International Journal of Community Medicine and Public Health
Komal SS et al. Int J Community Med Public Health. 2023 May;10(5):1822-1830
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040
DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20231280

Original Research Article

Perceptions and practice of breast self-examination among adult women residing in rural South Karnataka

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Received: 30 March 2023
Revised: 19 April 2023
Accepted: 24 April 2023

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ABSTRACT

Background: Breast cancer is the most common cancer in women and is the leading cause of death among women with 40-45 years old. The only way to manage this disease is early diagnosis through screening which helps in detecting breast cancer in 90% of women that it can be treated in about 90% of women. The best accessible and affordable way to screening is breast self-examination (BSE). The main objective of the study is to assess the awareness (knowledge, attitude and practice) regarding breast self-examination among women aged 30 years and above residing in a rural area.
Methods: This cross-sectional study was conducted from June 2016 to January 2017 in villages under Ittamadu Primary Health Centre area, Ramnagara District. A total of 600 women aged 30 years or above who gave written informed consent participated in the study. A semi structured questionnaire was administered by interview method. Descriptive statistics was used for analysis.
Results: This study revealed that the awareness regarding breast cancer among adult women aged 30 years and above was 4%. Majority of the study participants had poor knowledge regarding BSE, however they had favourable attitude towards BSE. With regard to practice of BSE, only 4% of the study participants practiced BSE.
Conclusions: Breast self-examination is one of the most appropriate, convenient and cost-effective method that can be done by every woman for early detection of breast cancer and all women after the age of 18 years should be trained to do BSE correctly and regularly by healthcare workers and doctors.

Keywords: Breast cancer, Adult women, Awareness, Breast self-examination, Rural

INTRODUCTION

Early breast cancer (EBC) constitutes only 30% of the breast cancer cases seen at regional cancer centres in India, whereas it constitutes 60-70% of cases in the developed world.[1] According to Global Cancer statistics, Globocan, in 2020, there were 2,261,419 incident cases of breast cancer worldwide which accounts to 11.7% of all cancers among women, the highest in the world.[2] India reports around 100,000 new cases annually according to the Indian Council of Medical Research (ICMR). About 30,000 women die from breast cancer in India annually.[3]

Delay in seeking medical advice is considered as one of the reasons for increased cancer mortality in developing countries.[1] This increase in mortality is mainly due to late diagnosis of the disease, which is a consequence of lack of knowledge and awareness regarding breast cancer, primarily in the women of developing countries. Early detection of breast cancer increases the effectiveness of the treatment, which results in a better prognosis,

reducing the morbidity and mortality rates.[4] Better socioeconomic conditions, health awareness and availability of breast cancer screening in developed Asian countries are major causes of a favourable clinical picture and outcomes in these countries.[1]

Breast self-examination is a procedure by which the breasts and accessory anatomic structures are observed and palpated to detect changes or abnormalities that may indicate the presence of malignancy.[5] If cancer is detected in stage 1 the chances of survival is 80%, while it is 20% when diagnosed in stage 3.[6]

Breast self-examination (BSE) has been seen to empower women, taking responsibility for their own health. The teaching of breast self-examination (BSE) can help women to know the structure and composition of their normal breasts thereby enhancing their sensitivity to any abnormality at the earliest.[7]

It is inexpensive, simple and does not require any specialized equipment or regular visits to the hospital, thus proving its usefulness in underdeveloped countries too, which lack resources. In addition, performing BSE on a regular basis makes women accustomed to the normal appearance and feel of their breasts and they are able to notice any changes in their breast as soon as they present.[8]

Objectives

To assess the awareness (knowledge, attitude and practice) regarding breast self-examination (BSE) among adult women residing in Rural South Karnataka.

METHODS

Study design, area, and duration

This cross-sectional study was conducted in Ittamadu primary health centre area, Ramangara Taluk, Ramanagara District, Karnataka, India. The estimated population of the Ittamadu Primary health centre area is 10911. It consists of 3 subcentres: Ittamadu, Heggadagere and Banandur and a total of 15 villages and households. The study data were conducted from June 2016 to January 2017 and all women aged 30 years and above, who have given written informed consent to participate in this study were included. Women who were non-permanent residents (residing for less than 6 months in the study area) were excluded.

