ORIGINAL RESEARCH

Knowledge and Practice of Breast Cancer Screening and Awareness of Its Risk Factors Among Reproductive Women of Jammu and Kashmir

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A B S T R A C T

INTRODUCTION: Breast cancer is the most common type of malignancy among women worldwide, therefore, it becomes necessary to understand the breast cancer literacy among women. Breast cancer literacy includes knowledge of breast cancer screening, practice of breast cancer screening and awareness of breast cancer risk factors.

OBJECTIVES: To determine level of awareness and practice of breast cancer screening, to assess level of awareness of breast cancer risk factors and to establish role of demographics in uptake and knowledge of breast cancer screening.

MATERIALS AND METHOD: In this study, reproductive women were taken and questionnaires given were filled by 381 respondents. Relevant questions were asked keeping in view the objectives. Role of age and maximum education of women was also established.

RESULTS: It was found that majority of women who were aware of breast cancer screening belonged to age-group 21-30 having mean of 56.19% and also showed higher practice of the same as compared to others (mean=50.1%) followed by women belonging to age-group 31-40 whose knowledge mean came out to be 25.5% and mean of practice was found to be 35.26%. The other two age groups of 15-20 and 41-45 showed low knowledge and less practice of breast cancer screening. Similar results were found out for other parameter.

CONCLUSION: Women whose maximum education was graduate and above showed higher level of awareness of breast cancer screening and risk factors and also higher practice of breast cancer screening as compared to women who had lower educational background.

KEYWORDS: Breast Cancer, Screening, Awareness, Risk Factors, Demographics

INTRODUCTION

Breast cancer is considered to be the most frequently occurring malignancy in the world, however in about 70-80% of cases, it is curable if diagnosed in early stage. Currently available treatments of breast cancer do not help if tumor has spread to other distant parts of body.[1] In females worldwide, breast cancer is the most commonly occurring cancer and out of all other cancers, it is the second most commonly occurring cancer. In 2018, over 2 million new cases of breast cancer were registered.[2] There are certain screening methods such as mammography, self-breast examination and clinical breast examination, that are useful in detecting breast cancer in early stages and thereby are beneficial in improving women's health.[3]

Findings show that patient delay in seeking help, making treatment less effective and minimal survival rate is associated with low awareness among women about symptoms of breast cancer, prevention strategies, risk factors of breast cancer and available treatments.[4] Studies indicate that women show low participation in breast cancer screening and it is due to their poor awareness of breast cancer screening.[5] Low and middle-income countries that lack proper screening programmes on national level have

considerably low cancer screening awareness and participation as compared to countries that have proper national level screening programmes.[6] Certain studies have concluded that programs on breast cancer screening for early diagnosis and treatment have led to increase in survival rate and therefore have helped in preventing the recurrence and mortality. Mammography, Breast Self-Examination (BSE) and Clinical Breast Examination (CBE) have crucial roles to play in early diagnosis.[7]

There are certain risk factors of breast cancer which include age, family history and genetic factor, gender, race, early menarche, late menopause, reproductive history, dense breast tissue, certain genome changes, obesity, alcoholism, exposure to radiation, poor breast feeding and lifestyle.[8] There are low levels of awareness regarding breast cancer which leads to late diagnosis of the disease and therefore high mortality rate among women due to breast cancer. Other factors that lead to diagnosis at advanced stage of breast cancer are inconvenient and unmanageable referral pathways to diagnosis, not enough access to effective treatment at regional cancer centres and incomplete treatment regimens.[9] In India, there is a high incidence and high

mortality due to breast cancer, therefore, it becomes essential to understand the level of cancer literacy especially since the average age of diagnosis is 10 years younger than women in Western countries.[10] In order to draft out comprehensive and effective health programmes and treatment campaigns for early detection of breast cancer, the pre-requisite is to assess the existing levels of cancer awareness and practice among the masses.[11]

MATERIALS AND METHOD

Research design: This study used a cross-sectional survey research design. This design was preferred in to obtain diverse information about women's knowledge, awareness and practice related to breast cancer screening uptake and their awareness regarding the risk factors of breast cancer using questionnaire. It was also flexible, easy to administer and cheaper in data collection. In this study, information about the factors that influence early screening for breast cancer among the women of reproductive age using questionnaire was collected. This study was carried out in the area of Jammu & Kashmir and the target population was the women of reproductive age, that is, women aged between 15-45 years.

