A Descriptive Cross Sectional Study of Awareness and Knowledge of Breast Cancer Risk Factors, Symptoms and Screening among Females in a Tertiary Care Hospital

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Abstract

Introduction: *Breast cancer is the second most common cancer overall and is the most common cancer in women worldwide, both in the developed and developing countries. There are about 1.38 million new cases and 458,000 deaths from breast cancer each year.*

Materials and Methods: *The present descriptive cross-sectional study was carried out from January 2018 to December 2018. The study population consisted of women attendants who attended various outpatient and inpatient departments of our Mahatma Gandhi MemorialMedical College Hospital during this period and consented for participation in the study after prior explaining the nature and objectives of the present study. A total of 80 women consented for participation in the present study. Data was collected by means of a structured questionnaire devised by the authors themselves. Besides English the questionnaire was also available in Hindi language. Willingness to participate in the present study was obtained by means of written informed consent.*

Results: *A total of 80 women participated in the present study. The youngest participant was 21 years old and the oldest was 60 years old. The mean age was 39.25 years. The majority 34 (42.5%) were of 31-40 years' age group followed by 22 (27.5%) of 41-50 years. Eighteen (22.5%) participants belonged to 21-30 years' age group, whereas only 6 (7.5%) belonged to 51-60 years' age group. The socio-demographic characteristics of study participants are shown in Table 1. Majority 72 (90%) of the study participants were married, only 8 (10%) participants were unmarried. Majority 42 (52.5%) of the study participants belonged to urban setting, whereas 38 (47.5%) belonged to rural areas. On enquiring about the educational status, 42 (52.5%) of our study participants were illiterate, 4 (5%) had primary education, 10 (12.5%) had secondary education, 2 (2.5%) had attended colleges, 16 (20%) were graduates, whereas 6 (7.5%) were post graduates.*

Conclusion: *The present study points to the insufficient knowledge of female participants about various risk factors and symptoms of breast cancer. Knowledge about breast self-examination, clinical breast examination and mammography was also not satisfactory and accordingly relevant educational programs and campaigns based on national level are needed to improve the knowledge level of women regarding breast cancer.*

Key Words: *Breast cancer*

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I.   Introduction

Breast cancer is the second most common cancer overall and is the most common cancer in women worldwide, both in the developed and developing countries. There are about 1.38 million new cases and 458,000 deaths from breast cancer each year.[1]

The incidence of breast cancer in India is on rising trend. Over 100,000 new breast cancer patients are estimated to be diagnosed annually in India. According to recent reports, India has 17 percent of the world's population suffering from breast cancer. More recent data from Globocan1 showed that for India for the year 2012; 144,937 women were newly detected with breast cancer and out of those 70,218 women died of breast cancer. So roughly for every 2 women newly diagnosed with breast cancer, one patient is dying compared to US every 5-6th women diagnosed with breast cancer; only one of those dying. Breast cancer is not only a disease of the rich but low and middle-income countries are also affected. In fact, more than half (58%) of women who die from breast cancer live in poor countries, where the chances of survival can be as low as 20%. With weak health systems and limited access to early diagnosis and treatment, women in these countries are likely to be diagnosed

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only at a late stage of breast cancer and in many settings; even access to supportive and palliative care is lacking.[2]

Currently there is not sufficient knowledge on the causes of breast cancer; therefore, early detection of the disease remains the cornerstone of breast cancer control. When breast cancer is detected early, and if adequate diagnosis and treatment are available, there is a good chance that breast cancer can be cured.[3]

Breast cancer is still considered social stigma in India. There are numerous myths and ignorance in the Indian society which results in unrealistic fear of the disease. Most of the patients seeks medical advice when the disease is fairly advanced. Over 70% of the cases report for diagnostic and treatment services in advanced stages of the disease, resulting in poor survival and high mortality rates.[4] Early Breast Cancer constitutes only 30% of the breast cancer cases seen at different cancer centers in India whereas it constitutes 60-70% of cases in the developed world. In India the incidence/mortality ratio is 0.48 compared with 0.25 in North America.[5] Late diagnosis is a major factor for this high mortality as most patients present in advanced stage of the disease. This is attributed to lack of awareness and non-existent breast cancer screening programs in India.[6]

