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Level of awareness of mammogram screening among women of Qatif city, Saudi Arabia

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Abstract
Background: Breast cancer is a serious public health issue worldwide. Approximately 1.67 million new cases of breast cancer, representing 25% of all cancers, were diagnosed among women in 2012. Its incidence is the highest in developed countries, with rates as high as 92 per 100,000 people in North America compared with 27 per 100,000 people in Middle Africa and Eastern Asia. It is the leading cause of death among women in developing countries and the fifth cause of mortality among all cancers. In Saudi Arabia, a total of 1,473 cases of breast cancer were diagnosed among women in 2010, representing 27.4% of all newly diagnosed cancers. It ranked first among all cancers diagnosed in women in the same year, with patients aged 48 years on average at the time of diagnosis. According to that a lot of studies done about breast cancer and/or mammogram screening to assess the level of knowledge, these studies end with various results, one of them done to investigate knowledge and practices of breast cancer screening among women aged 50 years or older in order to inform the breast cancer national health program and end with results that showed very low rates of breast cancer screening in the Kingdome of Saudi Arabia and they call for educational campaign to improve breast screening. Other study done in AL Khobar and found that Forty-eight percent women had poor knowledge about breast cancer. Also, in the multiple regression analysis, age, education and occupation of women were significant positive predictors of level of knowledge in their sample and TV was the most important source of knowledge. According to multiple studies done in this topics with their different results and according to the disease nature, morbidity, mortality and its only source of method for early screening and detection our research aim to assess the level of awareness among women of Qatif city, Saudi Arabia.
Objective: to assess the level of knowledge regarding mammogram screening among women of Qatif city, Saudi Arabia.
Method and Material: our study is descriptive, cross-sectional study conducted among women in Qatif city via social media (WhatsApp app) by electronic questioner within one week of December 2017. Data collection included random sample of 605 women in age's ranges between 18 to more than 50 years. We conducted an electronic questioner constructed in Arabic, that was written based on target ages and their educational level, included questions about mammogram screening knowledge and sources of knowledge also asked about mammogram screening general information. From the age of screening, other risky cases and mammogram screening safety and side effects and end it with questions related to mammogram screening awareness programs that was provided across the country to increase the level of awareness of breast cancer and mammogram screening and asked about personal view regarding how importance this screening is.
Results: The study showed that (40.3%) which is the majority of the sample range in ages between 18 to 29, more than half of the sample had college education (58.7%), secondary school education came second to it by (29.1%). Regarding knowledge about mammogram screening from 605 women (84%) had knowledge and in correlation to the age and level of knowledge about mammogram screening, it found to be high in age group between 18 to 29 years, it showed 180 women from 244 had knowledge. Both age groups of 30 to 40 and 41 to 50 from 156 and 150 women, equally 138 women had knowledge and in women more than 50 years, 52 women from 55 had knowledge. In correlation between educational level and knowledge about mammogram screening, it found to be high in women who undergo college education, 355 women as a total and 321 women from them had knowledge about mammogram screening, from secondary school education 128 women from 176 had knowledge about mammogram screening, postgraduate study and intermediate school had 29 from 32 and 21 from 30 women had knowledge about mammogram screening, least numbers found in women who got elementary school education and in women who is not enrolled in educational institutions, that 6 from 9 and 3 from 3 women had knowledge about mammogram screening. The sources of knowledge regarding mammogram screening showed awareness campaign had the highest percentage among other sources by (27.3%). while the hospitals and PHC (18%) as a source of awareness, social media, TV and Internet, friends and family and educational institutions had a close percentages (15.4%), (11.5%), (11.3%) and (10.3%). The least percentages found in women who had breast cancer or one of family member and in others by (4.8%) and (1.4%) (56.5%) more than half of the sample had knowledge about the proper age to start screening. (72%) had knowledge about risky cases that need early detection and screening. Regarding mammogram misconception ideas, (7.6%) had misconception idea about mammogram screening hazards. (3%) had misconception idea about mammogram that it leads to cancer or cancer metastasis and (14.9%) had misconception idea about mammogram screening that use a high amount of radiation. More than half of the sample (67.4%) know that hospitalization is not needed to undergo mammogram screening. In our study we found that 427 (70.6%) of women had knowledge about mammogram screening programs provided by our country, and (73.7%) had knowledge about the availability of mammogram screening van in Saudi Arabia. At the end (79%) women believe that mammogram screening is an important screening, while (4.6%) believe that mammogram screening is not important.
Conclusion: Our study showed good level of knowledge regarding mammogram screening among women of Qatif city, Saudi Arabia, that differ among ages, and educational level. Also, there are some misconception ideas that still need to be corrected about the safety, hazard and side effects. our research showed that awareness campaign, hospitals/PHC and social media and other sources play a role in awareness of Qatif city, specially awareness campaign (27.3%) that was provided and established to educate, guide and to improve people knowledge about breast cancer and mammogram screening, by increasing their knowledge, early detection and treatment will reduce the mortality and increase the survival rates.