Sample size and sampling technique

Sample size was calculated based on the assumption that the awareness regarding Breast self-examination was 22% based on a study done by Gore et.al.[9] With a relative error of 15% within 95% confidence interval (CI), sample size $n=4 \times p \times q/l^2$, the sample size was derived to be 599 which was rounded off to 600. The sampling technique used was probability proportionate to population size according to the population of the 3 subcentres, while selection of the samples was by simple random sampling using a currency note. In each sub centre all the villages were listed and randomly one village was selected by simple random sampling. In that village, after reaching the centre of the village, one street was chosen randomly using a currency note. In that street, the first house was selected randomly using a currency note. From there onwards, house to house survey was conducted to cover the required number of women aged 30 years and above. One eligible subject was studied from each household. In case of more than one appropriate age adult woman in a sampling unit, one adult woman was selected randomly. In case, there was no eligible subject in the household, next household was approached. When the required number of women were not available, the next nearest village was surveyed till the sample size was obtained. The same procedure was followed in the other two sub centres to cover the sample size.

Tools and techniques- data collection

One visit was made to each household for data collection. Questionnaires were prepared first in English then translated to Kannada which is the vernacular language of the respondents by language expert for ease of understanding of the respondents. During the visit, the eligible study subjects were interviewed face to face using a semi-structured questionnaire for back ground and associated variables after written informed consent was taken by each study participant.

All variables explored belonged to three variable categories –as described and defined below.

Sociodemographic factors: age, gender, type of family, religion, socioeconomic status (B G Prasad Classification 2015), education, occupation and marital status. Assessment of knowledge, attitude and practice of BSE.[4,10] For assessing knowledge and attitude, the responses to the questions were divided into those who had heard of BSE or not. Knowledge was scored on 10- those participants who scored more than 7 were substantially aware, between 5 and 7, and below 5 were said to be partially aware, and not aware, respectively. Attitude, on the was scored out of 20, a score of 17–20 was considered as high (favourable) attitude, 10–16 as moderate attitude, and below 10 as low (not favourable) attitude.

Ethical considerations

The study was approved by the Institutional Ethics Committee. Patient consent form and participation information sheet were filled. Prior to data collection, informed written consent was obtained from each study participant after explaining the purpose of the study. All information that was collected was kept confidential. Health education regarding practice of breast self-

examination was given to all the study participants at the end of the study.

Statistical analysis

Data were entered and analysed in SPSS Statistics for Windows, version 16.0 (SPSS Inc., Chicago, Ill., USA) after data cleaning. Continuous data were expressed in terms of mean and standard deviation. Categorical variables were expressed in proportions.

RESULTS

It was observed that among 600 study participants, maximum number of study participants 205 (34.2%) belonged to the age group of 30-39 years, followed by 133 (22.2%) in the age group of 40-49, 108 (18.0%) belonged to the age group of 50-59 years, 104 (17.7%) in the age group of 60-69 years, and 43 (7.1%) belonged to 70 years and above. The mean age of the study participants was 49.95 years. Majority 594 (99%) of the study population were married and the mean age at marriage was 17.20 years. The mean age of the study participants who practiced breast self-examination was 44±1.05 years, while the mean age of the participants who did not practice breast self-examination was 46±1.5 years.

Table 1 shows that with regard to religion, majority of the study participants were Hindus (89%) by religion. Nearly 77% of the study participants were homemakers followed by 17.84% who were semi–skilled workers. Only 45.5% of the study participants had received formal education and the rest of the study participants were not literate. Majority of the study population belonged to Class IV (41.5%) socioeconomic status according to revised modified B G Prasad classification.

Table 2 shows that only 24 (4%) of the study participants were aware of breast self-examination, while 576 (96%) were not aware. Table 3 compares the knowledge between participants who had and had not heard of breast self-examination (BSE). Most of the women (96%, n=576) had not heard of BSE, while only 24 (4%) study participants had heard. All the 24 (4%) study participants who had heard of BSE acknowledged that BSE is an important tool for the early detection of breast cancer. Only 22 (3.83%) study participants responded correctly that the appropriate age to initiate BSE was ≥19 years. About 23 (3.66%) study participants who had heard of BSE agreed that it should be a monthly routine. In this study, all the 24 (4%) study participants who had heard of BSE knew that the accurate method of BSE is to examine the armpits and palpate with the opposite hand using the palm and a minimum of three fingers. Overall, 24 (4%) study participants had a substantial amount of knowledge, while 576 (96%) study participants were unaware.

