia [8].

Women's awareness and beliefs of BC and its predisposing factors have been investigated in several countries such as the Netherlands, America, Australia, Iran, Arabic countries, and in Saudi Arabia in particular [9-16]. There is a lack of evidence of studies that assess women's awareness and beliefs of BC in Saudi Arabia. The aim of this study was to assess women's awareness and beliefs toward BC in Al-Baha region, Saudi Arabia.

## 2. Materials and Methods

### 2.1. Design

This is a descriptive cross-sectional study; it was conducted among women attending mammogram screening for BC at the Women and Child Care Center, Alaqiq Royal Mall.

### 2.2. Study population

This study was conducted on women who attended mammogram screening for BC at the Women and Child Care Center, Alaqiq Royal Mall, Al-Baha, Saudi Arabia.

### **2.3. Inclusion criteria**

1. Women at age (40 years or more) according to Saudi Ministry of Health Guidelines for mammography screening.
2. Attending for BC screening (mammography) to Maternity and Child Care Center.
3. Agree to participate

### **2.4. Exclusion criteria**

1. Age less than 40 years
2. Refuse to answer the questions

### **2.5. Sampling and sample size**

A convenient sampling technique was used; it included women who attended the center from September 2021 to December 2021, and agreed to participate.

### **2.6. Data collection**

Direct questions were asked to women concerning their awareness and beliefs toward BC.

### **2.7. Instruments**

Demographic questionnaire, awareness toward BC questionnaire, and beliefs toward BC questionnaire, were adopted from one questionnaire [17].

### **2.8. Data analysis plan**

Data were analyzed using descriptive statistics including frequency and percentage for demographic data and for levels of women awareness and beliefs toward BC. A correlation was tested using Chi-square test between the demographic variables and levels of awareness and beliefs of women.

### 3. Results

#### 3.1. Summary

Table 1 shows that women's age ranged between 40 and 60 years as the center allocated to conduct mammography among this age group, most of the women were at the age of 40-44 (57.1%) and 45-49 years old (28.6%). Furthermore, it was found that 62.9% women came from Alaqiq and 37.1% from Al-Baha to this center. It was also found that 80% of women were working at governmental sectors, 17.1% at private sectors, and only 2.9% do not work. The level of education was either secondary level (60%) or university education (40%). Most of the women were married (80%) and only 20% were single.

Table 2 shows that women had high level of awareness toward BC general information (42.9%), meaning of malignancy (54.3%), and ways for detecting BC detection (42.9%), it was also shown that they had fair awareness on myths related to BC (45.7%) and signs and symptoms of BC (51.4%). It also showed that they had inadequate awareness on the BC management (54.3%) and the prevalence of BC (51.4%). Furthermore, Figure 1 shows that overall level of women's awareness toward BC where 27% women had high level of awareness, 35.2% had fair level of awareness, 29.8% had inadequate awareness, and 7.9% no awareness about BC.

Table 3 shows that women had high level of beliefs toward BC health services (48.6%), toward ability of BC to be prevalent in some families (45.7%), ways for self-detecting BC (34.3%), and role of mammogram in early detection of BC (34.3%). It was also found that they had fair beliefs on factors related to BC (45.7%), genetic factors of BC (45.7%). It also showed that they had inadequate beliefs that BC could be treated (40%), furthermore, Figure 2 shows the overall level of women's beliefs toward BC where 31.4% women had high level of beliefs, 36.2% had fair level of beliefs, 19.7% had inadequate beliefs, and 12.7% had poor beliefs toward BC.

Table 4 states the relation between women characteristics (age, residence, occupation, education, and marital status) and level of their awareness toward BC were tested using Chi-square test. It was showed that the occupation of women and women's level of educations significantly improved the women's awareness; the women working in governmental sectors had high level of awareness toward BC (36%) compared to 0% for other sectors, (p-value 0.03) and women who had university education had high level of awareness toward BC (35.7%) compared to 14.3% for secondary school (p-value 0.02).

