Global Journal of Medicine & Public Health

Knowledge, attitude and practice about breast cancer and Breast self-examination among reproductive age group women in community

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ABSTRACT

Background

Breast cancer is the most common type of cancer in Indian women. Though breast cancer cannot be prevented, its rate of survival can be improved if found at an early, more treatable stage. Therefore, promoting breast self-awareness; breast self-examination can effectively reduce mortality due to breast cancer.

Objectives

To disseminate information about breast cancer and breast self-examination among reproductive age group women in the community and to assess the impact of health education on breast cancer and breast self-examination.

Methods

A descriptive cross-sectional study was conducted in an Urban Health Centre in New Delhi. A convenient sampling of 104 participants of age between 15 to 45 years was included in the study. Data was collected with the help of a predesigned, pre-validated and pretested questionnaire which included a Pre-test followed by a PowerPoint presentation covering various aspects related to breast cancer and breast self-examination followed by a posttest evaluation.

Results

Analysis of scores obtained in the assessment of knowledge revealed a mean Pretest score of 3.99 ± 3.10 which improved to 9.95 ± 0.61 in the Post-test score which was found to be statistically significant.Analysis of scores obtained in the assessment of attitude revealed a mean Pretest score of 16.90 ± 4.53 which improved to 22.04±9.43 in the Post-test score which was found to be statistically significant.

Conclusion

The knowledge, attitude and practice regarding cancer breast and breast self-examination were found to be lower among community women therefore major policy changes have to be made in present health programmes. Awareness of cancer breast and screening for breast self-examination should be started as part of routine Information, Education and Communication (IEC) activities in all health centres.

Keyword: Attitude, Knowledge, Breast Cancer, Breast Self-Examination

GJMEDPH2022; Vol.11, issue5|OPENACCESS

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Conflict of Interest—none| **Funding—**none

INTRODUCTION

Cancer ranks as one of the leading causes of death and is a major barrier to increasing life expectancy in every country of the world. Female breast cancer has now surpassed lung cancer as the leading cause of global cancer incidence in 2020, with an estimated 2.3 million new cases, representing 11.7% of all cancer cases, followed by lung (11.4%), colorectal (10.0 %) and prostate (7.3%) cancers. Breast cancer is the fifth leading cause of cancer mortality worldwide, with 685,000 deaths. Among women, breast cancer accounts for 1 in 4 cancer cases and for 1 in 6 cancer deaths, ranking first for incidence in the vast majority of countries (159 of 185 countries) and for mortality in 110 countries.[1]

Breast cancer is the most common type of cancer in Indian women. According to the International Agency for Research on Cancer, 162468 women were newly detected with breast cancer in India accounting for 27.7% of all newly detected cancers and 23.5% of all cancer related deaths in Indian women. [2]

There is an increase in prevalence of breast cancer observed in developing nations due a growing number of senior citizens and emergence of lifestyle-related breast cancer risk factors such as obesity, excessive consumption of junk or unhealthy foods, obesity and usage of harmful substances. [3, 4]

Though Breast cancer cannot be prevented, its rate of survival can be improved if found at an early, more treatable stage.[5] Treatment of cancers that are found at early stages are less expensive and more effective, with much better quality of life. Early detection can thus result in an increase in survival chances. There are various methods known to provide the early diagnosis of breast lumps which include breast self-examination, physical examination by a physician and mammography. [6]

Breast self-examination is an easy to apply, economical, safe and non-invasive detection method to prevent breast cancers among women that can be done easily at home. It provides an early check, does not take a long time, does not require any cost, maintains privacy, and does not include invasive procedures and only takes about 5minutes. [7]

The purpose of breast self-examination for a woman is to learn the anatomy of her breast, know how her breast normally feels and identifies changes in the breast if they occur in the future. Breast self-examination consists of two basic steps visual examination in the standing position and tactile examination carried out lying down or standing up. This examination should be performed frequently by menstruating women, preferably 5 days after each menstruation, and by post-menopausal women once a month on a fixed day. [8, 9]

Many women, however, practice Breast self-examination either irregularly or not at all. There are many reasons for this like not knowing how to do it, lack of time, the thought of not being able to use correct technique, the fear of finding a mass and also their perception of it being not so important to practise it. Several studies have shown that even with the very significant place it occupies in the early diagnosis of breast cancer, Breast self-examination is not well-known by women in our country, and its use is insufficient. [10]

This study aimed to assess the knowledge and attitude of breast self-examination examination among reproductive age group women in the community before and after giving health education.

AIM & OBJECTIVES

To disseminate information about breast cancer and Breast self-examination among reproductive age group women in community and to assess the awareness about breast Cancer and breast self-examination after giving health education.

MATERIAL AND METHODS

This study was descriptive cross-sectional conducted in Urban Health Centre Gokulpuri, which is a field practice area of Department of Community Medicine, Maulana Azad Medical College and Associated Hospitals, New Delhi.

Study participants- Reproductive age group women 15 to 45 years.