Table 4 shows that only 24 (4%) study participants had a positive attitude towards breast self-examination, about 565 (94.17%) participants the attitude was moderate as they had a neutral stand, while the attitude was poor for 11 (1.83%) participants. Majority of the study participants (94.5%) who had not heard of BSE, were interested in doing BSE, provided they knew how to do it.

Table 5 shows that among the participants who had heard of BSE, their main source of information was through health workers. There were only 24 (4%) participants in our study who had performed breast self-examination and continued to do so. While assessing the practice of BSE, majority (87.33%) of the participants preferred to do BSE, while 3 (12.87%) participants, although they practiced BSE, preferred a female doctor/ female nurse over BSE to examine their breasts. In our study we found that all the 24 participants who had heard of BSE, knew the correct technique of BSE, but only 21 (87.5%) practiced BSE at least once monthly.

Table 1: Socio-demographic details of the study participants.

Characteristic	Women	Percentage (%)
Religion		
Hindu	536	89
Christian	40	7
Muslim	24	4
Total	**600**	**100.00**
Education		
Not literate	327	54.5
Primary (1st to 5th)	57	9.5
Upper primary (6th to 8th)	67	11.2
Secondary (9th and 10th)	114	19.0
Senior secondary/PUC	26	4.3
Graduate	7	1.2
Post graduate	2	0.3
Total	**600**	**100.00**
Occupation		

Continued.

Homemaker	463	77.17
Professional	11	1.83
Skilled worker	8	1.33
Semi-skilled workers	107	17.84
Unskilled worker	11	1.83
Total	**600**	**100.00**
Socio-economic status (B G Prasad (2015)		
CLASS I (Upper)	20	3.3
CLASS II (Upper middle)	55	9.2
CLASS III (Middle)	203	33.8
CLASS IV (Lower middle)	249	41.5
CLASS V (Lower)	73	12.2
Total	**600**	**100.00**

Table 2: Distribution of study participants according to awareness regarding breast self-examination (n=600).

Awareness regarding breast self-examination	Number of women	Percentage (%)
No	576	96%
Yes	24	4%
Total	**600**	**100.0**

Table 3: Knowledge of breast self-examination.

Heard of breast self-examination?	Yes (%) (n=24)	No (%) (n=576)
Who should perform BSE?		
Males only		
Females only	24 (4)	29 (4.83)
Both males and females		6 (1)
Don't know		541 (90.17)
Is BSE important in the early detection of breast cancer?		
Important	24 (4)	
Not important		
Don't know		576 (96)
The correct age to initiate BSE		
<19 years	2 (0.34)	
≥19 years	22 (3.66)	
Don't know		576 (96)
Before menopause, how often should BSE be performed?		
Weekly	1 (0.34)	
Monthly	23 (3.66)	
Yearly		
Don't know		576 (96)
The appropriate time to perform BSE		
A week before menstruation		
A week after menstruation	24 (4)	
During menstruation		
Don't know		576 (96)
The breast self- examination should be done during this period because breast		
Becomes soft and least lumpy	3 (0.55)	
Will be freely movable	2 (0.33)	
All of above	19 (3.17)	
Don't know		576 (96)
After menopause the breast self- examination should be carried out		
Weekly	18 (3)	
Monthly	6 (1)	
Yearly		

Continued.

Heard of breast self-examination?	Yes (%) (n=24)	No (%) (n=576)
Don’t know		576 (96)
The appropriate place to perform BSE		
While lying on the bed	2 (0.34)	
In front of the mirror	22 (3.66)	
While having a bath		
All of above		
Don't know		576 (96)
The correct method of BSE		
Usage of the opposite hand for palpation of breasts		
Palpate with palm and minimum of three fingers		
Examine the armpit while performing BSE		
All of the above	24 (4)	
Don’t know		576 (96)
Do you think BSE can help in early identification of breast cancer?		
Yes	24 (4)	
No		
Don’t know		576 (96)
Knowledge of BSE		
Substantially aware	24 (4)	
Partially aware		
Not aware		576 (96)

Score >7 was considered as substantially aware of BSE, score between 5 and 7 was considered as partially aware of BSE, score ≤4 was considered as not aware of BSE. BSE=Breast self-examination.

Table 4: Attitude towards Breast self-examination (n=600).

