

Evaluation of Knowledge and Perception of Risk Factors and Screening For Breast Cancer Among Adult Females in Tabuk City-2017

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ABSTRACT

Introduction: There were 1,853 female breast cancer cases for year 2013 in Saudi Arabia. Breast cancer ranked the 1st among females accounting for 16.1%. Studies in the UK and USA have shown that women's perceptions of the population risk of cancer and their personal vulnerability are at variance with medical perspectives. Before genetic risk counseling, a minority of women have an accurate view of the chances of developing breast cancer, and the majority either over- or underestimate. A number of factors have been explored for their possible association with risk perception, including demographic and psychological factors and heuristic factors. There is considerable evidence in the literature that younger women have the highest levels of perceived risk of breast cancer, despite being at the lowest actual risk. However, there is also some evidence of a curvilinear pattern of risk perception, with lowest levels of risk perception among those aged 50 to 64 years.

Methods: We have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. Sampling was stratified for the different geographical areas of the city. A self-administered questionnaire, about Knowledge and perception of Breast cancer risk factors and screening, to be filled by participants and then to be returned back on the next day.

Results: In this study, there was a significant relation between

age and level of knowledge ($p=0.007$). Older participants showed lower level of knowledge of breast cancer. 23% of participants decided not to have regular mammogram because it is likely to be painful. We reported significant relation between level of knowledge of breast cancer and level of education.

Conclusion: We need to apply more efforts to increase the knowledge of risk factors and importance and perception of screening procedures of breast cancer among females in Tabuk city.

Keywords: Breast Cancer, Risk Factors, Screening.

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INTRODUCTION

There were 1,853 female breast cancer cases for year 2013 in Saudi Arabia. Breast cancer ranked the 1st among females accounting for 16.1%.¹ Identification of breast cancer predisposing genes has created a demand for personalized risk information in families with a cancer family history.² Studies in the UK and USA have shown that women's perceptions of the population risk of cancer and their personal vulnerability are at variance with medical perspectives. Before genetic risk counseling, a minority of women have an accurate view of the chances of developing breast cancer, and the majority either over- or underestimate.^{3,4} A number of factors have been explored for their possible association with risk perception, including demographic and psychological factors and heuristic factors.⁴⁻⁷ In a study from Scotland, older age, were found to be linked with risk overestimation before counseling, but only age was linked to any

significant degree.⁴ A quantitative survey of 330 women showed that those who had lost a mother (from breast cancer) in adolescence were more likely to overestimate and to have higher levels of cancer worry.⁸ A study based on Behavioral Risk Factor Surveillance showed that women residing in rural areas were less likely to receive mammograms in accordance with recommended guidelines than their urban counterparts.⁹ There is considerable evidence in the literature that younger women have the highest levels of perceived risk of breast cancer, despite being at the lowest actual risk.¹⁰ However, there is also some evidence of a curvilinear pattern of risk perception, with lowest levels of risk perception among those aged 50 to 64 years.¹¹ It is generally agreed that women who are more knowledgeable about breast cancer risk factors, screening recommendations, and mammography are more likely to be screened.¹² There is also

considerable evidence supporting a positive association between family history of breast cancer and increased levels of perceived risk.¹³ Several other factors have been found to contribute to increased perceptions of breast cancer risk, including having had a prior benign breast symptom.¹⁴ As hypothesized by many health behavior change models, some research supports the position that there is a positive association between risk perception and screening behavior; that is, the greater a woman's perceived risk, the more likely she is to comply with screening recommendations.¹⁵ However, it has also been argued that excessively overestimated perceptions of risk may deter some women from undergoing recommended screening.¹⁶