Period of study - 4 months.

Inclusion criterion:

1. All the reproductive age group women aged between 15 to 45 years and staying in the area for the last one year were enrolled during study period
2. Women who are willing to participate

Exclusion criteria:

1. Participants unable to understand Hindi/English and associated with severe debilitating illness or mental health problem
2. Women who have undergone breast surgery
3. Women who have been previously exposed to teaching programmes about breast self-examination.

Sample Size- At 95% confidence interval and according to Madhukumar's[11] study 18% having some knowledge about breast cancer/breast self-examination, and 20% increase in knowledge after lecture and demonstration. So estimated sample size was 161 by using the formula $N= (Z\alpha/2+Z\beta)^2 (P1Q1+P2Q2)/(P1-P2)$

$$n = \frac{\left[z_{1-\alpha/2}\sqrt{2\bar{p}(1-\bar{p})} + Z_{1-\beta}\sqrt{p_1(1-p_1)+p_2(1-p_2)}\right]^2}{(p_1-p_2)^2}$$

Where,

- n = sample size
- $Z1-\alpha/2$ = 1.96 value of the standard normal variate corresponding to the level of significance α of 0.5.
- $Z1-\beta$ = 0.84 value of standard normal variate for power of 95% for two tailed study.
- P_1 = 36% which is the proportion of knowledge of breast self-examination
- P_2 = 51% which is the assumed proportion of knowledge of breast self-examination post intervention.

But due to limited resources, a convenient sample of 104 reproductive age group women were taken by systematic random sampling.

Study Instrument

Data was collected through a detailed interview with the help of a predesigned, pre-validated and pretested questionnaire which included questions regarding socio-demography, knowledge and attitude about Breast cancer and Breast-self-examination.About 5 to 7 women were asked to come to Urban Health Centre to attend the health education session for 30 minutes. Each question in the questionnaire about knowledge and awareness were given one mark. The session included administration of Pre-test followed by power point presentation which covered various aspects related to breast cancer and breast self-examination followed by post-test.

Statistical analysis

The data was cleaned and entered in Microsoft Excel spreadsheet and analysed using IBM SPSS Statistics Version 21.0 software (Chicago). Data was expressed in percentage and proportions and were displayed in appropriate tables and figures. Appropriate statistics was applied to achieve desired results (McNemar's and Chi square test for pre and post-test comparison). The level of significance was set at 5%. All P-values less than 0.05 were treated as significant.

Ethical Consideration

Written and informed consent were taken from all study subjects. The study was initiated and conducted after obtaining ethical approval from the Institutional Ethics Board of our Institute. Confidentiality of the data collected was maintained and data was used only for the study purpose.

RESULTS

Socio-demographic characteristics of the study participants

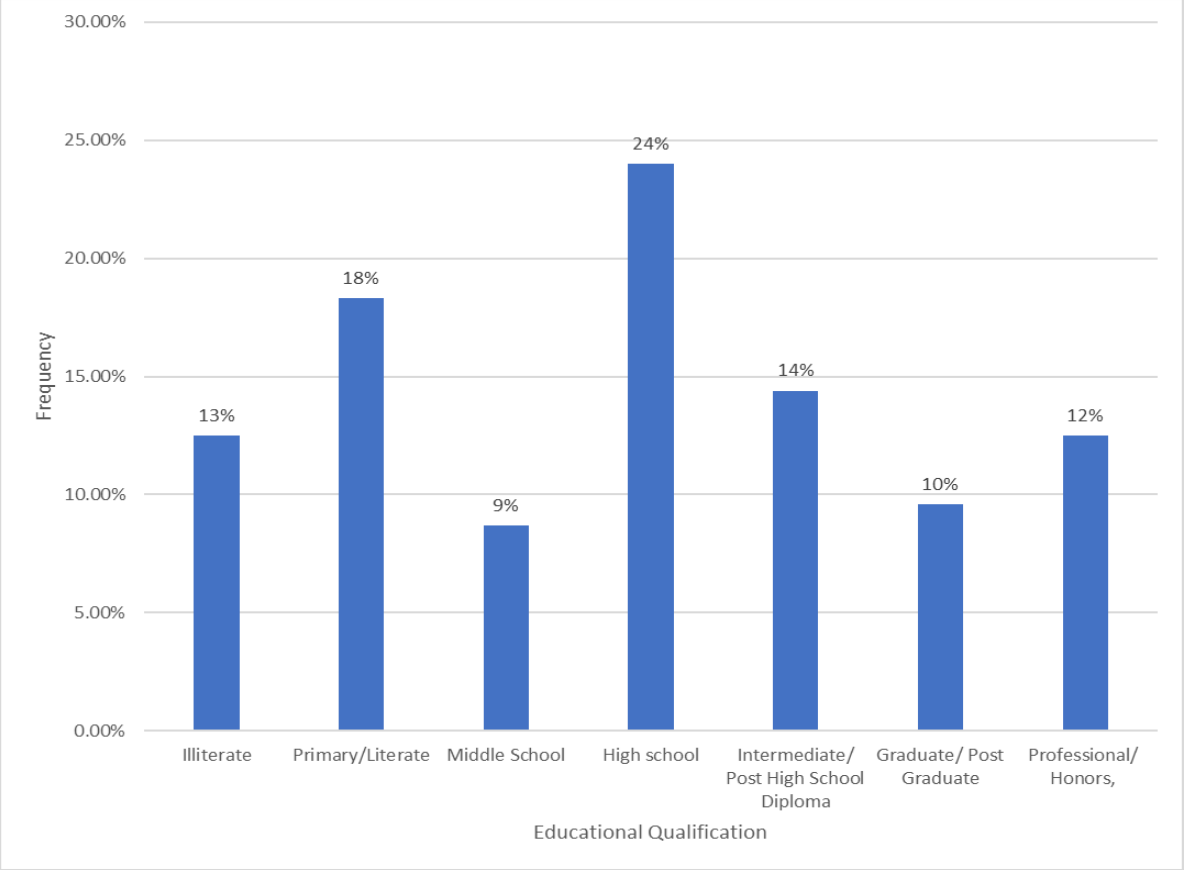
A total of 104 women were included in the study and their age ranged from 15 to 45 years. Majority i.e.,31(30%) belonged to age group between 25 to 30 years and only 3% were between 15 to 20 years as shown in (Table 1).