Sampling procedure and size: The women were picked by simple random sampling from Jammu and Kashmir until the desired sample size was attained.

The sample size of this study was calculated using Cochran's Formula which is given as follows:

Sample size for infinite population, $n_o = z^2pq/e^2$

Z score= 1.96, p=population proportion(0.5), q= (1-p), e= margin of error(0.05)

$n_o = (1.96)^2(0.5)(0.5)/(0.05)^2$

$n_o = 385$

After calculating the sample size of finite population, we used modified Cochran's formula to calculate sample size of infinite population whose formula is given as under:

Sample size for finite population, $n = n_o/1 + (n_o-1)/N$
$n = 387$

Therefore, the questionnaire was sent to 387 women of desired ages as per convenience, out of which 381

women responded back. Out of 381 women, 16.4% were of the age group 15-20, 51.4% belonged to the age group of 21-30, 19.9% women were of the age group 31-40 and 12.3% belonged to 40-45 age group.

Research instrument: Structured and close-ended questionnaire was used in the study which was constructed from the objectives of the study. This ensured that each question was related to a specific objective. Considerations were made for how information obtained from each question was to be analyzed. The questions were concise, in a logical sequence and with adequate information.

Data collection: Source of data was primary in nature. It was collected using close-ended questionnaires. The type of data gathered included- knowledge and practice of breast cancer screening, awareness of breast cancer screening, awareness of the risk factors of breast cancer and demographic factors.

Data analysis: The data collected was analyzed using statistical analysis in MS Excel.

RESULTS
In the present study, a pre-tested and pre-validated questionnaire was administered to 387 participants out of which 381 responded making the response rate 98.4%. The results obtained were divided into four sections which are as under:

Demographic characteristics of the participants:
Demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. Demographic characteristics include age, gender, employment, birth and death rates, education, etc. Two demographic characteristics have been taken into account for this study. They are:
- Age of the respondents.
- Education of the respondents

Age of respondents: The participants were asked to mention the age group in which they lie so as to establish an understanding of the role of age in the knowledge, practice of breast cancer screening and awareness of its risk factors. Figure 1 illustrates the age groups of the respondents, majority being those ones falling between the age group 21-30 years at 51.4% followed by the ones aged between 31-40 years at 19.9%

followed by women of age-group 15-20 comprising of 16.4% and lastly at 12.3% are those ones aged between 40-45 years.
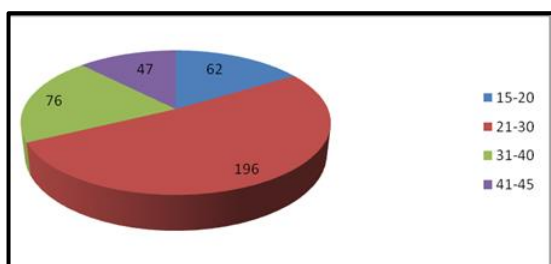

Figure 1. Age of the Respondents

Education of the respondents: Figure 2 depicts the maximum education of the respondents in which 80.8% are graduate or above, 15.1% have studied till higher secondary, 2.7% had studied till primary level and 1.4% comprised of participants that have studied till middle school.
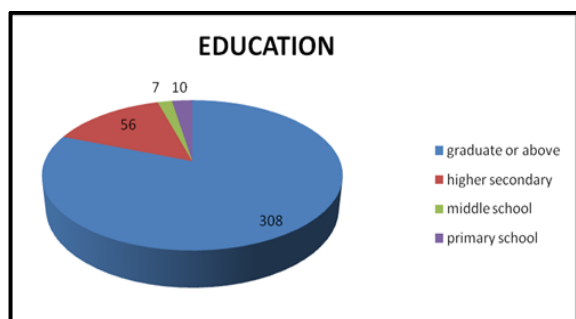

Figure 2. Maximum Education of the Respondents

Knowledge outcome of breast cancer screening: In order to assess this objective, relevant questions were asked to the respondents and responses were evaluated. There were seven questions on knowledge of breast cancer screening and the summary of correct and incorrect answers is given in table 1.

