



## RISK FACTORS AND SCREENING AWARENESS OF CARCINOMA BREAST IN WOMEN AT A TERTIARY CARE CENTER IN MANGALORE.

### KEYWORDS

BREAST CANCER, RISK FACTORS, SCREENING AWARENESS, EARLY DETECTION

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### ABSTRACT

**BACKGROUND:** Breast carcinoma is the second most common carcinoma in women and accounts for 22% of all cancers in women, which is more than twice the prevalence of cancers in women at any other site. Recent information suggests that globally, after lung cancer, carcinoma of breast is the second leading cause of cancer related deaths and is the most common cancer among women excluding the non-melanoma skin cancers. India accounts for nearly six percent of deaths due to breast cancer in the world and also one out of every 22 women in India are diagnosed with breast cancer every year.

**AIMS:** To determine the extent of breast cancer awareness, in terms of knowledge about risk factors and screening, among women in the local population through questionnaires

**METHODOLOGY:** This study used data from women at Yenepoya Medical College Hospital in Mangalore, to determine breast cancer awareness, which included knowledge of risk factors, breast self-examination, mammography and breast cancer screening. The survey was based on two previously validated knowledge-based lists of questionnaires.

**RESULTS:** The study demonstrated that a positive family history was connected with higher breast cancer awareness. Family history, age and occupation had large impact on screening and cancer awareness.

**CONCLUSION:** These outcomes give useful data about the level of awareness among women in the local population, which in turn will be useful for making changes and planning future programs for breast cancer awareness and screening.

### INTRODUCTION

Breast cancer is a cause for much concern worldwide, among both health professionals as well as the general public. It has been found to be the most common malignancy among women, as well as the most common cause for cancer deaths among women.

In India it accounts for 27% of all cancers in women. The incidence rates in India show a peak in the late forties.<sup>3</sup> Overall, 1 in 28 women is likely to develop breast cancer during her lifetime<sup>4</sup>.

A diversity of cultures, practices and beliefs in this country, result in a different approach to the disease among the different communities and populations. Cancers of any organ system are still considered a stigma particularly among people from rural areas, for which reason they generally present at a late stage when the disease is already advanced and the best that can be offered to them is palliation.

According to the Halsted theory, breast cancer is considered an orderly disease that spreads from the primary site to the regional lymph nodes via draining lymphatics, and then spreads to distant sites. Dr. Bernard Fisher however suggested that breast cancer is a systemic disease and that metastasis, if destined to develop, would have already occurred at the time of detection of the tumor. The Fisher theory thus implied that local control would have little effect on the progression of the disease in the long run.

There is a third hypothesis, however, which considers breast cancer to be a heterogeneous disease that can be thought of as a spectrum extending from a disease that remains local throughout its course to one that is systemic when first detectable. This hypothesis suggests that metastases are a function of tumour growth and progression. This model requires that there are meaningful clinical situations in which lymph nodes are involved but there has not yet been any distant disease. Persistent disease, locally or regionally, may give rise to distant metastases and, therefore, in contrast to the systemic theory, locoregional therapy is important.<sup>5</sup>

The above mentioned theory in the natural history of breast cancer encourages early detection of the disease to promote better treatment outcomes and reduce morbidity and mortality. There are many programs from the institution level to the national level which tries to reach out to women from all walks of life and educate them on the importance of early breast cancer detection and screening,

through interactions, demonstrations and audio-visual aids. All efforts have been successful to a great extent as we witness a better knowledge concerning breast cancer awareness in our daily practice. However there are still a good number of patients who present late, most commonly due to neglect or ignorance of the treatment options available.

### AIMS AND OBJECTIVE OF THE STUDY

- To assess the extent of breast cancer awareness in the local population, including the knowledge of risk factors involved and importance of early detection through screening.

### METHODS

The study was conducted at Yenepoya Medical College Hospital, Mangalore, where 320 women aged 18 years and above and consenting to participate in the study were given questionnaires in a language known to them. They included patients presenting for other disease conditions as well as their bystanders.