Table 1: Age wise distribution of study participants

Age(years)	Frequency	Percentage (%)
<20	3	3
20-25	24	23
25-30	31	30
30-35	18	17
35-40	11	11
40-45	17	16
Total	104	100

Out of total 104 about 13% were uneducated and more than 50% were educated beyond high school (Graph 1).

Graph1: Distribution of study participants according to their level of education



All participants in this study were found to be in the working profession except for 3 (3%) who were unemployed (Table 2).

Table 2Distribution of study participants according to their Occupation

Occupation	Frequency	Percentage
Professional	11	11
Semi Professional	1	1
Clerical/Shop owner/Farmer	11	10
Skilled	9	9
Semi-skilled	12	12
Unskilled	57	54
Unemployed	3	3
Total	104	100.00

Participants belonged to various socioeconomic status as per modified Kuppuswamy scale and a total of 34 (33%) were found to be of Lower Middle class (Table 3).

Table 3: Distribution of study participants according to their socioeconomic status

Socioeconomic status (Modified Kuppuswamy Scale)		
	Frequency	Percentage
Upper	4	4
Upper Middle	31	30
Lower Middle	34	33
Upper Lower	33	31
Lower	2	2
Total	104	100.0

A total of 6 (6%) women gave family history of breast cancer (Table 4)

Table 4: Distribution of study participants according to Family history of breast cancer

Family History of Breast Cancer		
	Frequency	Percent
Yes	6	6
No	98	94
Total	104	100.00

When asked about themselves, about 5(5%) participants gave a history of having some problem related to breasts in the past (Table 5)

Table 5: Distribution of study participants according to history of having breast abnormality in the past

Past History of Breast Abnormalities		
	Frequency	Percent
Yes	5	5
No	99	96
Total	104	100.00

Knowledge scores

Analysis of Pre-Test and Post- test assessment was done (Table 6).

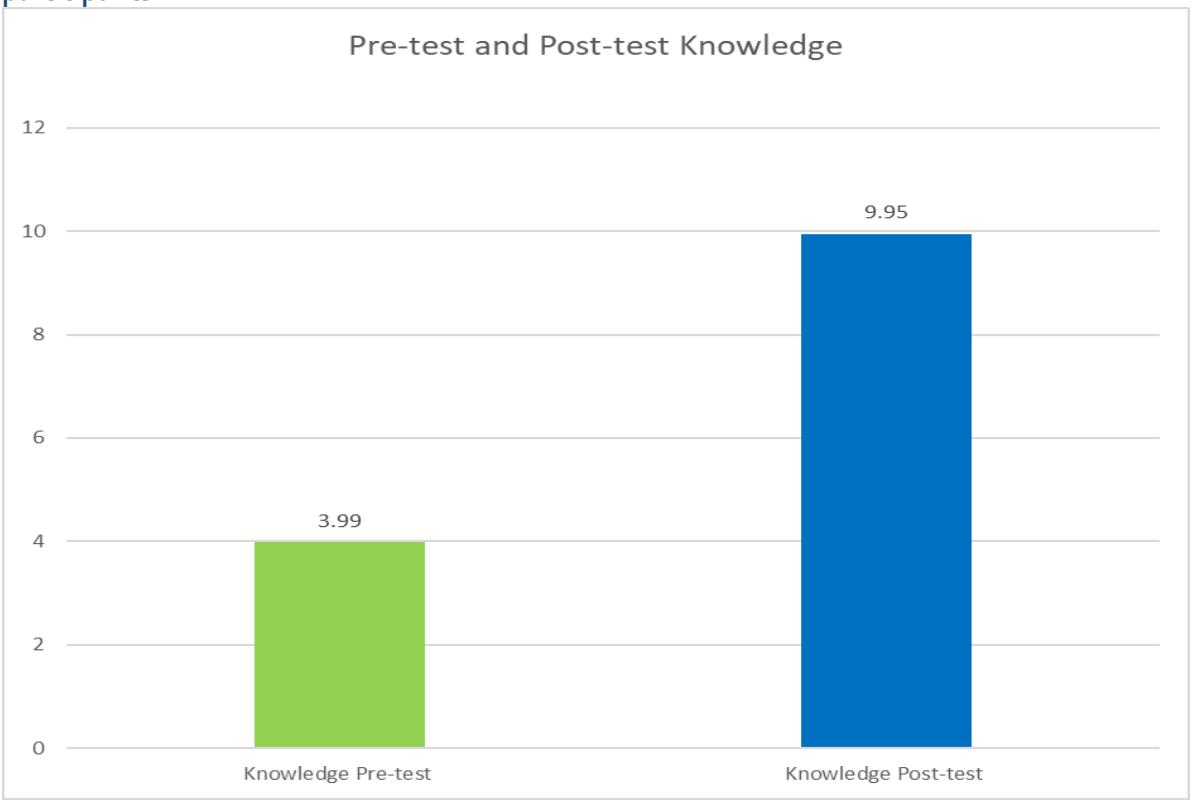
Table 6: Evaluation of scores obtained by participants in Pre-Test and Post-Test

