International Journal of Research in Medical Sciences
Choudhary M et al. Int J Res Med Sci. 2024 Jun;12(6):1999-2003
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20241548

Original Research Article

Breast self-examination: knowledge, awareness, and practices among females of reproductive age group

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Received: 08 April 2024
Revised: 10 May 2024
Accepted: 21 May 2024

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ABSTRACT

Background: Breast cancer occurs in an observable organ, thus awareness regarding its symptoms can help in its early detection and treatment. Although breast self-examination (BSE) is an old technique, evidence reveals many of females are not aware regarding this, and those with knowledge about breast cancer examination either fail to practice it or do so incorrectly.
Methods: It was a cross-sectional exploratory survey. 505 females attending outpatient department (OPD) at selected tertiary care hospital were recruited in the study using simple random sampling. Each participant was given a set of validated questionnaires to answer. The questionnaire was designed to obtain information regarding socio demographic data, knowledge, awareness, and practice regarding BSE. All data were coded, validated, and analyzed utilizing both descriptive and inferential statistics techniques.
Results: The study revealed that the largest proportion (42.06%) of subjects fell within the age range of 20-30 years. Total mean score of knowledge and awareness regarding breast self-examination was 9.68±3.5. Maximum 58.42% of the subjects had average knowledge and awareness followed by 23.96% having good knowledge and awareness and least (17.62%) had poor knowledge and awareness regarding BSE. Almost half i.e., 50.49% (255) of participants reported to perform BSE and 49.51% of participants had never practiced BSE.
Conclusions: The study revealed that while participants had average knowledge levels, they showed low involvement in routine BSE. This underscores the need for educational interventions to promote BSE practices, identify risk factors and warning signs, and encourage early-stage management of breast cancer, ultimately contributing to primary prevention in healthcare.

Keywords: Breast self-examination, Primary prevention, Breast cancer, Screening, Knowledge, Practices

INTRODUCTION

The breast is the most important part of a woman's body. Breast cancer tops the list as the most prevalent cancer in India. Most of the women get diagnosed at later or advanced stage of the disease with poor prognosis resulting in death of one woman with breast cancer every 13 minutes. As per an estimate most of deaths of females in India by 2030 will be because of breast cancer.[1]

Numerous lifestyle factors such as lack of exercise, use of combined oral contraceptives, stress, hormonal imbalance, and altered sleep patterns enhance the risk of breast cancer. The rate of breast cancer increases in the age of 40, with maximum incidence in the age group of 50-59. However, as per recent trends, the rates of reproductive tract cancer in females are rapidly increasing in adolescents and young adults (15-39 years of age).[2-4] Though breast cancer cause physical and psychological distress to females of all age groups, younger females present with more of body pain, psychological distress, impaired social functions, absolute or relative loss of physical functioning, and impaired coping. Thus, interventions for early detection of breast cancer can help to decrease mortality and related

morbidities; and thus, improve quality of life.[5] With the rising cases of cancer, it is expected that new cancer cases per year will rise to 29.5 million; and so do the breast cancer cases.[6]

Breast cancer occurs in an observable organ, thus awareness regarding its symptoms can help in its early detection and treatment. Early detection of breast cancer has been found to increase the 5-year survival rate by approximately 85%, however survival rate decreases down to 56% in cases of late detection. Techniques that can help in early detection of breast cancer include breast self-examination (BSE), clinical breast examination (CBE), and mammography. The latter two techniques need to spare time to visit a doctor for examination; however, BSE can be performed at home at self-convenience.[7]

Despite being an established technique, many females lack awareness of BSE. Additionally, those who are knowledgeable about breast cancer examination often fail to practice it or do so incorrectly. Various factors contribute towards non-practice of BSE includes lack of time, ignorant behavior, less understanding of its techniques, anxiety, and lack of knowledge towards magnitude of problem of breast cancer.[8]

Researchers found studies from different settings regarding knowledge and awareness of BSE among females, there was limited data with no recent data regarding knowledge, awareness, and practices regarding BSE among females of reproductive age in North India.[9-11] Thus, the present study was conducted to generate information regarding knowledge, awareness, and practices regarding BSE in a view to identify health education need of the group.

METHODS

Study design

The cross-sectional prospective study took place in the outpatient department of a tertiary care hospital in New Delhi for a three-month period from January 2023 to March 2023. The report was prepared using the strengthening of the reporting of observational studies in epidemiology (STROBE) checklist.

Sample

505 females attending the outpatient department (OPD) at the selected tertiary care hospital were recruited for the study sample using simple random sampling. Eligibility criteria for inclusion included females of reproductive age group attending OPD at tertiary care hospital, willing to participate in the study and who could read and understand either Hindi or English language. Individuals with a pre-existing cancer diagnosis of any kind were deemed unsuitable for inclusion and were therefore excluded from the dataset.

