

## ORIGINAL RESEARCH ARTICLE

# Breast self-examination knowledge, attitude, and practice among Jazan women, Kingdom of Saudi Arabia

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## Abstract

Breast cancer is the most common cancer among women worldwide. It is a major cause of cancer death, and its incidence rate has been gradually increasing in the Arab world, Saudi Arabia has a higher proportion of young females getting breast cancer than other countries. This study was conducted to investigate the knowledge, attitude, and practice regarding breast self-examination among females from 20 to 60 years old in Jazan Region, Saudi Arabia. Using A Community-based descriptive cross-sectional approach, data were gathered from 567 Saudi and non-Saudi women using structured interviews and then analyzed using the Statistical Package for Social Sciences (IBM) version 21.0 software program. Where the study indicated that around half of the participants (55.7%) had good total knowledge scores regarding breast self-examination, and most had positive attitudes. However, only 205 (36.2%) respondents practice it regularly. Moreover, the study reveals a significant association between respondents' knowledge and attitudes toward breast self-examination ( $P = 0.05$ ). These findings indicate moderate knowledge, poor breast self-examination practices, and a significant association between knowledge and attitudes. Therefore, conducting health education programs is necessary to raise awareness about breast self-examination (BSE) among Jazan women. (*Afr J Reprod Health* 2024; 28 [7]: 83-90).

**Keywords:** Breast; self-examination; knowledge; attitude; practice

## Résumé

Le cancer du sein est le cancer le plus répandu chez les femmes dans le monde. Il s'agit d'une cause majeure de décès par cancer et son taux d'incidence augmente progressivement dans le monde arabe. L'Arabie saoudite compte une proportion plus élevée de jeunes femmes atteintes d'un cancer du sein que les autres pays. Cette étude a été menée pour étudier les connaissances, l'attitude et la pratique concernant l'auto-examen des seins chez les femmes de 20 à 60 ans dans la région de Jazan, en Arabie Saoudite. À l'aide d'une approche transversale descriptive communautaire, les données ont été recueillies auprès de 567 femmes saoudiennes et non saoudiennes à l'aide d'entretiens structurés, puis analysées à l'aide du logiciel Statistical Package for Social Sciences (IBM) version 21.0. L'étude a indiqué qu'environ la moitié des participantes (55,7 %) avaient de bons scores totaux de connaissances concernant l'auto-examen des seins et que la plupart avaient des attitudes positives. Cependant, seuls 205 (36,2%) répondants le pratiquent régulièrement. De plus, l'étude révèle une association significative entre les connaissances et les attitudes des répondants à l'égard de l'auto-examen des seins ( $P = 0,05$ ). Ces résultats indiquent des connaissances modérées, de mauvaises pratiques d'auto-examen des seins et une association significative entre les connaissances et les attitudes. Par conséquent, il est nécessaire de mener des programmes d'éducation sanitaire pour sensibiliser les femmes de Jazan à l'auto-examen des seins (ESB). (*Afr J Reprod Health* 2024; 28 [7]: 83-90).

**Mots-clés:** Sein; auto-examen; connaissance; attitude; pratique

## Introduction

Breast cancer (BC) is the most prevalent cancer globally, with 2.26 million cases in 2020. It is the fifth greatest cause of cancer deaths, accounting for 685,000 deaths. As of the end of 2020, 7.8 million Women have been diagnosed with breast cancer in the previous five years, making it the world's most

common cancer. Breast cancer affects women of all ages after puberty, although the incidence rises later in life<sup>1</sup>. Among Arab women, breast cancer is responsible for 11 out of every 100,000 deaths<sup>2</sup>. Saudi Arabia has a higher proportion of young females getting breast cancer than other countries. As 53% of all cancer cases are breast cancer in Saudi Arabia, it is the most common cancer type<sup>3</sup>.

Early detection and effective treatment play a key role in the prognosis of breast cancer, with 100% 5-year survival rates for stage 0 and stage 1 patients, and 93% and 72%, respectively, for stage II and stage III patients. The prognosis for patients with breast cancer worsens dramatically when the tumor metastasizes, with only 22% surviving five years<sup>4</sup>.

