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Original Research Article

Impact of educational intervention on awareness of breast cancer among female students of Government College of Nursing, Nagpur

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ABSTRACT

Background: The nurses have a major influence on the behavior of our women, they need to be knowledgeable themselves about breast cancer risk factors and the importance of early detection through screening , thereby improving a chance of longer life for the patient. The need of the hour is to create awareness about breast cancer for early management of this disease.
Methods: The present pre-post test study was carried out among female students in a Government College of Nursing in Nagpur to assess the impact of educational intervention on awareness of breast cancer using a predesigned self-administered questionnaire.
Results: The overall knowledge about risk factors, signs and symptoms, diagnosis and treatment modalities of breast cancer of significantly increased from pre test to post test.
Conclusions: The impact of intervention shows significant increase in knowledge of breast cancer.

Keywords: Pre-post test study, Breast cancer**,** Intervention

INTRODUCTION

Breast cancer, the most common cancer among women worldwide, is the disease women fear most. It is a progressive disease and small tumours are more likely to be early stage of the disease, have a better prognosis and are more successfully treated.[1] According to National Cancer Registries and Regional Cancer Centers, Breast Cancer is the commonest cancer amongst women in Ahmedabad, Delhi, Kolkata, Mumbai and Trivandrum. In India, 1 in every 22 women is expected to be diagnosed with breast cancer in their life time. It is second most common cause of mortality in females after cervical cancer. More than 92% breast cancer are diagnosed at stage II or later.[2] According to IARC (International Agency for Research on Cancer), there will be approximately 2,50,000 new cases of breast cancer in India by 2015.[3] Moreover, data for national and regional cancer centers also show that there is an increase in the incidence of breast cancer. There is no definite primary prevention as yet. Therefore, early detection and prompt and adequate treatment (i.e. secondary prevention) of breast cancer would be helpful to decrease mortality from this disease.[4]

The most programmatic solution to early detection lies in the breast cancer education of women. Nurses constitute a special group having characteristics most suited for disseminating breast cancer information to the women.[5]

Nurses and midwives are the health care providers engaged in women through reproductive life.[6] Women

prefer a female health care provider when discussing female-related issues and this is particularly true in India.[7,8] Since the nurses have a major influence on the behavior of our women, they need to be knowledgeable themselves about breast cancer risk factors and the importance of early detection through screening, thereby improving a chance of longer life for the patient.[9] The objective of this study was to assess the impact of educational intervention on awareness of Breast cancer among female students of Govt. College of Nursing, Nagpur.

METHODS

The present pre and post test study was carried out in Govt. College of Nursing in Nagpur on 33 BSc Final year nursing students to assess the impact of educational intervention on awareness of Breast cancer among them. Approval from the Institutional Ethics Committee was obtained. Study was carried out between September 2013 to January 2014.

Inclusion and exclusion criteria

There were total 44 B.Sc final year nursing students enrolled in Government College of Nursing of which 40 were female and 4 were male. All the female students ≥20 years were included in the study as the recommended age for doing BSE is 20 years. Male students were excluded from the study to ensure open and unrestrained participation from female students. Out of 40 female students only 33 were present on the day of pre test, so all these 33 students were included in the study.

After explaining the nature and the purpose of the study verbal consent was obtained from the study subjects. The study was carried out in three phases: pre-intervention phase, intervention phase, post- intervention phase in pre-intervention phase - a predesigned self administered questionnaire was distributed to all the participants at the same time to collect details regarding socio-demographic data and knowledge of risk factors, sign and symptoms, diagnosis and treatment of breast cancer intervention phase: interventional health education in the form of interactive sessions and audio-visual demonstration regarding breast cancer was given. The post-test phase - After the span of three months of educational intervention, socio-demographic data was verified and impact of education was assessed by administering post-test questionnaire and awareness of Breast cancer was evaluated for each student. Pre and post test differences were analyzed by paired t-test for continuous variables and Z test for difference between proportions for categorical variables using STATA statistical software version 10.1, 2009.

