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Research Article

## The Knowledge and attitude of breast self examination and mammography among rural women

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### ABSTRACT

**Background:** Breast cancer is major public health concern in both developing and developed countries. Mortality due to breast cancer is high in India due to late detection, lack of awareness about screening methods and nonexistence of screening programs. To determine the level of awareness regarding breast cancer. To evaluate health beliefs concerning the model that promotes breast self-examination and mammography.

**Methods:** Cross sectional study conducted over a period of 6 months in tertiary care hospital. Study population was 200 women between the ages of 40 and 65 years. Data was collected by structured questionnaire. Champion Health Belief Susceptibility Model was applied.

**Results:** 75.5% women did not have adequate knowledge about breast cancer. 80% had no concept of BSE and 90% were never heard of mammography. 4.5% had mammography in last one year. Insufficient knowledge about breast cancer was 1.55 times higher in who had no breast cancer in family, 1.76 times higher in women who never practiced BSE. Significant positive co relations were found between the knowledge of breast cancer and Susceptibility, Seriousness, Breast self-Examination Benefit, Breast self-Examination Barrier, Health Motivation. Age and breast cancer in the family variables significantly associated with BSE practice.

**Conclusions:** Lack of knowledge amongst general public, influences prevention and early diagnosis of breast cancer. Spreading awareness regarding breast cancer by educational programs through mass media is the need of the hour. By using CHBMS health care provider can understand beliefs that influence women BSE and mammography practice.

**Keywords:** Breast self-examination, Awareness, Prevention, Breast cancer

### INTRODUCTION

Breast cancer is the most common cancer and leading cause of deaths among women worldwide. A recent study of breast cancer risk in India revealed that 1 in 28 women develop breast cancer during their lifetime.<sup>1</sup> An increasing trend in incidence is reported from various registries of national cancer registry project and now India is a country with largest estimated number of breast cancer deaths worldwide. Lack of awareness regarding screening methods, risk factors and cultural taboos that make Indian women embarrassed to talk about their

bodily problems leads to late detection of disease and death. In India the incidence/mortality ratio is 0.48 compared with 0.25 in North America.<sup>2</sup>

The recommended early detection strategies are, awareness of early signs and symptoms through screening by BSE (Breast Self-Examination), clinical breast examination and mammography screening.<sup>3</sup> ACS no longer recommends BSE as there is no data suggestive of increase survival rates. Still BSE seem to be important screening tool in rural areas.

Screening is linked with perception of risk, benefit and barriers through a reasoning process that includes personal and social influence and attitudes.<sup>4</sup> Study done among college-going students in Rajasthan only 28% examined their breasts rarely<sup>5</sup>. Even in team of dental students, the knowledge and practice of BSE was quite low.<sup>6</sup> HBM (Health Belief Model) is frequently applied to breast cancer screening. According to HBM a woman who perceives that she is susceptible to breast cancer is a serious disease and would be more likely to perform regular breast examination. Similarly a woman who has an internal cue (bodily perception) or who had been exposed to an external cue (positive influence of healthcare provider or media) would more likely to adopt BSE as she wants to improve her health and is confident of positive results.<sup>7,8</sup> HBM consists of 6 concepts; perceived susceptibility to illness, perceived seriousness of illness, perceived benefits for presumed action, perceived barriers for presumed action, confidence in one's ability and health motivation.<sup>9</sup> Though breast cancer is one of the few cancers detected in its preclinical stage it is practiced by a very low proportion of population in our country. This hypothesis forms the basis of this study. To determine the level of awareness regarding breast cancer. To evaluate health beliefs concerning the model that promotes breast self-examination (BSE) and mammography.

## METHODS

This cross-sectional study was conducted over a period of 6 months in tertiary care hospital. The study population was consisting of 200 women between 40 and 65 years who visited gynecology outpatient department.

Data was collected by a structured questionnaire which comprised of sociodemographic variables, risk factors, signs of breast cancer and the measurement of the health belief model of breast cancer. Questions were to determine the individuals' level of knowledge of breast cancer; 15 of which were about risk factors and 9 about the signs and symptoms of breast cancer. The answers were 'true', 'false' and 'don't know'. The knowledge score was computed by totaling the number of correct answers for all 24 questions. The knowledge score was re-coded into dichotomous variables by taking the mean value as the cut-off value to evaluate knowledge levels, coded sufficient = 1 and insufficient = 2. Univariate risk analysis was performed with the socioeconomic, demographic variables and knowledge levels. Logistic regression analysis was used to evaluate the significant variables with 95% Confidence Interval found in univariate analysis.

