

Research Article

The effect of awareness program on knowledge and practice regarding breast cancer early detection among women at Wad Nubau, in Omdurman locality, North Sudan

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Received: 22 May 2016

Accepted: 10 June 2016

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ABSTRACT

Background: Breast cancer is the most frequently occurring cancer among Sudanese women, 80% - 85% of breast cancer patients presented with late advanced disease. This highlights the need for increased community awareness about breast cancer and the need for early detection. The Study aimed to determine the effect of awareness program on knowledge and practice regarding breast cancer early detection among women at Wad Nubau Omdurman Locality- North Sudan.

Methods: Experimental pre and after study design was conducted. A total of 69 women were included. Awareness program was administrated by health workers for six month. The knowledge and practice regarding breast cancer early detection was measured by means of structured questionnaire before and after the awareness program. Data was analyzed using computer software program, statistical package for social sciences. Ethical approval was taken from Medical specialization board and Khartoum State ministry of health ethical review board and informed consent was taken from each participant.

Results: There was a significant improvement in knowledge regarding, over all knowledge {CI 95%, -0.77 to -0.15}, risk factors knowledge {CI 95%, -6.4 to -16.0}, and. Change in breast self-examination practicing from pre- to post-test was statistically significant ($P < 0.001$).

Conclusions: Results support the feasibility and effectiveness of the community base Awareness programs intervention in increasing the knowledge of breast cancer and attitude towards breast self-examination.

Keywords: Breast cancer, Early detection, Breast self-examination, Clinical breast examination, Awareness program, Knowledge, Attitude, Practice

INTRODUCTION

Worldwide it is estimated that more than 1.68 million women were diagnosed with breast cancer in 2012 with incidence rates varying across the world. Breast cancer survival rates have been improving for forty years; more women are surviving breast cancer than ever before. It is

estimated that over 508 000 women died in 2011 due to breast cancer (Global Health Estimates, WHO 2013). 50% of breast cancer cases and 58% of deaths occur in less developed countries. Breast cancer five-years survival rates vary greatly 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.¹ In Sudan, breast cancer is the most common malignancy in women. In spite of limited sources of information about breast cancer we can indicate that breast cancer in Sudanese women is on the rise and 80% - 85% of breast cancer patients presented with late advanced disease. Improve the delivery of services of cancer control through effective planning, coordination and integration of resources and activities such as educational activities, monitoring and evaluations which is one of the objectives of the Sudan National Cancer Strategy may be the solution for the late stage presentation.² Knowing the signs and symptoms of breast cancer help in discovering the disease early and then there are more treatment options and a better chance for cure.³ This highlights the need for increased community awareness about breast cancer and the need for early detection. The cancer control program at the federal ministry of health is a part of non-communicable diseases control program, which is responsible for development of plans and guidelines. Guideline has been developed for prevention and control of most common cancer in Sudan (breast, cervix and oral cancer) by raising the awareness of community about risks factors of cancer and by detection of cancer at an early stage, when there is a high potential to be cured.⁴ Risks factors significantly associated with breast cancer in Sudan were, past history of benign breast disease, pesticides and plasticizers exposure, period of being overweight, practice physical activities, unmarried, decreased number of children.⁵ These results were allied with the globally known risks factors of breast cancer. Breast cancer early detection comprises: early diagnosis and screening, The World Health Organization has adopted the following definitions: an early detection program is the organized and systematic implementation of interventions that comprise early diagnosis, screening (if sufficient resources are available), diagnosis, treatment and follow-up.^{5,6}

Early diagnosis is the awareness (by the public or health professionals) of early signs and symptoms of cancer in order to facilitate diagnosis before the disease becomes advanced, thus enabling more effective and simpler therapy although the standard for screening for breast cancer in developed countries is mammography, most middle income and all low income developing countries cannot afford mammography screening, because of the high cost of equipment, personnel and their training, so that in countries with breast cancer are at increasing problem (like Sudan) alternatives to mammography screening must be considered such as training of lay health cadre in raising the awareness of the community.^{6,9}

In the absence of readily available mammographic screening, breast self-examination (BSE) (despite its known limitations) remains a viable and practical alternative.¹⁰ With greater awareness of breast cancer and proper training in BSE combined with regular clinical

breast examination (CBE) it is possible to diagnose breast cancer earlier.¹¹

This study was performed to determine the effect of awareness program on knowledge and Practice regarding knowledge and early detection of breast cancer.