RESULTS

Thirty-three students comprised the study sample. Mean age of female students was 21±0.79 years (Range: 20-23 yrs). Majority i.e. 28 (84.85%) students were from urban area. According to Kuppuswamy's scale of socio-economic status 15 (53.57%) were from upper middle, 8 (28.57%) from lower middle, 4 (14.29%) from upper and only 1 (3.57%) from upper lower class. None of the study subjects belonged to lower socioeconomic class. Only 5 (15.15%) study subjects belonged to rural area. According to Prasad's scale of socio-economic status, 3 (60%) and 2 (40%) belonged to Class I and III respectively. Majority of students i.e. 24 (72.73%) were Hindus followed by 5 (15.15%) Buddhists and 4 (12.12%) Christians. All the 33 students were unmarried. All the study subjects 33 (100%) had ever heard about breast cancer.

Knowledge about risk factors of breast cancer which consisted 11 components i.e. female gender, Increasing age, prolonged oral contraceptive pills use, null parity, family history of breast cancer, being unmarried, breast feeding, fatty diet, early menarche and late menopause: At the baseline overall 68.04% study subjects gave the correct responses to questions related to risk factors of breast cancer which increased to 90.35% after the training programme and this difference is statistically significant with p=0.0085 (Table 1).

Knowledge about signs and symptoms of breast cancer which included 7 components i.e. weight loss, dimpling of skin, lump in breast, no pain in initial stage, presence of orange peel appearance, presence of axillary lump and bloody discharge from nipple: Before the intervention overall responses to the signs and symptoms of breast cancer were 56.27% which increased to 85.28% after intervention and this difference is statistically significant with p=0.0242 (Table 2).

Knowledge about diagnosis of breast cancer consisted of 8 components i.e. breast self examination, clinical breast examination, mammography, ultra sonography, CT scan, MRI, FNAC and biopsy: Comparison of pre and post test correct knowledge about diagnosis of breast cancer showed overall increase from 32.19% to 82.19%.This difference was statistically significant with p=0.0001 (Table 3).

Knowledge about treatment modalities of breast cancer included 4 components surgery, chemotherapy, radiotherapy and breast implant as a reconstruction surgery. All the study subjects in pre and post test correctly responded surgery as a treatment modality ie 33 (100%). Almost all 32 (96.97%) knew chemotherapy as treatment modality on pretest and all 33 (100%) in post test which was not statistically significant. Knowledge regarding radiotherapy and breast implant as reconstruction surgery significantly enhanced from 24 (72.73%) to 30 (90.91%) and 20 (60.61%) to 30 (90.91%) with P value 0.055 and 0.004 respectively. Overall Knowledge increased from 82.57% to 95.45% but the difference was not statistically significant with p=0.2694 (Table 4).

Table 1: Pre and post intervention comparison of correct knowledge about risk factors of breast cancer.

Risk factors	Study subjects (n=33)				Difference %	P value
	Pre – test		Post – test			
	No.	Percentage	No.	Percentage		
Gender (female)	33	100.00	33	100.00	0.00	-
Increasing age	30	90.91	32	96.97	6.06	0.3022
Breast feeding protective	28	84.85	33	100.00	15.15	0.02
Oral contraceptive pills	26	78.79	31	93.94	15.15	0.0729
Family h/o breast cancer	24	72.73	31	93.94	21.21	0.0208
Fatty Diet	24	72.73	32	96.97	24.24	0.006
Overweight	23	69.70	30	90.91	21.21	0.0303
Null parity	23	69.70	26	78.79	9.09	0.3984
Unmarried	15	45.45	24	72.73	27.28	0.0242
Early menarche	11	33.33	26	78.79	45.46	0.0002
Late menopause	10	30.30	30	90.91	60.61	0.01

Table 2: Pre and post intervention comparison of correct knowledge about signs and symptoms of breast cancer.

Sign and symptoms	Study subjects (n=33)				Difference %	P value
	Pre – test		Post – test			
	No.	Percentage	No.	Percentage		
Weight loss	28	84.85	33	100.00	15.15	0.02
Dimpling of skin	24	72.73	33	100.00	27.27	0.0012
Lump in breast	23	69.70	31	93.94	24.24	0.0107
Orange peel appearance	23	69.70	27	81.82	12.12	0.2506
No Pain in initial stage	17	51.52	26	78.79	27.27	0.0201
Axillary lump	11	33.33	26	78.79	45.46	0.0002
Bloody discharge from nipple	4	12.12	21	63.64	51.52	0.0001

Table 3: Distribution of study subjects according to correct knowledge about diagnosis of breast cancer.

