

Level of Knowledge and Perceived Barriers about Mammography among Females

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Abstract

Objective: To assess the level of knowledge and perceived barriers of mammography among women of 40 years of age and above, of Rawalpindi and Islamabad city.

Subjects and Methods: A cross-sectional survey was carried out in outpatient departments of two tertiary care hospitals, of Rawalpindi and Islamabad city through interviewer administered questionnaire. Second part of the questionnaire was self-developed and pilot tested while third part was adopted from Champion's Health Belief Model. Ethical approval from hospital management and written informed consent from participants was taken. About 350 participants were interviewed completely. Data were analyzed by using SPSS version 16.0.

Results: Mean age of the participants was 52.91±8.59 years. Out of total study population, 197 (56.29%) participants had poor level of knowledge while 155 (44.30%) women agreed on that 36-45 years is suitable age for mammography. Few barriers were highlighted through questionnaire, some more than others like, inspite of being expensive, I will get it done, if doctor advised me (58.29%), "lack of awareness about health facility having Mammography" (53.72%), dislike, being examined by male doctor (52.86%). Lack of transport facility (50%) and "permission from husband (50,29%).

Conclusion: Increasing the level of knowledge about mammography will help in reducing the perceived barriers and improving the attitude towards mammography in women.

Key Words: Breast Cancer, Knowledge, Mammography, Women.

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Introduction

Breast cancer is one of the most prevalent and major cause of death among women all over the world, with 521 thousand deaths in 2012 and expected to cause more than 600 thousand deaths in 2020.¹ In developing countries it is the second leading cause amongst all type of cancers and is a serious health problem of the female population. According to the World Health Organization (WHO), 8.2 million people worldwide died from cancer and approximately 65% deaths occurred in developing countries, while 35% of cancers could be prevented.² Pakistan is among those developing countries where approximately one in every nine women is likely to suffer from breast cancer. The breast cancer incidence rate is one of the highest in Asia. According to one study age standardize incidence rate of breast cancer in Pakistani women is 50.30/100,000³ but more than 90% of women diagnosed with breast cancer at the earliest stage survive their disease for at least 5 years compared to around 15% for women diagnosed with the most advanced stage of disease.⁴

The prevention, early detection and successful treatment from breast cancer can be possible only with early diagnosis and treatment.⁵ There are three basic methods of early detection of breast cancers, i.e. self-breast examination (SBE), clinical breast examination and mammography. WHO recommends regular breast screening for women using mammography.⁶ Mammography is considered to be a gold standard for early detection of breast cancer.⁷ It is considered to be the only procedure which plays a major role in the early detection of disease and reduces breast cancer mortality by 20 to 35%⁸, particularly among the women of age 50 year and above. It has been recommended that screening should be routinely carried out in women of this age group.⁹ Yet in many countries the practice and acceptance of mammography screening remains poor. Despite the benefits of mammography, several previous studies demonstrated poor knowledge, attitudes and utilization of screening services, among various study

populations in the developing world.^{10,11} Several factors have been identified, which influence the level of knowledge and utilization of screening services in general. A Malaysian study reported that less than 50% of their study population were aware of mammography as the best screening test for breast cancer.¹² Although mammography is considered best for age 50 years and above, protective screening can be done below this age. Women of age less than 50 years should at least possess the basic knowledge of mammography but literature revealed that the women's knowledge about mammography is variable and sometimes incorrect.¹³

However, above mentioned studies show that majority of the women having mammography do not have clear knowledge about aim and objective of this screening test,¹⁴ yet it is important for them to have basic level of knowledge about all the breast cancer screening tests generally and mammography specifically. This will ensure the successful implementation of breast cancer control policies¹⁵ and mammographic examination at appropriate intervals.¹⁶

