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EFFECTIVENESS OF EDUCATIONAL INTERVENTION ON KNOWLEDGE OF BREAST CANCER AND BREAST SELF-EXAMINATION AMONG HEALTH CARE WORKERS WORKING IN URBAN SLUM AREA OF METROPOLITAN CITY- A PRE-POST INTERVENTION STUDY

Community Medicine

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ABSTRACT

Background: Breast cancer has been one of the most prevalent cancers in Indian women and they are less aware about the signs, symptoms, and risk factors of breast cancer. So, it is vital to encourage early detection through promoting public awareness of breast cancer and its screening. This study aimed to assess effectiveness of educational intervention on knowledge of breast cancer in health care workers (HCW). **Methods:** The present pre-post-test study was carried out among health care workers (HCW) in health post under urban field practice area of tertiary health care hospital. This study aimed to assess effectiveness of educational intervention on knowledge of breast cancer in health care workers (HCW) using a predesigned self-administered questionnaire. Mc-Nemar's tests was applied to determine the difference between pre-test and post-test. Data was be analysed by using IBM SPSS 22.0. **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 and breast self-examination. There is an urgent need for nation- and state-wide awareness programmes, engaging multiple stakeholders of society and the health system, to help improve cancer literacy in India.

KEYWORDS

Breast cancer, Awareness, Breast Self-Examination, Risk factors, Healthcareworkers.

INTRODUCTION:

Breast cancer is the leading cause of death worldwide.[1] In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally.[2] It causes more lost disability-adjusted life years (DALYs) in women than any other type of cancer.[3] According to the GLOBOCAN 2020 report, breast cancer is the leading cancer among Women and its incidence in India is 13.5% and mortality is 10.6%[1,4,5]. Indian women are less prone to breast cancer, but their mortality rate is higher than that of Western women. [6–10]

Urbanisation and lifestyle changes have led to a rapid rise in breast cancer cases, with women living in urban India being more vulnerable than those from rural areas [11,12] with the highest incidence rate in major metropolitan cities. [13,14,15]

The majority of BC cases in Western nations were detected in stages I or II, but 46% of cases in India were diagnosed in advanced stages. [16–18] Early diagnosis is essential for saving lives and improving medical conditions. [16–23] Delayed diagnosis is due to a lack of primary level screening, regional treatment facilities, reliance on large tertiary cancer hospitals, high out-of-pocket expenses, and a lack of female participation in existing programmes.[24] Indian women are unaware of breast cancer symptoms, resulting in late detection.[25]

Widespread public ignorance, inadequate awareness of cancer symptoms, prevention and treatment, social stigma, and structural inequities among sociocultural groups hamper early identification. Many studies in India found that the knowledge of Breast cancer risk factors was low.[24,26–28] Studies have found literacy deficit about Breast cancer among health professionals at primary care centres, nurses and other health staffs as a potential barrier in Breast cancer prevention and early detection as they are on the frontline for spreading awareness at the community level. Hence, capacity building of both primary healthcare providers and community education are essential to increase awareness about BC, promoting screening, early detection and treatment of BC cases.

There are limited studies in India which used health education intervention to improve BC knowledge and practices.[24,29–32] Most of these studies focused on health education interventions of women directly at community or individual level using PowerPoint presentations, videos, flipcharts and pamphlets and report significant change in BC knowledge and breast self-examination (BSE) practices. This study was conducted in an urban slum of Mumbai with the goal of increasing knowledge about breast cancer through the use of Information, Education, and Communication (IEC) modules and health educational workshops for primary healthcare professionals.

MATERIAL AND METHODS:

The present pre and post-test intervention study was conducted at health post under urban field practice area of tertiary health care hospital on 32 healthcare workers (ASHA, CHW) to assess the impact of educational intervention on awareness of BC knowledge and breast self-examination (BSE) practices among them. Approval from the Institutional Ethics Committee was obtained. Study was carried out between July 2022 to September 2022.

Inclusion And Exclusion Criteria:

There was total 32 healthcare workers (ASHA, CHW) working at health post under urban field practice area of tertiary health care hospital. All the female healthcare workers >18 years were included in the study.

Sample Size: Sample size of 32 by complete Enumeration Method.

Sampling Technique: Convenient sampling technique.

Study Procedure: 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. *Preintervention 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.

***Post-test phase* -** After the span of 15 days 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.

The baseline and endline surveys were conducted to see the change induced by health education intervention on Healthcare worker knowledge and practices related to Breast cancer. Descriptive statistics like frequency and percentage were used to under demographic characteristics and to understand the level of Knowledge. Pre and post-test differences were analysed by McNemar test, Wilcoxon Signed Rank Test for difference between proportions for categorical variables using SPSS statistical software version 22.

