RESEARCH COMMUNICATION

Impact of a Health Education Intervention Program Regarding Breast Self Examination by Women in a Semi-Urban Area of Madhya Pradesh, India

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Abstract

Background: Breast cancer is the most common carcinoma in the world and the second most prevalent in Indian females. Over 0.7 million new cases of carcinoma breast are detected every year globally, with nearly 0.3 million deaths, affecting 28 per 100,000 females in the age group of 35 to 60 years. Breast self examination (BSE) can detect 40% of breast lesions. The present study aimed to assess the impact of a health education intervention program about breast self examination (BSE) among women in a semi-urban area in Madhya Pradesh, India. Methodology: The study was carried out in three phases; pre-intervention phase, intervention phase, and post-intervention phase. A total of 1000 women were included. Interventional health education in the form of a lecture, pamphlets, flip charts and demonstration of the five step method of breast self examination using audio-visual aids was administrated. Results: There was a significant improvement in knowledge regarding all aspects of breast self examination of the intervention group from pre- to post-test. After the intervention program, 590 (59%) women had good knowledge and among them 90.7% practiced (BSE) compared to 0% pre-test. An overall increase in the awareness of 43% and 53% of BSE practice was observed in the study group after intervention. Seven cases of breast disease were detected in which two were breast carcinoma and five were fibroadenomas. Conclusion: The knowledge and practices of women toward breast self examination for early detection were observed to be inadequate in respondents but there was a significant improvement after the intervention. Health education programs through various channels to increase the awareness and knowledge about BSE are the need of the hour. Mass media cancer education should promote widespread access to information about early detection behavior.

Key Words: Breast-self examination - breast cancer - health education - knowledge - practice

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Introduction

According to World Health Organization (WHO), non-communicable diseases, including cancer account for 75% of all deaths in the Americas, European and Western Pacific Regions, including China. In contrast, non-communicable diseases account for half of all deaths that occur in the South-East Asia and Eastern Mediterranean Regions, and less than 25% of all deaths that occur in the African Region (The World Health Report, 2000). Among cancers, breast cancer is the most common cancer in women worldwide, comprising 16% of all female cancers. It is estimated that 519,000 women died in 2004 due to breast cancer, and although breast cancer is thought to be a disease of the developed world, a majority (69%) of all breast cancer deaths occurs in developing countries (WHO Global Burden of Disease, 2004). Breast cancer is one of the world's leading causes of mortality in women 35 years of age or more (Stager, 1993).

Carcinoma of the breast is thus an important public health problem with its associated high morbidity and mortality (Maurer, 1997). Current reports indicate that cancer of the breast is the commonest malignancy in females affecting more than a million females annually, with an increasing incidence as the women presumably adopt a western life style (Forbes, 1997; Ruiz-Ramos and Viciana, 1997). Black women, believed to be at higher risk than their white counterparts, seem to develop lesions at an earlier age, present with a bigger mass and late for treatment (Newman and Alfonso, 1997; Adebamawo and Ajayi, 2000; Edino et al., 2000). The life time risk of breast cancer is about 10% for white women and 7.3% for black women. It reduces life expectancy of the population at risk especially those between thirty to fifty years. It has been predicted that some 3.5% of women will die from breast cancer (Adebamawo and Adekunle, 1999). Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries (Ferlay, 2001; Coleman et al.,

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2008). The low survival rates in less developed countries can be explained mainly by the lack of early detection programmes, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities.

It is well established that early detection of abnormalities is associated with better prognosis of breast cancer. It has been reported that the five-year survival rate was reached by 85% of affected women with early detection, whereas later detection decreased the survival rate to 56% (Hallal, 1982). In some studies, it has been reported that women who carefully examined their breasts could find small masses of breast cancer and their prognosis became better. For example, in a study carried out by Philip et al., 54.0% of 304 patients with newly diagnosed breast cancer claimed to practice BSE i.e. Breast Self Examination (Philip, 1986). In that study, it was found that those who performed BSE had reported their symptoms to health personnel sooner than the other subjects. In addition, in a meta-analysis of 12 studies including the study mentioned above, it was reported that there was good evidence of the benefit of encouraging women to practice BSE (Hill et al., 1988).