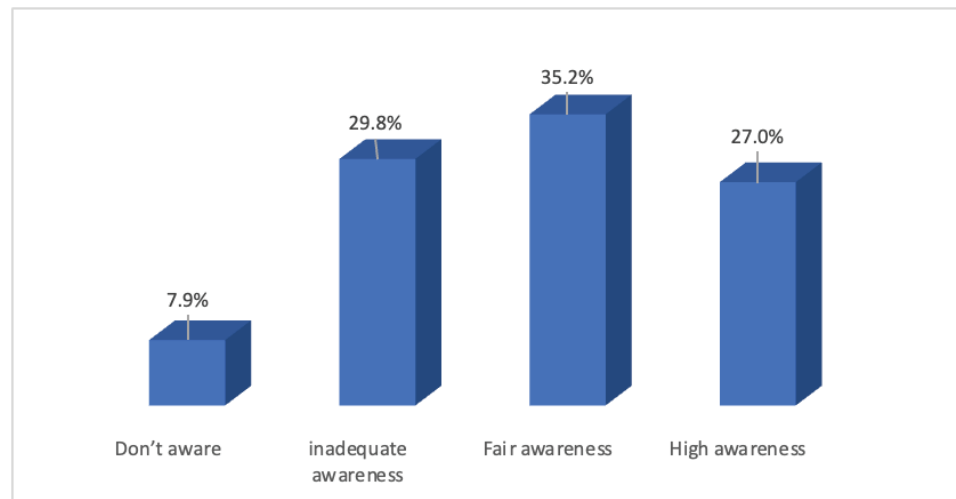
In Table 5, the relationships between women characteristics (age, residence, occupation, education, and marital status) and level of women beliefs toward BC were tested using Chi-square test. It was shown that the occupation of women and their level of education were significantly related; the women working in governmental sectors had high level of beliefs toward BC (21.4%) compared to 16.7% for women working in private sectors ( $p$ -value 0.03), and women who had university education had high level of beliefs toward BC (42.9%) compared to 23.8% for secondary school ( $p$ -value 0.01).

TABLE 1: Demographic characteristics of women at Al-Baha region,  $n = 35$ .

Age (yr)	Frequencies	Percentage
40–44	20	57.1%
45–49	10	28.6%
50–54	3	8.6%
55–60	2	5.7%
<b>Residence</b>		
Alaqiq	22	62.9%
Al-Baha	13	37.1%
<b>Occupation</b>		
Governmental employee	28	80.0%
Private employee	6	17.1%
Unemployed	1	2.9%
<b>Education</b>		
Secondary school	21	60.0%
University	14	40.0%
<b>Marital Status</b>		
Single	7	20.0%
Married	28	80.0%

TABLE 2: Women's awareness on breast cancer at Al-Baha region,  $n = 35$ .

Items	Not aware	Inadequate awareness	Fair awareness	High awareness
Myths related to BC	14.3%	22.9%	45.7%	17.1%
General information on BC	8.6%	20.0%	28.6%	42.9%
Meaning of malignancy	2.9%	11.4%	31.4%	54.3%
Risk factors of BC	8.6%	25.7%	37.1%	28.6%
Signs and symptoms of BC	5.7%	22.9%	51.4%	20.0%
Prevalence of BC	2.9%	51.4%	37.1%	8.6%
BC could be prevented	5.7%	40.0%	34.3%	20.0%
Management of BC	17.1%	54.3%	20.0%	8.6%
BC detection	5.7%	20.0%	31.4%	42.9%
<b>Overall women's awareness on BC</b>	<b>7.9%</b>	<b>29.8%</b>	<b>35.2%</b>	<b>27.0%</b>



