

## Breast cancer and self-examination knowledge among Tanzanian women: implications for breast cancer health education

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**Abstract:** The purpose of this study was to assess knowledge related to breast cancer and breast self-examination (BSE) among Tanzanian women. This hospital-based study was conducted at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania. Face-to-face interviews were conducted with 130 women aged 20-69 years without a known history of breast cancer. Demographic data and subjects responses to a questionnaire addressing the knowledge of the women on breast anatomy and physiology; breast cancer causes; symptoms; breast self examination and treatment were recorded. Our results showed that correct scores ranged between 3% and 95.5% with a mean correct score of 36.1%. Since the average total correct scores fell below 50%, one might conclude that subjects possessed little knowledge related to breast cancer and BSE. However a closer look of the results showed that although correct and incorrect responses were dispersed throughout all content areas, the majority (80-90%) of subjects were more likely to correctly answer items assessing symptoms than any other subset of items but had knowledge deficits regarding when to get medical consultation. In this study, only 47% of subjects knew that they needed to see a doctor when they developed a breast lump. Few subjects correctly answered items assessing breast changes, breast cancer etiologic/risk factors, and BSE technique. The results highlight the need for breast cancer health education to Tanzanian women with an emphasis on breast changes, breast cancer and BSE technique.

### Introduction

Breast cancer continues to pose a major health threat for women worldwide. Specifically, breast cancer constitutes the second leading cause of cancer incidence and mortality for women in Tanzania (Ngoma and Mtango, 2002). The lifetime risk for developing breast cancer in Tanzania like in most developing countries is approximately 1 in 20 (Parkin, 2003). Because there are no definite preventive measures for breast cancer, all efforts to reduce breast cancer mortality focus on early detection and state-of-the-art treatment. The Ocean Road Cancer Institute like other Cancer Institutes throughout the world recommends the use of breast self-examination (BSE), professional breast examination (PBE) and mammography as the most effective means of detecting breast cancer at an early stage when chances for survival are greatest. Specific guidelines include (i) performing BSE on a monthly basis beginning at age 20; (ii) obtaining a PBE annually especially after the age of 40; and (iii) having a baseline mammogram by age 40 followed by a mammogram every 1-2 years for women aged 40-50 years and annually for women aged 40-50 years (NIH, 1997; ACS, 1998).

BSE is considered a non-invasive, safe, and inexpensive method for detecting breast cancer. While women discover the overwhelmingly majority of breast lumps themselves, controversy exists regarding the ability of BSE to actually reduce mortality from

breast cancer. An ongoing criticism is the lack of prospective randomised controlled studies establishing the effectiveness of BSE in reducing mortality from breast cancer. However, in a Japanese study, Kurebayashi *et al.* (1994) reported a positive relationship between more frequent BSE and early clinical stage breast cancer patients. Women who practiced BSE regularly had smaller tumour size compared to women who practiced BSE occasionally. In the Japanese study among regular performers of BSE, a smaller percentage of women died from breast cancer compared to occasional BSE performers at 3.8% and 7.6%, respectively. Despite the controversy related to BSE, many authorities and breast health experts worldwide recommend BSE as prudent practice.

In spite of this life saving recommendation, little has been done and documented regarding Tanzanian women's knowledge of a variety of health issues in general, and breast health specifically. There are no studies that examine breast cancer screening practices among Tanzanian women of various ages, ethnic, racial, educational and cultural backgrounds. If such studies were conducted, it may be found that although the various groups may demonstrate similar degrees of knowledge regarding breast cancer and BSE, the young women are more likely than their mothers to believe that cancer could be cured. This means that young women will be more likely to perform BSE than their mothers because they believe in the benefits

of early detection leading to cancer cure. A finding like this one would make health care providers to conclude that adolescent women should be targeted to receive breast health education and should be encouraged to incorporate BSE into their daily lifestyle. Since so far no research has been done in Tanzania, a baseline study to learn about Tanzanian women's knowledge about breast cancer and health practices was conducted. Specifically, the study aimed at exploring the level of knowledge related to breast cancer and BSE in Tanzanian women aged between 20 and 69 years.

