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Original Research Article

Awareness about breast cancer and breast self-examination among reproductive age group females attending outpatient department of tertiary health care hospital: a cross-sectional study

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ABSTRACT

Background: Breast cancer (BC) is the most common type of cancer in Indian women. For every two women newly diagnosed with breast cancer, one woman died of it in India. Hence, this study was conducted to assess the awareness about breast cancer, and to assess knowledge regarding breast self-examination (BSE) among reproductive age group females.

Methods: A cross-sectional study was conducted in the out-patient department (OPD) at a tertiary health care hospital from April to September 2023 among 203 females of the reproductive age group (15-49 years) using a simple random sampling technique. A self-designed, pre-tested questionnaire was used to assess awareness about breast cancer and knowledge regarding BSE. Institutional Ethics Committee approved this study. Data was analyzed with statistical package for the social sciences (SPSS) version 20.0 and Microsoft excel.

Results: Study participants had a mean age of 28±8 years. Among the total participants of n=203, 93 (45.8%) were married, and 58 (28.6%) belonged to the upper socioeconomic class. A total of 175 (86.2%) women heard about BC. Among them (n=175), 133 (76.0%) women were aware of causes of BC, 89 (50.8%) knows about diagnosis, 77 (44%) had knowledge regarding treatment and 101 (57.7%) were known to preventive measures for BC. 86 (49.1%) women had knowledge about BSE, but among them only 52 (60.4%) knew proper technique and were practicing it monthly.

Conclusions: Overall awareness about BC and BSE was less and measures should be taken to improve BC awareness and BSE practices.

Keywords: Awareness score, Hospital-based study, 15-49 years age females, Knowledge

INTRODUCTION

Breast cancer (BC) is the most common type of cancer in women around the world. It disrupts the function of breast tissue by damaging its normal structure due to tumour formation.[1] Regardless of their racial or ethnic origin, all women are at risk of developing BC and it is the most diagnosed cancer in the world among them.[2] Every year BC leads to the deaths of thousands of women which affects the countries at all the stages of modernity.[3] According to the World Health Organization (WHO), in 2022, 2.3 million women were diagnosed with BC and 6.7 lakhs died of it globally. Also, BC occurs in every country of the world among women and can occur at any age after they hit puberty with more incidence in later life.[4] As per the Globocan 2022 data, in India, BC accounted for 26.6% (192020) of all cancer cases among females and 10.7% of all cancer deaths.[5]

According to the ICMR-National Center for Disease Informatics and Research 2021 report, Maharashtra BC accounts for 29.9% of all cancers among females.[6] Various risk factors are present among women across different locations and age groups are overweight and obesity, family history, age at birth of a first child, lack of breastfeeding, and tobacco 11-51%, 13-58%, 8-83%, 17-

88%, and 20-74% respectively.[7] The various signs and symptoms of BC include the change in shape and size of breasts, lump or thickening in the breast, redness around or on the nipple, discharge from the nipple, constant pain in the breast or armpit, inverted nipple or change in its position and change in skin texture over the breast.[8] Screening tests available for the BC are breast examination i.e. clinical breast examination and breast self-examination (BSE), thermography, mammography, tissue sampling, and magnetic resonance imaging (MRI).[9] The BSE is an early detection tool that uses a combination of physical and visual examinations of breasts to check for signs and symptoms of breast cancer as mentioned above.

Most women in low and middle-income countries do not receive routine mammography as there is no access to such facilities. To encourage women to take help when they notice any changes on BSE it is necessary to raise awareness about BC.[10] There are various reasons for the low rate of BSE and occasionally unwillingness to perform i.e. fear of finding out BC, lack of knowledge about the proper technique of BSE, and lack of awareness about what to do if a lump is discovered.[11] Some studies showed that BSE does not reduce the mortality from BC but the women who practice BSE regularly tend to have their tumors diagnosed at an early stage and subsequently have a better survival rate.[12] Previous studies have reported the level of knowledge about BC ranging from 49.6% to 86.8%.[3,7,15]

Considering all the above facts, it is very necessary to evaluate the knowledge of breast cancer among the risk groups. If females have sufficient knowledge regarding breast cancer, they can prevent themselves and contribute to reducing the burden of the disease in their community. Therefore, we have conducted this study to assess the awareness about breast cancer and knowledge regarding breast self-examination among reproductive age group females who are the target population for breast cancer.