METHODS

Community based experimental pre and after study design conducted in Wad Nubai, Omdurman locality, Khartoum state - North Sudan. A sample of 69 women aged 20-59 years who were attending Wad Nubai Primary health care center and had no history of breast cancer were randomly selected. Four female volunteers were recruited to give the sessions of health education and they were trained before the delivery of the sessions. The study was carried out in three phases. The first phase is the Pre intervention phase, Participants initially agreed to participate in the research were recruited by trained volunteers according to inclusion and exclusion criteria. Each volunteer 17-18 woman were enrolled. For questionnaires were administered in participants' homes to obtain base-line data and observational check list to obtain participants performance of Breast Self-Examination. Intervention phase each participant attended 3 sessions 2 months apart, each session spanned about 4 hours, ending with an open discussion. The sessions mainly focused on Orientation about magnitude and impact of breast cancer, signs, symptoms and risk factors and frequency and suitable age for starting BSE, and mammography as screening tool as well as teaching them how to perform BSE and seek medical help when notice any change in their breasts. Learning methods used were lectures and intellectual discussion using adapted training material, power point presentation, Leaflet and audio-visual aid. Post intervention phase was carried out by a house-to house visit 6 months after the conduction of the health awareness program. Same preliminary questionnaire was used. Performance of breast self-examination was assessed by observational checklist.

The data obtained by questionnaires were analyzed based on the set of objectives of the study using descriptive statistics with cross-tabulations. Frequencies were generated for Socio-demographic variables: age, occupation, marital status, education. Paired t-tests were used to determine changes before and after the intervention in knowledge about breast cancer, risk factor and early detection methods. The binomial approach McNemar chi-square tests were used to detect changes in BSE knowledge practice and performance before and after intervention. P value of <0.05 was considered significant. Ethical and technical approval was obtained from Sudan Medical specialization board and Khartoum State Ministry of health. Participants' confidentiality was insured and informed consent was taken. Permission was also sought from the officer-in-charge in Omdurman locality and Wad Nubai public committee.

RESULTS

The total number of participants was 69: at baseline, the majority of participants had heard about BSE (88.4%), The participants knowledge toward methods for early detection were increased, especially toward mammogram as a one of the methods for early detection of breast cancer from 45 (65.2%) to 59 (85.5%) (Table 2).

Table 1: Socio - demographic characteristics.

Characteristics	Frequency	Percent
Age in years	20 - 29 years old	24 34.8
	30 - 39 years old	18 26.1
	40 - 49 years old	18 26.1
	50 - 59 years old	9 13
Total	69	100
Level of education	Illiterate	2 2.9
	Basic	2 2.9
	Secondary	32 46.4
	university and above	33 47.8
Total	69	100
Current job	An employee	23 33.3
	Retired	2 2.9
	Housewife	32 46.4
	freelance	10 14.5
	Student	2 2.9
Total	69	100
Marital status	Married	43 62.3
	Single	22 31.9
	Widowed	3 4.4
	Divorced	1 1.4
Total	69	100

Table 2: Knowledge toward BSE, CBE and mammogram among women in Wad Nubai, Omdurman locality North Sudan.

Variables	Baseline, n (%)	6 months, n (%)
Early detection of cancer by breast self examination	61(88.4)	66 (95.7)
Clinical Breast examination is one of methods for early detection of breast cancer	61 (88.4)	62(89.9)
Mammogram is one of the method for early detection of breast cancer	45 (65.2)	59 (85.5)

Change in knowledge about breast cancer risks factor and early detection method (BSE, CBE and mammogram) before and after the intervention were statistically significant; P <0.001 (Table 3) with obvious significant difference in Overall Knowledge of breast cancer and early detection between the two phases of the assessment with (CI 95%, -16.7 to -9.3; P <0.001).

In this study 2 participants identified changes in their breasts (breast swelling and nipple discharge) and were encouraged to visit Wad Nubai Health Center. Examined by Trained midwives and were referred to Breast Clinic at Khartoum Hospital for further higher investigations and treatment.

Table 3: Changes in breast cancer knowledge and early detection knowledge among women in Wad Nubai, Omdurman locality North Sudan.