Comparison of Pre-test Knowledge and Attitude						
		Mean	**SD**	**SEM**	**t-stat**	**p-value**
Knowledge	Pre-test	3.99	3.10	0.30	-19.572	<0.001**
	Post-test	9.95	0.61	0.06		
Attitude	Pre-test	16.90	4.53	0.44	-0.749	<0.001**
	Post-test	22.04	9.43	0.92		

A total of 104 participants underwent health education on Breast self-examination. Analysis of scores obtained in assessment of knowledge by Multiple Choice Question revealed a mean Pre-test score of 3.99±3.10 which improved to 9.95±0.61 in Post test score.

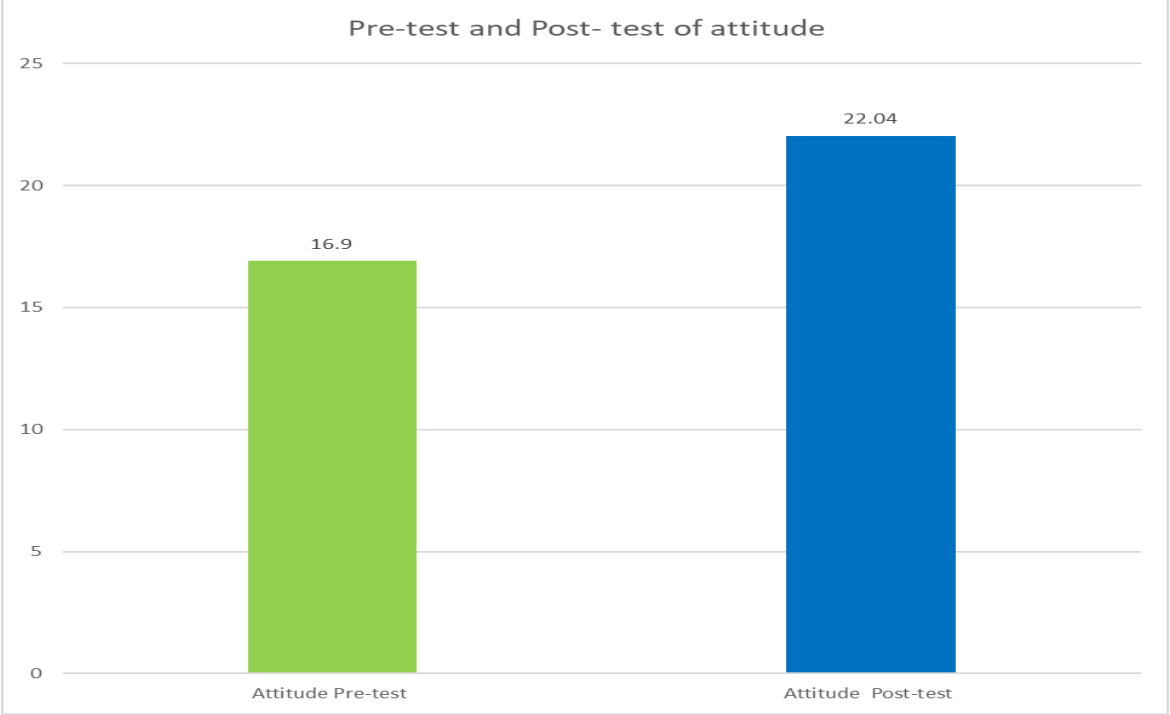
This improvement in knowledge was statistically significant with p<0.001 for knowledge. Range of Pre and Post test score was 0-10 and 9-13 respectively. (Table 6, Graph 2).