HBM was applied to the subjects. The Health Belief Model Scale was developed in 1984 and was revised in later works by Champion. HBM is a 53-item, self-report measure, representing 8 scales, susceptibility (5 items), seriousness (7 items), benefits-BSE (6 items), barriers-BSE (6 items), confidence (11 items), health motivation (7 items), benefits- mammography (6 items) and barriers-

mammography (5 items). All the items have 5 response choices ranging from strong disagreement (1 point) to strong agreement (5 points). All scales are positively related to screening behavior except for barriers which are negatively associated. Minimum and maximum values for sub-scales are susceptibility(5–25), seriousness (7–35), benefits-BSE (6–30), barriers-BSE(6–30), confidence (11–55), health motivation (7–35), benefit mammography (6–30), and barriers- mammography (5–60). Upon completion of the questionnaire an interactive session was followed where the investigators of the study demonstrated the correct method of BSE performance.

## Statistical analysis

Bivariate correlation analysis and logistic regression analysis was performed in the data analysis.

## RESULTS

**Table 1: Sociodemographic features of the study group.**

Variables	Mean±SD
Age	
40-50	43.94±3.53
51-60	55.60±3.01
61-Above	67.00±6.48
Age of first pregnancy	20.61±13.18
Number of living children	2.59±1.17
Marital Status	Number (%)
Married	171 (85.5)
Single	3 (1.5)
Widow	26 (13)
Women Occupation	
Working	112 (56)
House Wife	88 (44)
Education Level	
Illiterate	116 (58)
Primary	50 (25)
Secondary and above	34 (17)

Mean age of the women was 55.60±3.01. Among all, 75.5% of women did not have adequate knowledge about breast cancer (score<12). 80% had no concept of BSE and 90% of women were never heard of mammography. Only 4.5% had mammography in last year.

## Knowledge, practice and source of information

80% of women had knowledge about BSE but only 12% practiced in the past 1 year. Among them 20% of women did BSE on monthly basis and 80% practiced irregularly. 15% of women had heard of CBE only 8% had it regularly. Only 4.5% of women had mammography at least once in last 5 years. 40% of the women had no information, 40.5% had information through television,

radio and 12.5% had information through friends, relatives, books, newspapers and self-help groups. However only 7% had information through health care personals.

**Table 2: OR for level of insufficient knowledge about breast cancer in the study group, breast cancer in family and breast self-examination.**

	n	OR (95% CI)
<b>Breast cancer in family</b>		
Yes	11	1.00
No	189	1.55 (1.14 – 2.34)
<b>Self-breast examination</b>		
Yes	24	1.00
No	176	1.76 (1.27 – 2.18)
<b>Clinical breast examination</b>		
Yes	22	1.00
No	178	1.42 (1.15 – 1.96)

**Table 3: Correlation between knowledge about breast cancer and subscale of CHBMS (n=200).**

Scale	Knowledge on breast cancer	
	r	p
Susceptibility	0.330	<0.001
Seriousness	0.194	<0.001
Breast self-Examination Benefit	0.357	<0.001
Breast self-Examination Barrier	0.249	<0.001
Confidence	0.115	0.106
Health Motivation	0.207	0.003
Mammography Benefit	- 0.024	0.736
Mammography Barrier	0.073	0.304

According to logistic regression analysis the odds ratio (Table 2) of having insufficient knowledge about breast cancer was 1.55 times higher in who had no breast cancer in family, 1.76 times higher in women who never practiced SBE and 1.42 times higher in subjects who never went for CBE.

Table 3 represents the bivariate correlation of each subscale score of CHBMS in relation to knowledge of breast cancer score. Significant positive co-relation was found between the knowledge of breast cancer and Susceptibility, Seriousness, BSE Benefit, BSE Barrier, Health Motivation. No significant correlation found among mammography benefit, barrier, confidence and knowledge score.