Breast self examination (BSE) is an important, cheap and easy method for early diagnosis of breast cancer. BSE has been defined as a preventive health behavior, i.e. "an activity undertaken by a person, who believes herself to be healthy, for the purpose of preventing disease or detecting disease in an asymptomatic state" (Rutledge, 1987). Although BSE is a simple, quick and cost-free procedure, it appears that many women either perform it erratically or not at all. Several reasons have been reported for women not practicing BSE, besides initial ignorance of the procedure (Agars and McMurray, 1993). They include alleged lack of time, lack of self-confidence in their own ability to perform the technique correctly, fear of the possible discovery of a lump and embarrassment associated with manipulation of the breast (Stillman, 1977; Lierman et al., 1994).

Thus keeping in mind the public health importance of breast cancer and the early detection strategy of BSE, the present study was designed with the following objectives:- 1. To determine the awareness and practice regarding BSE in women. 2. To assess the impact of health education on awareness and practice of BSE. 3. To identify other factors affecting on the awareness and practices of BSE. 4. To increase awareness about breast self examination in the women above 20 years of age and to screen out suspected cases of breast diseases for further management.

Materials and Methods

General Details

Study Area: Shree Mahila Grah Udyog Lijjat Papad Industries, Jabalpur, Madhya Pradesh (India), which is a women self –help group. Study Period: 6 months (August 2006 to January 2007) Study Design: Descriptive, interventional study. Sample size and sampling: Out of 1,410 women in the age group of 20-50 years, enrolled and working at Shree Mahila Grah Udyog Lijjat Papad Industries, Jabalpur, India, a total of 1,215 women accepted to be a part of the study. The number of drop-outs was 215 women. So finally 1000 women were subjected for post intervention in the form of health education regarding BSE.

Study tools and technique

Awareness and practice regarding BSE was assessed among the women through predesigned questionnaire. After two days, they were demonstrated about the five step method of breast self examination using audio-visual aids.

Tool I. A structured questionnaire was developed by the researchers to identify the knowledge and awareness regarding the BSE, the practice pattern relative to BSE and knowledge of risk factors related to breast cancer. Then pamphlets were distributed in which important signs and symptoms of breast diseases, risk of breast cancer and importance of its early detection by breast self examination were explained.

Tool II. This was followed by health education intervention which was done two days later in the form of Information, Education and Communication (IEC) activity. A short lecture in the vernacular language along with demonstration was delivered by doctors regarding the problem statement, pathogenesis, preventive measures and all other aspects of breast diseases and breast cancer. A short educational film was shown to all respondents. The content of the film included the importance of BSE, anatomy of the breast, methods of performing BSE and the schedule for BSE. Flip charts were also used for reinforcement of the message. Questions from the audiences were encouraged and a demonstration was performed by the few respondents themselves.

Tool III. Post interventional assessment was done to assess the increase in level of knowledge of BSE of the respondents.

Tool IV. After two month a camp was organized and post interventional assessment regarding BSE practice was carried out. The women who identified any problem in their breast were examined by medical college faculty in the camp and if any suspicious case was reported, then referred to NSCB Medical College, Jabalpur (Madhya Pradesh) for further higher investigations.

Statistical analysis

The effect of the educational film on the Health awareness and practice was examined using the chi-squared (c2) test of significance. The F- test statistics was applied where ever relevant. The 5% and 1% levels of significance were used.

Ethical clearance

Ethical clearance for conducting the study was taken from the Dean/Principal and Head of Community Medicine Department of the institution i.e. NSCB Medical College, Jabalpur, with the assurance that confidentiality will be maintained and the information obtained for this study will not be used for any other purpose except for academic purpose. Permission was also sought from the officer-in-charge, Shree Mahila Grah Udyog Lijjat Papad Industries, Jabalpur with the assurance regarding the

confidentiality of information thus obtained during study.