Heard of breast self-examination?	Yes (%) (n=24)	No (%) (n=576)
BSE is/will be embarrassing to me		
Strongly agree		5 (0.83)
Neutral		561 (93.5)
Strongly disagree	24 (4)	10 (1.67)
BSE is one of the easiest and economical ways to detect breast lump		
Strongly agree	24 (4)	
Neutral		570 (95)
Strongly disagree		6 (1)
Performing BSE makes me feel unpleasant		
Strongly agree		12 (2)
Neutral		564 (94)
Strongly disagree	24 (4)	
If there is a lump, I prefer to get treatment from a traditional healer		
Strongly agree		5 (0.83)
Neutral		
Strongly disagree	24 (4)	571 (95.17)
I feel uncomfortable, I cannot do BSE		
Strongly agree		8 (1.33)
Neutral		568 (94.67)
Strongly disagree	24 (4)	
I avoid BSE because I worry about having breast cancer		
Strongly agree		
Neutral		576 (96)
Strongly disagree	24 (4)	
All women after 19 years of age should do BSE		
Strongly agree	24 (4)	
Neutral		576 (96)
Strongly disagree		

Continued.

Heard of breast self-examination?	Yes (%) (n=24)	No (%) (n=576)
I really care about my breasts		
Strongly agree	24 (4)	576 (96)
Neutral		
Strongly disagree		
The main purpose of doing breast self-examination is to detect any changes in the breast		
Strongly agree	24 (4)	
Neutral		571 (95.17)
Strongly disagree		5 (0.83)
I am interested in doing BSE		
Strongly agree	24 (4)	567 (94.5)
Neutral		9 (1.5)
Strongly disagree		
Attitude**		
High attitude of BSE	24 (4)	
Moderate attitude		565 (94.17)
Low attitude		11 (1.83)

Attitude was scored on 20, high (favourable) attitude was considered as score between 17 and 20, moderate attitude was considered as score between 10-16, low (not favourable) attitude was considered as score between 0-9. BSE=Breast self-examination.

Table 5: Practice of breast self-examination (n=24).

Have you ever performed BSE before?	Yes (N)	Percentage (%)
If yes, then from where did you learn it?		
Friends and family		
Doctors/health workers	24	100
Internet/TV		
If yes, then for what purpose did you perform it?		
Advice from doctors/ health workers	21	87.5
You noticed a breast lump	2	8.33
Family history	1	4.17
How frequently have you performed it?		
At least once weekly		
At least once monthly at end of menstrual period	21	87.5
Occasionally (less than 12 times in a year)	3	12.5
How do you prefer your breast examination to be done?		
By a nurse/female doctor	3	12.5
By yourself	21	87.5
On identifying an abnormality in your breasts, what would you do?		
Tell mother/mother-in-law	5	20.83
Tell spouse	8	33.33
Consult doctor/nurse	11	45.84
I undress until the waist when doing BSE	21	87.5
I do BSE while lying down	8	33.33
I place a towel or pillow under shoulder before examining breast on the side while lying down	8	33.33
I look at the breasts in mirror with hands on thighs	21	87.5
I look at the breasts in mirror with arms raised over the head	21	87.5
I use fingers to examine any lumps or thickening of the skin of the breasts	24	100
I observe any unusual change in the shape and size of the breast (looking for swelling, dimpling of skin or changes in nipples)	24	100
I press on the nipple to check for any unusual discharge	24	100
I do armpit examination as well to check for any lump	22	91.97
I use the right hand to examine the left breast and left hand to examine the right breast	24	100

DISCUSSION

There is ample evidence quoted in articles published in reputed journals that breast cancer can be detected early with BSE, which significantly and positively alters the prognosis and thereby improves the quality of life and reduces the socioeconomic impact on the individual, family and community. Most of the studies done on breast self-examination are on student's/ health workers and there is paucity of studies on awareness of BSE among rural women. In view of this, the study was undertaken.