METHODS

A cross-sectional study was carried out in the outpatient department (OPD) of a tertiary care hospital from April 2023 to September 2023 among 203 reproductive age group females of 15-49 years' old who were accompanying the patients attending various OPDs at the tertiary care hospital. The sample size was calculated using OpenEpi software version 3.0 and by taking reference of a recently published study by (Dey et al) using the proportion of 84.5% women aware of breast cancer with a confidence limit of 95% and allowable error of 5%.[11] This study was approved by the Institutional Ethics Committee and informed consent was taken from each participant before data collection. Complete confidentiality of the data was maintained. A self-designed pre-tested and validated questionnaire was constructed to assess the awareness about BC and BSE. The questionnaire has a total of 18 questions with a score of 0 and 1 for each. The participants were divided into three groups based on the scores obtained by them i.e. not aware (score <6), partially aware (score 6-12), and aware (score ≥12). We have assessed the various sociodemographic characteristics of the study participants such as age, residence, marital status, education, and socioeconomic status according to the modified B. G. Prasad classification.[13] Along with that the presence of risk factors among study participants for BC was noted i.e. addiction, type of diet consumption, parity, age at first pregnancy, and duration of breastfeeding wherever applicable. Data was collected with face-to-face interviews using simple random sampling during OPD hours. The data was entered in Microsoft Excel and analyzed using statistical software statistical package for the social sciences (SPSS) version 24.0 for frequency, mean, standard deviation, percentages, and Chi-square test. The p value is considered significant if it is less than 0.05.

RESULTS

A total of 203 females of reproductive age group participated in the study. The mean age of the study participants was 28±8 years ranging from 15 to 45 years' age group. The majority of the participants 156 (76.8) had urban residences. The education of the study participants was divided into above secondary level including 11th, 12th, graduation and post-graduation, secondary level including education up to 10th class, and primary education. The majority of the study participants 90 (44.3) had above secondary level education, followed by 85 (41.8) educated up to the secondary level and 28 (13.7) had completed their primary education. Most of the study participants 108 (53.2) were living without a spouse and were more aware of BC and BSE, followed by those living with a spouse 95 (46.7). The socioeconomic status of the study participants was determined by using a modified B.G. Prasad classification. Majority of the participants belonged to class-I 58 (28.6), followed by class-II 48 (23.6), class-III 46 (22.7%) and class-IV 47 (23.2) and class-V 4 (2.0) (Table 1).

Among the total study participants, the majority 175 (86.2%) heard of breast cancer. Various sources of information were healthcare workers 69 (34%), media 41 (20.2%), families 37 (18.2%), friends or colleague 21 (10.3%) and awareness campaign 7 (3.4%). To assess the knowledge about risk factors of BC, we have taken major risk factors such as overweight, addiction, physical inactivity, radiation exposure, and hereditary factors, and the study shows 80 (45.7%), 130 (74.2%), 56 (32%), 85 (48.5%), 52 (29.7%) participants respectively had adequate knowledge about them. Most of the participants 133 (76%) were knowledgeable about the possible causes of BC i.e. overweight, addiction, early age at menarche, nulliparous women, having a first child after 30 years of age, a mother who has not breastfed her child, taking hormone replacement therapy and oral contraceptives. Among the total participants, 145 (82.8%) were aware of the complaints of BC such i.e. lump in the breast, change in shape and size of breast and nipple, swelling in the

armpit, dimpling over the breast, discharge from the nipple, etc. Half of the study participants, 89 (50.8%) had adequate knowledge regarding various measures for the diagnosis of BC such as BSE, clinical breast examination, and mammography. Only 77 (44%) knew the treatment and 101 (57.7%) were aware of the preventive measures for BC (Table 2).

Table 1: Sociodemographic profile of the study participants (n=203).