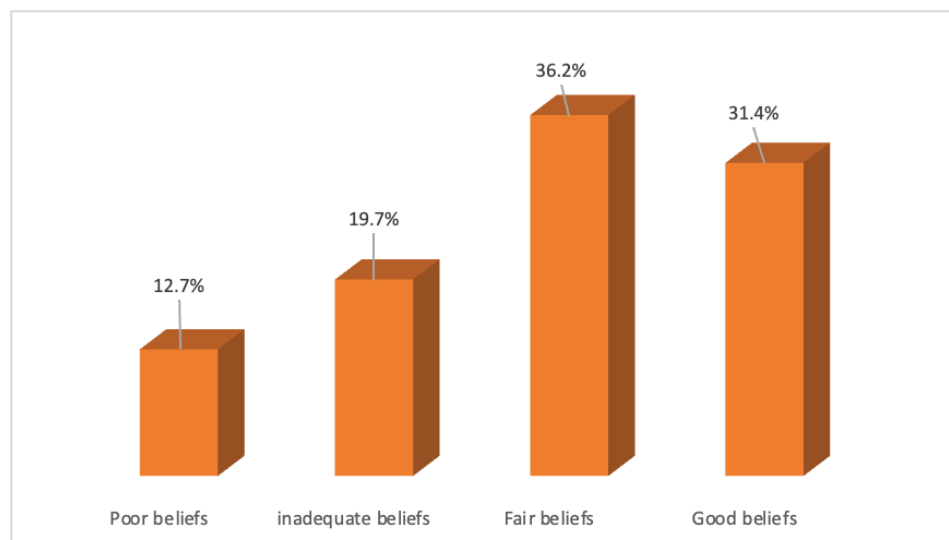
**Figure 1:** Overall women's awareness on breast cancer at Al-Baha region.

**TABLE 3:** Women's beliefs on breast cancer at Al-Baha region,  $n = 35$ .

Items	Poor beliefs	Inadequate beliefs	Fair beliefs	Good beliefs
Factors increase the risk of BC	14.3%	22.9%	45.7%	17.1%
BC could be treated	5.7%	40.0%	34.3%	20.0%
BC could be self-detected	2.9%	22.9%	40.0%	34.3%
BC could be for genetic factors	17.1%	17.1%	45.7%	20.0%
BC could be prevalent in some families	25.7%	20.0%	8.6%	45.7%
Mammogram is helpful in BC detection	8.6%	20.0%	37.1%	34.3%
Personal perception on self-examination and mammogram	17.1%	22.9%	28.6%	31.4%
Reasons of attending BC clinic	20.0%	5.7%	42.9%	31.4%
Services in BC clinic	2.9%	5.7%	42.9%	48.6%
<b>Overall women's beliefs on BC</b>	12.7%	19.7%	36.2%	31.4%

## 4. Discussion

The current study showed that women at Al-Baha region had high level of awareness toward BC description, detection, and they also had fair level of awareness on myths related to BC, signs, and symptoms of BC. It was also found that they had inadequate awareness on the BC management, the prevalence. Furthermore, it was reflected that 27% of women had high level of awareness toward BC, 35.2% had fair level of awareness, 29.8% had inadequate awareness, and 7.9% were not aware about BC. These findings are similar to other study which showed that women have good knowledge on BC [18]. Previous reports from United Arab Emirates (UAE) and Germany have shown that women's awareness of BC was similar to our findings; as well, most of the participants were aware on the BC description and signs and symptoms [14, 19].



**Figure 2:** Overall women's beliefs on breast cancer at Al-Baha region.

**TABLE 4:** Relationship between demographic variables, and the level of women's awareness,  $n = 35$ .

Variables/level awareness	of Not aware	Inadequate awareness	Fair awareness	High awareness	P-value
<b>Age (yr)</b>					
40–44	20%	25%	30%	25%	0.08
45–49	20%	30%	40%	10%	
50–54	33%	33%	0	33%	
55–60	50%	50%	0	0	
<b>Residence</b>					
Alaqiq	18%	32%	23%	27%	0.065
Al-Baha	23%	31%	15%	31%	
<b>Occupation</b>					
Governmental employee	17.9%	21%	25%	36%	0.03*
Private employee	50%	17%	33%	0	
Unemployed	100%	0	0	0	
<b>Education</b>					
Secondary school	19.0%	38.1%	28.6%	14.3%	0.02*
University	21.4%	28.6%	14.3%	35.7%	
<b>Marital status</b>					
Single	14.3%	28.6%	28.6%	28.6%	0.061
Married	28.6%	25.0%	25.0%	21.4%	

(\*) Significant

In present study, it was found that occupation and level of education significantly affect the awareness in women. In other words, women working in governmental sectors had high level of awareness toward BC compared to those working in other sectors, and women who had university education had high level of awareness toward BC compared

TABLE 5: Relationship between demographic variables, and the level of women's beliefs,  $n = 35$ .