II.   Materials And Methods

The present descriptive cross-sectional study was carried out from January 2018 to December 2018. The study population consisted of women attendants who attended various outpatient and inpatient departments of our M.G.M Medical College Hospital during this period and consented for participation in the study after prior explaining the nature and objectives of the present study. A total of 80 women consented for participation in the present study. Data was collected by means of a structured questionnaire devised by the authors themselves. Besides English the questionnaire was also available in Hindi language. Willingness to participate in the present study was obtained by means of written informed consent. The participants were requested to fill out the questionnaire in presence of the authors of the study, so as to clarify doubts if any.

The questionnaire sought information about socio-demographic status including age, marital status, residence, level of education, occupation, family history of any cancer including breast cancer and monthly income of the participants. The questionnaire aimed to know about the knowledge of various risk factors and symptoms of breast cancer. The level of knowledge of risk factors was assessed by categorizing into four groups. "Excellent" knowledge group were those who answered 80-100% correct answers (12-15) about breast cancer risk factors, "very good" knowledge group were those who answered 60-79% correct answers (9-11), "Good" knowledge group were those who answered 40-59% correct answers (6-8) and participants who answered less than 40% correct answers (0-5) were "Poor" knowledge group. Further the questionnaire was also aimed to assess the awareness of participants about Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and Mammography.

Upon completion of the questionnaire, an interactive session followed with the participants in which information regarding breast cancer risk factors, symptoms and screening procedures were discussed. Pamphlets regarding correct methods of breast self-examination were also distributed.

Attendants presenting with signs and symptoms suggestive of any breast disease and women with any patient of carcinoma breast in immediate family were excluded from the study.

The data of all the Participants was compiled and assessed for:
1.   Awareness and level of knowledge about various risk factors of breast cancer.
2.   Awareness and knowledge of symptoms of breast cancer.
3.   Awareness about Breast self-examination, clinical breast examination and mammography among the study participants.

III.   Results

A total of 80 women participated in the present study. The youngest participant was 21 years old and the oldest was 60 years old. The mean age was 39.25 years. The majority 34 (42.5%) were of 31-40 years' age group followed by 22 (27.5%) of 41-50 years. Eighteen (22.5%) participants belonged to 21-30 years' age group, whereas only 6 (7.5%) belonged to 51-60 years' age group. The socio-demographic characteristics of study participants are shown in Table 1. Majority 72 (90%) of the study participants were married, only 8 (10%) participants were unmarried. Majority 42 (52.5%) of the study participants belonged to urban setting, whereas 38 (47.5%) belonged to rural areas. On enquiring about the educational status, 42 (52.5%) of our study participants were illiterate, 4 (5%) had primary education, 10 (12.5%) had secondary education, 2 (2.5%) had attended colleges, 16 (20%) were graduates, whereas 6 (7.5%) were post graduates. The majority 56 (70%) of our study participants were housewives, 14 (17.5%) were employed in government sector, 6 (7.5%) had private jobs, whereas 4 (5%) were unemployed. About 42 (52.5%) of our participants had a monthly income of 5000-10,000 rupees, whereas 16 (20%) had a monthly income of 10,000-30,000 rupees, 14 (17.5%) had a monthly income of 30,000-50,000 rupees and 8 (10%) had a monthly income of <5000 rupees.

Regarding overall assessment of level of knowledge about various risk factors of cancer breast, our results concluded that 60% of study participants had a "poor" knowledge, whereas 22.5% had a "good" knowledge and only 17.5% had "very good" knowledge about various risk factors of cancer breast. No participant had an "excellent" knowledge about the risk factors of the cancer breast (Table 2). Only 6 (7.5%) participants were aware of a maximum of ten risk factors, whereas 4 (5%) participants were not aware of any risk factor involving cancer breast.