### Materials and Methods

The study was carried out to cover women from the three municipalities of Dar es Salaam. Dar es Salaam is the capital City of Tanzania with an estimated population of 3,000,000 inhabitants. Study participants were drawn from women without a known history of breast cancer who came to the cancer of the cervix-screening clinic at the Ocean Road Cancer Institute and at a Health Centre in Mwenge, Dar es Salaam. The Health Centre provides antenatal clinic, reproductive and child health and general medical services. Subjects were approached and invited to participate in the study upon their arrival at the Cancer Institute or the Health Centre.

Prior to data collection, the subjects were informed of the study's purpose and protocol and about their rights as research subjects. After receiving informed

consent, a one time face-to-face interview was conducted to all subjects.

Data were collected using developed instruments. The first instrument included ten items that addressed the subjects' personal and demographic particulars. The second instrument included 25 close-ended items that measured knowledge about breast cancer and BSE. Questions were posed in multiple-choice and yes-no- don't know formats assessing information on (i) breast anatomy and physiology, (ii) breast cancer, (iii) causes (iv) risk factors, (v) symptoms, (vi) BSE, and (vii) evaluation and treatment. The instruments items were developed in Kiswahili, which is the national language. The number of correct responses (25) in the second instrument was compiled for a total knowledge score. The possible range of scores was 0-25.

### Results

Demographic data and subjects' responses were summarized using descriptive statistics (Table 1). A total of 130 women were examined between January and February 2004. The subjects' ages ranged from 20 to 69 years with a mean age of 34 years. Forty-five per cent of the subjects were between 30 and 39 years. The majority of subjects (61%) were married and 43% identified themselves as housewives. Seventeen percent of subjects reported having no formal education. Most (49%) reported annual household incomes of less than TShs. 500,000 (US\$ 435) (Table 2).

**Table 1: Level of education and marital status of the subjects (N= 130)**

Variable	Number	Percentage
<b>Level of education</b>		
1. None	22	17
2. 1- 7	77	59.2
3. 7-12	25	19.2
4. > 12	6	4.6
<b>Marital status</b>		
1. Single	14	11
2. Married	79	61
3. Widowed	13	10
4. Divorced	5	4
5. Separated	8	6
6. Others	11	8

The responses of the subjects to their knowledge about cancer and BSE are shown in Table 3. Overall, correct scores ranged from 3% to 95.5% with a mean correct score of 36.1%. For example only 47% of subjects knew that they needed to see a doctor when they developed a breast lump.

## Discussion

Demographic data indicated that most of the subjects covered by this study were of the reproductive age (with a mean average age of 34 years). The majority

**Table 2: Type of occupation and annual household income of the subjects (N=130)**

Variable	Number	Percentage
<b>Occupation</b>		
1. Formal sector	35	27
2. Informal sector	17	13
3. Housewife	56	43
4. Retired	10	8
5. Student/unemployed	12	9
<b>Annual household income</b>		
1. TShs. < 500,000	32	49
2. TShs. 500,000-1,000,000	16	25
3. TShs. 1,000,000-1,500,000	7	11
4. TShs. 1,500,000	4	6
5. Do not know	6	9

Regarding breast anatomy and physiology, 6 women (4.6%) correctly answered that one's menstrual cycle or menopausal status can alter breast tissue. Similarly, 10 women (8%) correctly answered that a woman does not need to see a doctor if she feels a firm ridge in the lower curve of her breast. This finding is not unique to the study population given that women may not know that the firm ridge in the lower curve of their breast, the mammary ridge, serves as normal supportive structure. One hundred and eighteen participants (91%) answered incorrectly that a bruise or bump causes cancer.

Of the items assessing BSE technique, only 22% knew when during the menstrual cycle to perform BSE and notably 7 subjects (5.4%) knew that the breast should be examined in a systematic manner.

of the subjects were married housewives. Only a few of the subjects were illiterate. An annual household income reported in this study is slightly higher than the known poverty line of USD 360. However, determining the household income was difficult especially when the individual being interviewed was not employed. By also asking for the rank at which they were working it was possible to crosscheck on the validity of their information for those with formal employment. For those working in the informal sector, information was sought on what they earned per day.