Breast self-examination (BSE) is an important tool for women to detect changes in their breasts that may indicate breast cancer. According to studies, women who are knowledgeable about Breast self-examination (BSE) are more likely to perform it regularly and detect breast changes sooner<sup>5</sup>. Many researches indicate that knowing breast self-examination can have a beneficial effect on identifying breast cancer early<sup>6</sup>. Knowledge of breast self-examination may also influence the attitude and practice of breast self-examination<sup>7</sup>. Attitude is an established way of thinking about breast self-examination, which includes accepting that breast self-examination is necessary, that all women should do it, wanting to encourage others to get information and practice it, and seeking medical care for any abnormalities<sup>8</sup>.

Many studies in Arab countries, including Jordan (Alsarireh and Darawad, 2018)<sup>9</sup>, Palestine (Alzabadi, et al.<sup>10</sup>, Saudi Arabia (Alomair A, et al.)<sup>11</sup>, and Iraq (Ewaid SH, Shanjar AM, Mahdi RH)<sup>12</sup>, reported inadequate knowledge and low breast self-examination (BSE) practice among participant. Knowledge, attitude, and practice of breast self-examination have been reported in other different countries. In regards to breast self-examination knowledge 22.7% in Vietnam<sup>13</sup>, and 51.0% in cameroon<sup>14</sup>, and 43.1% in Jima<sup>15</sup>, had adequate knowledge about breast self-examination. As per women's attitude, 74.9% in Libya<sup>16</sup> and 46.3% in Adwa town<sup>17</sup> had a favorable attitude towards breast self-examination. Considering practice towards breast self-examination 20.6% in Sudan<sup>18</sup> and 13.3% in Arba Minch<sup>19</sup> had a good practice of breast self-examination.

In 2021, one study examined knowledge, attitudes, and practices regarding breast self-examination among women in Gondar Town, Northwest Ethiopia. Study findings indicate that women have inadequate knowledge, an unfavorable attitude, and poor practice regarding breast self-examination<sup>20</sup>. An additional study examined women's knowledge, attitudes, and practices of breast self-examination in two Cameroonian

communities. The majority of the participants had little knowledge of breast self-examination (BSE) and had poor attitudes and practices<sup>21</sup>. Other studies have shown that comprehensive knowledge of breast self-examination is still low in many developing countries. For example, a study of 790 female household representatives in Southwest Cameroon found that only 25% had adequate knowledge of breast self-examination and only 15% had practiced it<sup>22</sup>. According to other studies, Iranian women did not practice breast self-examination because they were not aware of and lacked the necessary skills<sup>23</sup>. A similar study conducted in Nigeria found that while 97.3% of participants heard about breast self-examination, only about 50% reported some knowledge, and only 14.5% did breast self-examination regularly<sup>24</sup>.

Overall, these studies suggest that there is still a need for greater education and awareness about breast self-examination among women. Therefore, this study has been conducted to assess the knowledge and attitude of women toward breast self-exam in the Jazan region.

## Methods

### Research setting and study sample

A community-based, cross-sectional study was used. The cross-sectional study method is an efficient and effective way to collect data from many different individuals at a single point in time. A Cluster sampling technique was used to select five governorates (Abu Arish, Ad-Darb, Bish, Damad, and Al-Aydabi). Females were selected by simple random sampling within each of these governorates. A convenience sample of 567 women aged between 20 and 60 living in the Jazan region participated in the study. Sample size determined using the formula for infinite population ( $SS = [Z^2p(1 - p)]/ C^2$ ). While ( $SS =$  Sample size,  $Z =$  Z-score (1.96 for a 95% confidence level),  $p =$  Percentage of population (Assumed as 50% or 0.5), and  $C =$  Confidence level).

### Study instruments

The data was collected through structured interviews. Breast self-examination knowledge was assessed with a structured knowledge questionnaire. Therefore, it had been dichotomized as low knowledge (wrong answers) and Good knowledge (correct answers). To determine the attitude of

participants toward breast cancer, a 3-point Likert scale was used (Agree, Disagree, and Neutral). The researchers do a cross-tabulation of the overall knowledge and attitude of respondents. Regarding practicing breast self-examination the researchers asked the respondents directly if they have practiced breast self-examination or not. Demographic information, such as age, marital status, occupation, and education level, was collected from each woman.

### ***Inclusion/Exclusion criteria***

The inclusion criteria include females aged between 20 and 60 (a potential age group for an early detection practice for breast cancer), living in the Jazan region, and willing to participate in the study.

### ***Data collection procedure***

The data was collected through structured interviews in Arabic conducted by the co-authors. The questionnaire consists of the following four parts:

First part: Socio-demographic characteristics of the participant (i.e., age, marital status, occupation, educational level, and highest academic qualification).