Characteristics	Number	Percentage
Age (years)		
21-30	18	22.5
31-40	34	42.5
41-50	22	27.5
51-60	6	7.5
Marital Status		
Married	72	90
Unmarried	8	10
Place of residence		
Urban	42	52.5
Rural	38	47.5
Education		
Illiterate	42	52.5
primary	4	5
Secondary	10	12.5
College	2	2.5
graduate	16	20
Post graduate	6	7.5
Occupation		
House wife	56	70
Government job	14	17.5
Private job	6	7.5
Unemployed	4	5

Table 1: Socio demographic characteristics of study population

When we compared the level of knowledge about risk factors of cancer breast with the level of education among various participants, we found that 95.2% illiterate participants had "poor" knowledge of risk factors, whereas no participant of college, graduate and post graduate educational level had "poor" knowledge (Table 4), similarly no illiterate participant had a "very good" level of knowledge of risk factors, whereas 100% of participants who had been to college, 50% of graduated and 66.6% of post graduates had "very good" level of knowledge about risk factors of cancer breast. The sources of information about breast cancer risk factors were mainly from family/friends and relatives in 24 (30%) participants followed by television in 18 (22.5%). When the participants were asked about symptoms of breast cancer, the most identified symptom was palpable lump/thickening in the breast in 64 (80%) followed by changes in shape and size of breast in 42 (52.5%). Sore/ulceration in breast that does not heal was identified as a symptom by 38 (47.5%) and blood stained discharge from nipple was identified as a symptom of breast cancer by 36 (45%) participants. The other less identified symptoms were redness, warmth or darkening of skin 18 (22.5%), lump in armpit 12 (15%) and dimpling or puckering of skin or nipple 10 (12.5%) (Table 5).

No participant could correctly identify all the seven symptoms mentioned in the questionnaire. Maximum of five symptoms of breast cancer were correctly identified by only 14 (17.5%) participants followed by four symptoms identified by 10 (12.5%). About 18 (22.5%) participants were able to identify correctly one and three symptoms of breast cancer. Majority of 20 (25%) participants were able to identify two symptoms correctly of breast cancer. (Table 7)

When asked about Breast self-examination, 48 (60%) participants had not heard about BSE, 18 (22.5%) had heard but were irregular performers, 10 (12.5%) had heard but did not perform BSE at all, whereas only 4 (5%) participants had heard about BSE and were regular performers (Table 8)

The most common reason for non-performance of BSE was "not knowing the correct method" in 57.14% and being "too busy" was the second most important reason for non-performance in 42.8% participants. The main source of information about BSE was Television in 25% followed by family, friends/relatives, Health care professionals and internet in 18.75%. None of the participants had clinical breast examination in the past year, the main reason cited was "lack of proper knowledge" and "non-awareness" about CBE. When asked about Mammography, only 6 (7.5%) participants were aware of mammography. The source of knowledge about mammography was television in 33.3%, health care professionals in 33.3% and internet in 33.3% participants.

When participants were asked about treatment of breast cancer, single modality treatment in the form of surgery, chemotherapy, radiotherapy was answered by 22 (27.5%), 12 (15%) and 6 (7.5%) participants, whereas 22 (27.5%) participants knew about dual modality of surgery and chemotherapy as the treatment of cancer breast. Only 6 (7.5%) knew a combination of surgery, chemotherapy and radiotherapy as the treatment of breast cancer and 12 (15%) participants had no idea of the treatment of breast carcinoma.(Table 9)

Level of knowledge	Number of risk factors identified	Number (% age)
Excellent (80-100%)	12-15	0(0%)
Very good (60-79%)	9-11	14(17.5%)
Good (40-59%)	6-8	18 (22.5%)
Poor (<40%)	0-5	48 (60%)

Table 2: level of knowledge about various risk factors of breast carcinoma

Risk factors	True N (%)	False N (%)
Family history	34 (42.5)	46 (57.5)
Alcohol	22 (27.5)	58 (72.5)
Oral contraceptives	20 (25)	60 (75)
Genetic factors	32 (40)	48 (60)
Smoking	54 (67.5)	26 (32.5)
Being Women	46 (57.5)	34 (42.5)
Age 55+	48 (60)	32 (40)
Age at first birth >30 years	8 (10)	72 (90)
Short period of breast feeding	38 (47.5)	42 (52.5)
Early menarche <12 years	8 (10)	72 (90)
Late menopause >54 years	6 (7.5)	74 (92.5)
obesity	52 (65)	28 (35)
Radiation exposure	8 (10)	72 (90)
Null parity	14 (17.5)	66 (82.5)
Personal history of cancer breast	14 (17.5)	66 (82.5)