**Table 4: The relations between sociodemographic variables and BSE practice.**

	Present (%)	Absent (%)	P
<b>Education</b>			
Illiterate	54.17	58.52	0.2629
Primary	20.83	25.57	
Secondary/above	25.00	15.91	
<b>Age group</b>			
40-50	87.50	65.91	0.0009
51-60	12.50	30.68	
61-above	0	3.41	
<b>Marital Status</b>			
Married	83.33	85.79	0.5871
Single	4.17	1.71	
Widow	12.50	12.50	
<b>Breast Cancer in Family</b>			
Present	0	6.25	0.0111
Absent	100	93.75	

**Table 5: The relations between sociodemographic variables and mammography practice.**

	Present (%)	Absent (%)	P
<b>Education</b>			
Illiterate	11.12	60.21	<0.0001
Primary	44.44	24.08	
Secondary/above	44.44	15.71	
<b>Age group</b>			
40-50	88.88	67.54	0.0008
51-60	11.12	29.32	
61-above	0	3.14	
<b>Marital Status</b>			
Married	88.88	85.34	0.3245
Single	0	2.09	
Widow	11.12	12.57	
<b>Breast Cancer in Family</b>			
Present	0	5.76	0.0149
Absent	100	94.24	

**Relation between sociodemographic variables and bse and mammographic practice**

Table 4 and 5 represent the relation between socio demographic variables and BSE and mammography practice. Age and breast cancer in the family variables were significantly associated with BSE practice. Education status, age and breast cancer in family variables are significantly associated with mammography practice.

Table 6 represents comparison of subscale mean ranks of CHBMS on BSE practice and mammography practice.

Statistically significant finding was seen in mean rank of susceptibility, seriousness, confidence which were higher in practice group. No significant difference of mean ranks

was noted in variables of BSE practice and non-practice groups.

**Table 6: Differences between mean ranks of CHBMS subscale on BSE practice and Mammography practice.**

Scale	BSE practice			Mammography practice		
	Practice (n=24) mean rank	Non Practice (n=176) mean rank	P	Practice (n=9) mean rank	Non Practice (n=191) mean rank	P
Susceptibility	8.17	6.96	0.257	12.78	6.84	0.001
Seriousness	11.96	10.47	0.380	20.44	10.18	0.001
BSE Benefit	13.29	12.55	0.671			
BSE Barrier	13.79	13.63	0.932			
Confidence	24.25	20.56	0.194	33.44	20.42	0.003
Motivation	19.13	21.99	0.127	26.78	21.40	0.068
Mammography Benefit				5.78	6.17	0.512
Mammography Barrier				5.00	5.15	0.729

## DISCUSSION

Low cancer awareness leads to late presentation to hospital which in turn influence survival rate. In the present study, only 24.5% of women had adequate knowledge. The WHO stresses on promoting awareness in the community and encouraging early diagnosis of breast cancer, especially for women aged 40-69 years and who are attending primary health care centres or hospitals for other reasons, by offering clinical breast examinations.<sup>10</sup> The main source of information for the women was Media. This indicates that using TV and radio to bring awareness reaches housewives effectively. It is important to know that health care personal are poor source of information. Nurses and ANMs in rural areas concentrate on maternal and child health. Educating women about breast cancer may bring awareness to reach screening methods by which we can achieve early detection.

Breast Cancer occurs a decade earlier in Indian women as compared with the women of developed countries and is a leading cause of mortality in developing countries like India. So raising awareness about the screening procedures can help in reducing mortality.<sup>11</sup>

BSE familiarize women with the appearance of their breast and also aids in early detection of breast cancer. In our study only 80% of women had ever heard of BSE and only 12 % of women practiced regularly. Studies have reported that BSE is highly effective in increasing sense of ownership about health, health care seeking behaviour and creating awareness about breastcancer among women.<sup>12</sup> In spite of various benefits the practice of BSE remains low in various countries like in india 0-52%<sup>5,13</sup> 54% in england<sup>14</sup> and 19-43.2% in nigeria.<sup>15,16</sup> In our study it was found that only 15% of women were aware

of CBE (Clinical Breast Examination) and 8 % practiced in the past 2 years. In the study conducted by Ho et al, annual CBE rate was 45% in educated women.<sup>17</sup> A study from rural area of Turkey noted CBE percentage of 3.3% annually, 18% when ever they have complaint.<sup>18</sup> Vikas et al have noted CBE practice is only 32% even among nurses population barriers being discomfort ,embarrassment and belief that CBE is a painful procedure.<sup>19</sup> Regular CBE and mammography are internationally accepted guidelines for breast cancer screening. In our study 5% had heard about of mammography but 4.5% had at least once. Poor mammography practice have been recarded in developing countries but significantly higher in developed nations.<sup>15</sup> The american cancer society guidelines for cancer screening recommends annual CBE and mammography for women above 40.<sup>15,18</sup>