Graph 2: Comparison of Pre-Test and Post-test Mean scores for knowledge obtained by participants



Similarly, the analysis of scores obtained in assessment of attitude by Multiple Choice Question revealed a mean Pre-test score of 16.90 ± 4.53 which improved to 22.04±9.43 in post test score. This improvement in scores was found to be statistically significant with p<0.001 for attitude. Range of Pre and Post test score was 7-31 and 7-35 respectively.(Table 6, Graph 3)

Graph 3: Comparison of Pre-Test and Post-test Mean scores for attitude obtained by participants

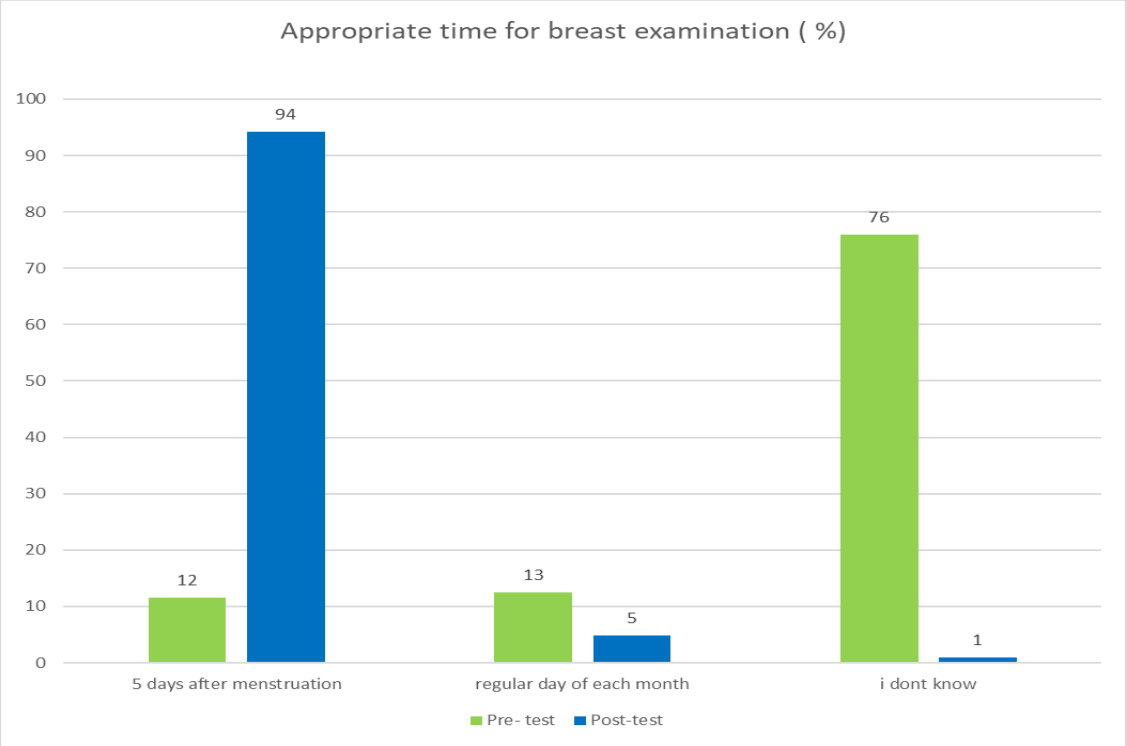


Around 79(76%) participants have never performed Breast self-examination prior to participating in this study while 25(24%) reported performing Breast self-examination in the past. Appropriate time for breast self-examination i.e., 5 days after menstruation was known to only 12 (12%) women which increased

Table 6: Do you know the appropriate time for breast self-examination?

Characteristics	**Pre-test No. (%)**	**Post-test No. (%)**
SBE done 5 days after menstruation	12(12)	98(94)
Regular day of each month	13(13)	5(5)
I do not know	79(75)	1(1)
Total	104(100.0)	104(100)

Graph 4: Comparison of Pre-test and Post-test response of participants on appropriate time for breast self-examination

