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Original Article

Validating breast self examination as screening modalities for breast cancer in eastern region of Nepal: A population based study

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Abstract
Breast cancer is one of the most common causes of death in many developed countries amongst middle-aged women and is becoming common in developing countries as well.
Aims and Objectives: The objective of this study was to evaluate the performance of Breast Self Examination (BSE) against examination conducted by the trained health personnel.
Methodology: A descriptive evaluative study was conducted among women aged 15 to 60 years undertaken in urban and rural areas. It was a population-based study and non-probability sampling method was used for data collection. Respondents conducted Breast Self Examination on their own, and then investigators did clinical examination of breasts of the respondents to verify their findings.
Results: Mean age of the respondents was 34.54 ± 9.12 years. Nearly half (44.8%) of the respondents were illiterate. On comparison of each variable of breast self- examination with the physical examination of breast, it was observed that size of the breasts and lump found in the breast had significant relation to performance during examination ($P<0.1$). The result of Kappa test showed 68% agreement between findings of examinations done by the experts and respondents.
Conclusion: Breast Self Examination can be used as an important tool for primary prevention of breast cancer in Nepal, where sophisticated method like screening mammography for general public cannot afford.

Breast cancer is leading cancer among the women worldwide, with more than 540,000 new cases each year. Over 40 percent of these cases are in the developing countries[1].The lifetime risk for women for developing breast cancer was 9.5 percent among whites and 6.9 percent among blacks in the United States[2]. Mean age of occurrence of breast cancer is about 42 years in India as compared to 53 years in White women of the United States of America[3].

Breast cancer is the fifth most common cancer in India. Exact figures regarding its incidence and mortality are not available. According to the population based tumour registry cell of the Indian Council of Medical Research in (I.C.M.R.), New Delhi, breast cancer constitutes about 12 percent of all cancers detected in Delhi and about 24 percent of all cancer in women[4]. No exact data is available from Nepal as we don't have a cancer registry. As per medical record of B.P. Koirala Memorial Cancer Hospital, breast cancer constitutes 8.8% of all cancers treated in the year 2003.

The earlier a woman is diagnosed, the better her chances of survival. If the breast cancer is confined within the breast and has not spread to the lymph nodes or surrounding tissue, the five-year survival rate is 94%[5]. Survival from breast cancer decreases rapidly with increasing stage of disease. Typical population based figures for five year relative survival are 86%, 58%, 46% and 12% for stage I, II, III and IV respectively. There is considerable potential for reducing population mortality from breast cancer by a systematic approach to improving the stage at presentation by early detection[6].

Professional organizations recommend monthly breast self-examination and every women should get her breast examined by a trained health care provider, every three years, up to the age of 40 years and annually thereafter. It is not practiced in the developing countries, due to ignorance of people and lack of trained health manpower. Examination of the breast has been advocated for many years as the first screening modalities for detection of the breast cancer. A WHO expert committee has also recommended BSE for the early detection of breast cancer.

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The main objective of this study was to evaluate the performance of Breast Self Examination (BSE) against examination conducted by the trained health personnel.

Material and methods

Study Design

This study was a descriptive evaluative study, based on population survey. Breast cancer information, education and communication (IEC) campaign was organized in Rural & Urban areas (Sunsari, Morang and Saptari district) of Eastern region of Nepal during various health camps organized by B. P. Koirala Institute of Health Sciences, Nepal.

Sample Size

Non- probability sampling method was used for this study. Women of age group between 15 to 60 years who attended the health camps during the year 2004.were enrolled in this study. Total number of women was 201.

Exclusion Criteria

Pregnant women, lactating mothers and other subjects, who refused to participate in the study, were excluded.

Method of Data Collection

After all respondents agreed to participate in the study, each respondent was interviewed to obtain socio-demographic information. Then the women were asked to do self breast examination without giving any information about breast examination technique. Later, the respondents were asked about variation in size and shape of breast, dimpling of nipples, lump found in breasts and axillary lymph nodes. Immediately, after examination done by the respondents, investigators verified the findings of breast examination and recorded them in two separate pro forma for analysis.

Health education sessions were conducted by using different audio visual aids like video show, poster and demonstration on dummy to all the subjects. In the case where a lump was found, further evaluation was done by FNAC (Fine Needle Aspiration Cytology).

Different statistical tests like Kappa test, correlation coefficient, chi-square test, etc were used to correlate findings of Self- Breast Examination and Clinical examination.

Statistical Methods Used

Different statistical tests like Kappa test, correlation coefficient, chi-square test, etc were used to correlate findings of Self- Breast Examination and Clinical examination.

Results

Mean age of the respondents was 34.54 ± 9.12 years. 97% of the respondents were rural areas. 23.3% breast lump cases were found in the age group of 30 to 40 years. No case with lump in the breast was found between 51 to 60 years (Figure 1).

Presence of lump was 5 times higher in Muslim women compared to Hindu women. Prevalence of breast lump was higher among primi gravida (13.3%) and lowest (1.9%) in grand-multi (Table 1). Over reporting of abnormalities by the women during breast self-examination was noticed.

This study showed that the number of cases of breast lumps detected by the participants and by the health workers was same in number, but there was difficulty to find out the exact site (breast quadrant) and size of lumps for the respondents.

On comparison of each variable (Size, shape, dimpling, lump, axillaries lymph node) of breast self-examination with the physical examination of breast, it was observed that size of the breast and lump found in the breast had significant relation on their performance during examination ($P<0.1$). A negative correlation was observed in dimpling of the nipples and axillaries lymph nodes (Table 2).