Evidences from the literature indicated that mostly women have heard about mammography and a number of women are aware of its importance^{17, 18}, but generally knowledge about the test is low.^{15,17} A study in Pakistan reported that 29.3% women had heard about mammogram, 47.6% believed that mammography is painful, 18.8% thought that it is safe; 35.9% thought it can detect breast lump before it is palpable and 23.9% answered that they should routinely have annual mammogram as well.¹⁹ A study conducted in United Kingdom shows better awareness in women about mammography with 96% women feeling comfortable while having a mammogram, 89% said mammogram would reduce the anxiety related to breast cancer and 78% thought that it would reduce their chances of dying of breast cancer. However, some women felt that mammogram would be painful, frightening, worried about the effects of radiations.²⁰ Besides the low level of knowledge there are many other factors that hinder the utilization of mammography like difficulties related to access, the misunderstanding that the examination is not necessary and the low awareness as to the importance of the examination for the early diagnosis of breast cancer.²¹ Literature revealed that potential barriers also included financial expense, apprehension about radiation exposure, pain, difficult access, inconvenience, and lack of time.²² A study conducted in Iran found perceived barriers to mammography practice included 56% concerns about the discomfort of having a mammogram, 63% not having time for mammography screening, 62% not knowing where to obtain a mammogram, and fear that the test is painful (49%) and embarrassing (58%).²³

One study described that high level of awareness about mammography is an effective way of influencing women attitude towards mammography which will then help in decreasing morbidity and mortality related to breast cancer.²⁴ Many studies have been conducted in Pakistan regarding level of knowledge about risk factors and general

screening tests of breast cancer but very few of them focus specifically on knowledge and perceived barriers of the gold standard screening test (mammography) in particular. This study aimed to assess the level of knowledge and perceived barriers regarding mammography among women of age 40 years and above in Rawalpindi and Islamabad.

Subjects and Methods

A cross-sectional survey was carried out from October 2015 to February-2016. Women of age 40 years and above visiting Outpatient Departments of two tertiary care hospitals of Rawalpindi and Islamabad were included in the study. The sample size was calculated by using proportion formula method by keeping parameters as: level of precision (d^2) 5% (0.05), assumed proportion of knowledge and barriers of mammography (p) 50% and $q = (1-p)$. Formula = $n = \frac{Z^2 pq}{d^2}$
 $\frac{2.24 \cdot (0.5)(1-0.5)}{0.0025} =$ So the final sample size was 384 participants.

Study participants from both hospitals were selected by random sampling technique. First woman in each hospital was selected randomly by using random number selection from OPD register list. After selection of first woman, every fifth woman who was fulfilling the study criteria was selected for interviews. A self-developed interviewer administered questionnaire was used to collect data related to the level of knowledge. Questionnaire consisted of three components; first demographic data which included age, marital status, educational status, ethnicity and occupational status. Second component consisted of knowledge about mammography and third component comprised of perceived barriers of mammography. (It was adapted from Champion's Health Belief Model with two additional components i.e. permission from the husband/family and availability of facility nearby). Perceived barrier scale was ordinal three points Likert Scale: agree, neither agree nor disagree and disagree. There were eighteen items in perceived barrier scale.

Questionnaire related to knowledge was developed after extensive literature reviews and was sent to expert for review. Feedback from subject expert was incorporated. Later on questionnaire was pilot tested in different hospitals on 10% of the sample size. No major changes were found. The investigators through face-to-face interviews, collected data with the participants in OPD of the hospitals. All the women of age 40 years and above were included in this study except those who; were already known case of breast cancer, have any disability in hearing or speaking, and those who had mammogram within last one year

Data was checked for its validity and consistency and was entered on SPSS version 16.00 for analysis. Descriptive statistics were applied to calculate the mean and standard deviation of age, frequency and percentage of other

demographic variables and other variables related to level of knowledge and perceived -barriers. Level of knowledge was categorized as follows 0-3 as "Poor", 4-6 as "Sufficient" and 7-9 as "Good". Final analysis of 350 participants was done because 20 participants refused to participate and 14 questionnaires were incomplete. Ethical approval was taken from ethical committee of Punjab Employee Social Security Hospital Islamabad.

Informed consent was taken from each participant after explaining the study purpose, potential harm and benefits to the participants, right to withdraw and volunteer participation. Strict protocols were set to maintain the confidentiality of the participants.

Results

The response rate was 350 (91.15%) in this study. Mean age of the participants was 52.91 ± 8.59 years. Among these, 291 (83.10%) were married, 241(68.86%) Punjabi, (22.57%) Pathan, 152(43.43%) had no formal education and 104(29.71%) received primary education. About 40 (11.5%) were doing job and fifty percent on job participants were government employees. Detail of each demographic category is presented in table-1. High percentage 273 (78%) of participants had not previously undergone any breast cancer screening test.

Out of the 77 participants who underwent any breast cancer screening test only 16 (20.78%) had mammography. Fig 1, indicate the details of other screening tests experiences by the rest of participants. Study results indicated that 197 (56.29%) participants had poor level of knowledge regarding mammography. Fig. 2 presents further facts about the level of knowledge.