As per the study, 84.9% of the respondents knew that breast self- examination is a useful tool for early detection of breast cancer whereas 15.1% of the respondents responded otherwise which implies that a considerable amount of respondents knew about BSE. Further questions were asked to explore their knowledge about the same. While doing so, it was found out that only 30.8% of the participants knew the correct age to start BSE while others opted for the wrong answer. Moving on, only 42.5% of the respondents knew how often should BSE be done

which implies that not even half of the participants knew the right answer. Another important aspect of BSE is to know the best time to do it. Correct answer to this question was given by merely 14.4% while the other 85.6% of the respondents had no clue about it. It depicts that a handful of respondents knew the correct time to do BSE which clearly points out that they do not practice BSE and even if they do practice.

Additionally, knowledge about clinical breast examination was also explored and it was found out that only 14.4% of the respondents knew that it is done using hands. The ideal frequency by which CBE should be done is yearly, however only a small fraction of 38.4% of the respondents knew the correct answer. Mammography is another screening method for the detection of breast cancer. The correct age to start mammography should be known by all women. However, only 17.1% of the women knew the right age to start mammography.

Practice outcome of breast cancer screening: The participants were asked about the practice of breast cancer screening and their responses were recorded. Out of the total lot, only 29.2% of the respondents practiced BSE and that too majority (45.8%) practiced it rarely and 38.1% practiced it occasionally. As far as practicing CBE is concerned, a small fraction of 6% practiced CBE which is an extremely low number and when asked about the reason for not practicing it, majority of the women accepted that they had never heard about it before which shows that there is little awareness among the masses. Table 2 sums up the response rates of practice of breast cancer screening.

Awareness outcome of breast cancer risk factors: Relevant questions were posed to the participants and their responses were recorded and assessed. One of the risk factors of breast cancer is to bear child after the age of 30 years and the percentage of participants who knew it was merely 16.4%. Another risk factor of breast cancer is wrong diet and only 21.9% of the participants agreed to it, while the rest believed that diet has no role to play in the development of breast cancer. It is a well-established fact that breast cancer can be acquired via heredity, however when this question was posed to the respondents, a major chunk (74.7%) of the respondents believed otherwise. Another risk factor of developing breast cancer is the early onset of menstrual cycle and late menopause. 76.7% of the respondents thought of this statement as false. One of the most important risk factor of breast cancer is that any previous treatment

KNOWLEDGE ITEMS	CORRECT RESPONSE	INCORRECT RESPONSE
K1. Breast self examination is a useful tool to detect breast cancer	84.9%	15.1%
K2. Correct age to start breast self examination	30.8%	69.2%
K3. Breast self examination should be done how often	42.5%	57.5%
K4. Best time to do breast self examination	14.4%	85.6%
K5. Clinical breast examination is done using	14.4%	85.6%
K6. Clinical breast examination should be done how often	38.4%	61.6%
K7. Age to start mammography	17.1%	82.9%

Table 1. Summary of Knowledge Assessment on Breast Cancer Screening among the Reproductive Women (n=381)

PRACTICE ITEMS	YES	NO
P1. Practice of breast self examination	29.2%	70.8%
P2. Practice of clinical breast examination	6%	94%

Table 2. Summary of Practice Assessment on Breast Cancer Screening among the Reproductive Women (n=381)

using radiation therapy and only 39% of the participants agreed to this statement. Table 3 depicts the percentage of responses towards the knowledge of risk factors of breast cancer.