Table 3 depicts the result of Kappa test, which shows 68% total agreement between the findings of examination done by the health professionals and respondents (women).

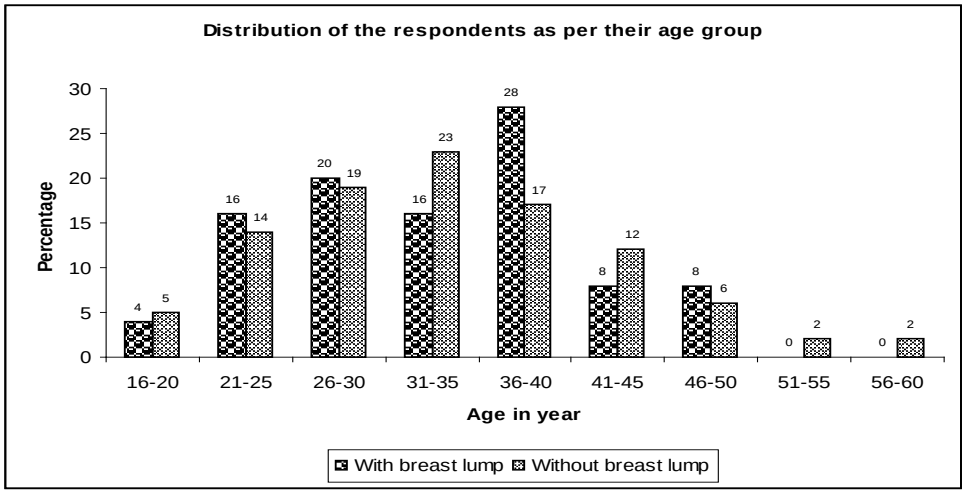

Fig 1: Distribution of the respondents as per their age group

Table 1: Distribution of the Respondents According to Their Pregnancy Status:

Gravida	Lump cases		Non-lump cases		Proportionate
	No.	%	No.	%	
Nulli	2	8.0	19	10.8	**10.5**
Primi	2	8.0	15	8.5	**13.3**
Multi	10	40.0	91	51.8	**10.9**
Grand- multi	11	44.0	51	28.9	**1.9**
Total	25	100.0	176	100.0	

Table 2: Comparison of the of Each Variable with Findings of Breast Examination by the Respondents & Health Professionals

S. No.	Variables	Kappa Value	P-Value	Remarks
1.	Similar shape of the both breasts	.094	.183	Not Significant
2.	Uniformity in size of both breasts	.488	.000	Significant
3.	Presence of dimpling of the nipples	-.014	.839	Not Significant
4.	Presence of breast lump	.680	.000	Significant
5.	Presence of axillaries lymph node	-.010	.887	Not Significant

Table 3: Total Statistical Agreement of the finding Breast Self- Examination & Physical Examination of Breast

		Physical Examination of breast		Kappa Value	P-value
		+	-		
Breast self-	+	18	7	0.68	.000 <0.001

Discussion

Breast-self examination (BSE) is a technique that all women can do to examine their own breasts. Thus, it is a useful self-care activity for all adult women. Regular monthly BSE is an essential health maintenance activity. Teaching the skills of BSE can be life saving and with regular BSE, malignancy may be discovered at an earlier stage, which can save lives. A set of limitations has been negatively related to BSE practice such as lack of confidence in one's examination, fear of an abnormality, forgetting, and lack of time. Therefore, instruction in BSE can be used to increase the frequency and thoroughness of practice[7].

Breast self-examination and clinical examination by a professional are complementary screening methods for breast cancer in the community[8]. Instructional interventions to teach breast self-examination have shown improvements in both examination technique and lump detection accuracy[9]. This study has demonstrated that women who are taught BSE are as reliable at detecting breast lumps as professionals.

Almost all respondents (97%) were residing in rural area, near about half (44.8%) were illiterate; 95.5% were married and half 50.2% were occupied as housewife. Majorities (88%) respondents belong to Hindu religion and 56% of them were from upper lower class socio-economic class as per modified socioeconomic scale of Kuppuswamy. Study covered wide age range (16 to 60 years) and breast lump most commonly found in 36 to 40 years, which may be due to hormonal changes and related with the age of the women. Twelve percent of the respondents had breast lump found by both women and health professionals. This study also revealed that in our context women can report gross abnormalities/ abnormal growth in their breast. It is difficult for them to report micro findings like exact scientific technique of BSE, size, shape and location of the lump, which is not the main objective of BSE. If they will conduct BSE on regular basis, it will definitely help for early reporting and do further evaluation of abnormal findings.

Breast self- examination is recommended for early detection of breast cancer, where sophisticated instruments like mammography are not available for screening of breast cancer. As analyzed statistically 68% agreement (Kappa test) existed between findings of the respondents and experts in this study.

Conclusion

This study is one of the first studies of this kind in Nepal. BSE is totally a new concept in our context, and there is need to increase awareness among people for prevention and/or early detection of breast cancer. According to the statistical agreement test (Kappa), it is proved that breast self- examination can be recommended for early detection of breast cancer, where sophisticated instruments like mammography is not available for screening of breast cancer. The data collected during the study from Sunsari, Morang and Saptari districts, which lie in Eastern Development region of Nepal, conclusively brought out that women can conduct breast self-examination, if they have knowledge and skills of this procedure. Awareness of breast cancer prevention is needed for the people of developing countries.

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