Second part: questions related to practicing breast self-examination

Third part: General knowledge statements about breast Self-examination among participants

Fourth part: respondent's attitudes towards breast self-examination. This scale uses a 3-point Likert scale (Agree, Disagree, and Neutral) to measure participants' attitudes toward breast self-examination.

### ***Pilot study***

A pilot study was conducted on 10% of the studied group for the purpose of evaluating the tool's content; ensuring clarity of questions and removing. Those who participated in the pilot study were included in the main study sample since no changes were made to the tools.

### ***Ethical consideration***

Ethical approval was obtained from the Standing Committee for Scientific Research at Jazan University (Reference No: REC-44/06/429). To protect the participant's privacy, the data was kept

private. It was only accessible to the researchers, and the data would be used for research purposes only

### ***Statistical analysis***

The data were entered and analyzed using SPSS version 21 (a computerized statistical package for social sciences). Descriptive analysis including the calculation of frequency and percentage measured was used to measure socio-demographic information, knowledge, and attitudes. For the scoring of the knowledge of breast self-examination, the measures of mean and standard deviation were calculated. To study the association between respondent's knowledge and attitudes we applied a Chi-square test with P values which indicates whether the relationship is statistically significant, a P-value of  $\leq 0.05$  has been used as a significant level for all statistical tests. Results were presented as tables.

## **Results**

Table 1 shows that 567 respondents participated in the study, nearly two-thirds 390 (68.8%) were Saudi. Out of which 384 (67.7) fall within the age 20–30 years while 104 (18.3%) were in the age bracket of 30 - 40 years, followed by 58 (10.2%) in the age group 40 - 50 and only 21 (3.7%) of the respondents falling within the age groups > 50 years. The majority of women 257(45.3%) and 209 (36.9%) were students and housewives respectively. Two hundred sixty-eight (47.3%) of them were married, 274 (48.3%) were single, 13 (2.3%) were divorced, with 12 (2.1%) were widowed. The highest number 283 (49.9%) of the respondents had bachelor certificates as their highest academic qualifications, followed by secondary/high school 170 (30%), diploma/ National Career Education / Community Health Extension Worker 38(6.7%), intermediate School and master degree 25 (4.4%), elementary School 21(3.7%) and Doctor of Philosophy (Ph.D.) 5 (0.9%).

Table 2 presents information about the participant's practice of breast self-examination (BSE). The majority of the participants 505 (89.1%) have heard about breast self-examination (BSE) and 348(61.4%) know how to perform it, but just 205(36.2%) practice it regularly. The participants revealed some barriers that hinder their practice of breast self-examination (BSE) (e.g. most important barriers are lack of time 171(30.2%), not convinced

**Table 1:** Socio-demographic characteristics of the participant (N = 567)

Variables		Frequency	Percent (%)
Nationality	Saudi	390	68.8
	Non-Saudi	177	31.2
Age	20 - 30 Years	384	67.7
	30 - 40 Years	104	18.3
	40 - 50 Years	58	10.2
	> 50	21	3.7
Marital status	Married	268	47.3
	Single	274	48.3
	Divorced	13	2.3
	Widow	12	2.1
Occupation	Student	257	45.3
	Businesswoman	26	4.6
	Housewife	209	36.9
	Civil servant	73	12.9
	Housekeeper	2	.4
Highest academic qualification	No formal education.	0	0.0
	Elementary School	21	3.7
	Intermediate School	25	4.4
	Secondary /High School	170	30.0
	Diploma/ National Career Education / Community Health Extension Worker.	38	6.7
	Bachelor	283	49.9
	Masters	25	4.4
Doctor of Philosophy (Ph.D.)	5	0.9	

**Table 2:** Practicing breast self-examination: (N = 567)

Variable		Frequency	Percent
Have you heard about breast self-examination?	Yes	505	89.1
	No	62	10.9
Do you practice breast self-examination regularly?	Yes	205	36.2
	No	362	63.8
Do you know how to perform breast self-examination?	Yes	348	61.4
	No	219	38.6
Barriers hindering their practice of breast self-examination	Lack of time	171	30.2
	Not convinced about Breast Self-examination	230	40.6
	Not at risk hence not required to do so	257	45.3
	Fear of finding some abnormality	146	25.7
	Too frequently to practice	81	14.3

about breast Self-examination 230(40.6%), not at risk hence not required to do so 257(45.3%), fear of finding some abnormality 146(25.7%), and breast self-examination being too frequent to practice 81(14.3%).