Keywords: breast cancer, among women, Qatif city, Saudi Arabia

1. Introduction

Breast cancer is the most common cancer and a principal cause of cancer death among women globally [1]. It is the most frequent cancer of women, and ranking second overall when both sexes are considered [2]. Also, Once considered a disease of high-income countries, about 50% of breast cancer cases and 58% of breast cancer deaths occur in developing nations [1]. The five-year survival rate among women with newly diagnosed breast cancer in the United States has reached 89% [1]. In contrast, breast cancer cure rates in low-income

countries are estimated to be below 40% [1]. Many advances in breast cancer control in high-income countries like the United States are attributed to attention to disease risk factors and symptoms, advances in early detection, and accessible and effective multimodality treatment [1]. It's typically produces no symptoms when the tumor is small and most easily treated. Mortality from breast cancer is preventable if the disease can be diagnosed early [3]. Mammography is the only breast screening procedure for which empirical evidence exists to have significantly reduced breast carcinoma mortality by about 63% [4], which is why screening is important for early detection. Mammography, a screening procedure, is an x-ray examination of the breast that has decreased the risk of death from breast cancer by 25 to 30% [5]. It can detect breast cancer or carcinoma in situ at 5 to 10 mm in diameter. Most physicians cannot reliably detect lesions smaller than 10 mm on physical examination, and patients generally seek medical attention for lesions that are 25 mm or larger [5]. As mammogram screening is the first choice for early detection of breast cancer, screening starts at age of 40 and in risky cases it need earlier detection and follow-ups, breast cancer is one of the cancers that affects the patient's body health, psychological health and also affects the country economically. So early detection and treatment play a role to improve its outcomes by decreasing the mortality and increasing the survival rates. All that can be reached by undergoing mammogram screening which is freely available in Saudi Arabia. Regarding that, to strengthen knowledge of mammogram screening, and to increase the early detection of breast cancer many campaigns have been established in Kingdom of Saudi Arabia as National Campaign for Breast Cancer Awareness, it has been worked by presence of mobile mammogram units (big pink bus) in malls, primary health care centers and local events, that provide convenient and safe breast screenings to underserved women over age 40. All that effort done to increase women knowledge and awareness regarding breast cancer and mammogram screening. In our study we aim to assess the level of knowledge regarding mammogram screening, involving in that women of Qatif city in Eastern province of Saudi Arabia.

2. Literature review

Screening mammography is an important tool for detecting early breast cancer [5]. In many countries, screening programs are mandatory for women over 50 years of age. This is due to the higher incidence of breast cancer in older women there, consideration of cost-benefit ratio, and past fears about radiation risks in younger women [5]. One review discounts the last factor, indicating that even in women as young as 25, the benefits of mammographic screening far outweigh any risks [5]. Given the fact that the majority of breast cancer patients in Saudi Arabia are younger than those in the West, mainly because of the nature of the population pyramid of Saudi Arabia, the right population for screening needs to be defined and access to specialized medical services must be assured [5]. The lack of public knowledge about cancer is a potential barrier preventing people from participating in such studies and in cancer control activities [5]. So in this literature review we will present some of the studies that showed the level of awareness and knowledge regarding mammogram screening:

First study was published under a name of breast cancer screening in Saudi Arabia: Free but almost no takers [6], this study done to investigate knowledge and practices of breast cancer screening among women aged 50 years or older in order to inform the breast cancer national health program, the survey is a national multistage survey of individuals aged 15 years or older [6]. They collect 10,735 participant [6] in this study and the survey included questions on socio-demographic characteristics, tobacco consumption, diet, physical activity, health-care utilization, different health-related behaviors, and self-reported chronic conditions [6]. And female respondents were asked about knowledge and practices of self and clinical breast exams, as well as mammography [6] and their results showed 1,135 of women aged 50 years or older were included in the analysis [6]. About 89% of women reported not having a clinical breast exam in the past year, and 92% reported never having a mammogram [6]. Women living in Al Sharqia had the highest rate of mammography use [6]. Women who were educated, those who had received a routine medical exam within the last two years, and those who were diagnosed with hypertension were more likely to have had a mammogram in the past two years [6]. They end with results that showed very low rates of breast cancer screening in the Kingdome of Saudi Arabia, they call for educational campaign to improve breast screening [6].

Second study published under name of knowledge and attitude towards screening mammography among 400 women in the eastern province of Saudi Arabia [5]. In this study doctor Fatima A. Al-Mulhim aimed to assess knowledge and attitude of Saudi females towards screening mammography, in her research she found that Positive family history of breast cancer was the most significant factor that was positively associated with individual knowledge and attitude towards screening mammography ($p<0.00001$) [5]. There was no significant association with the level of education [5]. Poor knowledge and attitude were observed among 41.8% of all participants, especially in relation to not having mammography done or not wishing to have it done [5]. There were 51 (12.8%) participants who had not had mammography done, but wished to have it, 25 (6.3%) participants who were undecided about having mammography done in the future, while 67 (16.8%) wished to have it done every one to two years [5]. And concluded her study with deficient knowledge and attitude found towards screening mammography even with highly educated females.