Method of diagnosis	Study subjects (n=33)				Difference%	P value
	Pre – test		Post – test			
	No.	Percentage	No.	Percentage		
Breast Self Examination	17	51.52	33	100.00	48.48	0.0001
Mammography	16	48.48	30	90.91	42.43	0.0002
FNAC	15	45.45	29	87.88	42.43	0.0003
CT scan	11	33.33	29	87.88	54.55	0.0001
Biopsy	10	30.30	21	63.64	33.34	0.0067
Clinical breast examination	7	21.21	23	69.70	48.49	0.0001
Ultrasonography	5	15.15	23	69.70	54.55	0.0001
MRI	4	12.12	29	87.88	75.76	0.01

Table 4: Distribution of study subjects according to correct knowledge about treatment of breast cancer.

Knowledge about Treatment		Study subjects (n=33)				Difference %	P value
		Pre – test		Post – test			
		No.	%	No.	%		
Available treatment modalities	Surgery	33	100.00	33	100.00	0.00	-
	Chemo-therapy	32	96.97	33	100.00	3.03	0.31316
	Radio-therapy	24	72.73	30	90.91	6.06	0.5657
Breast implant		20	60.61	30	90.91	30.30	0.0041

DISCUSSION

Breast cancer is a community health problem in the world. Early detection of breast cancer and subsequent prompt management may play an important role in minimizing the number of deaths from breast cancer. It is a greater responsibility to empower female nurses to participate in breast cancer awareness and early detection of breast cancer campaign. Having adequate knowledge of breast cancer and methods of detection may increase the nurses' competency to teach women in the community.[10] In our study Comparison of correct knowledge about risk factors of breast cancer showed that all 33 (100%) reported female gender as a risk factor in both pre and post test consistent to the findings of study by Shadia.[10] Increasing age, prolonged oral contraceptive pills use and nulliparity were identified as risk factors by most of study subjects in pre test while knowledge regarding all the remaining risk factors, viz; Family history of breast cancer, being unmarried as a risk factor and Breast feeding as protective factor in Breast cancer, being overweight, fatty diet, early menarche and late menopause rose significantly in post test similar to the findings of Shadia where post test knowledge rose significantly, with the least knowledge i.e. only 3% for fatty food consumption as a risk factor of breast cancer which rose later to 100%.[10]

At the baseline overall 68.04% study subjects gave the correct responses to questions related to risk factors of breast cancer which increased to 90.35% after the training programme in our study these findings were consistent with that of Khokhar, where correctly answered questions regarding high risk factors for breast cancer and after the training programme increased from 77.16% to 100%.[11]

Jaydip et al, observed that menopause after 55 years of age, consumption of red meat and menarche below 12 years of age were identified as high risk factors by less than 50% of the participants whereas nurses from Ahmedabad believed that they were exposed to one or another risk factor for breast cancer such as radiation (42.85%), age (40.66%), obesity (39.66%).[11,12]

One of the most known risk factors was family history (93.9%), among nurses in study by Fotedar et al, it is one of the major risk determinant as family history of breast cancer increases the risk if a woman has a mother who has suffered from breast cancer her risk increases about 3 fold while having a sister with cancer, the risk increases by about 2-3 fold, other factors were radiation exposure (71.9%), and diet and related factors (79.2%), the ones least known were physical inactivity (25.4%).[13-15] Only 35% mentioned about risk factors in study by Somdatta.[16] Breast feeding as protective factor was known to 24% of respondents. Oral contraceptives were recognized as risk factor by 8% and advancing age by 4.9%. Other factors mentioned were obesity and excessive fat intake.

In the present study, overall responses to the signs and symptoms of breast cancer increased from 56.27% to 85.28% after intervention compared to 7% in pretest and 79.5% in posttest in a study by Nadia et al.[17]

Comparison of correct knowledge about signs and symptoms of breast cancer in our study revealed that correct responses for weight loss, Lump in breast and orange peel appearance was given by 84.85%, 69.70% and 69.70% study subjects in pretest respectively while 100%, 93.94% and 81.82% in post test respectively.