METHODS

We have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. The study was conducted during the period from January to May 2017. The participants were female and selected by random sampling. Sampling was stratified for the different geographical areas of the city. The sample size was calculated based on the formula ($n = Z_{1-\alpha}^2 P(1-P)/d^2$), where n = sample size = 384,¹⁷⁻¹⁸ Z = standard normal variate = 1.96 (at 5%

type I error, $p = 0.05$), P = expected proportion = 50%, and d = precision error = 5%. Additional 20 % was added to cover the missing data. The total sample obtained was 460. All the pupils were approached to obtain the desired sample size. A self-administered questionnaire, consisted of 20-items was developed based on an earlier studies and instruments used in other prior studies.¹⁹ The questionnaire requires information about Knowledge and perception of Breast cancer risk factors and screening, has been filled by participants. A letter that explains the objectives of the study and asks for participants consent was sent with the questionnaire. The questionnaire requires information of Knowledge and perception about Breast cancer risk factors and screening. The questionnaire responses were analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 20. Categorical variables were described by frequencies and percentages. Descriptive analysis involving Chi-square test was used to test significance of association between categorical variables. The level of significance was set at $P < 0.05$. The research was approved by the local Research Committee of the Faculty of Medicine, University of Tabuk. Pupils were asked to give their written consents before participation in the study.

Table 1: General characteristics of participants: (n= 460)

Character		
Age	Bellow 20 years (n (%))	025 (5.4%)
	From 20 to 30 year old (n (%))	300 (65.2%)
	From 30 to 40 year old (n (%))	100 (21.7%)
	From 40 to 50 year old (n (%))	017 (3.7%)
	From 50 years old and above (n (%))	18 (4%)
Education	Not educated (n (%))	008 (1.7%)
	Primary/intermediate/ secondary (n (%))	119 (25.9%)
	Graduate (n (%))	333 (72.4%)
Income	Poor (n (%))	101 (22%)
	Average (n (%))	339 (73.7%)
	High (n (%))	020 (4.3%)
Marital Status	Not Married (n (%))	198 (43%)
	Married (n (%))	221 (48%)
	Divorced (n (%))	028 (6.1%)
	Widow (n (%))	013 (2.8%)
Number of Children	Mean (SD) (n)	1.19(1.843)
	Range (n)	0 – 9

Table 2: Frequency of level of knowledge of breast cancer:

Level of knowledge and Perception of Risk Factors	Frequency	Percent
Low knowledge	226	49.1
High knowledge	234	50.9
Total	460	100.0

Table 3: Relation between age and level of knowledge and perception of risk factors for breast cancer within age groups:

Age	Knowledge		Total
	Low knowledge	High knowledge	
Bellow 20 years (n (%))	20 (80%)	5 (20%)	25 (100%)
From 20 to 29 year old (n (%))	131 (43.7%)	169 (56.3%)	300 (100%)
From 30 to 39 year old (n (%))	54 (54%)	46 (46%)	100 (100%)
From 40 to 49 year old (n (%))	10 (58.8%)	7 (41.2%)	17 (100%)
From 50 years old and above (n (%))	11 (61.1%)	7 (38.9%)	18 (100%)
Total	226 (49.1%)	234 (50.9%)	460 (100%)

Table 4: Relation between education and level of knowledge and perception of risk factors for breast cancer within level of education groups:

Education	Knowledge		Total
	Low knowledge	High knowledge	
Not educated (n (%))	3 (37.5%)	5 (62.5%)	8 (100%)
Primary/intermediate/ secondary (n (%))	72 (60.5%)	47 (39.5%)	119 (100%)
Graduate (n (%))	151 (45.3%)	182 (54.7%)	333 (100%)
Total	226 (49.1%)	234 (50.9%)	460 (100%)

Table 5: Relation between perceived barriers of screening for breast cancer and level of knowledge and Perception of risk factors for breast cancer:

Perceived barriers	Knowledge		P-value
	Low knowledge n=226	High knowledge n=234	
I do not know where a woman can go to get a regular mammogram.	77(34%)	76(32%)	0.002
I would not have regular mammogram because it is likely to be painful.	40(18%)	54(23%)	0.000

Table 6: Relation between perception and knowledge of family history of breast cancer and level of knowledge and Perception of risk factors for breast cancer:

Perception and knowledge of family history of breast cancer	Knowledge		P-value
	Low knowledge n=226	High knowledge n=234	
If I have a family history of male with breast cancer, I am at increased risk to have breast cancer	52(23%)	128(54.7%)	0.000
Total		180(39.1)	

RESULTS

Table 1 shows general characteristics of the participants. Participants classified to four categories according to age: Less than 20 year (5.4%), from 20 to 29 year (65.2%), from 30 to 39 year (29.7%), from 40 to 49 year (3.7%), and 50 year or more (4%). The majority was university graduates (72.4%), and married (48%). Table 2 shows level of knowledge of participants regarding breast cancer, participants classified to two groups, high knowledge and low knowledge, they were nearly equal, high knowledge (50.9%) and low knowledge (49.1%).