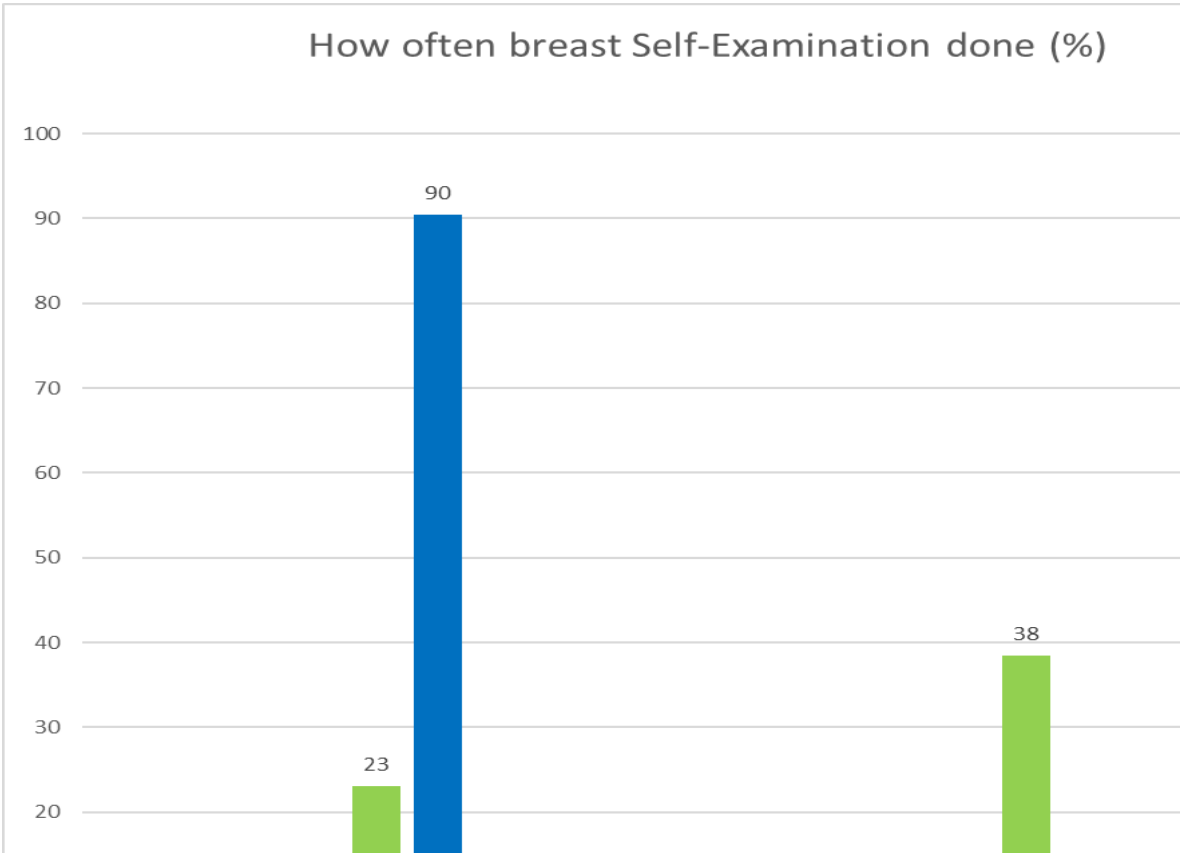


Only 24 women (23%) knew that breast self-examination should be done once in a month which increased in post -test to 90 % in post- test (Table 7, Graph 5).

Table 7: How often should breast self-examination be done -Pre and post test scores

Characteristics	Pre test No. (%)	Post test No. (%)
once a week	6(6)	2 (2)
once in a month	24 (23)	94 (91)
once in 3 months	5 (5)	2 (2)
once in 6 months	6 (6)	3 (3)
once in a year	40 (38)	2 (2)
Don't Know	23 (22)	0 (0)
Total	104	104

Graph 5: Comparison of Pre-test and Post-test response of participants on frequency of breast self-examination