The response to appropriate age to have a screening mammogram indicated that 155 (44.30%) women agreed on age 36-45 years, and 129(36.90%) agreed on more than 45 years of age Very low percentage 66 (18.90%) of women selected less than 35 years of age as a suitable age for mammography.

Total numbers of perceived barriers assessed were eighteen. Study participants did not agree with three barriers i.e. no one is there to take care of my kids, people will treat me differently if I am diagnosed as cancer patient and confidentiality may not be maintained.

Response to perceived barriers was; In spite of being expensive will have it if doctor advise me (58.29%), lack of awareness about health facility having Mammography (53.72%), dislike being examined by male doctor (52.86%), lacks of transport facility and permission from husband have equal percentage (50%). Frequency and percentage of agreement status of perceived barriers for mammography are described in table-1.

Health Believe Model Statement	N (%)		
	Agree	Neither agree nor disagree	Disagree
Do not want to know about having or not having cancer	152 (43.43)	96 (27.43)	102 (29.14)
Lack of money	138 (39.43)	115 (32.86)	97 (27.71)
Lack of awareness about health facility having Mammography	188 (53.72)	74 (21.14)	88 (25.14)
Regular mammography is too embarrassing	137 (39.14)	114 (32.57)	99 (28.29)
It takes too much time	152 (42.43)	111 (31.71)	87 (24.86)
It is painful procedure	147 (42.00)	106 (30.29)	97 (27.71)
Inspite of expensive will have it if doctor advise me	204 (58.29)	41 (11.71)	105 (30.00)
Lack of transport facility	175 (50.00)	61 (17.43)	114 (32.57)
Other important problems than having regular mammography	164 (46.85)	65 (18.57)	121 (34.57)
Mammography operator are not careful	158 (45.14)	97 (27.71)	95 (27.14)
No one is there to take care of my kids	122 (34.86)	104 (29.71)	124 (35.43)
I do not trust on mammography	154 (44.00)	69 (19.71)	127 (36.29)
If I diagnosed as cancer patient people will treat me differently	139 (39.71)	78 (22.29)	133 (38.00)
I dislike being examined by male doctor	185 (52.86)	60 (17.14)	105 (30.00)
Confidentiality may not be maintained	126 (36.00)	119 (34.00)	102 (34.00)
Lack of information about having mammography	153 (43.71)	82 (23.43)	115 (32.86)
Permission from family/husband	176 (50.29)	40 (11.43)	134 (38.29)
It's not available nearby	142 (40.57)	124 (35.43)	84 (24.00)

Table-2: Participant's Demographic Characteristics vs Level of Knowledge about mammography (n=350)

Demographics Variable	Category	Level of Knowledge		
		Poor	Sufficient	Good
Marital Status	Married	163	100	28
	Unmarried	3	7	0
	Divorced/ Separated	9	6	3
	Widow	22	5	4
Ethnicity	Punjabi	137	78	26
	Pathan	50	24	5
	Sindhi	3	1	1
	Kashmiri	6	14	3
	Others	1	1	0
Educational Status	No Formal Education	93	40	19
	Primary	67	28	9
	Secondary	21	13	2
	Higher Secondary and above	16	37	5
Occupational Status	Government Job	28	31	13
	Private Job	44	19	5
	Own Business	1	3	1
	House Wife	96	46	8
	Not Working	28	19	8