According to logistic regression analysis the odds ratio of having insufficient knowledge about breast cancer was 1.55 times higher in who had breast cancer in family and 1.76 times higher in women who never practiced BSE. Some authors claim that experiential and demographical variables have several direct paths to attitudinal variables and potential indirect paths to BSE behaviours.<sup>20</sup> In our study education status variable is significantly associated with mammography practice. Insufficient knowledge about breast cancer, age and family history of breast cancer is significantly associated with both mammography practice and BSE practice. Studies have indicated that many women are not aware of what they need to do to protect them from breast cancer.<sup>20,21</sup> It has been reported that older women were more likely to practice BSE than others.<sup>12,22</sup> In a study done at Turkey, significant association was found between breast cancer

knowledge and BSE practice.<sup>12</sup> The importance of education in adopting of BSE practice has been reported repeatedly.<sup>23,24</sup>

In this study mammography benefit, reduced barrier, motivation were not significant in explaining mammography practice but susceptibility, seriousness and increased confidence were significantly associated with it. Motivation seem to be important for the practice of mammography. This is similar to results of holm and Eun-Hyun.<sup>25,26</sup>

Benifits were not significant variable in predicting BSE and mammography practice. It is supported by the finidings in Asian women such as from hong kong, Jordan, Korea.<sup>27,28</sup> In contrast findings from American studies reported women who perceived more benefit from BSE were more likely to perform BSE.<sup>8,29,30</sup> Confidence was found to be significant factor for mammography practice. Confidence was much higher among mammography practice group compare to nonpractice group but same was not true for BSE in our study. One research group found positive relation between confidence and BSE.<sup>31</sup> Study among mexican american says that knowledge and confidence were associated with both BSE and colorectal cancer screening. Similarly Sortet, Ashton and Foxall.S showed that women who reported more confidence in performing BSE were significantly more likely to do so regularly.<sup>32,33</sup>

## CONCLUSIONS

Lack of knowledge among general public influences the prevention and early diagnosis of breast cancer.

Spreading awareness regarding breast cancer amongst public by educational programs through mass media is the need of the hour.

Increase in BSE and mammography practice achieved by educating regarding breast cancer.

By using HBM health care provider can understand beliefs that influence women BSE and mammography practice.

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## REFERENCES

1. Breast cancer Basics. Tata memorial Center Mumbai. <https://tmc.gov.in/tmh/index.php/types-of-cancer-category-list/142-b/279>.
2. Parkin DM, Pisani P, Ferlay J. Global cancer statistics 2002. *CA Cancer J Clin.* 2005;55:74-108.
3. Coleman MP, Quaresma M, Berrino F, Lutz JM, Angelis RD, Capocaccia R, et al. Cancer survival in