Table 3: Knowledge about risk factors

Level of education	Excellent (%)	Very good (%)	Good (%)	Poor (%)	Total (%)
Illeterate	-	-	2 (4.76)	40 (95.2)	42 (100)
Primary school	-	-	2 (50)	2 (50)	4 (100)
Secondary school	-	-	4 (40)	6 (60)	10 (100)
College	-	2 (100)	-	-	2 (100)
Graduate	-	8 (50%)	8 (50)	-	16 (100)
Post graduate	-	4 (66.6%)	2 (33.3)	-	6 (100)

Table 4: Level of knowledge of risk factors compared to level of education of the participants

Symptoms	N (%)
Breast lump/Thickening	64 (80)
Blood stained nipple discharge	36 (45)
Sore/ulceration in breast that does not heal	38 (47.5)
Lump in armpit	12 (15)
Changes in breast shape and size	42 (52.5)
Dimpling or puckering of skin of breast or nipple	10 (12.5)
Redness, warmth or darkening	18 (22.5)

Table 5: Knowledge about breast cancer symptoms

Source of knowledge	BSE N (%)	Mammography N (%)	Risk Factors N (%)
Family, Friends, Relatives	6 (18.75)	-	24 (30)
Health care professionals	6 (18.75)	2 (33.33)	14 (17.5)
Television	8 (25)	2 (33.33)	18 (22.5)

Internet	6 (18.75)	2 (33.33)	6 (7.5)
Newspaper/magazine/books	2 (6.25)	-	2 (2.5)
Radio	4 (12.5)	-	10 (12.5)

Table 6: Main source of knowledge

Number of Symptoms Identified	N(%)
Five Symptoms	14 (17.5%)
Four Symptoms	10 (12.5%)
Three Symptoms	18 (22.5%)
Two Symptoms	20 (25%)
One Symptom	18 (22.5%)

Table 7: Number of Symptoms Identified

BSE Knowledge	N(%)
Not heard	48 (60%)
Heard but did not perform	10 (12.5%)
Heard but were irregular performs	18 (22.5%)
Regular performer	4 (5%)

Table 8: Knowledge about Breast Self Examination

Knowledge about treatment	N(%)
Surgery	22 (27.5%)
Chemotherapy	12(15%)
Radiotherapy	6(7.5%)
Surgery & chemotherapy	22 (27.5%)
Surgery, Radiotherapy & Chemotherapy	6 (7.5%)
No idea	12(15%)

Table 9: Knowledge about Treatment of Breast Cancer

IV.   Discussion

Breast cancer is by far the most frequent cancer among women. Lung cancer is now the leading cause of cancer death among women in more developed regions (210,000 deaths) followed by breast cancer (198,000 deaths), which ranks as most frequent in women in less developed regions (324,000 deaths), followed by cancer of lung (281,000 deaths) and cervix (230,000 deaths). Keeping into view huge mortality because of cancer breast among women, it is very important that females be aware of various risk factors and symptoms of the disease. In the present study, our results revealed that 60% participants had a poor knowledge about various risk factors of cancer breast. Study by TT Amin et al. on adult Saudi women also reported low overall level of knowledge regarding breast cancer risk factors. Patel NA et al. in a study in urban slums of Turbhe, Navi Mumbai, found no knowledge about breast cancer risk factors in 93.1% participants.[7]

In a study on female secondary school teachers in Selangor Malaysia, Parsa et al.found knowledge about risk factors of cancer breast in only 55% participants, whereas in a study among female health workers in a Nigerian Urban City Akhibge AO et al. found that 55% participants had a poor knowledge about the risk factors of breast cancer. In our study participants showed poor understanding of various breast cancer risk factors as majority of the respondents did not know that the following to be risk factors of breast cancer: Alcohol consumption, Oral contraceptive use, Null parity, Short duration of breast feeding, Personal history of breast cancer, Genetic factors, Early menarche <12 years, Radiation exposure, Age at first birth >30 years, Late menopause >54 years.[8]