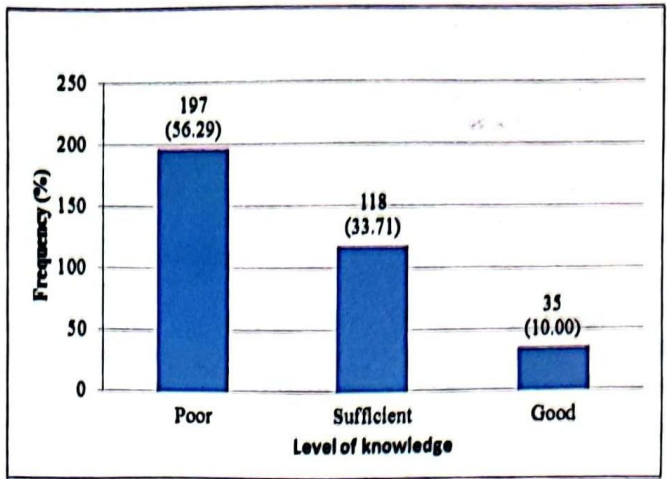


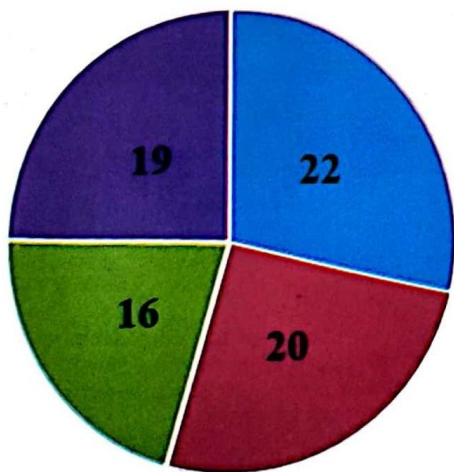
Fig 2: Frequency of level of knowledge about mammography (n=350)

Discussion

This study was aimed to assess the level of knowledge and perceived barrier about mammography because to the best of researcher's knowledge, very few local studies are available focusing upon this topic. Most of the prevalent studies assess the knowledge, which generally covered self-breast examination, clinical breast examination and mammography as a whole. This study found 56.29% women had poor level of knowledge about mammography.^{15,17} Two Level of knowledge was compared with demographic characteristics of participants. Study findings described that married women 28(9.62%) and Punjabi women 26 (1.08%) had poor level of knowledge. On the other hand women having no formal education 19 (12.50%) and government job 13 (18.05%) had good level of knowledge. Details of the results are given in table 2.

Malaysian studies reported that less than 50% study population was aware of the importance of mammography in early detection of breast cancer.^{12,25} A Study carried out in Turkey reported that 72.60% of population having poor knowledge about this specific test and its importance.²⁶ A previous Pakistani study reported that only 29.30% women had heard about mammography.¹⁹

The study assessed knowledge about appropriate age of mammography and found that 18.90% women thought it to be less than 35 years of age. One of the study reported that although majority of Pakistani women who are suffering from breast cancer report late, but in fact it is more common at a young age contrary to the Western Countries where it is more common after 60 years.²⁷ The results of present study are also congruent with results of Chinese study²⁸, Avicia's study²⁹ and an Iranian study³⁰ which showed that high percentage of perceived barriers was the most significant factor in poor mammography percentage. Results revealed that 42% considered mammography as painful procedure which is less than another Pakistani study 47.6%.¹⁹ An Iranian study which found 49% participants describing it



■ Self Breast Examination ■ Clinical Examination ■ Mammography ■ Ultrasound

Fig. 1: Frequency of screening test

painful.²³ While a British study indicated 35% thought it to be painful.²⁰ About 42.4% of women thought that the procedure is time consuming or takes too much time, awareness about facility 53.72% and procedure is embarrassing 39.14% the factors that are observed less than an Iranian study 63%, 62% and 58% respectively.²³

“No one to take care of children” and “people will treat differently if diagnosed as a cancer patient” might not be a barrier because of strong family network of eastern culture and community awareness about cancer as non infectious disease. Moreover, confidentiality might not be a perceived barrier due to ethical and professional values of medical science.

Association between different demographic characteristics, level of knowledge and perceived barriers was insignificant. Although Rawalpindi and Islamabad city were selected with the assumption that knowledge will be high and barriers will be low here but study results failed to support this assumption as true. There are high percentage of women regardless of any demographic characteristics having poor level of knowledge about mammography and many perceived barriers. Mostly women from poor and middle class families visit the public sector hospitals in both cities so these findings might not be true representative of whole of Rawalpindi and Islamabad city population as a whole. This study was based in Outpatient Departments of tertiary care hospitals of twin cities only so its finding cannot be generalized to whole Pakistani population.

Conclusion

Poor level of knowledge is one of the main factors affecting optimal utilization of mammography services along with financial, health system, cultural and fear related barriers. Early detection and prevention can reduce morbidity and mortality, related to breast cancer. This can be achieved through raising awareness about the importance of mammography among women and also by eradicating the perceived barriers. This will improve women's attitude towards utilization of mammography as a diagnostic or protective service.

Conflict of Interest

This study has no conflict of interest as declared by any author.

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Authorship Contribution:

Author 1: Conception, Synthesis and Planning of the research,

Author 2: Interpretation, analysis and discussion

Author 3,4,5: Active participation in active methodology