Table 3 shows significant relation between age and level of knowledge ($p=0.007$). Of total 460 participants, (5.4%) were under age 20 year, (65.2%) were 20 to 29 year, (29.7%) from 30 to 39 year, (3.7%) from 40 to 49 year, and (4%) were 50 year or more. The majority of Participants who aged less than 20 year were with low knowledge of breast cancer (80%) and who were high knowledge were (20%). Among participants who aged 20 to 29 year, the level of knowledge was for high and low knowledge (56.3%) and (43.7%), respectively. Those who aged from 30 to 39, the level of knowledge were (46%) high knowledge and (54%) low knowledge. Participants aged from 40 to 49 who were with low knowledge are more than those who were with high knowledge, (58.8%) and (41.2%), respectively. the majority of participants who were 50 year or more are low knowledge (61.1%).

Table 4 shows relation between level of knowledge of breast cancer and level of education ($p=0.05$). (54.7%) of who were

graduated were with high knowledge. (60.5%) of whom level of education were (primary, intermediate, and secondary) are low knowledge. The majority of uneducated participants were with high knowledge (62.5%).

Table 5 shows significant relation between perceived barriers of screening for breast cancer and level of knowledge and Perception of Risk Factors for Breast Cancer. Among female with low knowledge of breast cancer (226), 34% ($p=0.002$) of them did not know where they can to get a regular mammogram, and 18% ($p=0.000$) of them decided not to have regular mammogram because it is likely to be painful. Female with high knowledge of breast cancer and its risk factors ($n=234$), 32% (0.002) of them did not know where they can to get a regular mammogram, and 23% (0.000) of them decided not to have regular mammogram because it is likely to be painful.

Table 6 shows significant relation between level of knowledge of breast cancer and the family history of male with breast cancer. 39.1% of total female agreed that if they have a family history of male with breast cancer, they are at increased risk to develop breast cancer. 23% of those who were of low knowledge of breast cancer agreed that if they have a family history of male with breast cancer, they are at increased risk to develop breast cancer. At the same time, 54.7% of female who were with high knowledge agreed that if they have a family history of male with breast cancer, they are at increased risk to develop breast cancer.

DISCUSSION

The American Cancer Society's estimates for breast cancer in the United States for 2017 are 252,710 new cases of invasive breast cancer will be diagnosed in women, about 63,410 new cases of carcinoma in situ (CIS) will be diagnosed (CIS is non-invasive and is the earliest form of breast cancer), and about 40,610 women will die from breast cancer.²⁰ The present study findings shows that there is deficit in knowledge of risk factors and screening procedures. In our study the majority of participants who were 50 year or more are low knowledge (61.1%). In another study there were findings similar to our results that shows lowest levels of risk perception among those aged 50 to 64 years.²¹ In this study there was a significant relation between age and level of knowledge ($p=0.007$). Older participants showed lower level of knowledge of breast cancer. There is a considerable evidence in the literature that younger women have the highest levels of perceived risk of breast cancer, despite being at the lowest actual risk.²² This study showed that 23% of participants decided not to have regular mammogram because it is likely to be painful, a study that done to determine the effects of patient-based mammography screening strategies reported similar findings.²³ In our study, the relation between level of knowledge of breast cancer and the family history of male with breast cancer was significant. 39.1% of total female agreed that if they have a family history of male with breast cancer, they are at increased risk to develop breast cancer. 23% of those who were of low knowledge of breast cancer agreed that if they have a family history of male with breast cancer, they are at increased risk to develop breast cancer. At the same time, 54.7% of female who were with high knowledge agreed that that if they have a family history of male with breast cancer; they are at increased risk to develop breast cancer. In another study there were findings similar to our results that showed awareness of genetic testing for breast cancer risk assessment was found to be significantly associated with family history of breast cancer, increasing from 35% in the lowest family history risk group to 67% in the group with the strongest familial risk ($p = 0.002$).²⁴ On the other hand, another study showed that Knowledge of breast cancer and breast cancer screening among women with positive family history of breast cancer and women without family history of breast cancer did not differ significantly.²⁵

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