SWOT analysis

The strength of the study is that a large cohort of 1,451 women was working at Shree Mahila Grah Udyog Lijjat Papad Industries, Jabalpur, India, and thus the authors were able to obtain and analyze " knowledge, attitude and practice (KAP) " regarding BSE from respondents of varied age groups, background and education level. The weakness of the study is that it does not cover other aspects of the KAP gap like family type, availability of information, support of spouse, health seeking behavior, motivational factors and their attitude regarding seriousness of breast cancers. Though this study gives a picture of knowledge and practice of BSE but the reasons that why a large section of women do not has knowledge about BSE is difficult to elicit completely from this study. Also there is a need to conduct more studies in rural areas where the two-third of Indian population resides and also the health facilities are not adequate.

Results

In the present study, a total of 1,000 respondents were interviewed. The mean age of women was 29.61 and most of the respondents were in the age group of 20- 30 years i.e. 627 (62.7%). Only 90 (9 %) women were high school educated & 100 (10%) were illiterate. The majority of the respondents 821 (82.1 %) belonged to the lower middle social class. A total of 450 (45%) were from the Scheduled Caste category (Table 1).

Pre-interventional observations

Among the respondents studied, only 160 (16%) respondents have heard about BSE (Table 2), but none of them were practicing BSE. However, only 19 (1.9%) respondents knew correct facts about BSE (ideal age of start practicing, frequency, five step method etc). Out of 160 respondents, 139 (86.9%) had either middle or high school level education. Media was the major source of information (42.6%) followed by relative & health worker (30.2%).

Table 1. Background Characteristics of the Respondent Women (N=1000)

Characteristics		Number	%
Age	20-30 years	627	62.7
	31 – 40 years	285	28.5
	≥41 years	88	8.8
	Mean(years)	29.6	
Education level	Illiterate	100	10.0
	Primary	140	14.0
	Middle	670	67.0
	High school	90	9.0
Socioeconomic status	Upper class	0	0.0
	Upper middle	0	0.0
	Middle class	74	7.4
	Lower middle	821	82.1
	Lower class	105	10.5
Caste	Scheduled caste	450	45.0
	Scheduled tribe	153	15.3
	Other backward classes	350	35.0
	General category	47	4.7

Post-interventional observations

After the intervention, 590 (59.0 %) of women were having correct and complete knowledge about BSE & 410 (41.0 %) were still not having correct and complete knowledge about BSE (Table 2). The main causes were lack of interest and not able to understand the importance of BSE. A total of 535 (53.5 %) respondents were regularly practicing BSE after intervention as compared to none before intervention (Table 3).

Due to the effect of health education imparted to the respondents, the knowledge of BSE increased from 160 (16 %) to 590 (59 %) i.e. 43 % (3.6 times) increase in knowledge component (Table 2) and this was observed to be statistically significant ($P < 0.05$).

In the younger age group of 20-30 years, the increase in knowledge regarding BSE was significant after intervention ($P<0.05$). Similarly, in the same age group, the practice regarding BSE was significant after intervention ($P<0.05$).

In the post interventional phase knowledge about BSE were positively correlated with educational status of respondents, $P< 0.05$ (Table 4). In the same phase

Table 2. Knowledge of BSE in Relation to the Education Status

Education		Knowledge	No Knowledge
Pre-intervention			
Illiterate	(n= 100)	0 (0.0 %)	100 (100%)
Primary level	(n= 140)	21 (15.0%)	119 (85.0%)
Middle level	(n= 670)	121 (18.1%)	549 (82.0%)
High school	(n= 90)	18 (20.0%)	72 (80.0%)
Total	(n= 1000)	160 (16.0%)	840 (84.0%)
Pre-intervention			
Illiterate	(n= 100)	21 (21.0%)	79 (79.0%)
Primary level	(n= 140)	55 (39.3%)	85 (61.7%)
Middle level	(n= 670)	426 (63.6%)	244 (36.4%)
High school	(n= 90)	88 (97.8%)	2 (2.33%)
Total	(n= 1000)	590 (59.0 %)	410 (41.0%)