While responses to presence of axillary lump increased from 33.33% to 78.79%, no pain in initial stage increased from 51.52% to 78.79%, dimpling of skin from 72.73% to 100% and for bloody discharge from nipple increased from 12.12% to 63.64% compared to study by Khokhar among nurses where awareness about signs and symptoms of breast cancer like lump in armpit raised from 84.16% to 99.22%, no pain in breast in initial stages increased from 44.01% to 93.82%, while knowledge about discharge from nipple, change in shape and skin changes increased from 92.66%, 98.84%, 96.52% respectively in pretest to 100% in post test.[11]

However all were aware of lump in breast as a sign of breast cancer in our study compared to study by Shadia where correct responses for lump in breast as a sign of breast cancer raised from 27% to 42%, for axillary lump it increased from 30% to 61% in nursing students of Saudi Arabia.[13]

The overall correct knowledge about diagnosis of breast cancer showed increase from 32.19% to 82.19% in our study. However correct knowledge about screening methods of breast cancer viz; breast self examination rose by 48.48%, clinical breast examination by 48.49% and mammography 42.43% in contrast to the findings of Bala and Gameti who observed that knowledge about screening methods for the breast cancer had increased by 64% for BSE and 74.4% for mammography after Health Education intervention.[18] These findings were even high compared to those of Khokhar where correct knowledge about BSE, CBE and mammography as a screening method increased by 32.8% 69.8% and 23.2% respectively after the intervention.[11] Moreover, Hanan showed 27.1% increase in the percentage of correct knowledge about BSE as a diagnostic method of breast cancer.[19] While Phumpla[4] showed 93% of study subjects knew Clinical Breast Examination by Physician as early detection methods which was 100% after intervention.

Puri et al, study found that breast self exam as screening modality was recognized by only 33% subjects compared to 43.4% in findings of Khadiga et al.[20,21] Sheraz et al found that 89.3% identified mammography as a screening method for breast cancer whereas majority of participants were aware of mammography as a screening method for early breast cancer in study by Fotedar.[13,22]

Apart from screening methods like BSE, CBE and mammography correct knowledge about diagnostic modalities like FNAC, biopsy, ultrasonography, CT scan and MRI was imparted to the nursing students in our study which rose significantly after intervention

Overall knowledge regarding treatment modalities rose from 82.57% to 95.45% in our study. All the study subjects in pre and post test correctly responded surgery as a treatment modality. Almost all i.e. 96.97% knew chemotherapy as treatment modality in pretest and 100% in post test. Knowledge regarding radiotherapy and breast implant as reconstruction surgery significantly increased from 72.73% to 90.91% and 60.61% to 90.91% respectively. However Hanan et al findings showed 39.6% in pretest & 84.4% in post test mentioned that breast cancer is curable disease while 70.4% correctly indicated the three forms of treatment of breast cancer as chemotherapy, surgery and radiotherapy in study by Oabimbola.[19,23]

There was scarce data related to awareness of treatment modalities and re constructive surgeries which were considered in our study.

Knowledge regarding screening as well as confirmatory diagnostic techniques was emphasized in our study. Our study also imparted awareness on treatment as well as reconstruction modalities which is equally important. As the resection surgeries in the treatment of Breast cancer not only hampers the physical image but also affects the emotional status of the women with a sense of incompleteness in the form of loss of feminity. It is matter of great concern to impart knowledge regarding treatment as well as the reconstruction surgeries that will be a boon and may help women to rebuild their self image and regain confidence.