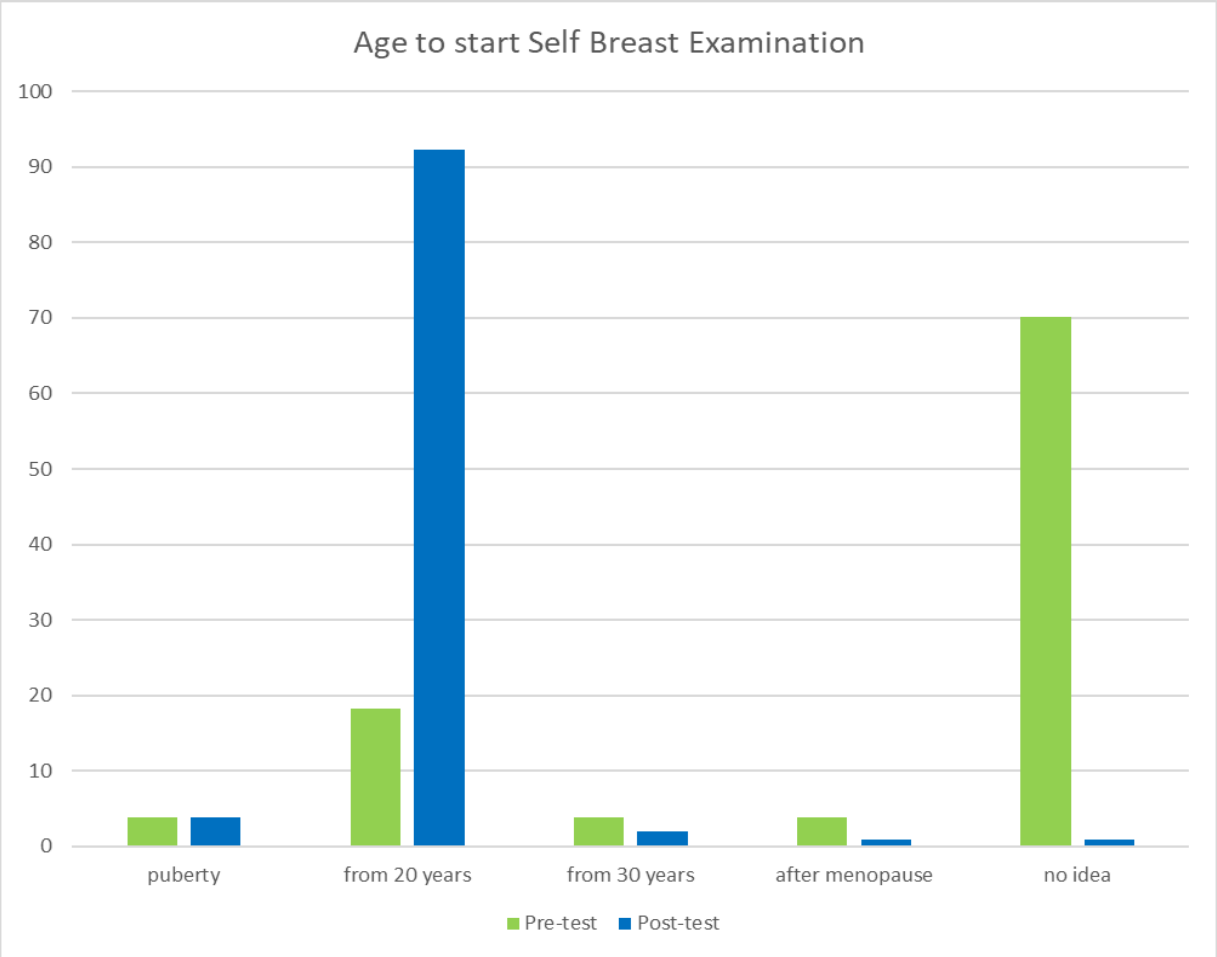


Only 19 women (18 %) responded that breast self-examination should be performed after 20 years of age which increased to 92 % after a training session in post- test (Table 8, Graph 6).

Table 8: Pre & Post-test response on appropriate age to start breast self-examination

Characteristics	Pre test No. (%)	Post test No. (%)
Puberty	4 (4)	4 (4)
from 20 years	19 (18)	96 (92)
from 30 years	4 (4)	2 (2)
after menopause	4 (3.85)	1(1)
no idea	73 (70.18)	1 (1)
Total	104 (100.00)	104(100.00)

Graph 6: Comparison of Pre-test and Post-test response of participants on appropriate



Fifty percent of them did not do breast examination either because they were unaware of the need or didn't know how to do it.About 88(85%) were aware that they should go to the doctor if they notice breast abnormality (Table 7).

DISCUSSION

The purpose of this community-based intervention study was to assess the knowledge on breast cancer and breast self-examinaton and their behaviour regarding the above followed by health education in reproductive age group women in the community. Breast self-examination helps a woman to familiarise with her breast appearance, consistency and feel so they can be watchful and approach a health care professional at the earliest if there is any change noticed. As per Johns Hopkins Medical centre, 40% of women who are diagnosed with breast cancers are detected by women herself who feel the lump in her breast, therefore starting a regular breast self-examination in routine practice by every woman is very important".[12]

The women included in this study predominantly belonged to the age group of 15 to 45 years. Similar study was done by Parashar et al. on community health workers of South Delhi with major representation of age group from 20 to 45 years.[13]

It has been observed from literature that in developed countries there is an increase in rate of presentation of breast cancer above 50 years, as compared to India, where it is seen in a younger age group women.[14]

This is the correct age to initiate breast self-examination and early detection can help in early prevention and treatment.

This age group was chosen in our study based on study conducted by Forouzanfaret al. who observed that breast cancers were twice more common among 15 to 49 years age group in

developing countries than developed countries.[15]

In our study, a total of 6 % of women gave family history of breast cancer. In a study conducted by Kalliguddi et al. in Bangalore around 12% women gave history of breast cancer in their family. [16]Similar findings were reported by a study conducted by Beydag et al. in Turkey in 2010 where the investigators reported around 7.7% women with family members diagnosed with breast cancer. [17]

This shows that even though women have their relatives suffering from breast cancer still they lack the knowledge of the importance of performing breast self-examination. Thus,national programs, aimed at popularising self-breast examinations, need to be introduced to reduce the morbidity and mortality associated with breast cancer.

In the present study, analysis of scores obtained in assessment of knowledge by Multiple choice questions revealed a mean Pre-test score of 3.99 ± 3.10 which improved to 9.95 ± 0.61 in Post-test score.

Similarly, the analysis of scores obtained in assessment of attitude by Multiple choice questions revealed a mean Pre-test score of 16.90 ± 4.53 which improved to 22.04±9.43 in post test score. Rao et al. and Shankar et al. also demonstrated similar significant improvements in knowledge and practice of breast self-examination at variable intervals after educational interventions. [18,19] This shows that wide-spread use of illustrative posters in local languages along with interactive sessions by health care workers can play very important role for disseminating information about breast self-examination and improving the knowledge related to it.