$\chi 2 = 122.5$, $\chi 2$ (critical 5%) = 5.9, $p < 0.01$

Pre- and Post intervention comparison

F-stat = 11.73. F-critical (3,3 df. 5%) = 9.8, $p < 0.05$

Table 3. Actual Post-intervention Regular BSE Performance in Relation to the Education Status

Education		Practicing	Not Practicing
Illiterate	(n= 100)	14 (14.0%)	86 (86.0%)
Primary level	(n= 140)	36 (25.7%)	104 (74.3%)
Middle level	(n= 670)	406 (60.6%)	264 (39.4 %)
High school	(n= 90)	79 (87.7%)	11 (12.3%)
Total	(n= 1000)	535 (53.5%)	465 (46.5%)

Table 4. Correlation Matrix for Knowledge about BSE, Education Status, Practice of BSE and Age

	Knowledge	Education	Practice of BSE
Knowledge	1		
Education	0.4780035*		
Practice	0.9996008***	0.4768699*	
Age	0.3934809*	0.9795260***	0.3975075*

*p< 0.05, **p< 0.01, ***p< 0.001

knowledge about BSE and respondents practicing BSE were very highly significant and showed strong positive correlation, P<0.001 (Table 4). Young age of the respondents showed moderate positive correlation with knowledge about BSE and practice of BSE and highly significant positive correlation with educational status of respondents.

After two months of post interventional a camp was organized, in this camp checkup of breast was done and those who identified some problem in their breast through BSE were referred for further higher investigation. Seven cases were found to be suffering from the breast disease, 2 (0.37%) being diagnosed as carcinoma of breast and 5 (1.3%) as fibroademona.

Discussion

An overall 43% increase in the awareness was observed in study group after intervention. However, 55 respondents (9.3 % of those who acquired knowledge after intervention) had not started practicing BSE. The major cause was forgetfulness (32.72%) followed by lack of time (25.45%). Knowledge about BSE is positively correlated to the education status of women. Out of 90 women who had high school education, 18 (20%) knew about BSE before intervention and 88(99.7%) had knowledge about BSE after intervention. An earlier similar study revealed that there were significant relationships between education level and knowledge and practices of breast self examination (Yavari et al., 2007).

In the present study, it was found that those women having high school level education, 79 (87.7 %) were able to doing correctly and regularly BSE practices after intervention as compared to none before intervention. Similar finding were also observed in a study by Abd El et al (2009). Many other studies have also reported that health promotion education taught to young women increases their BSE knowledge level, and improves BSE performance levels (Maurer, 1997; Sevil et al., 2005).

The present study pointed to a number of conclusions and recommendations. There was a significant relation between education and the incidence and correct pattern of BSE. Literacy status of female is directly related to the awareness and practice of BSE along with her health seeking behavior.

The message regarding BSE should be disseminated by “one to one approach” by organizing small groups at work place and small gatherings at village level, colleges etc. Mass media, both print and electronic, should be utilized and community organizations mobilized to disseminate correct relevant information about BSE to women. The IEC strategy must include celebrity women from different aspects of life to promote the cause of BSE. An educational program needs to be designed and implemented within the ambit of Reproductive and Life sciences education to the students in high schools and colleges so as to increase awareness and competence in BSE.

Research should be promoted to know the reasons for not practicing BSE in order to select suitable strategies to sustain regular practice over time. The help of women self – help groups can be taken to arrange such studies. A regular training program also needs to be designed and implemented with the aim of capacity building of the peripheral health workers (female), so that to made them competent in BSE thus enabling them to teach this practice to other women.

In addition, further studies are recommended to explore the reasons of low knowledge and practice of BSE among the women folks in the general population especially those from rural area where the two thirds of the Indian population resides and where access to information is still a challenge.

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