Third study done and published under name of knowledge and perception of breast cancer and practice of breast self-examination among female patients attending primary health care centers in AL Khobar city, Saudi Arabia [7]. Their study aim is to assess the knowledge of risk factors and screening methods for breast cancer, perception of the disease, and practice of breast self-examination (BSE) among female patient attending primary health care centers (PHCCs) in Al-Khobar city, Saudi Arabia [7]. They found that Forty-eight percent women had poor knowledge about breast cancer [7]. Around 85% women recognized postmenopausal hormone therapy, period of breast feeding and smoking to be risk factors for breast cancer [7]. Only 25% women knew that mammogram is the best screening method [7]. Almost half (49.2%) of participants were seriously concerned about

getting breast cancer [7]. In the multiple regression analysis, age, education and occupation of women were significant positive predictors of level of knowledge ($p < 0.05$) [7]. Television was the most important source of knowledge (44.1%) [7]. BSE was practiced by 44.6% women [7]. Logistic regression analysis showed that practice of BSE in women was more likely with increasing age, educational level and knowledge scores as well as in homemakers and health-care workers ($p < 0.05$) [7].

Also other study conducted in AlHassa, KSA to assess level and determinants of knowledge about risk factors and utilization of screening methods used for breast cancer early detection among adult Saudi women in Al Hassa [8], their cross sectional study done with total of 1,315 Saudi adult females selected from ten primary health care centers [8]. Their results showed that overall level of knowledge regarding risk factors and appropriate screening was low and dependent upon educational and occupational status. Early screening is underutilized among participants due to several perceived barriers. Clinical breast examinations were employed by less than 5% and mammography by only 3% of cases [8]. A positive family history was found in 18% of cases among first and second degree relatives, and 2 % had a prior history of benign breast lesions [8].

3. Methodology

The study intends to find the level of awareness of mammogram screening among women of Qatif city in eastern province of Saudi Arabia. Study design is cross-sectional. We collected our sample by conducting a questioner via social media to collect a large number of sample and to reach our target ages.

Study design, sample and place

Our study is descriptive, cross-sectional study conducted among women in Qatif city via electronic questioner within one week of December 2017. Data collection included random sample of 605 women in age's ranges between 18 to more than 50 years. We conducted an electronic questioner constructed in Arabic that was written based on target ages and their educational level, included questions about mammogram screening knowledge and sources of knowledge also asked about mammogram screening general information. From the age of screening, other risky cases and mammogram screening safety and side effects and end it with questions related to mammogram screening awareness programs that was provided across the country to increase the level of awareness of breast cancer and mammogram screening and asked about personal view regarding how importance this screening is.

The survey conduction

Among social media WhatsApp app so by that it will be easy to found a large sample including the target ages.

Statistical techniques

Survey results inserted into SPSS where it was analyzed to show the frequency and percentages and to find frequency of correlation between the age, educational and women knowledge about mammogram to assess the level of knowledge of our participants.

Ethical consideration

The purpose of the study was explained and all sample's information collected and used after their permission, that was written at the beginning of the questioner before they start answering the questions and all ethical consideration was followed throughout the study.

4. Results

This study conducted among women in Qatif city in eastern province of Saudi Arabia. In order to see the level of awareness of mammogram screening. Descriptive data analysis showed this results by using SPSS.

Frequency distribution of sample age

Table 1

		Frequency	Percent
Valid	18 to 29	244	40.3
	30 to 40	156	25.8
	41 to 50	150	24.8
	more than 50	55	9.1
	Total	605	100.0

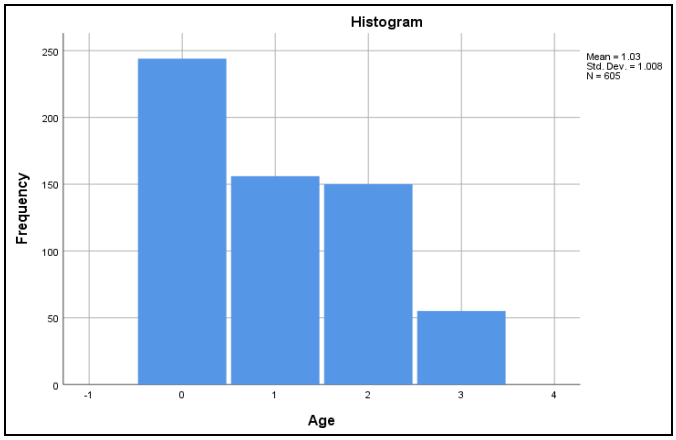

Fig 1

The figure show that nearly (40.3%) which is the majority of the sample range in ages between 18 to 29. After that, (25.8%) of the sample rang in ages between 30 to 40, (24.8%) of the sample range in ages between 41 to 50, and less percentages found in ages more than 50 years old by (9.1%).

Frequency distribution of sample educational status

Table 2: Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not enrolled in educational institutions	3	.5	.5	.5
	Elementary school	9	1.5	1.5	2.0
	Intermediate school	30	5.0	5.0	6.9
	Secondary school	176	29.1	29.1	36.0
	College	355	58.7	58.7	94.7
	Postgraduate study	32	5.3	5.3	100.0
	Total	605	100.0	100.0	

It is obvious from the table that more than half of the sample had college education (58.7%), secondary school education came second to it by (29.1%). postgraduate and intermediate school education percentages close to each other (5.3%) and (5%).less percentages found in elementary school education and in women non-enrolled in education institutions by (1.5%) and (0.5%).