Tool measurement

A self-structured questionnaire was designed to obtain information regarding socio demographic data, knowledge, awareness, and practice regarding BSE. The tool was developed in English and was validated by 10 experts who have experience and interest in the same field. The tool was then translated to Hindi language forward and backward by two bilingual experts for the convenience of participants. The modified tool was subsequently administered to 50 subjects who were not part of the main data collection to assess the clarity, feasibility, and practicality of the study instrument. The reliability of the tool was assessed using a test-retest method. The reliability of the tool was 0.90 and 0.93 respectively for knowledge, awareness, and practices. After ensuring reliability and validity of the tool, each participant was given a set of validated questionnaires to answer.

Components of questionnaire

The questionnaire was divided into 3 sections. The first section of the tool comprised nine questions focusing on socio-demographic data, covering aspects such as age, religion, educational status, occupation, marital status, and monthly income, area of residence, family history of breast cancer, and previous personal history of breast cancer. Section two included a self-structured tool to assess knowledge and awareness regarding BSE. The questionnaire had 17 multiple choice questions, with 4 answer options, out of which one was correct. The maximum score for the tool was 17 and minimum was 0. A score of 0-6 was considered having poor knowledge, 7-12 average knowledge and 13-17 was considered having good knowledge. Section three included 8 questions to assess practices of BSE among study participants.

Data collection

Information was collected by administering a pretested structured questionnaire to the participants. Eligible participants were provided with an information sheet containing the title of the study, study objectives, methodology, their role, and their right to give consent and withdraw at any time from the study. All study participants provided written consent to participate before the data collection process commenced. After signing the consent form, they were provided with a questionnaire to be filled in. It took an average of 8 to 10 minutes for one participant to fill the questionnaire. The investigators provided clarification on questions as needed; however, they refrained from suggesting answers to the subjects. Collected data were coded, validated, and analyzed using IBM statistical package for the social sciences (SPSS) (version 21, IBM co-operation, US).

Ethical consideration

The study adhered to the principles outlined in the 'WMA Declaration of Helsinki'.[12] The study was conducted after

obtaining approval from the ethical committee of the selected institute. Formal permission for collection of data was obtained from the HODs of selected OPDs. All study participants provided written consent before data collection commenced. Confidentiality and anonymity of all responses were made and collected data was used for research purposes only. The results did not identify any of the subjects individually or personally.

RESULTS

Socio-demographic characteristics

The study showed that maximum 42.06% of the subjects belonged to age group of 20-30 years, however least 7.04% of subject were of age group >50 years. The majority (71.02%) of subjects were married, however only 2.0% were separated. Majority (74%) of subject belonged to Hindu religion, and least 4.04% of subjects were from Sikh community. Maximum 73.02% of subjects were living in urban areas and rest 27.06% of subjects were from rural community. Maximum (44.02%) of subjects had educational status up-to senior secondary and (7.02%) others. Around 1/3rd of subjects, i.e., 32.02% were having monthly income up to Rs. 10,000 and a minimum (19%) of the subjects had monthly income ranging from Rs. 10,000 to Rs. 20, 000. Almost half (55.06%) of subjects were homemakers and the least (6.02%)were unemployed. 17.02% of subjects had a family history of breast cancer; and 9.02% had previous history of breast cancer (Table 1).

Knowledge and awareness regarding BSE

The study found that the total mean score of knowledge and awareness regarding BSE was 9.68±3.5. Maximum 58.42% of the subjects had average knowledge and awareness followed by 23.96% having good knowledge and awareness and least 17.62% had poor knowledge and awareness regarding BSE (Table 2). More than half 58.42% of study subjects were aware of the meaning of BSE. Majority 70.10% of the subjects had knowledge regarding risk factors of breast cancer. Slightly more than 1/3rd (39.60%) of the subjects had knowledge regarding who should perform BSE and at what age BSE should be started (33.66%).

However, a maximum of the subjects (60.59%) were aware of the frequency of BSE. Although 39.40% of subjects were aware of the right technique to perform BSE, only 24.95% of subjects knew the signs and symptoms to be paid attention to while performing BSE (Table 3).

Practices regarding BSE

The results revealed that almost half i.e., 50.49% (255) of participants used to do BSE and (49.51%) of participants had never practiced BSE. Table 4 depicts frequency of study subjects performing steps of BSE in correct manner.

Table 1: Socio-demographic profile of study subjects (n=505).