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REFERENCES

1. Smith RA, Saslow D, Sawyer KA, Burke W, Costanza ME, Evans, WP, et al. American Cancer Society Guidelines for Breast Cancer Screening: Update. A Cancer Journal for Clinicians. 2003;(3):141-69.
2. National Cancer Institute. 2011. Available at: http://www.nci.nih.gov. Accessed 20 January 2014.
3. Abdel-Fattah M, Zaki A, Bassili A, el-Shazly M, Tognoni G. Breast Self-Examination practice and its impact on breast cancer diagnosis in Alexandra, Egypt. East Mediterr Health J. 2000;6(1):34-40.
4. Phungula P. An investigation of knowledge and practice of breast self examination among female high school learners: an intervention study. 2011. Available at: http//www.uzspace.uzulu.ac.za/.../ Accessed on 2 March 2104.
5. Ahmed F, Mahmud S, Hatcher J, Khan SM. Breast cancer risk factor knowledge among nurses in teaching hospitals of Karachi, Pakistan: a cross-sectional study.BMC Nurs: 2006;5:6.
6. Tigka M, Gourounti K, Biliatis I, Lykeridou K. Knowledge of breast cancer screening Of Greek and Italian student midwives: A comparative study. Health Sci J. 2009;3(2):72-79.
7. Underwood S, Shaikha L, Bakr D. Veiled yet vulnerable: Breast cancer screening and the Muslim way of life. Cancer Practice: A Multidisciplinary Journal of Cancer Care. 1999;7(6):285–90.
8. Graham H. The nurse's role in promoting breast awareness to women. Nursing Times. 2005;101(41):23–4.
9. Ali Abu-Salem OT, Abdulla Hassan M. Breast Self-Examination among Female Nurses in Jordan. Shiran E Med J; 2007;8(2).
10. Yousuf SA. Breast Cancer Awareness among Saudi Nursing Students JKAU: Med Sci. 2010;17(3):67-78.
11. Khokhar A. Effect of a Training Programme on Knowledge of Nurses from a Missionary Hospital in India Regarding Breast Cancer and its Screening. Asian Pacific J Cancer Prevent. 2012;13(12):5985-7.
12. Oza JR, Prajapati JD, Ram R. A study on awareness toward the early detection of breast cancer on nursing staff in civil hospital, Ahmedabad, Gujarat, India Healthline. 2011;2(1):34-7.
13. Fotedar V, Seam RK, Gupta MK, Gupta M, Vats S, Verma S. Knowledge of Risk Factors & Early Detection Methods and Practices towards Breast Cancer among Nurses in Indira Gandhi Medical College, Shimla, Himachal Pradesh, India. Asian Pacific J Cancer Pre. 2013;14(1):117-20.
14. Bernstein L, Teal CR, Joslyn S, Wilson J. Ethnicity-related variation in breast cancer risk factors. Cancer 2003;97:222-9.
15. Lynh Hand Lynch J. Hereditary cancer: Family History, diagnosis, molecular genetics, ecogenetics and management strategies. Biochimie. 2002;84(1):3-17.
16. Somdatta P, Baridalyne N. Awareness of breast cancer in women of an urban resettlement colony. Indian J Cancer. 2008;45:149-53.
17. Nadia YS, Magda AA. Effect of Breast Self-Examination Training Program on Knowledge, Attitude and Practice of a group of working women. J Egyptian Nat Cancer Inst. 2001;12(2):105-15.
18. Bala DV, Gameti H. An educational intervention study of breast self examination (BSE) in 250 women beneficiaries of urban health centers of west Zone of Ahmedabad. Healthline. 2011;2(2):46-9.
19. Abd El Aziz HM1, Akl OA, Ibrahim HK. Impact of A Health Education Intervention Program about Breast Cancer among Women in a Semi-urban Area

in Alexandria, Egypt. J Egypt Public Health Assoc. 2009;84(1-2):219-43.
20. Puri S, Mangat C, Bhatia V, Kalia M, Sehgal A, Kaur A. Awareness Of Risk Factors And Aspects of Breast Cancer Among North Indian Women. The Internet J Health. 2008;8(2):1.
21. Dandash KF, Al-Mohaimeed A. Knowledge, Attitudes, and Practices surrounding Breast Cancer screening in female teachers of Buraidah, Saudi Arabia. Int J Health Sci. 2007;1(1):76-85.
22. Sheraz A. Knowledge, Attitude and Practice for breast cancer risk factors and screening modalities in staff nurses of Ayub Teaching Hospital Abbottabad. J Ayub Med Coll Abbottabad. 2011;23(3):127-9.
23. Oluwatosin OA. Primary health care nurses' knowledge practice and client teaching of early detection measures of breast cancer in Ibadan. BMC Nursing. 2012;11(22):1.

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