Frequency distribution of sample heard about mammogram screening:

Table 3

		Frequency	Percent
Valid	No	97	16.0
	Yes	508	84.0
	Total	605	100.0

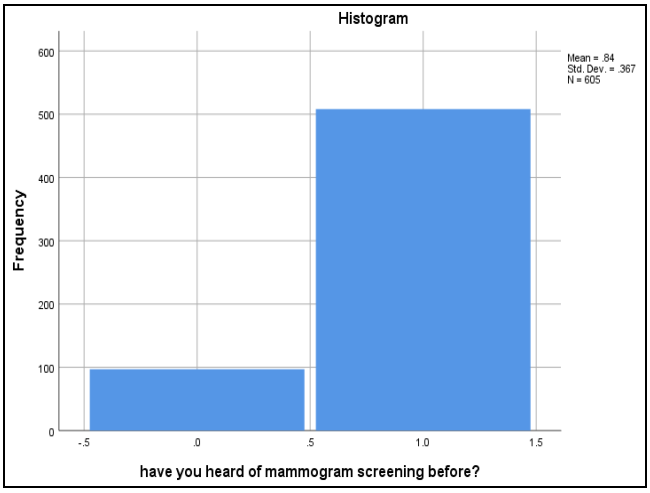

Fig 2

Total sample is 605 women. Who answered ''Yes'' is the highest percentage by (84%), and who answered ''No'' from the total is 97 women (16%).

Crosstab to the age * question of participants' knowledge of mammogram screening

Table 4

Age * have you heard of mammogram screening before? Crosstabulation				
Count				
		Have you heard of mammogram screening before?		Total
		No	Yes	
Age	18 to 29	64	180	244
	30 to 40	18	138	156
	41 to 50	12	138	150
	more than 50	3	52	55
Total		97	508	605

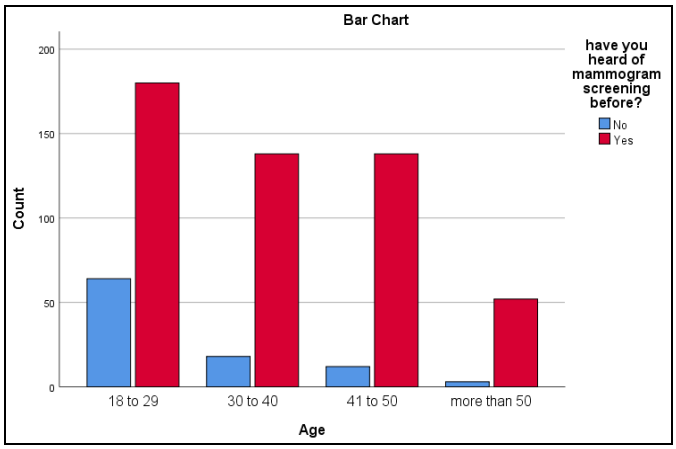

Fig 3

The table show that 180 from 244 women in ages from 18 to 29 know about mammogram screening, 138 from 156 women in ages from 30 to 40 know about mammogram screening, 138 from 150 women in ages from 41 to 50 know about mammogram screening and 52 from 55 women in ages of >50 years now about mammogram screening.

Crosstab to the education * question of participants' knowledge of mammogram screening

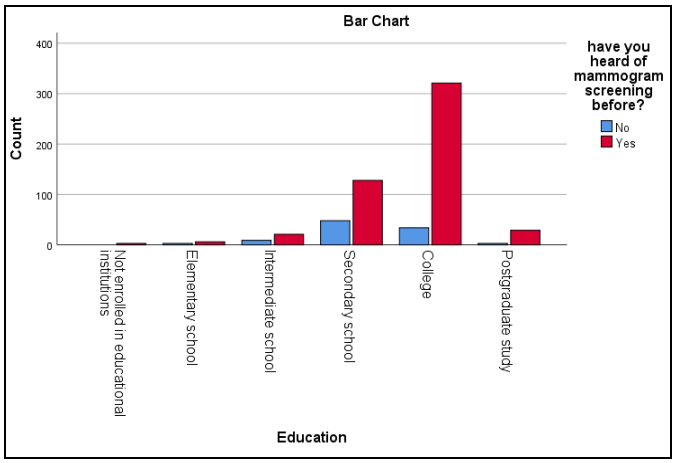

Fig 4

The chart show the majority of the sample level of education is college, included 355 women and 321 from them had knowledge about mammogram screening, secondary school education came second to it, total 176 women, from them 128 women had knowledge about mammogram screening, postgraduate study and intermediate school had 29 from 32 and 21 from 30 women had knowledge about mammogram screening, least numbers found in women who got elementary school education and in women who is not enrolled in educational institutions, that 6 from 9 and 3 from 3 women had knowledge about mammogram screening.