Variables	Frequency	Percentage
Age (years)		
≤30	135	66.5
31-45	68	33.4
Residence		
Urban	156	76.8
Rural	47	23.1
Education		
Above secondary level	90	44.3
Secondary level	85	41.8
Primary level	28	13.7
Marital status		
Living with spouse	95	46.7
Living without spouse	108	53.2
SES - class		
Class I	58	28.6
Class II	48	23.6
Class III	46	22.7
Class IV	47	23.2
Class V	4	2.0

Table 3 shows, the association between sociodemographic and risk factor profile of study participants with awareness score of BC and BSE. Among all the study participants, 52.70% had an awareness score ≥9 and were more aware of various aspects of BC and BSE as compared to the remaining 47.29% with an awareness score <9. Among the total participants residing in urban areas were 156 (76.8%), 39 (25%) were not aware, 69 (44.2%) were partially aware and 48 (30.8%) were aware of BC and BSE. There was a statistically significant association between education and awareness scores of study participants regarding BC and BSE ($p<0.001$). No association was found between marital status and awareness scores. Most of the participants from class-I 31 (53.4%) were aware of BC and BSE, while the majority of the participants from class-II 31 (64.6%) were partially aware and most of the participants from class-I 16 (34.8%) were not aware. There was a statistically significant association between socioeconomic class and awareness about BC and BSE ($p<0.001$). Addiction i.e. tobacco chewing, smoking, alcohol drinking, etc. was one of the risk factors present among 19 (9.4%) participants which also shows its significant association with awareness regarding BC and BSE ($p=0.003$). Participants having no addiction were more aware. The type of diet consumption was divided into vegetarian and mixed types, majority of the participants 154 (75.8%) consumed a mixed diet. The participants consuming vegetarian diet 18 (36.7%) were more aware of BC and BSE. The association between type of diet consumption and awareness about BC and BSE was found to be statistically significant ($p=0.013$). Among the total married participants, the majority 89 (90.8%) had children. Nullipara participants were more aware of BC and BSE. The parity of the participants and awareness about BC and BSE were significantly associated ($p=0.04$). Average age of first pregnancy in Indian females is 21.2 years. Majority of the participants 57 (64.0%) had their first child at and after the age of 21 years. Most of the participants 17 (53.1%) having first pregnancy before 21 years of age were not aware, and participants 18 (31.6%) having first pregnancy at and after 21 years were aware of BC and BSE. The association between age at first pregnancy and awareness regarding BC and BSE was found to be statistically significant ($p<0.001$). Approximately half of the participants breastfed their children for more than 2 years and they were more aware of BC and BSE. The association between duration of breastfeeding and awareness about BC and BSE was found to be statistically significant ($p=0.001$) (Table 3).

Table 2: Distribution of study participants according to awareness of various aspects of breast cancer and breast self-examination (n=203).

Items	Yes N (%)	No N (%)
General knowledge about breast cancer (n=203)	175 (86.2)	28 (13.7)
Knowledge about risk factors (n=175)		
Overweight	80 (45.7)	95 (54.2)
Addiction	130 (74.2)	45 (25.7)
Physical inactivity	56 (32)	119 (68)
Radiation exposure	85 (48.5)	90 (51.1)
Hereditary	52 (29.7)	123 (70.2)
Knowledge about causes (n=175)	133 (76.0)	42 (24.0)
Knowledge about complaints (n=175)	145 (82.8)	30 (17.1)
Knowledge about diagnosis (n=175)	89 (50.8)	86 (49.1)
Knowledge about treatment (n=175)	77 (44.0)	98 (56.0)
Knowledge about prevention (n=175)	101 (57.7)	74 (42.2)
Knowledge about breast self-examination (n=175)	86 (49.1)	89 (50.8)

Table 3: Risk factor profile of study participants and their association with awareness score of breast cancer and breast self-examination (N=203).