The result of knowledge scores among participants is illustrated in Table 3. Regarding knowledge about who should perform breast self-examinations the majority of the students 395(69.7%) have a low knowledge score with a mean of 30.3 and a standard deviation of 46. Nearly

two-thirds of participants, 380(67%) have low knowledge scores regarding how often to perform breast self-examinations with a mean of 33 and a standard deviation of 47.1. In comparison, the majority of them 439(76.7%), and 535(94.4%) have good knowledge about the reasons behind practicing breast self-examination and what should be done if breast mass is detected respectively. With regards to participants' knowledge about the appropriate time to perform breast self-examination, only 207(36.5%) of them have good knowledge about this domain

**Table 3:** Knowledge of Breast Self-examination among Participants :(N = 567)

Domain		Frequency	Percent	Mean%	Std. Deviation %
The general knowledge about who should perform breast self-examinations	low knowledge	395	69.7	30.3	46
	Good knowledge	172	30.3		
The general knowledge about how often to perform breast self-examinations	low knowledge	380	67.0	33	47.1
	Good knowledge	187	33.0		
The general knowledge about the appropriate time to perform breast self-examination	low knowledge	360	63.5	36.5	48.2
	Good knowledge	207	36.5		
The general knowledge about the reasons behind practicing	low knowledge	131	23.1	77	42.2
	Good knowledge	436	76.9		
The general knowledge about What should be done if breast mass detected	low knowledge	32	5.6	94.3	23.1
	Good knowledge	535	94.4		
overall knowledge	Good knowledge	316	55.7	144.	49.7
	low knowledge	251	44.3		

**Table 4:** Respondents' attitudes towards breast self-examination

Variable	Category	Frequency	Percent
Doing breast Self-examination is wasting time (negative)	Agree	34	6.0
	Disagree	493	86.9
	Neutral	40	7.1
No family history of breast cancer so there is no need to practice breast Self-examination (negative)	Agree	65	11.5
	Disagree	435	76.7
	Neutral	67	11.8
Feel uncomfortable, can't do breast Self-examination once a month (negative)	Agree	88	15.5
	Disagree	420	74.1
	Neutral	59	10.4
It's embarrassing to do a breast self-examination (negative)	Agree	128	22.6
	Disagree	338	59.6
	Neutral	101	17.8
I am interested in doing a breast Self-examination (positive)	Agree	505	89.1
	Disagree	27	4.8
	Neutral	35	6.2
If there is a lump, I will go to a specialist doctor (positive)	Agree	521	91.9
	Disagree	20	3.5
	Neutral	26	4.6
I discuss with my friends about breast Self-examination (positive)	Agree	89	15.7
	Disagree	412	72.7
	Neutral	66	11.6
I am not afraid to think about the breast cancer (positive)	Agree	211	37.2
	Disagree	200	35.3
	Neutral	156	27.5

with a mean of 36.5% and a standard deviation of 48.2.

Overall knowledge score about breast self-examination is moderate in general as (55.7%) of the participants have good knowledge with a mean of 144 and a standard deviation of 49.7.

According to Table 4, most respondents have a positive attitude toward breast self-examination. As (89.1%) were interested in performing a breast self-exam, (91.9%) agreed to visit a specialist doctor if they found a lump. Also, (86.7%) disagree with the statement that breast self-examination is a waste of