Frequency distribution of sample sources of knowledge

Table 5

		Responses		Percent of Cases
		N	Percent	
source of knowledge	Friends/Family	119	11.3%	23.5%
	Hospital/PHC	189	18.0%	37.4%
	Having breast cancer or one of family member	51	4.8%	10.1%
	Awareness campaigns	287	27.3%	56.7%
	TV/Internet	121	11.5%	23.9%
	Social media	162	15.4%	32.0%
	School/College/Institute (any educational institution)	108	10.3%	21.3%
	Others	15	1.4%	3.0%
Total		1052	100.0%	207.9%

This table display the sources of knowledge regarding mammogram screening among the sample, the awareness campaign had the highest percentage among other sources by (27.3%). while the hospitals and PHC (18 %) as a source of awareness, social media, TV and Internet, friends and family and educational institutions had a close percentages (15.4%),(11.5%),(11.3%)and (10.3%).the least percentages found in women who had breast cancer or one of family member and in others by (4.8%) and (1.4%).

Frequency distribution women's knowledge regarding the proper age to start mammogram screening

Table 6

		Frequency	Percent
Valid	Any age	93	15.4
	Below 40	71	11.7
	40 and above	342	56.5
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

From 506 women, more than half the sample answered the question regarding the proper age to start mammogram screening correctly from 40 and above (56.5%). and least percentages found in the two remaining choices by (15.4%) for ''ANY AGE'' and (11.7%) for ''BLEOW 40''.

Frequency distribution of women's knowledge regarding the present of any situations that need early mammogram screening

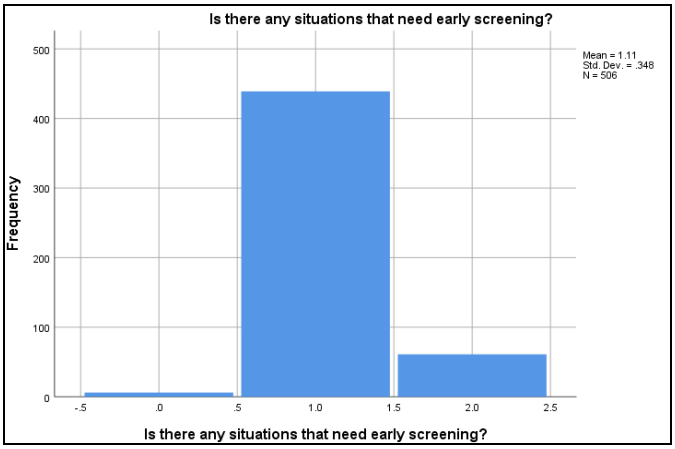

Fig 5

From 506 women, a high percentages found in women who answered ''YES'' (72%), who answered '' I DON'T KNOW'' (10.1%) and who answered '' NO'' (1.0%).

Frequency distribution of women's knowledge regarding mammogram screening if it's dangerous or not

Table 7

		Frequency	Percent
Valid	No	342	56.5
	Yes	46	7.6
	I don't know	118	19.5
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

The table display that (56.5% of) the sample answered ''NO'', (19.5%) of the sample did not know the answer. least percentages found in women who answered ''YES''.

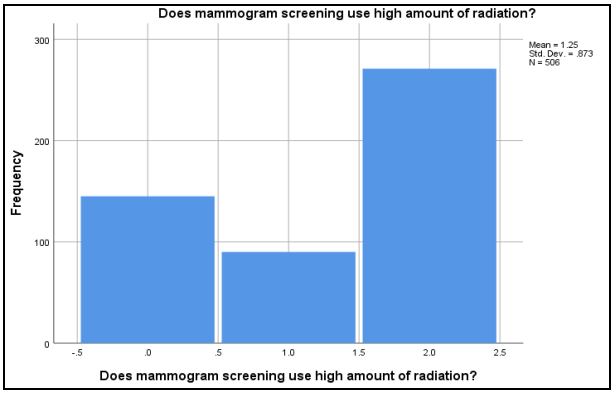

Fig 6

Frequency distribution of women's knowledge regarding mammogram if it uses high amount of radiation

Table 8

		Frequency	Percent
Valid	No	145	24.0
	Yes	90	14.9
	I don't know	271	44.8
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

From 506 women, (44%) which is the majority of them did not know the answer, (24%) answered it with ''NO'' and (14.9%) answered it with ''YES''.

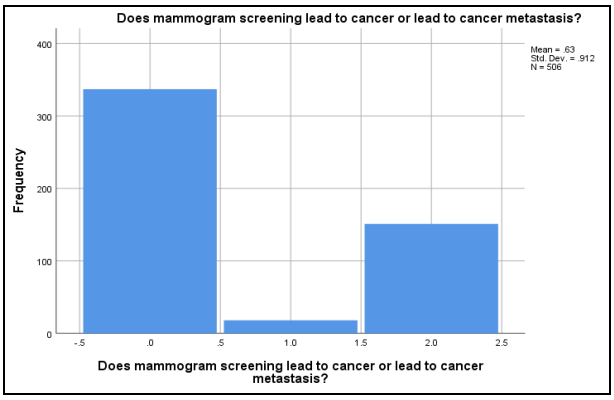

Fig 7

Frequency distribution of women's knowledge regarding mammogram screening if lead to cancer or cancer metastasis

Table 9

		Frequency	Percent
Valid	No	337	55.7
	Yes	18	3.0
	I don't know	151	25.0
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

Most of the sample answered ''NO'' (55.7%), (25%) did not know the answer and least percentages found in answer ''YES''.