AWARENESS OF RISK FACTORS	CORRECT RESPONSE	INCORRECT RESPONSE
A1. Bearing first child after age of 30 years	16.4%	83.6%
A2. No role of diet in the development of breast cancer	21.9%	78.1%
A3. Breast cancer can be acquired via heredity	25.3%	74.7%
A4. Menarche in early age and menopause in late age	23.3%	76.7%
A5. Any previous treatment like radiation therapy	39.1%	69.9%

Table 3. Summary of Awareness on Breast Cancer Screening among the Reproductive Women (n=381)

Role of demographic factors on the knowledge and practice of screening for breast cancer: To begin

with, the knowledge of breast cancer screening was evaluated and their respective means were calculated and it was found out that majorly the correct responses that were given to the questions were by the age groups of 21-30 with mean 56.19% followed by age group 31-40 with mean 25.5% whereas other two age-groups, i.e., 15-20 age group having mean 13.83% and 41-45 age group having mean knowledge of 4.48% showed extremely low knowledge about breast cancer screening. Similarly, mean calculated for practice of breast cancer screening was highest in the age group 21-30(mean=50.1%) followed by age group 31-40(mean=35.26%). Least practice was shown by age group 15-20 having mean 14.23% followed by age group 41-45 having mean 0.41%. The role of education was also established and it was found out from their respective means that majorly the correct responses about knowledge of breast cancer were given by respondents whose maximum education is graduate or above(mean=82.75%) followed by respondents who had maximum qualification of higher secondary (mean=10.11%). However, low knowledge of breast cancer screening was found among respondents whose maximum qualification was middle school(mean=3.7) and primary school(mean=3.44%) (Table 4).

DISCUSSION

Breast cancer is currently the most commonly occurring cancer globally and continues to remain a worldwide public health issue.[12] Recently, questions regarding the effective use of cancer screening have come forward, as scientists, clinicians, and other experts weigh the extent to which harms of screening may outweigh the benefits.[13] Breast cancer awareness is the need of the hour. The most important step towards breast cancer awareness is to create awareness about its screening among the masses.

PARAMETERS	MEAN	
	KNOWLEDGE	**PRACTICE**
AGE (In Years)		
15-20	13.83%	14.23%
21-30	56.19%	50.1%
31-40	25.5%	35.26%
41-45	4.48%	0.41%
MAXIMUM EDUCATION		
Primary School	3.44%	0.00%
Middle School	3.7%	0.45%
Higher Secondary	10.11%	5.95%
Graduate or Above	82.75%	93.6%

Table 4. Mean of Total Score of Knowledge and Practice among the Reproductive Women

In this study, the very first objective was to determine the level of awareness about breast cancer screening among the women of reproductive age. Many findings showed that awareness about breast cancer risk factors was poor among women. As per a published report, only 31% of women from urban areas had knowledge of well-known risk factors for breast cancer, many women in urban areas had lower income levels.[14] Other studies have consistently found poor knowledge of risk factors among Asian women.[15,16] We analyzed same aspect in our study and in order to assess this objective, relevant questions were asked to the respondents and responses were evaluated. As per the study, 84.9% of the respondents knew that breast self- examination is a useful tool for early detection of breast cancer while as 15.1% of the respondents responded otherwise which implies that a considerable amount of respondents knew about BSE. However, only knowing about BSE is not enough. Therefore, further questions were asked to explore their knowledge about the same. While doing so, it was found out that only 30.8% of the participants knew the correct age to start BSE while others opted for the wrong answer. Moving on, only 42.5% of the respondents knew how often should breast self examination be done which implies that not even half of the participants knew the right answer. Another important aspect of BSE is to know the best time to do it. Correct answer to this question was given by merely 14.4% while the other 85.6% of the respondents had no clue about it.

Respondents were asked relevant questions about clinical breast examination so as to check their level of awareness about it. One of the most important factor of clinical breast examination is to know the equipment to do it. It is done using hands and when this question was posed to the respondents, only 14.40% of the women knew the right answer which implies that a very small fraction of women must have practiced CBE. The ideal frequency by which CBE should be done is yearly, however only a small fraction of 38.4% of the respondents knew the correct answer. Mammography is another screening method for the detection of breast cancer. The correct age to start mammography should be known by all women. However, only 17.1% of the women knew the right age to start mammography.