Variables	Awareness about BC			Frequency (%) n=203	Chi-square P value (95% CI*)
	Not aware (awareness score <6) N (%)	Partially aware (awareness score 6-12) N (%)	Aware (awareness score ≥ 12) N (%)		
Age (years)					
≤30	29 (21.5)	64 (47.4)	42 (31.1)	135 (100)	0.50
31-45	19 (27.9)	32 (47.1)	17 (25.0)	68 (100)	
Residence					
Urban	39 (25.0)	69 (44.2)	48 (30.8)	156 (100)	0.28
Rural	9 (19.1)	27 (57.4)	11 (23.4)	47 (100)	
Education					
Above secondary level	3 (3.3)	46 (51.1)	41 (45.6)	90 (100)	<0.001
Secondary level	33 (38.8)	38 (44.7)	14 (16.5)	85 (100)	
Primary level	12 (42.9)	12 (42.9)	4 (14.3)	28 (100)	
Marital status					
Living with spouse	24 (25.3)	46 (48.4)	25 (26.3)	95 (100)	0.70
Living without spouse	24 (22.2)	50 (46.3)	34 (31.5)	108 (100)	
SES – class**					
Class I	8 (13.8)	19 (32.8)	31 (53.4)	58 (100)	<0.001
Class II	9 (18.8)	31 (64.6)	8 (16.7)	48 (100)	
Class III	16 (34.8)	19 (41.3)	11 (23.9)	46 (100)	
Class IV	15 (29.4)	27 (52.9)	9 (17.6)	41 (100)	
Addiction					
Yes	2 (10.5)	16 (84.2)	1 (5.3)	19 (100)	0.003
No	46 (25.0)	80 (43.5)	58 (31.5)	184 (100)	
Type of diet					
Vegetarian	4 (8.2)	27 (55.1)	18 (36.7)	49 (100)	0.013
Mixed	44 (28.6)	69 (44.8)	41 (26.6)	154 (100)	
Parity (n=98)					
Nullipara	0	3 (33.3)	6 (66.7)	9 (100)	0.04
Parous	26 (29.2)	43 (48.3)	20 (22.5)	89 (100)	
Age at first pregnancy (years) (n=89)					
<21	17 (53.1)	13 (40.6)	2 (6.2)	32 (100)	<0.001
≥21	9 (15.8)	30 (52.6)	18 (31.6)	57 (100)	
Breastfeeding duration (years) (n=89)					
<2	6 (13.3)	30 (66.7)	9 (20.0)	45 (100)	0.001
≥2	20 (45.5)	13 (29.5)	11 (25.0)	44 (100)	

*CI-Confidence interval, **modified B. G. Prasad classification

Among the total 203 participants, only 86 (49.1%) knew BSE. Among them, 52 (61%) were known to the proper technique and were practicing BSE every month. The remaining 34 (39.5%) were not aware of the timing and proper technique for the practice of BSE and were practicing any time as shown in the figure, so we explained to them in detail about the BSE and motivated them for its regular monthly practice (Figure 1).

Half of the study participants 89 (50.8%) were not practicing BSE as they were not aware of it. There were various reasons such as the majority 28 (31.4%) did not know how to practice BSE, 25 (28%) had no knowledge of BSE, 16 (17.9%) did not feel the need to practice BSE, 8 (8.9%) had no complaints associated with breasts, 7 (7.8%) felt shy to practice BSE, while the remaining had other reasons for not practicing BSE (Figure 2).

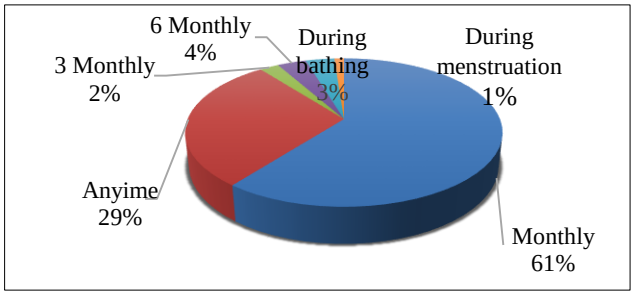

Figure 1: Distribution of study participants according to frequency of breast self-examination, n=86 (100%).