As regards to the subject knowledge on condition, most of the subject possessed little knowledge related to breast cancer and BSE. However although correct

**Table 3: Average percentages of correct, incorrect and do not know responses**

Variable	% Correct	% Incorrect	% Don't know
Breast Anatomy and Physiology	8	74	18
Breast Cancer	20	65	15
Risk Factors	22.4	48.7	28.9
SymptomsBreast Self Examination (BSE)	76.6	20.6	2.8
Evaluation/Treatment	24	61	15

and incorrect responses were dispersed throughout all content areas, a closer look at the symptoms shows that the majority of subjects had knowledge deficits regarding when to get medical consultation.

The belief that breast cancer is caused by trauma to the breast is a common misconception that has been documented (AMC, 1993; Phillips *et al.*, 1999). This finding confirms that Tanzanian women like those in other parts of the world need to be sensitised on the fact that, there is no known relationship between injury to the breast and subsequent breast cancer development.

The finding that few subjects knew that approximately 5% of women in Tanzania are considered at risk for developing breast cancer during their lifetime is not surprising. This is because in Tanzania very little attention has been paid to educating women in cancer awareness in general and specifically regarding average lifetime risk for developing breast cancer. The findings that few women correctly answered that delayed child bearing and age older than 35 years are risk factors linked to breast cancer development suggest that greater emphasis should be placed on educating Tanzanian women on the relationship between breastfeeding, age and the risk of development of breast cancer. However, these findings have certain limitations. Firstly, because of convenience sampling, findings are limited to the study population. Secondly, because the study examined knowledge related to breast cancer BSE only, vital information related to actual BSE practice and use of professional breast examinations and mammography is lacking. Thirdly, because studies examining breast cancer and BSE knowledge among Tanzanian women are non-existent, findings from the current study could not be compared with previous research. This study adds to the limited knowledge base regarding breast health and women, an area that warrants further investigation as part of expanding global women's health research agenda.

This study represents an important initial step in assessing breast cancer and BSE knowledge among Tanzanian women. Results highlight the need for breast health education, with an emphasis on breast cancer in general and breast cancer screening specifically. The study also reveals that any breast

cancer screening educational effort in Tanzania must put emphasis on the basic information and technique of BSE because of the complementary benefit of the use of BSE in addition to mammography and professional breast examination. Since most Tanzanian women have limited literacy skills, recommended message delivery strategies that can inform and influence behaviour should include a variety of approaches such as printed materials (brochures, booklets, books), audiovisuals (videos, multimedia programmes) and action-oriented activities, e.g., role-playing, storytelling, and games. These multifaceted approaches have been shown to be the most effective means for promoting breast cancer awareness and use of breast cancer screening measures (AMC, 1993; Frank and Mai, 1985).

Since the current study was not designed to assess the access to and availability of breast cancer screening services in Tanzania both of which are important to reduce breast cancer, this area could be a good avenue for further research. The questions which might be posed to assist in the design of a study in this area include: (i) the number of health facilities that are available for breast cancer screening in the country; (ii) enabling and constraining factors to breast cancer screening for Tanzanian women; (iii) the influence of educational status of women on the adoption of breast cancer screening; (iv) educational strategies needed to enhance BSE beliefs on breast cancer and breast cancer screening; (v) Beliefs of women on breast cancer and breast cancer screening (vi) health policies needed to assist in assuring access to breast cancer screening for women. Answers to these and other research questions may prove useful to health care providers when designing breast health interventions for Tanzanian women. Furthermore, a qualitative study may be needed to fully assess and address issues related to breast cancer knowledge and the adoption of all three screening practices among Tanzanian women.

In conclusion, this study provides baseline data regarding knowledge of breast cancer and BSE among Tanzanian women. Moreover the findings highlight the need for breast health education focusing on breast cancer in general, and specifically breast cancer screening. The development of locally relevant and

appropriate public health education tools for use in Tanzania should be of high priority in the National Cancer Control Programme. As we move towards improving women's health in the country, issues related to breast cancer control must be addressed within a socio-economic and cultural context. This is particularly important as efforts to improve the status of women and women's health in Tanzania are currently being addressed in the on going Health Sector Reforms.

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