Frequency distribution of women's knowledge regarding mammogram screening if it need hospitalization:

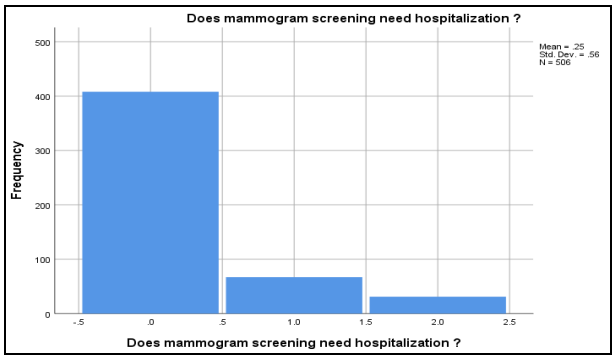

Fig 8

From the chart, more than half of the sample answered ''NO'' (67.4%), least percentages found in the remaining two answers ''I DON'T KNOW'' and ''YES'' (5.1%) and (11.1%).

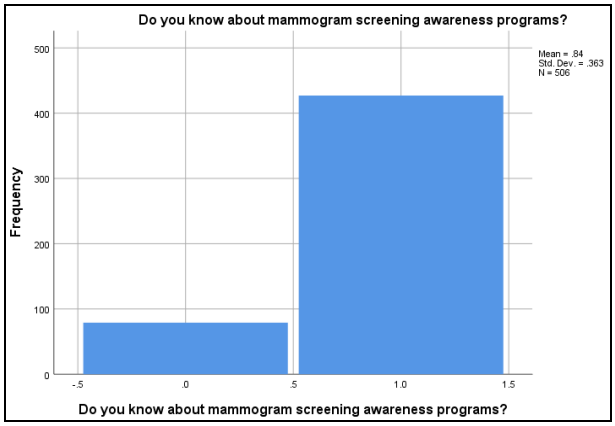

Fig 9

Frequency distribution of women's knowledge regarding mammogram screening awareness programs in Saudi Arabia

From 506 women, 427 answered ''YES'' (70.6%) and 79 answered '' NO'' (13.1%).

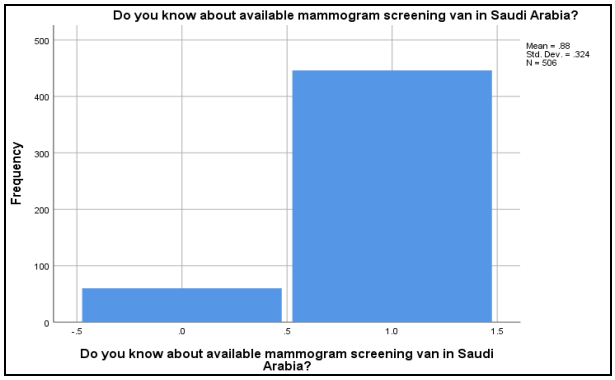

Fig 10

Frequency distribution of women knowledge regarding mammogram screening van in Saudi Arabia

Table 10

		Frequency	Percent
Valid	No	60	9.9
	Yes	446	73.7
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

Table display the answers of the sample that (73.7 %) answered ‘’YES’’ and (9.9%) answered ‘’NO’’.

Frequency distribution of women’s personal believe regarding mammogram screening if it is an important screening

Table 11

		Frequency	Percent
Valid	No	28	4.6
	Yes	478	79.0
	Total	506	83.6
Missing	System	99	16.4
Total		605	100.0

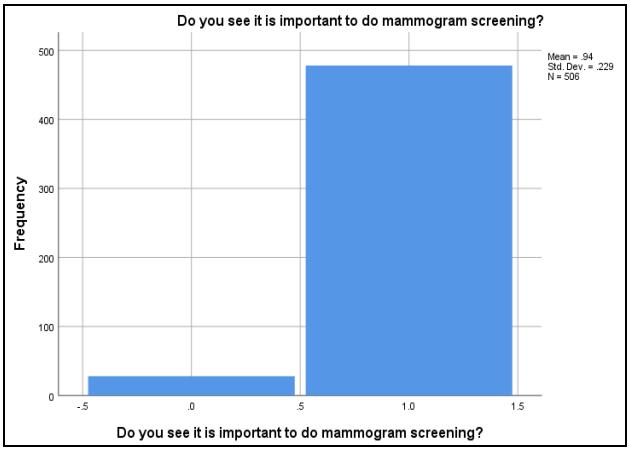

Fig 11

From the chart 506 women answered ‘’YES’’ (79%) and 28 women answered ‘’NO’’ (4.6%).