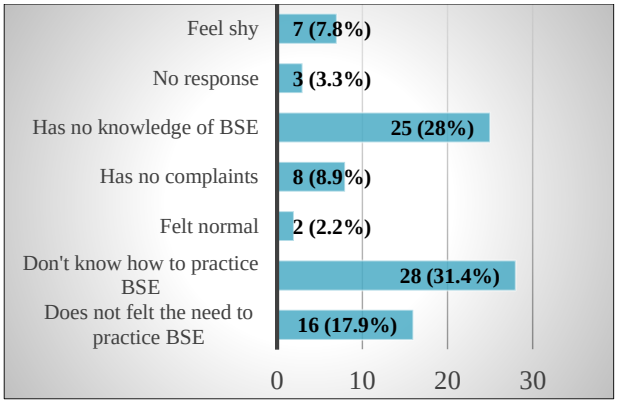

Figure 2: Reasons for not performing breast self-examination, n=89 (100%).

DISCUSSION

Increasing awareness about BC and BSE is important, particularly in low and middle-income countries including India, which is an effective and feasible way to increase the timely detection of breast cancer and its further management.

In our study, the mean age of study participants is 28 years, similar findings were present in the study conducted by Dey et al where the mean age of participants was 30.7 years.[11] Another study by Mehejabin et al had similar findings where the mean age of study participants was 28.7 years.[1] These findings were similar because both studies were carried out in the same age group females and in the same settings.

In the present study, we found out that 86.2% of participants have heard of BC and similar findings were present in the studies carried out by Afaya et al where they found out that awareness about BC was present among 86.8% of reproductive age group females.[14] In another study conducted by Dadzi et al, 88.3% of the respondents were aware of BC.[15] These findings were similar to the present study as these studies are carried out in the same setting of an urban area where awareness is more as compared to the rural settings. In contrast, another study carried out by Prusty et al found that 50% of women were heard of BC which was carried out in a lower socioeconomic community.[7]

In the current study, we found that 76% of the participants knew the causes of BC. A study carried out by Rahman et al found that 49.8% of participants knew about BC risk factors.[3] Another study by Ranasinghe et al found that 66% of the study participants were aware of the BC risk factors.[16] These findings are different to our study as the previous study was carried out among female students and the present study is done on a hospital basis.

We found out that around half of the participants, 50.8% were knowledgeable about the diagnosis of BC. While in a study carried out by Yadav et al found that 19 % and 49% of participants knew about mammography and ultrasonography as early diagnostic modalities for BC respectively.[17] In another study carried out by Dahiya et al 48.6% participants were aware of mammography as a screening technique for BC.[18] These findings were similar to our study as IEC campaigns related to BC awareness are inadequate and need to be targeted towards vulnerable women with lower educational levels.

In the present study we have found that 57.7% of participants were aware of the prevention of BC and similar findings were present in the study carried out by Nischith et al.[19] They found that 62.2% of study participants were aware of BC prevention. Another study conducted by Quansar et al found that 30.7% of participants know that check up by doctors can be one of the preventive modalities of BC, whereas 28.7% stated that BSE can be a measure for the prevention of BC and 23.8% participants stated that BC cannot be prevented.[20]

We found out that knowledge about BSE was present among 49.1% of study participants and similar findings were present in the study carried out by Dahiya et al where they found that 49% of study participants were knowledgeable about BSE.[18] In another study carried out by Nischith et al, 52.9% of participants were unaware of BSE.[19] In a study carried out by Rahman et al found that 68.9% of study participants were aware of BSE.[3] These findings are dissimilar to our study as most of the females are not aware of BSE and there is a gap between the knowledge and practice of BSE among the participants.

CONCLUSION

Most of the study participants heard of breast cancer but the overall knowledge about the disease and BSE practices is less among the study participants. There is a statistically significant association between education and socioeconomic status of study participants with awareness regarding BC and BSE. Among the risk factors, the presence of addiction and low parity were significantly associated. The findings of the study cannot be generalized as it is a hospital-based study. Further studies should be carried out at the community level to assess the awareness regarding breast cancer and BSE among the reproductive age group females. It is recommended that every opportunity should be taken to educate the females about risk factors, causes, symptoms, screening and diagnostic methods, treatment and preventive measures for breast cancer as well as proper techniques to carry out breast self-examination practices.

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