On the basis of breast cancer knowledge-based published surveys two sets of questionnaire were made<sup>6,7</sup>. The first part had questions on general breast cancer awareness which would assess the participant's knowledge on risk factors of breast cancer and also diseases associated with it. The second part had questions on screening awareness of breast cancer, which would assess the participant's knowledge on mammography, self-breast examination and basic variables such as religion, age and family history of breast cancer were included. Details on family history of breast cancer and also personal history were obtained. These questions were scored accordingly.

A cross-sectional design assessed cancer awareness among the participants.

### General Awareness

Eight of the general awareness questions were acquired from Stager's questionnaire<sup>7</sup>. Stager's survey depended on the Breast Cancer Knowledge Test by McCanceal<sup>6,7</sup>. Additional question were added because diet, exercise, and hormone replacement therapy are identified as risk factors of breast cancer<sup>8-13</sup>.

### Screening Awareness

Screening awareness questions on breast cancer were taken from

The Breast Cancer Knowledge Test by McCanceet al<sup>7</sup>. It included 8 awareness screening questions

**Scoring**

Each question answered correctly was given a score of 1, and questions answered incorrectly or unanswered were scored 0.

**Data Collection**

The survey was conducted from August 2016 to November 2016. Questionnaires were in Kannada, Malayalam and English languages. The cover page of the questionnaire briefly described the reason for this study and indicated that by returning the questionnaires they were consenting to take part in the study. The response rate was 78%, with 250 completed questionnaires, and no questionnaire had more than 3 unanswered questions.

**Data Analysis**

Data were analyzed using Chi-square and Fisher's exact test.

**RESULTS**

**Sample Characteristics**

Table 1 shows the number of demographic variables. Participants were mainly from Davangere, Shivamoga, and north Kerala and the majority was Muslim by religion. Educational differences were also observed. The mean age of participants was 32.1 years (range 18 to 67 years).

**Table 1: Demographic variables**

VARIABLES	NUMBER (n)		PERCENTAGE %	
<b>RELIGION</b>				
Hindu	58		23.2	
Muslim	163		65.2	
Christian	29		11.6	
Others	0		0	
<b>EDUCATION</b>				
High school	93		37.2	
Pre-university college	39		15.6	
Graduate	4		1.6	
Master's degree	0		0	
<b>MARITAL STATUS</b>				
Married	210		84	
Single	40		16	
<b>FAMILY HISTORY OF BREAST CANCER</b>				
	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
	23	227	9.2	97.8
<b>HISTORY OF CHRONIC DISEASE</b>				
	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
	46	204	18.4	87.6

The number and percentage of correct answers to general breast cancer awareness questions are presented in Table 2.

**Table 2: Result of General Breast Cancer Awareness Questionnaire**

QUESTION	NUMBER	PERCENTAGE (%)
1. The most frequently occurring cancer in women is breast cancer	39	15.6
2. Bearing the first child after the age of 30 increases the risk of breast cancer	77	30.8
3. Breast cancer is more common in 65 old women than in 40-year-old women	42	16.8
4. Being overweight increases the risk of developing breast cancer	96	38.4
5. Exercise reduces the risk of developing breast cancer	113	45.2
6. Diet affects the risk of developing breast cancer	24	9.6

7. A hard blow on the breast may cause breast cancer	72	28.8
8. The irritation of a tight bra over a time cause breast cancer	18	7.2

Table 3 shows the number and percentage of correct answers to breast cancer screening awareness questions.