The second objective of this study was to assess the level of practice of breast cancer screening among the women of reproductive age. One finding shows that practice of BSE, CBE, and mammography was 38.4, 25.2, and 12 %, respectively. Over the six different domains of the health belief model, the mean score of perception of susceptibility was lower, which is interpreted as indicating that study participants feel less vulnerable to breast cancer risk.[17] Participants were asked about the practice of breast cancer screening and their responses were recorded. Out of the total lot, only 29.2% of the respondents practiced BSE and that too majority (45.8%) practiced it rarely and 38.1% practiced it occasionally. As far as practicing CBE is concerned, a small fraction of 6% practiced CBE which is an extremely low number and when asked about the reason for not practicing it, majority of the women accepted that they had never heard about it before which shows that there is little awareness among the masses.

Third objective of this study was to evaluate the level of awareness of the risk factors of breast cancer. Regarding to the awareness of breast cancer risk factors roughly half of our study samples had poor knowledge and only 14.8% of subjects had high level of knowledge.[17] One of the risk factors of breast cancer is to bear child after the age of 30 years and the percentage of participants who knew it was merely 16.4%. Another risk factor of breast cancer is wrong diet and only 21.9% of the participants agreed to it, while the rest believed that diet has no role to play in the development of breast cancer. It is a well-established fact that breast cancer can be acquired via heredity, however when this question was posed to the respondents, a major chunk (74.7%) of the respondents believed otherwise. Another risk factor of developing breast cancer is the early onset of menstrual cycle and late menopause. 76.7% of the respondents thought of this statement as false. One of the most important risk factor of breast cancer is that any previous treatment

using radiation therapy and only 39% of the participants agreed to this statement.

Also, demographic factors were assessed and their role was established. Differences in rate of advanced or metastatic breast cancer by ethnicity and socioeconomic status may be due, in part, to delays in responding to breast symptoms which may differ between ethnic and socioeconomic groups. Such differences occur because of differences in access to care or due to patient factors which include health literacy, health seeking behaviors or psycho-social factors.[18] In our study, the knowledge of breast cancer screening was evaluated and it was found out that majorly the correct responses that were given to the questions were by the age groups of 21-30 and 31-40 while as other two age-groups, i.e., 15-20 and 41-45 did not know the correct answers and showed extremely low knowledge about breast cancer screening. Same results were found for the other two parameters, i.e., practice of breast cancer screening and awareness of its risk factors.

The role of education was also established and it was found out that majorly the correct responses were given by women who had the qualification of graduate or above followed by respondents who had maximum qualification of higher secondary. However, no illiterate respondent or respondent having maximum qualification of primary school, middle school and high school knew any of the correct answer which can be seen as an alarming situation.

CONCLUSION
The results obtained from this study provide important baseline information about the awareness of breast cancer screening and its risk factors both of which are quite low. The results have also shown low practice of breast self-examination, clinical breast examination and mammography by the women of reproductive age. Demographic factors also have an impact on the knowledge and screening of breast cancer as women who do not possess enough qualification and lie in a certain age group (15-20 & 41-45) were found to be least informative about breast cancer and did not practice breast cancer screening either. Such information may be used to develop tailored education programs on breast cancer, increased primary and secondary prevention efforts. As can be inferred from this study, the knowledge of breast cancer screening, its practice and the awareness of breast cancer risk factors are extremely low and it is required to take necessary steps

so as to increase the same among the masses. For breast cancer, primary prevention includes educating women on breast cancer risk factors which according to this study is not up to the mark especially in the age-group of 15-20 and 41-45 and in women with low qualification background.

Recommendations:
-Home-to-home campaigns are the need of the hour especially for women with low qualification background.
-Women falling in the age-group of 41-45 should be given special attention and should be imparted with extensive knowledge of breast cancer.
-School curriculums should be framed in such a way that young children can learn about breast cancer, its management and its risk factors.
-Vulnerable women should be identified and periodic screening should be done so as to detect breast cancer in its early stage.
-Social media should be widely used to spread awareness about the risk factors, screening and diagnosis of breast cancer.
-The word of available diagnostic facilities should be spread through various mediums among one and all so that women can avail those facilities.

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