5. Discussion

Table 12

source of knowledge	Responses	
	N	%
Friends/Family	119	11.3%
Hospital/PHC	189	18.0%
Having breast cancer or one of family member	51	4.8%
Awareness campaigns	287	27.3%
TV/Internet	121	11.5%
Social media	162	15.4%
School/College/Institute (any educational institution)	108	10.3%
Others	15	1.4%
Total	1052	100.0%

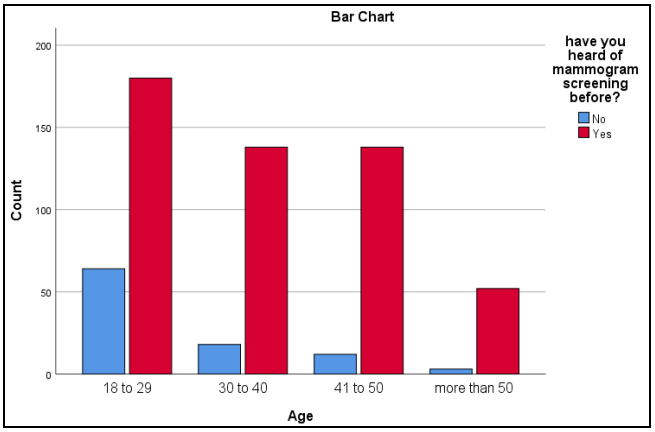

Fig 12

Mammography, a screening procedure, is an x-ray examination of the breast that has decreased the risk of death from breast cancer by 25 to 30% [5]. It can detect breast cancer or carcinoma in situ at 5 to 10 mm in diameter [5]. Most physicians cannot reliably detect lesions smaller than 10 mm on physical examination, and patients generally seek medical attention for lesions that are 25 mm or larger [5]. As mammogram screening is the first choice for early detection of breast cancer, screening starts at age of 40 and in risky cases it need earlier detection and follow-ups, breast cancer is one of the cancers that affects the patient’s body health, psychological health and also affects the country economically. So early detection and treatment play a role to improve its outcomes by decreasing the mortality and increasing the survival rates. All that can be reached by undergoing mammogram screening which is freely available in Saudi Arabia. In our study hypothesis is to assess the level of mammogram screening awareness including women in ages from 18 to more than 50 from Qatif city, the study found that our participant’s ages was : (40.3%) in ages between 18 to 29, (25.8%) in ages between 30 to 40, (24.8%) in ages between 41 to 50 and (9.1%) in ages more than 50 years, our sample educational level was (58.7%) in women who got college education and (29.1) % in women who got secondary school education and the results showed 508 (84%) from 605 women heard about mammogram screening, while 97 (16%) never heard about it.

In correlation to the age, level of knowledge regarding mammogram screening found to be high in age group between 18 to 29 years, that 180 women from 244 had knowledge. Both age groups of 30 to 40 and 41 to 50 from 156 and 150 women, 138 had knowledge and in women more than 50 years, 52 women from 55 had knowledge. And most of these knowledges came from awareness campaigns by (27.3%). (18%) from hospitals and PHC, (4.8%) in women who have breast cancer or one of her family member, (11.5%) from TV/Internet. In a study done in AL Khobar, they found that Forty-eight percent women had poor knowledge about breast cancer. Only (25%) women knew that mammogram is the best screening method. Almost half (49.2%) of participants were seriously concerned about getting breast cancer [7] and In the multiple regression analysis, age, education and occupation of women were significant positive predictors of level of knowledge ($p < 0.05$) [7]. Television was the most important

source of knowledge (44.1%) [7] in other study done in Saudi Arabia involving 400 women in the eastern province of Saudi Arabia under name of knowledge and attitude towards screening mammography among 400 women in the eastern province of Saudi Arabia [5], it showed that positive family history of breast cancer was the most significant factor that was positively associated with individual knowledge and attitude towards screening mammography [5]. Also, other study In Al Hassa governorate, a population-based study found lower rates of mammography, 5.1% among 1,315 women aged 18-65 years old and overall level of knowledge regarding risk factors and appropriate screening was low and dependent upon educational and occupational status [6]. Also, our study found that more than half the sample answered the questions regarding the proper age to start mammogram screening correctly from 40 and above (56.5%) and also high percentage (72%) found in participant's knowledge about risky cases that need early detection and screening. In mammogram screening there are some misconceptions that women fall into it, which is about the side effects of mammogram screening so according to that, we asked about mammogram screening if it is dangerous or not, if it use a high amount of radiation and if it cause cancer or cancer metastasis. The answers showed percentages of good knowledge regarding mammogram screening if it is dangerous, (56.5%) they answered it with "No", and regarding high amount of radiation (44.8%) of the sample answered ''I don't know'', (14.9%) answered "yes" and (24%) answered "No". In the question that asked about mammogram if it cause cancer or cancer metastasis (55.7%) answered "No", (25%) answered "I don't know" and 18 women (3%) answered "yes". this misconception ideas may act as a barrier to refrain women from screening so we should apply more efforts regarding these misconceptions to be corrected. Mammography was introduced to KSA prior to 2002 [6]. Specifically, a nationwide breast cancer screening center was established in Riyadh in 2007, and 1,215 were screened in the first year, although not all were 50 years or older at the time [6]. A regional mammography screening program, aimed at women 35-60 years old, was also established in 2007 in Al Qasim, and was preceded by an awareness campaign. Mammography has been available in all regions of KSA since 2005 [6]. Regarding that, In our study we found that 427 (70.6%) of women know about mammogram screening program provided by our country, and (73.7%) know about the availability of mammogram screening van in Saudi Arabia.