RESULTS:

General Characteristics Of Participants

The study participants comprised of total of 32 female healthcare workers (ASHA, CHW) in the health post 1 and 2 in the urban slum area (which is a field practise area of Tertiary care hospital). The sociodemographic characteristics is mentioned in table 1. Most of the participants are married (93.8%) and belong to more than 40 years of age groups (81.3%). Most of them belong to the lower middle class (87.5%) according to the Modified Kuppuswamy Scale 2021. Majority of them have completed High School (50%) and middle school (37.5%).

Knowledge About The Risk Factors:

It has 9 components as given in table 2 i.e., At the baseline overall 40.97% study subjects gave the correct responses to questions related to risk factors of breast cancer which increased to 98.26% after the training programme and this difference is statistically significant with p value <0.001. Fewer than 20% of respondents knew that breast cancer risk factors include a family history of the disease and prolonged exposure to hormonal treatment, OCP. Knowledge increased from 66% to 94% and then to 100% after the intervention.

Knowledge About The Signs And Symptoms:

It has 7 components as given in table 3 i.e., The majority of those who took part (58.48%) correctly identified the signs and symptoms of breast cancer in their initial assessments, and this proportion increased dramatically (96.4%) after receiving training. Nearly all of the study's participants are aware that a lump or swelling in the breast is an early sign of breast cancer. Among the symptoms of breast cancer, dimpling, puckering, or bulging skin and changes in the nipple were the least well-known.

Knowledge About The Steps Of Breast Self-examination:

It has 5 components as given in table 4 i.e., At the baseline overall 72.5% study subjects gave the correct responses to questions related to steps of breast self-examination which increased to 98.75% after the training programme and this difference is statistically significant with p value <0.001.

Knowledge About The Investigations And Treatment Of Breast Cancer:

It has 4 components as given in table 5 i.e., At the baseline overall majority 91.4% of study subjects gave the correct responses to questions related to investigations and treatment of breast cancer which is slightly increased to 94.25% after the training programme and this difference is not statistically significant. (p >0.05)

The median scores of knowledges for all the domains mentioned in table 6 has increased statistically significantly (P < 0.05, Wilcoxon signed rank test) after the intervention.

Table 1: Sociodemographic Details

Variable	Frequency (Percentage)
Age Groups <40 Years >40 Years	 26(81.3) 6 (18.8)
Health Post	
1	18(56.3)
2	14(43.8)
Religion	
Hindu	27(84.4)
Muslim	5(15.6)
Marital Status	
Married	30(93.8)
Unmarried	2 (6.3)
Education	
Middle School	12(37.5)
High School	16(50)
Intermediate	4(12.5)
Socioeconomic Status	
Lower Middle	28 (87.5)
Upper Middle	4(12.5)

Table 2: Knowledge About Risk Factors

Variables	Pretest n (%)	Post-test n (%)	Significance McNemar test (P Value)
Early menarche - <12 yrs.	23(71.9)	32(100)	=0.004 (Significant)
Late menopause- >55 years	13(40.6)	31(96.9)	<0.001 (Significant)
Age at first pregnancy- after 30yrs	12(37.5)	30(93.8)	<0.001 (Significant)
Elderly woman >40yrs	18(56.3)	32(100)	<0.001 (Significant)
Obesity	13(40.6)	32(100)	<0.001 (Significant)
Substance abuse -tobacco use, alcohol drinking	13(40.6)	32(100)	<0.001 (Significant)
History of multiple radiation exposure (x-ray, CT)	14(43.8)	32(100)	<0.001 (Significant)
Family history of breast cancer	6(18.8)	30(93.8)	<0.001 (Significant)
Prolonged exposure to hormone therapy, OCP	6(18.8)	32(100)	<0.001 (Significant)
Total correct response	118 (40.97)	283 (98.3)	

Table 3: Knowledge Of Signs And Symptoms

Variables	Pretest n (%)	Post-test n (%)	Significance McNemar test (P Value)
Breast lump or swelling	32 (100)	32 (100)	-
Change in size, shape and colour of breast	25 (78.1)	32 (100)	0.016 (Significant)
Dimpling, puckering or bulging of skin	14 (43.8)	32 (100)	<0.001 (Significant)
Redness, soreness, rash or swelling	16 (50)	28 (87.5)	0.008 (Significant)
Change in position of nipple or inverted nipple	12 (37.5)	32 (100)	<0.001 (Significant)
Abnormal nipple discharge-watery, milky, yellow fluid, bloody	17 (53.1)	30 (93.8)	<0.001 (Significant)
Lump or thickening of skin in the armpit	15 (46.9)	30 (93.8)	0.001 (Significant)