- five continents: a worldwide population –based study(CONCORD). *The Lancet Oncology.* 2008;9(8):730–56.
4. Yarbrough SS, Braden CJ. Utility of health belief model as guide for explaining or predicting breast cancer screening behaviors. *Journal of advanced nursing.* 2001;33:677-88.
5. Yadav P, Jaroli DP. Breast cancer: Awareness and risk factors in college-going younger age group women in Rajasthan. *Asian Pac J Cancer Prev.* 2010;11:319–22.
6. Doshi D, Reddy BS, Kulkarni S, Karunakar P. Breast Self-examination: Knowledge, Attitude, and Practice among Female Dental Students in Hyderabad City, India *Indian J Palliat Care.* 2012;18(1):68–73.
7. Petro-Nustas W, Mikhai IB. Factors associated with breast self-examination among Jordanian women. *Public health nursing.* 2002;19:263-71.
8. Champion VL. Instrument refinement for breast cancer screening behaviors. *Nursing research.* 1993;42:139-43.
9. Champion VL. Development of benefits and barriers scale for mammography utilization. *Cancer nursing.* 1995;18:53-9.
10. WHO screening for breast cancer, 2008. <http://www.who.int/cancer/detection/breastcancer/en>.
11. Kamath R, Mahajan KS, Ashok L, Sanal TS. A Study on Risk Factors of Breast Cancer among Patients Attending the Tertiary Care Hospital, in Udupi District. *Indian J Community Med.* 2013; 38(2):95–9.
12. Austoker J, Manasciewicz R. Breast self-examination. Editorial misses central point, *BMJ.* 2003;326:1-2.
13. Gupta SK. Impact of Health Education Intervention Program Regarding Breast Self-Examination by Women in Semi urban Area of Madhya Pradesh India. *Asian Pac J Cancer.* 2009;10(6):1113-117.
14. Philip J, Harris WG, Flaherty C, Joslin CA. Clinical measures to assess the practice and efficiency of breast self-examination, *Cancer.* 1986;58(4):973-77.
15. Okobia MN, Bunker CH, Okonofua FE, Osime U. Knowledge, attitude and practice of nigerian women towards breast cancer: a cross-sectional study. *world J surg oncol.* 2006;4:11.
16. Gwarzo UM, Sabitu K, Idris,SH. Knowledge and practice of breast self-examination among female undergraduate students of Ahmadu Bello university Zaria,North western Nigeria. *Ann afr med.* 2009;8(1)55-8.
17. Ho V, Yamal JM, Atkinson EN, Basen-Engquist K, Luna GT, Follen M. Predictors of breast and cervical cancer screening in vietnamese women in Harris Country, Houston, Texas. *Cancer nursing.* 2005;28:119-29.
18. Dundar PE, Ozmen D, Ozturk B, Haspolat G, Akyildiz F, Coban S. The knowledge and attitude of breast self-examination and mammography in a group of women in rural area in western turkey. *BMC cancer.* 2006;6:43.



19. Fotedar V, Seam RK, Gupta MK, Gupta M, Vats S, Verma S. Knowledge Of Risk Factors & Early Detection Methods and Practice Towards Breast Cancer Among Nurses In Indira Gandhi Medical College, Shimla, Himachal Pradesh, India *Asian Pacific J Cancer Prevention.* 2013;14(1):117-20.
20. Champion VI, Miller TK. Variables related To Breast Self-Examination. *Psychology of Women Quarterly.* 1992;16:81-86.
21. Kosgeroglu A, Ayranci U, Ozerdogan N. Knowledge of women on early diagnosis methods and risk factors for breast cancer in a province of Western Turkey: A descriptive study *Pak J med science.* 2011;27(3):646-50.
22. Ravichandran K, Al-Hamdan NA, Mohamed G. Knowledge, Attitude and Behavior Among Saudis Towards Cancer Preventive Practice, *J Family Community Med.* 2011;18(3):135-42.
23. Rasu RS, Rianon NJ, Shahidullah SM, Faisal AJ, Selwyn BJ. Effect of educational level on knowledge and use of breast cancer screening practices in bangladeshi women health care. *Women int.* 2011;32(3):177-89.
24. Ceber E, Turk M, Ciceklioglu M. The effect of an educational program on knowledge of breast cancer, early detection practices and health beliefs of nurses and midwives. *J clinical nursing.* 2010;19(15-16):2363-71.
25. Eun-hyun. Breast examination performance among korean nurses. *Journal of nurses in staff development.* 2003;19:81-7.
26. Holm C, Frack Di, Curtin J. Health beliefs, health locus of control and women's mammography behaviour. *Cancer nursing.* 1999;22:149-56.
27. Lee YY, Lee EH. Predicting factors of breast self-examination among middle aged women. *Journal of academy of adult nursing.* 2001;13:509-16.
28. Fung SY. Factors associated with breast self-examination behavior among chinese women in hongkong. *Patient education and counseling.* 1998;33:233-43.
29. Secginli S, Nahcivan N. Breast cancer screening behaviour among women. *Proceeding of the 2nd international and 9th national congress,* september 2003.
30. Holm C, Frank Di, Curtin J. health beliefs, health locus of control and women's mammography behaviour. *Cancer nursing.* 1999;22:149-56. .
31. Friedman LC, Nelson DV, Webb JA, Hoffman LP, Baer PE. Dispositional optimism, self-efficacy and health beliefs as predictors of breast self-examination, *American journal of preventive medicine.* 1994;10:130-5.
32. Foxal MJ, Barron CR, Houfek J. Ethnic difference in breast self-examination practice and health beliefs. *Journal of advanced nursing.* 1998;27:419-28
33. Ashton L, Karnilowicz W, Fooks D. The incidence and belief structures associated with breast self-examination. *Social behavior and personality.* 2001;29:223-30.

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