Socio-demographic variables	Frequency	Percentage
Age (years)		
20-30	213	42.06
31-40	169	33.08
41-50	87	17.04
>50	37	07.04
Marital status		
Unmarried	115	23.00
Married	356	71.02
Separated	10	02.00
Widow	19	03.08
Religion		
Hindu	370	74.00
Muslim	86	17.02
Sikh	22	04.04
Others	29	05.08
Area of residence		
Rural	138	27.06
Urban	366	73.02
Educational qualification		
Illiterate	53	10.06
Senior secondary	221	44.02
Graduation	185	37.00
Others	36	07.02
Monthly income		
Up to 10 k	161	32.02
10-20 k	95	19.00
20-30 k	144	28.08
Above 30 k	129	25.08
Occupation		
Unemployed	31	06.02
Homemaker	278	55.06
Working	133	26.06
Student	49	09.08
Family history of breast cancer	86	17.02
Previous self-history of breast cancer	46	09.02

Table 2: Knowledge and awareness scores of study subjects regarding BSE (n=505).

Category	Knowledge and awareness score	Frequency (n)	Percentage (%)	Mean±SD
Poor	0-6	89	17.62	4.07±2.20
Average	7-12	295	58.42	9.69±1.76
Good	13-17	121	23.96	13.75±0.88

Table 3: Item analysis of knowledge and awareness regarding BSE (n=255).

Knowledge and awareness items	Correct response (N)	Percentage (%)
Meaning of BSE	295	58.42
Risk factors of breast cancer	354	70.10
Diagnostic techniques of breast cancer	295	58.42
Who should perform BSE	200	39.60
At what age BSE should be started	170	33.66
How often should BSE be performed	306	60.59
Appropriate time to perform BSE	214	42.37
Correct method to perform BSE	198	39.40
Sign and symptoms to be paid attention while performing BSE	126	24.95
What to do in case any abnormality in breast is found during BSE?	296	00.11

Table 4: Self-breast examination practices among females of reproductive age group.

Variables	Frequency (N) of yes as a response	Percentage (%)
Do you look for any difference between your breasts?	167	33.06
Do you put your hands on hip, pull your elbow forward for BSE?	94	18.61
Do you use 3 fingers while examining your breast?	176	34.85
Do you also examine the surrounding area in your breast? (armpit)	163	32.27
Do you perform BSE at same time each month?	118	23.36
Do you use all three methods of BSE i.e., linear, circular and wedge?	118	23.36
Do you look for any abnormality (discharge and inversion) of nipples?	109	21.58
Do you look for any abnormality such as Peau d' orange in the breast?	60	11.88

Association with selected socio-demographic variables

Association between knowledge and awareness regarding BSE with selected socio-demographic variables i.e., age, educational status, area of residence, family history of breast cancer was non-significant at $p<0.05$. However, association of educational status with knowledge and awareness was found to be significant at $p<0.05$.

DISCUSSION

Early detection of breast cancer plays an important role in reducing breast cancer mortalities. Lack of an established national breast screening in India, makes it importance to enhance knowledge and practice of BSE among vulnerable group. The present study was conducted to assess the knowledge, awareness, and practices regarding breast self-examination of females of reproductive age in a view to identify health education need of the group. As there is no international standardized questionnaire to assess knowledge, awareness and practices regarding BSE, a self-structured questionnaire was used in current study after ensuring its validity and reliability.

Slightly more than half 58.42% of the subjects had average knowledge and awareness and 17.62% had poor knowledge and awareness regarding BSE. The results are consistent with study conducted by Asmare et al and Padmaja et al which found adequate knowledge regarding BSE among females of Ethiopia and 66.9% women had adequate knowledge regarding BSE among females of India respectively.[12,13] Kalliguddi et al also reported higher scores of knowledge, and attitude regarding BSE among women in Hyderabad.[14] On the contrary Kumarasamy et al found that only 26% of participants from rural Tamil Nadu were aware about BSE and merely 18% of the females had ever performed BSE.[15] Doshi et al also reported poor knowledge regarding BSE among dental students in Andhra Pradesh region of India, which highlighted need of educational activities regarding BSE in these regions.[16]

Almost half 50.49% (255) of participants practiced BSE in their daily routine in the current study. The findings are consistent with the study conducted by Abhay et al that indicated positive attitude regarding BSE among 46.3% of study subjects.[17] Similar findings were reported by Dechasa et al in their study where they found 47.2% had ever performed BSE.[18] Only 23.36% of females performed BSE at the same time every month by using all needed techniques. As the current study was cross-sectional study, thus causal conclusions cannot be drawn. The study was carried out in one tertiary care hospital of Delhi; therefore, it may not represent other states of the country in general, and the practice of BSE may be different in other sections of the country.

CONCLUSION

The average level of knowledge of maximum participants and low level of routine BSE practice indicated need of

educational activity to motivate women to practice BSE, identify risk factors, warning symptoms, and management of breast cancer at their early stage and help health care system in primary prevention of the disease.

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: Choudhary M, Mohanasundari SK, Ara M. Breast self-examination: knowledge, awareness, and practices among females of reproductive age group. Int J Res Med Sci 2024;12:1999-2003.