Table 4: Knowledge Of Steps Of Breast Self-examination

Variables	Pretest n (%)	Post-test n (%)	Significance McNemar test (P Value)
Standing Infront of the mirror with shoulders straight and arms on the hips to look for changes in breast	28 (87.5)	30 (93.8)	0.687 (Not Significant)
Raise arms and look for changes in Breast	26(81.3)	32(100)	0.031 (Significant)
Look for any signs of fluid coming out of one or both nipple	27(84.4)	32(100)	0.063 (Not Significant)
Feel breasts for any swelling while lying down , using hand of opposite side	13(40.6)	32(100)	<0.001 (Significant)
Feel for any swelling in armpit	22(68.8)	32(100)	0.002 (Significant)

Table 5: Knowledge Of Investigations And Treatment Of Breast Cancer

Variables	Pretest n (%)	Post-test n (%)	Significance McNemar test (P Value)
Can breast cancer be cured if it is detected in its early stage	31(96.9)	32(100)	1.00 (Not Significant)
Can breast cancer be detected in its early stage by having routine check-ups with a doctor /health specialist	28(87.5)	32(100)	0.125 (Not Significant)

Can routine mammography detect breast cancer in early stage	26(81.3)	30(93.8)	0.289 (Not Significant)
Can breast cancer be treated by surgery /radiotherapy/chemotherapy	32(100)	32(100)	1.00 (Not Significant)

Table 6: Assessment Of Total Difference In The Knowledge Of Breast Cancer Among Participants (pre-test Vs. Post-test)

Variables		Median score	Z value	Wilcoxon Signed Rank Test P Value
Knowledge about Risk Factors	Pretest	4	4.955	<0.001 (Significant)
	Post test	9		
Knowledge of signs and symptoms	Pretest	5	4.666	<0.001 (Significant)
	Post test	7		
Knowledge of steps of breast self-examination	Pretest	4	4.213	<0.001 (Significant)
	Post test	5		
Knowledge of investigations and treatment of breast cancer:	Pretest	4	1.4	0.161 (Not Significant)
	Post test	4		

DISCUSSION:

This study intended to increase Breast cancer awareness and screening practises among the primary level healthcare worker. Before the interventions, almost half of the healthcare worker were aware of Breast cancer. After Interventions all participants were made aware of breast cancer in almost all the domains. After the session, healthcare worker in the study showed statistically significant increases in sign and symptom and risk factor knowledge.

In this study, we found that the knowledge of risk factors was very low among the study population. Similar studies were conducted in India. The results were similar to Study conducted by Yadav SP et al[33] where 40.97% study subjects gave the correct responses to questions related to knowledge of risk factors of BC which increased to 98.26% after the training programme. Similar results was seen in Study conducted by Gharieb Moustafa D.[34] and in study conducted in urban health centres in Ahmedabad where health education interventions resulted in a statistically significant impact on knowledge of screening methods[29]. The study in Mumbai Metropolitan[24], Semiurban Madhya Pradesh[31] and rural Tamil Nadu[35] found that health education interventions for women and primary healthcare workers led to improved knowledge and Breast cancer screening practices among the participants.

Studies have shown that training based on health education modules to community health workers resulted in increased knowledge of BC and its practices among the health workers.[32,36] Our intervention sessions conducted in urban slum, Mumbai, found statistically significant difference in median knowledge score of signs and symptoms and risk factors among the healthcare.

CONCLUSION:

Results of this study highlight that there was a less awareness about risk factors, signs and symptoms of Breast cancer and steps of BSE among the study participants, which was effectively increased after health education intervention. Whereas most of them had good knowledge regarding investigations and treatment options of BC prior to the intervention.

Recommendation:

Screening programmes like Breast self-examination should be promoted using Mass media platforms like television, radio, mobile apps (STHAN SWATHYA) etc . Health education sessions should be taken by HCWs by giving more emphasis on preventable risk factors, lifestyle modification and BSE practices to raise awareness and strengthen methods for breast cancer prevention and early detection.

Limitations:

This study is limited to only 2 health post in Urban Slum in Metropolitan city. The results of this Pre-Post Study were compared without a control group, requiring careful interpretation of the impacts. Recall Bias might affect responses and it depend on the participants' understanding skills.

Conflict of Interest- Nil

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