6. Conclusion

Our study aim is to find the level of knowledge regarding mammogram screening among women of Qatif city in eastern province, Saudi Arabia. The study showed that (40.3%) which is the majority of the sample range in ages between 18 to 29, more than half of the sample had college education (58.7%), secondary school education came second to it by (29.1%). Regarding knowledge about mammogram screening from 605 women (84%) had knowledge and in correlation to the age and level of knowledge about mammogram screening, it found to be high in age group between 18 to 29 years, it showed 180 women from 244 had knowledge. Both age groups of 30 to 40 and 41 to 50 from 156 and 150 women, equally 138 women had knowledge and in women more than 50 years, 52 women from 55 had knowledge. In correlation between educational level and knowledge about mammogram screening, it found to be high in women who undergo college education, 355 women as a total and 321 women from them had knowledge about mammogram screening, from secondary school education 128 women from 176 had knowledge about mammogram screening, postgraduate study and intermediate school had 29 from 32 and 21 from 30 women had knowledge about mammogram screening, least numbers found in women who got elementary school education and in women who is not enrolled in educational institutions, that 6 from 9 and 3 from 3 women had knowledge about mammogram screening. The sources of knowledge regarding mammogram screening showed awareness campaign had the highest percentage among other sources by (27.3%). While the hospitals and PHC (18%) as a source of awareness, social media, TV and Internet, friends and family and educational institutions had a close percentages (15.4%), (11.5%), (11.3%) and (10.3%). The least percentages found in women who had breast cancer or one of family member and in others by (4.8%) and (1.4%) (56.5%) more than half of the sample had knowledge about the proper age to start screening. (72%) had knowledge about risky cases that need early detection and screening. Regarding mammogram misconception ideas, (7.6%) had misconception idea about mammogram screening hazards. (3%) had misconception idea about mammogram that it leads to cancer or cancer metastasis and (14.9%) had misconception idea about mammogram screening that use a high amount of radiation. More than half of the sample (67.4%) know that hospitalization is not needed to undergo mammogram screening. In our study we found that 427 (70.6%) of women had knowledge about mammogram screening programs provided by our country, and (73.7%) had knowledge about the availability of mammogram screening van in Saudi Arabia. At the end (79%) women believe that mammogram screening is an important screening, while (4.6%) believe that mammogram screening is not important. Our study showed good level of knowledge regarding mammogram screening among women of Qatif city, Saudi Arabia, that differ among ages, and educational level. Also, there are some misconception ideas that still need to be corrected about the safety, hazard and side effects. our research showed that awareness campaign, hospitals/PHC and social media and other sources play a role in awareness of Qatif city, specially awareness campaign (27.3%) that was provided and established to educate, guide and to improve people knowledge about breast cancer and mammogram screening, by increasing their knowledge, early detection and treatment will reduce the mortality and increase the survival rates.

One of the limitations of this study included the fact that it has a diversity in percentage of the age of the sample, that the females 50's and older was 9.1% which is very small, while 40% for female (18-29) years old. Moreover, we conducted our survey to collect the data that help to assess the participants' knowledge and awareness regarding mammogram screening and to get the target aim of the study.

As a recommendation we recommend researchers who research in this topic and field to collect a large sample, that include different age groups and both genders, and to find

other correlations that affect knowledge and awareness.

7. References

1. Emma Perry Morse, Bertha Maegga, Gertrud Joseph, and Susan Miesfeldt. Breast cancer knowledge, beliefs, and screening practices women seeking care at District Hospital in Dares Salaam, Tnzania. Breast Cancer Auckl, 2014; 8:73-79.
2. Parkin DM, Bray F, Ferlay J, Pisani P. Global cancer statistics, 2002. CA Cancer J Clin. 2005; 55:74-108.DOI:10.3322/canjclin.55.2.74.
3. American Cancer Society. Breast Cancer Facts & Figures 2017-2018. Atlanta: American Cancer Society, Inc., 2017.
4. Tabar L, Vitak B, Chen HT, Yen M, Duffy SW, Smith RA. Beyond randomized controlled trials, organized mammography screening substantially reduces breast carcinoma mortality. Cancer. 2001; 91:1724-1731.DOI: 10.1002/1097-0142(20010501)91:9<1724:AID-CNCR1190>3.0.CO;2-V.
5. Fatima A, Al Mulhim. Knowledge and attitude towards screening mammography among 400 women in the eastern province of Saudi Arabia. J Family Community Med. 2001; 8(3):73-78.
6. Charbel El Bcheraoui. Mohammed Basulaiman, Shelley Wilson, Farah Daoud, Marwa Tuffaha, Mohammad A *et al*. Breast cancer screening in Saudi Arabia: free but almost no takers. PLoS One. 2015; 10(3):e0119051.
7. Parveen Rasheed, Latifa Saad Al-Sowielem. knowledge and perception of breast cancer and practice of breast self-examination among female patients attending primary health care centers in AL Khobar city, Saudi Arabia Kuwait Medical Journal. 2013; 45(2):123-129.
8. Amin TT, Al Mulhim AR, Al Meqihwi A. Breast cancer knowledge,risk factors and screening among adult Saudi women in primary health care setting. Asian Pac J Cancer Prev. 2009; 10(1):133-8.
9. Rolina K, Al-Wassia, FRCPC, Nada J Farsi, BDS PhD, Leena A. Merdad, BDS, SD, and Sara K. Hagi, PhD. Patterns, knowledge and barriers of mammography use among women in Saudi Arabia. Saudi Med J. 2017; 38(9):913-921.