In this study, it was found that only 4% of the study participants had awareness regarding breast self-examination. Kommula et al. in a study done among women in South India, found that only 16.5% were aware of breast self-examination.[11]

Among the 24 participants who were aware of BSE, 18 (50.0%) had studied up to 12th standard, 4 (16.67%) had studied upto 10th standard, followed by 2 (18.33%) participants who were graduates in comparison to a study done by Yerpuda et al, among rural women in south India, only 30.89% of the women were aware of breast self-examination and the level of awareness was highest among those aged 51-60 years. Awareness of breast self-examination was found to be significantly associated with educational attainment.[12]

Among the 24 (4%) participants who were aware of BSE, all were aware that BSE is a method for early detection of breast cancer and all had participated in a program on breast self-examination by health personnel, while in a study by Rao et al., among rural women in South India, 6/342 (11%) had received some form of training from a local NGO and the rest had sourced their knowledge from either the television or the print media.[13] Comparing with another study by Joyce et al., in which out of the 152 respondents who heard about breast self-examination, majority (55.9%) obtained the information from the health worker.[14]

In this study, when asked about the age at which BSE should be performed, only 24 (4%) participants responded correctly as more than 19 years of age, while in comparison to a study done by Choumessi et al only 7.06% of the of them indicated that BSE should be done as from 20 years.[15] Hence health education has to be done to improve the knowledge of the studied population about BSE.

The findings in this study shows that knowledge of BSE was generally low among the 600 women who participated in this study, only 24 (4%) had high knowledge regarding BSE & the remaining 576 (96%) study participants were unaware of BSE. This is comparable to a similar study by Gogolla et al among rural women where the awareness regarding BSE was only 5%.[16] While in a study by Rita et al among women in Ghana, only 43% had some knowledge regarding BSE, while 56.7% reported not knowing anything about it or having not heard about it.[17]

We found in our study that majority of the study participants (98%) said that they would seek help from a doctor in case of detection of a breast lump. The findings are similar to a study by Rao et al, where 86.5% of the women endorsed that they would seek immediate help in case of detection of any breast lump and approach either a doctor or a health worker.[13]

Despite the poor knowledge among the participants, it was very heartening to know that in this study, majority (94.17%) had a moderate attitude towards BSE, whereas in a study done by Danesh et al, in Shahrekord, 75.88% of the participants in had a moderate attitude toward BSE.[18]

The observed moderate attitude shows that most of the women are interested in doing BSE but they lacked the correct knowledge to practice it. It should be explained that early detection of breast cancer by the frequent practice of BSE is valuable as it could increase their chances of survival through prompt and effective treatment.[4]

In our study we found that among the 24 (4%) participants who were aware BSE, all of them practiced breast self-examination. This is comparable to a study done by Amoran et al among rural women in Nigeria where only 5.3% of the participants perform BSE regularly (monthly) as recommended, while in a study by Rao et al among rural women in South India, among the participants (16%) who had some knowledge regarding BSE, none of them practiced.[13,19]

The findings in this study shows that among the 24 participants who practiced BSE, only 17 (70.83%) did BSE once a month, while 7 (29.17%) reported as having done once a year. A similar study by Joyce et al., showed that out of the 89 participants who practiced BSE, only 16.9% of the study participants reported that they do BSE monthly.[14]

Though our study showed that that among the 24 (4%) participants who practiced BSE, majority of the participants (87.5%) preferred to carry out BSE themselves, but contrasting results were seen in a study conducted in Iran by Gholamrezza et al, which showed that almost all of the women (96.7%) preferred to have a female doctor do their breast examination.[20]

In this study, we found that 98.5% of the study participants were interested in doing BSE. This is comparable to a study done by Rao et al, where 93% of the women were interested in doing BSE. It reflects on the fact that people appreciate the importance of BSE. However, the gap in knowledge in other parameters of

BSE emphasizes on the need to educate women about the correct method and timing of BSE.

Limitations

Practice of breast self-examination was assessed based on recall. This study was done in a rural setting and a similar study should be done in an urban setting to assess the general awareness of breast self-examination.

CONCLUSION

The study found that the overall awareness of Breast self-examination among the study participants was low at 4%. Those who were aware of Breast self-examination had participated in a program on breast self-examination by health personnel and knew the correct technique of BSE. Although majority of the study participants (94.5%) had not heard of BSE, they were interested in learning BSE, which shows that there is a need to conduct more awareness programs to educate women on the importance of breast self-examination and focus on identifying the barriers to BSE.

Recommendations

Hence it is recommended that the stake holders should plan community oriented educational intervention programme emphasizing on proper technique to bring about the desirable behavioural change among women which in turn will motivate them to do breast self-examination regularly.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Komal SS, Venkatakrishna S. Perceptions and practice of breast self-examination among adult women residing in rural South Karnataka. Int J Community Med Public Health 2023;10:1822-30.