Nearly one- fourth (24%)women in our study reported performing Breast self-examination in the past while 76% participants had never performed breast self-examination prior to participating in this study. In a study conducted by Gupta S et al. in Madhya Pradesh it was found that 16% respondents have heard about breast self-examination, but none of them were practising the same.[20] Contrary to this study conducted by Dubai et al. in 2012in Malaysia reported that 55% had done breast self-examination in the past.[21] In India much less women have performed breast self-examination as they never got an opportunity were they got a training on self-breast examination and there is also absence of any educational campaign regarding the topic. Therefore, there is a need for the government of India to create more Information Education and Communication and Behaviour Change Communication activities to spread the awareness in the general public.

In this study appropriate time for breast self-examination i.e., 5 days after menstruation was known to only 12% women which increased to 94% after training. This finding is contrary to the findings of a study conducted by Haldi et al. in Malaysia in 2010 on undergraduate and postgraduate female students in which 72% responded correctly about the correct time of conducting breast health screening. [22] This difference could be because of regular training provided to students regarding breast cancer in their university. Programmes aimed at targeting small groups of women at the community level need to be encouraged, which not only disseminate the correct knowledge and technique about breast self-examination under supervision, but also ensure comfort and privacy to the individual. Peer group interactions would also instil a positive attitude regarding breast self-examination.

In the current study around one fourth (23%) knew that self-breast examination should be done once in a month which is quite low. Similar study conducted by Suh et al. in Cameron reported that 35% women knew that breast self-examination should be performed monthly.[23] On the contrary study conducted by Shrestha et al. in Nepal in 2017 reported that74% of women knew that breast should be examined every month.[24].Very few women have correct knowledge regarding the frequency at which breast self-examination needs to be done thus, more and more awareness programs should be conducted by health care workers to spread correct knowledge regarding breast self-examination in the community. It is a known fact that breast examination should be done once a month and at least a week after menstruation

since breasts are tender and lumpy during menstruation. In case the woman has attained menopause she can select a particular day of the month and perform self-breast examination regularly.

Almost Half (50%) of them did not do breast examination either because they were unaware of the need or didn't know how to do it. These findings are similar to study done by Zavare et al.in 2013 that reported 50% women felt that it wasn't necessary for them to do and the need wasn't there since they do not have any breast problems at that time.[25]Shyness related to one's body, rejection from their partner post diagnosis of breast cancer, discomfort and embarrassment in examining their breasts and lack of support are some of the underlying reasons for not doing breast self-examination.This attitude is worrisome since women don't feel the importance of breast self-examination.

About 84.6% were aware that they should go to a doctor if they notice breast abnormality. Much lower rates regarding consulting doctors were reported in the study conducted by Koc et at. university students in 2019 in Turkey reported that 55.9% knew that a physician should be consulted whenever a swelling is found during self-examination. [26]Thus awareness should be spread in the community to seek help from health care professionals as soon as they detect any abnormality in their breast. Small group training of women regarding knowledge on breast cancer and self-breast examination is essential.

Limitations of the study

There are few limitations in this study. One limitation was that women were in a hurry in finishing the questionnaire as many of the participants complained of busy schedules and not having much time to spare. Probably they might not have understood the questionnaire properly or didn't answer appropriately.

In spite of the above limitations, all effort was made to abide by all ethical standards and we ensured voluntary participation by all the participants.

CONCLUSION

Early diagnosis of breast lump has an encouraging result on the prognosis and it also limits the development of complications and reduces disability. Besides, it also enhances the quality of life and survival rate.

In the present era there is a crucial need for more effective cancer literacy programmes at state, district levels and also involvement of organisations in the community. Rigorous health promotion intervention programme emphasising on risk factors, prevention, screening and management for breast cancer is crucial. Regular training of healthcare providers especially, grass root level workers like ASHA, ANM, Anganwadi workers is essential to spread the importance of self-breast examination in the community. There is also a need to address the perceptions and misconceptions about cancer breast among women so that appropriate behaviour change can be encouraged in them which denotes the need for educative and awareness programs targeting younger members of the society, to implement early practices of breast examination. There is a need for maintenance of high-quality population-based cancer registries which would keep a record of cause-specific cancer incidence and mortality statistics which is lacking presently in our health system, which is essential for the development of suitably designed targeted cancer plans.

Dissemination of correct knowledge and technique about breast examination and behaviour change is required so that breast lumps can be diagnosed early. It needs to be integrated in the curriculum of school. Breast related issues are still a taboo in our country which needs more attention in our national programmes.

ACKNOWLEDGEMENT

We are grateful to all the participants, ASHA and ANM from the community, Medical Officer of Gokulpuri, Faculty from the Department of Community Medicine, Maulana Azad Medical College for their constant support and encouragement.

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