Al Dubai SAR et al.in a study among Malaysian women living in Shah Alam City also found that the knowledge on risk factors of breast cancer was unsatisfying as most of the respondents did not know the following to be risk factors of breast cancer: Null parity, Delivery at more than 30 years old, Shorter duration of breast feeding, Oral contraceptive pills, Menopause after age of 50 and Menarche before age of 11 years. Similarly Ahmed AS et al.in a study on Saudi women aged from twenty to above sixty years found that most of the participants in their study did not know the association between breast cancer and short periods of breast feeding, early menarche, late menopause and delivery of first child after age of 30 years.[9]

In a study by Parsa et al.only 13% and 18.9% respondents knew about the relationship between late age of menopause and early menarche with breast cancer respectively. In our study, the most identified risk factor was smoking (67.5%). Similar results were found by Ahmed AS et al.also who reported smoking as the most identified risk factor in 69.11% participants.

Women who have early age at menarche (<12 years) have a 30% increased risk of breast cancer, while those who have a later age of menopause (>60 years) will have a 20-50% increased risk of disease. Women who have never had children or those who are more than 30 years at the time of their first child's birth are twice as likely to develop breast cancer than women who had their first child before the age of 30 years.[10]

Recognizing the symptoms of breast cancer is essential for early self-detection and treatment of breast cancer. In the present study, 80% of the studied population knew that a breast lump/thickening could be a warning sign of breast cancer.

Our results are similar to studies done by Ahmed AS et al.and Al Dubai SAR et al who reported breast lump as the main identified symptom in 92.5% and 90.8% respectively. In some studies like Patel NA et al. and Sharma PK et al.breast lump was identified as a symptom of breast carcinoma by only 19.36% and 21.37% participants. In our study only 15% participants knew that lump in armpit can also be a symptom of breast cancer; however, Al Dubai SAR et al. in a study reported 75.2% participants having knowledge of enlargement of neighbouring lymph nodes as a symptom of breast cancer.

It is thought that Breast Self-Examination (BSE) makes women more breast aware, which in turn may lead to an earlier diagnosis of breast cancer. In our study 60% participants had not heard of breast self-examination and only 5% participants were regular performers of breast self-examination. In a study by Sharma PK et al only 4.58% participants were aware of and periodically conducted breast self-examination, whereas in another study by Patel NA et al. only 8 women out of 160 knew about breast self-examination among which only 2 women practiced breast self-examination. In our study the most common reason cited for non-performance of breast self-examination was "not knowing the correct method" in 57.14% and being "too busy" was the second most common reason for non-performance in 42.85% participants. Similar findings were reported by Ahuja S et al also.

In our study, none of the participants had a clinical breast examination done in the past year. Similar results were reported by Sharma PK et al. Lack of proper knowledge and non-awareness about CBE was the main reason cited for non-performance. With regards to mammography awareness, only 7.5% participants in our study had heard about mammography. Our results are comparable to study by Montazeri A et al. who in a population based survey in Tehran Iran reported 9% participants having heard of mammography. However, in other studies like Al Dubai SAR et al.[4] 50% of women were aware of mammography, similarly the importance of mammography for early detection of breast cancer was identified by 62.3% participants in a study conducted on Saudi Arabian women by Ahmed AS et al.

The most important source of information about breast cancer risk factors in our study was interaction with members of family, friends and relatives (30%). Television being readily available now a days was the second most important source of information (22.5%) (Table 6) followed by health care professionals who were the third most common source of information (17.5%) regarding breast cancer risk factors. Television was also the most common source of knowledge regarding breast self-examination (25%). Internet was the second most common source of knowledge (18.75%) regarding breast self-examination along with family, friends, relatives and health care professionals (Table 6).[11]

V.   Conclusion

The present study points to the insufficient knowledge of female participants about various risk factors and symptoms of breast cancer. Knowledge about breast self-examination, clinical breast examination and mammography was also not satisfactory and accordingly relevant educational programs and campaigns based on national level are needed to improve the knowledge level of women regarding breast cancer. The conservative nature of our society still prevents women from directly discussing sensitive issues with their health care providers, therefore there is a vital need to educate the female members of society to overcome knowledge deficits. Since this study is limited by its small sample size, studies with larger and representative samples are recommended to confirm the findings of the present study.

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