**Table 3: Result of Breast Cancer Screening Awareness Questionnaire**

QUESTIONS	NUMBER	PERCENTAGE (%)
1. Screening of breast cancer doesn't make much difference in the outcome of treatment	165	66
2. A women who regularly examines her breasts is doing one of the most effective methods of breast cancer detection	40	16
3. Mammography can detect lumps that can't be felt	198	79.2
4. Mammography is recommended annually for women over 40 yrs	195	78
5. Some nipple discharge is expected, as you get older when you squeeze the nipple during BSE	142	56.8
6. Important part of BSE is looking in the mirror	43	17.2
7. When examining the breast you should use pads of your fingers	39	15.6
8. If a woman gets regular mammography, she does not need to do BSE or have physical examinations	46	18.4

BSE – Breast Self Examination

The overall knowledge concerning screening was found to be more in comparison to general awareness concerning breast cancer (Table 4)

**Table 4: Percentage of Correct Answers in General Awareness and Screening Awareness**

QUESTION NO	GENERAL AWARENESS (%)	SCREENING AWARENESS (%)
1	15.6	66
2	30.8	16
3	16.8	79.2
4	38.4	78
5	45.2	56.8
6	9.6	17.2
7	28.8	15.6
8	7.2	18.4

**Multivariate Assessment**

Mean percentage of correct responses were assessed in relation to (1) General breast cancer knowledge, and (2) Breast cancer screening awareness.

Independent variables included age, religion, profession, nationality, race, education, marital status, family history of breast cancer and history of chronic disease.

Profession was not found to be statistically significant. A positive family history of breast cancer was found to be associated with a better knowledge of the disease. The mean general breast cancer knowledge score was 66.1% for those with a family history of breast cancer as compared to 38.4% for those without a family history of breast cancer.

The other group for breast cancer screening knowledge included

profession, family history of breast cancer, and age. Those with a family history of breast cancer were more aware of the importance of screening and had more knowledge about screening methods. The adjusted mean screening awareness score was 79.1% for those with a family history of breast cancer compared with 63.3% for those without a family history of breast cancer.

## DISCUSSION

Breast cancer is fairly common among malignancies in women. Being a disease associated with significant mortality and morbidity, and also being a disease which responds favorably to early detection and treatment, it is desirable that the population at risk, the greater percentage of which are women, are educated about early detection through screening. Also equally important is that they are made aware of treatment options available, as well as institutional and government aided schemes that are provided particularly for the lower income groups, so that finance is not a hindrance for investigations which form an essential part of screening as well as prompt treatment.

In this study, differences regarding general awareness were in questions related to breast risk factors and to myths about breast cancer. Women were better informed about screening as compared to the nature and progression of the disease. Age was inversely related to breast cancer screening knowledge. Multivariate analysis included the overall mean percentage of correct responses as the dependent variable. Also, women with a family history of breast cancer had significantly better general breast cancer knowledge and awareness about breast cancer screening.

## CONCLUSION

The purpose of this study was to assess the extent of breast cancer awareness that is prevalent among the local population of women presenting to our hospital. This would give us useful feedback regarding the success of awareness programs that are being conducted by various departments including ours, during the year. The information from the study can also be utilized to modify the existing breast cancer awareness programs and increase primary and secondary prevention efforts. Primary prevention includes educating on risk factors of breast cancer and influencing behavior change. Secondary prevention includes early detection and screening for the disease. Studies have also shown that knowledge is directly associated with prevention efforts. For example, lack of breast cancer screening knowledge has been found to be an obstacle in encouraging patients to obtain screening<sup>4,15</sup>.

From the results of this study it is seen that although a good number of women are aware of breast cancer screening, not many are very certain about the nature or progression of the disease, both of which together is an integral part of the success of early breast cancer detection campaigns. We hope to improve awareness of breast cancer as well as early detection, by tailoring the content of programs that are already being conducted as well as increasing the frequency of programs during the year so a larger population of women can be reached out to. Also a mention of the treatment options and possible benefits of early detection, as well as financial schemes available to those in need might encourage those at risk as well as those affected by the disease to present at an earlier stage.

## Recommendations

It has been understood that awareness is helpful in the early detection of various diseases, and prevention where applicable<sup>16-19</sup>. The information acquired from this study will help in planning early intervention strategies. The mean scores before and after an educational program will help to evaluate the efficacy of these programs. In view of the lack of breast cancer knowledge, the need of future health education which involves breast cancer screening and general breast cancer awareness might be advocated.

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