Variables/level of awareness	Poor beliefs	Inadequate beliefs	Fair beliefs	Good beliefs	P-value
<b>Age (yr)</b>					
40–44	15.0%	20.0%	30.0%	35.0%	0.062
45–49	20.0%	40.0%	30.0%	10.0%	
50–54	0.0	33.3%	0.0	66.7%	
55–60	0.0	50.0%	0.0	50.0%	
<b>Residence</b>					
Alaqiq	18.2%	22.7%	31.8%	27.3%	0.07
Al-Baha	30.8%	23.1%	23.1%	23.1%	
<b>Occupation</b>					
Governmental employee	14.3%	25.0%	39.3%	21.4%	0.03*
Private employee	33.3%	33.3%	16.7%	16.7%	
Unemployed	0.0%	100.0%	0.0%	0.0%	
<b>Education</b>					
Secondary school	14.3%	33.3%	28.6%	23.8%	0.01*
University	14.3%	21.4%	21.4%	42.9%	
<b>Marital status</b>					
Single	0.0	28.6%	42.9%	28.6%	0.08
Married	25.0%	21.4%	28.6%	25.0%	

(\*) Significant

to those having secondary school education. The fair or low level of knowledge may contribute to decrease or delay in the uptake of medical treatment. This, especially happened for low-educated women, who had poor awareness of BC. Furthermore, our findings showed a satisfactory level of women's awareness of BC; however, one previous report in Saudi Arabia has shown that women lacked in punctuality of breast self-examination uptake in rural areas in the Asir region [16].

The findings of this study showed that women at Al-Baha region had high level of beliefs toward BC. It was found that 31.4% of them had high level of beliefs, 36.2% had fair level of beliefs, 19.7% had inadequate beliefs, and 12.7% had poor beliefs toward BC. These findings are similar to other studies which showed that women have positive beliefs on BC outcomes, and poor beliefs on symptoms and risk factors [15, 18].

In present study, it was found that the occupation and level of education significantly affect the women's beliefs. That is to say that women working in governmental sectors had high level of beliefs toward BC compared to those working in private sectors, and women who had university education had high level of beliefs toward BC compared to those who had secondary school education. Furthermore, most of our subjects consider that early detection of BC is important, and this was correlated mainly among educated



women. Their beliefs on risk factors, screening of BC was high. These findings were similar to other previous studies highlighting that they could correctly detect risk factors of BC [19]. A similar finding was also reported from studies conducted in the UAE on college students and public women [14, 20].

The women's awareness and beliefs of BC is an important contributing factor for prevention and management of BC, this will enhance BC services uptake and facilitate early detection process. However, more research is recommended to approve this, the present study highlights the current situation regarding BC in AL-Baha region.

Our study had some limitations: The findings of the current study depend on the responses of the women to the asked questions that could cause information related bias. Furthermore, the sample size of our survey was small and not representative to whole Al-Baha region population, since it was conducted in only on BC center; however, the participated women are from different areas of Al-Baha region.

## 5. Conclusion

Women in Al-Baha region have high levels of awareness and beliefs of BC. The study showed that a significant correlation between women's occupation and level of education with levels of awareness and beliefs toward BC.

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The author would like to acknowledge Al-Baha Health Affairs, Saudi Arabia and would also like to thank the participant women.

## Ethical Considerations

The study was approved by Al-Baha Health Affairs on September 20, 2021.

## Competing Interests

I would like to confirm that there are no financial and personal relationships with other people or organizations that could inappropriately affect our work. I would also like to assure that we have no conflicts of interest related to publication of this study.

## Availability of Data and Material

Data is available with corresponding author upon request.

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## Authors' Contribution

MSH is the author of this research, she conducted the work related to this study.