Pre phase and post phase Knowledge	Paired differences				
	Mean (SD)	95% Confidence interval of the difference		Paired t-test	P value
		Lower	Upper		
Over all breast cancer early detection	-13.0 (15.4)	-16.7	-9.3	-7.0	0.000
Breast cancer knowledge	-2.4 (13.2)	-5.6	0.8	-1.5	0.133
breast cancer risks factor	-11.2 (19.8)	- 6.4	-16.0	-4.7	0.000
Early detection methods(BSE,CBE and mammogram)	-11.2 (19.8)	- 6.4	-16.0	-4.7	0.000

*Binomial McNemar test

Only (53.6%) had ever performed BSE the main cause is lack of knowledge, (8.3%) performed monthly BSE, (14.5%) performed BSE 2times/6monthly and (27.5%) performed BSE once/6monthly. At 6-month follow-up, participants showed increases in regular monthly BSE performance by (23.6%), 2 times/6 monthly by (13.0%) and once/6monthly by (2.9%) compared with baseline

(Table 4). All these changes in knowledge and practice of BSE were statistically significant (P<0.001). Observational checklist was the second tool for data collection in this study. Analysis of check list clarified that the improvement in performance of BSE before and after intervention was statistically significant (P < 0.001) (Table 5).

Table 4: Change in practice of BSE among women in Wad Nubai, Omdurman locality.

Variables	Baseline, n (%)	6 months, n (%)	P value
Ever practiced breast self-examination	37 (53.6)	62 (89.9)	0.000
Performed BSE monthly	8 (8.3%)	22 (31.9%)	0.000
Performed BSE 2times/6monthly	10 (14.5%)	19 (27.5%)	0.000
Performed BSE once/6monthly	19 (27.5%)	21 (30.4%)	0.000

*Binomial McNemar test

Table 5: Change in performance of BSE among women in Wad Nubai, Omdurman locality, North Sudan.

Variables	Baseline, n	6 months, n	P*
Performance of BSE			
Full performance (12 items were conducting correctly)	20	50	0.000
Partial performance (less than 12 items were conducting correctly)	17	12	
Total	37	62	

DISCUSSION

According to the resources available the guideline for prevention and early detection of breast cancer have been developed, contain many of the basic interventions focus on education, awareness building and expanding capacity at the primary and community healthcare levels, and also contribute to overall health system strengthening.³ The study focused on conducting awareness program guided by this guideline through lay health workers (volunteers). Lay health workers (LHWs) are widely used to provide care and raise awareness for a broad range of health issues.⁷ A significant improvement was observed in the women's knowledge regarding, over all knowledge (CI 95%, -0.77 to -0.15; P= 0.000), risk factors knowledge (CI 95%, -6.4 to -16.0; P= 0.000), and knowledge of early detection method (CI 95%, -6.4 to -16.0; P= 0.000). Knowledge and attitude indexes toward breast cancer and early detection before intervention were high (79.7%) and (93.2%) respectively, so no significance difference were detected after intervention, similar to result of other study conducted among Korean-American women in 27. The difference might be attributed to the fact that the women were received general information about breast cancer mainly from the media (73.9%) and also explained that movement forward to a better or higher knowledge about breast cancer, risk factors and early detection method, might not necessarily result from increase in breast cancer knowledge and attitude alone, that emphasized the importance of direct interpersonal communication.

Breast self-examination is very important and may be the only mean for identifying breast cancer at early stages in low- and middle-income countries, the study results illustrated that statistically significant difference in the knowledge attitude and practice of BSE, between baseline and 6 months follow -up, those results reflected the appreciation of the women to important of BSE as early detection method. participants ever practiced breast self-examination at baseline were (53.6%), the rise of the percentage of practicing BSE at 6 months follow -up

were (36.3%), rise in regular monthly BSE practicing was (23.6%), rise of the 2 times/6 months practicing was (13.0%) and rise of the once/6 months practicing was (2.9%), compare to previous study conducted in Algazira state 2006 showed the rise of the percentages practicing regular BSE were (21.1%, 2times) and (48.2%, 3times).¹² The significant difference in this result could be explained by the effectiveness of intervention by volunteers that provide necessary reinforcement and support to them.⁸

CONCLUSION

This study highlighted the importance and feasibility of introducing awareness program regarding breast cancer and early detection among women. The evidence supports improvements in women knowledge and compliance with BSE, after conduction of such awareness program, in accordance with the study findings, women demonstrated significant improvements in knowledge related to breast cancer risk factors, frequency and suitable age for starting BSE and CBE. There was also significant improvement in performance of BSE. Knowledge about BSE was the prominent cause for practicing BSE.

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: Hussien RA, Abusalih HH, Hussein A. The effect of awareness program on knowledge and practice regarding breast cancer early detection among women at Wad Nubaii, in Omdurman locality, North Sudan. *Int J Res Med Sci* 2016;4:2938-42.