**Table 5:** A cross-tabulation of overall knowledge and attitude of respondents

Domain		Overall knowledge		Total	X <sup>2</sup>	P-value
		Good knowledge	low knowledge			
Doing breast Self-examination is wasting time (negative)	Agree	12 (35.3%)	22 (64.7%)	34	44.903	.000
	Disagree	300 (60.9%)	193 (39.1%)	493		
	Neutral	4 (10.0%)	36 (90.0%)	40		
No family history of breast cancer so there is no need to practice breast Self-examination (negative)	Agree	33 (50.8%)	32 (49.2%)	65	36.933	.000
	Disagree	268 (61.6%)	167 (38.4%)	435		
	Neutral	15 (22.4%)	52 (77.6%)	67		
Feel uncomfortable, can't do breast Self-examination once a month (negative)	Agree	49 (55.7%)	39 (44.3%)	88	25.069	.000
	Disagree	252 (60.0%)	168 (40.0%)	420		
	Neutral	15 (25.4%)	44 (74.6%)	59		
It's embarrassing to do a breast self-examination (negative)	Agree	62 (48.4%)	66 (51.6%)	128	48.733	.000
	Disagree	225 (66.6%)	113 (33.4%)	338		
	Neutral	29 (28.7%)	72 (71.3%)	101		
I am interested in doing a breast Self-examination (positive)	Agree	302 (59.8%)	203 (40.2%)	505	33.251	.000
	Disagree	9 (33.3%)	18 (66.7%)	27		
	Neutral	5 ( )14.3%	30 (85.7%)	35		
If there is a lump, I will go to a specialist doctor (positive)	Agree	308 (59.1%)	213 (40.9%)	521	34.275	.000
	Disagree	7 (35.0%)	13 (65.0%)	20		
	Neutral	1 (3.8%)	25 (96.2%)	26		
I discuss with my friends about breast Self-examination (positive)	Agree	53 (59.6%)	36 (40.4%)	89	49.959	.000
	Disagree	253 (61.4%)	159 (38.6%)	412		
	Neutral	10 (15.2%)	56 (84.8%)	66		
I am not afraid to think about the breast cancer (positive)	Agree	139 (65.9%)	72 (34.1%)	211	44.238	.000
	Disagree	125 (62.5%)	75 (37.5%)	200		
	Neutral	52 (33.3%)	104 (66.7%)	156		

time, and (86.9%) disagree with the statement that breast self-examination is unnecessary when no family history of breast cancer. A significant association has been found between respondents' knowledge and attitudes toward breast self-examination ( $P = 0.05$ ) in Table 5.

## Discussion

In light of the increasing incidence and mortality rates of breast cancer in Saudi Arabia, along with efforts to raise breast cancer awareness<sup>25</sup>, the knowledge of Saudi females about self-examination needs to be assessed. It has been shown that breast self-examination can improve a woman's health by detecting early signs of breast cancer, thus decreasing mortality rates and increasing her likelihood of surviving. We conducted the present study to determine the knowledge, attitude, and practice of breast self-examination among 567 respondents. Compared with other studies in other Saudi Arabia provinces including Al Madinah Al Munawwara (Souad A. Fadhlalmawla, *et al.*)<sup>26</sup>,

Jeddah, (Al Thoubaity F, 2020)<sup>27</sup> and Qassim region (Jahan S, *et al.*)<sup>28</sup>, the Jazan women were more aware of breast self-examination. However, 36.2% did not perform it, similar to Cameroon (65.2%)<sup>14</sup> did not practice breast self-examination and Ethiopia in 2017 just (28.3%)<sup>29</sup> had performed it. Our study was strongly related to lack of time, not being convinced about breast self-examination, fear of finding some abnormality, not being at risk hence not being required to do so, and breast self-examination being too frequent to practice.

As regards the respondents' attitudes towards breast self-examination being significantly linked to respondents' knowledge, this study found a significant association between respondents' knowledge and attitudes ( $P = 0.05$ ), so a health education program designed to increase women's knowledge is essential to improve their attitudes towards breast self-examination, which is crucial to reducing breast cancer morbidity and mortality by increasing early detection and treatment which is supported by (Nazer Ali, *et al.*)<sup>30</sup>.

## Strengths, limitations, and public health implications

The research includes five governorates, which account for approximately one-third of the entire population of Jazan. Where the current study contains a large sample size which may cause an increase in the power of the study, therefore our findings can be generalized to all Jazan women. The limitation of this study was that the practice was not directly observed rather we used direct questions that would not know how exactly they were practicing it. The significance of this research is that it evaluates women's knowledge and attitudes on breast self-examination, recognizing the misunderstandings of people highlights the importance of consistently providing public education on these concepts through diverse media

## Conclusions

Study findings indicate moderate knowledge, and poor breast self-examination practices despite the majority of the participants having heard about breast self-examination (BSE), and also the study shows a significant association between knowledge and attitudes. The study recommends conducting health education programs and seminars regarding breast self-examination to increase awareness and address barriers hindering their practice of breast self-examination.

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## Author's contributions

This study was conceived and designed by the 1st Author, who conducted research, conceptualized,

reviewed the literature, and approved the final version of the manuscript. 2nd author designed the methodology, 3rd author performed formal analysis, 5th author participated in project administration, and authors from 6 to 11 collected data. All authors have critically reviewed and approved the final draft.

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