## References

- [1] Okamoto, J., & Leischow, S. J. (2019). *Global cancer prevention. Fundamentals of Cancer Prevention* (pp. 353–375). Springer.
- [2] Nagai, H., & Kim, Y. H. (2017). Cancer prevention from the perspective of global cancer burden patterns. *Journal of Thoracic Disease*, 9(3), 448.
- [3] Wild, C. P. (2019). The global cancer burden: Necessity is the mother of prevention. *Nature Reviews Cancer*, 19(3), 123–124.
- [4] Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394–424.
- [5] Bollyky, T. J. (2020, February 4). *The growing cancer threat in Africa*. Think Global Health. [thinkglobalhealth.org/article/growing-cancer-threat-africa](https://thinkglobalhealth.org/article/growing-cancer-threat-africa)
- [6] UICC. (2019, November 5). *Cancer control in Africa: Paving the way to universal health coverage*. <https://www.uicc.org/addressing-cancer-burden-africa>
- [7] Albeshan, S. M., & Alashban, Y. I. (2022). Incidence trends of breast cancer in Saudi Arabia: A joinpoint regression analysis (2004–2016). *Journal of King Saud University-Science*, 33(7), 101578.
- [8] Sabgul, A. A., Qattan, A. M., Hashmi, R., & Al-Hanawi, M. K. (2022). Husbands' knowledge of breast cancer and their wives' attitudes and practices related to breast cancer screening in Saudi Arabia: Cross-sectional online survey. *Journal of Medical Internet Research*, 23(2), e25404.

- [9] Gong, J., Kampadellis, G., Kong, Q., & Spijker, W. (2022). Factors determining non-attendance in breast cancer screening among women in the Netherlands: A national study. *Health Promotion International*, daac009.
- [10] Davis, C. M. (2022). Health beliefs and breast cancer screening practices among African American women in California. *International Quarterly of Community Health Education*, 41(3), 259–266.
- [11] Jaffee, K., Cohen, M., Azaiza, F., Hammad, A., Hamade, H., & Thompson, H. (2022). Cultural barriers to breast cancer screening and medical mistrust among Arab American women. *Journal of Immigrant and Minority Health*, 23(1), 95–102.
- [12] Hajian-Tilaki, K., & Nikpour, M. (2022). Accuracy of self-perceived risk perception of breast cancer development in Iranian women. *BMC Women's Health*, 21(1), 1–8.
- [13] Macdonald, C., Saunders, C. M., Keogh, L. A., Hunter, M., Mazza, D., McLachlan, S.-A., Jones, S. C., Nesci, S., Friedlander, M. L., Hopper, J. L., Emery, J. D., Hickey, M., Milne R. L., Phillips, K.-A., Kathleen Cuninghame Consortium for Research Into Familial Breast Cancer. (2022). Breast cancer chemoprevention: use and views of Australian women and their clinicians. *Cancer Prevention Research*, 14(1), 131–144.
- [14] Kharaba, Z., Buabeid, M. A., Ramadan, A., Ghemrawi, R., Al-Azayzih, A., Al Meslamani, A. Z., Alfoteih, Y. (2022). Knowledge, attitudes, and practices concerning breast cancer and self examination among females in UAE. *Journal of Community Health*, 46(5), 942–950.
- [15] Abo Al-Shiekh, S. S., Ibrahim, M. A., & Alajerami, Y. S. (2022). Breast cancer knowledge and practice of breast self-examination among female university students, Gaza. *The Scientific World Journal*, 2021, 6640324.
- [16] Alqahtani, T., Alqahtani, A., Alshahrani, S., Orayj, K., Almanasef, M., Alamri, A., Easwaran, V., & Khan, N. A. (2022). Assessment of knowledge and practice of mammography and breast self-examination among the general female population in Asir region of KSA. *European Review for Medical and Pharmacological Sciences*, 25(23), 7231–7237.
- [17] Linsell, L., Forbes, L. J., Burgess, C., Kapari, M., Thurnham, A., & Ramirez, A. J. (2010). Validation of a measurement tool to assess awareness of breast cancer. *European Journal of Cancer*, 46(8), 1374–1381.
- [18] Grunfeld, E., Ramirez, A., Hunter, M., & Richards, M. (2002). Women's knowledge and beliefs regarding breast cancer. *British Journal of Cancer*, 86(9), 1373–1378.
- [19] Pöhls, U. G., Renner, S., Fasching, P., Lux, M., Kreis, H., Ackermann, S., Bender, H.-G., & Beckmann, M. W. (2004). Awareness of breast cancer incidence and risk factors among healthy women. *European Journal of Cancer Prevention*, 13(4), 249–256.

- [20] Rahman, S. A., Al-Marzouki, A., Otim, M., Khayat, N. E. H. K., Yousef, R., & Rahman, P. (2019). 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*, 20(6), 1901.