



COMPARATIVE EVALUATION OF BREAST CANCER AWARENESS IN POPULATION OF HARYANA

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ABSTRACT

The aim of this study was to assess the knowledge of breast cancer, their perception towards its treatment outcomes and anxiety concerning breast cancer among women of Haryana. This study was conducted from January 1st 2013 to June 30th 2013 in population of Haryana. The women enrolled in this study had different educational background. 100 students from university who were pursuing higher education, 100 participants were from rural area and 100 were from the urban area were selected. Questionnaire was prepared to collect the data. 2% rural participants, 6% of urban participants and 25% of the participants of university were well informed about the risk factors and symptoms of breast cancer Whereas 6% of university participants, 40% of rural women and 31% women of urban areas did not had any kind of information of the breast cancer risk factors and symptoms. 56% university participants, 2% rural participants and 3% urban participants knew about the idea how to remain safe from breast cancer. Awareness about the risk factor was found higher in university participants (47%) than that of the urban (7%) and rural participants (9%). In conclusion, survey results suggest the need for educational programs as tools for improving the current knowledge of breast cancer, targeting women through the mass media. The programs should also emphasize the need for prevention of breast cancer by avoiding exposure to potential carcinogens such as frequent X-rays exposure and cigarette smoke and promoting healthy diets that are rich in fiber and contain less saturated fat, in addition to physical exercise.

KEYWORDS: Breast cancer, risk factors, symptoms, carcinogens, awareness.

INTRODUCTION

Breast cancer is a major public health issue and the most commonly diagnosed cancer for women worldwide (World Health Organization, 2008; Bener *et al.*, 2008; Bener *et al.*, 2011). Unlike developed nations, mortality associated with breast cancer among women remains a matter of serious concern in the developing nations. It is estimated that 7.4 million people died of cancer in 2004 and, if current trends continue, 83.2 million people will have died by 2015 (World Health Organization, 2008). In India, breast cancer is the second most common cancer (after cervical cancer) with an estimated 1, 15, 251 new diagnoses and the second most common cause of cancer-related deaths with 53,592 in 2008 (Ferlay *et al.*, 2000). Breast cancer accounts for 22.2% of all new cancer diagnoses and 17.2% of all cancer deaths among women in India. Many risk factors have been known for breast cancer. Gender and age are major risk factors for breast cancer. Other risk factors of breast cancer are age at menarche, age at natural menopause, the interval between age at menarche and age at natural menopause, age at first full term pregnancy, number of live births, breastfeeding history, alcohol consumption, smoking, the use of oral contraceptives and postmenopausal hormones (Lee *et al.*, 2008; Lemone *et al.*, 2011). Revealing the risk factors about breast cancer and making the screening programs widespread are significant in reducing the risks for breast cancer (Eti *et al.*, 2007). There are also data suggesting that factors related to women's knowledge and beliefs about breast cancer and its management may contribute significantly to medical help-seeking behaviors (Odusanya

et al., 2001). Understanding the factors that influence patients' delay in seeking breast cancer treatment is therefore necessary to improve its treatment outcomes. Early detection and effective treatment are important to reduce morbidity and mortality of breast cancer. Clinical breast examination (CBE) and breast self-examination (BSE) are recommended methods for early detection of breast cancer (Khatcheressian *et al.*, 2006). In India, breast cancer awareness studies are not well documented. Due to the high mortality rate of the breast cancer among women, the awareness concerning reducing its risks should be paid attention. Despite the continuous effort and increasing interests among Indian public health officials and various non-profit organizations, there are currently no standard breast cancer screening guidelines, and nationwide breast cancer screening has not been implemented routinely in India. There is a need of large scale work on breast cancer awareness. Apart from that, awareness programmes could be used to identify the different practices related to breast cancer, risk factors and prevention between women of rural/ urban population. The purpose of this study was to assess the basic knowledge status of the university students, women of rural and urban areas of Rohtak concerning awareness of breast cancer prevention and to explore women's attitudes towards reducing the risk factors. The work focused on raising the women's awareness and self-protection abilities, reducing the incidence of breast cancer and improving the women's quality of life.

MATERIAL & METHODS

Study design & population

A survey was conducted from 1st January to 30th June 2013 on women of age group ranged from 20 to 70 years. The women enrolled in this study had different educational background. For this study, 100 students from university who were pursuing higher education, 100 participants were from rural area of Rohtak and 100 were from the urban area of Rohtak were selected. Women with health related professional backgrounds like doctor and nurses were not selected purposefully as they knew a lot about breast cancer. Women who did not want to answer the questions were also excluded from the study. Verbal informed consent was obtained from all the study participants.

Questionnaire

A well-structured questionnaire was prepared to get detail information. Questionnaire was based upon the general questions related to risk factors of breast cancer like age, educational level, marital status, having a child, family history of breast cancer, breast-feeding, life style, etc.

Data Collection

Data collection was carried by face-to-face interview of the women of rural and urban areas. The data was collected using self-designed questionnaires. All the questions were in English but it was translated in Hindi by the researcher in order to help the women to understand these questions.

Data analysis

The data was analyzed by using the Microsoft Excel 2010 in order to compare the knowledge of participants. For continuous data, mean was used and for nominal data frequencies and percentages were calculated.

RESULTS

In present study, 300 participants (university, urban, rural) of different age groups from 20 to 70 years were selected. Majority of the participants were in age group 20-30 year (34% rural, 55% urban and 100% university participants) and least was from the age group 60-70 year (11% rural participants only). The mean age of the university participants was 25 years, 30 years of urban areas and 39 years was the mean age of rural participants (Fig. 1).

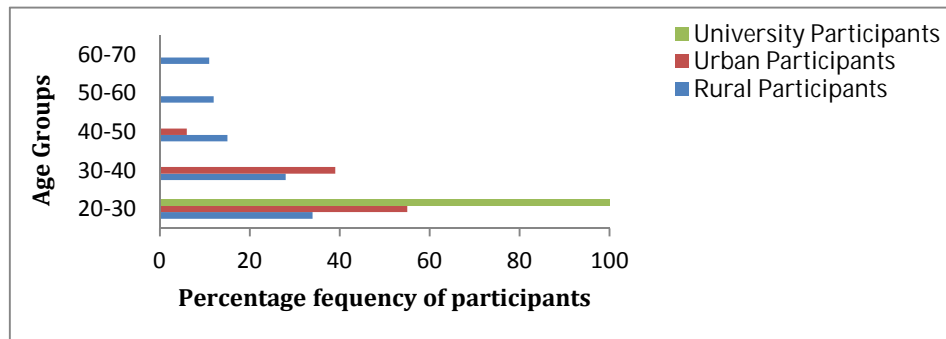


FIGURE 1: Percentage frequency of participants of different age groups.

Knowledge Status

2% rural participants, 6% urban participants and 25% participants of university were well informed about the risk factors and symptoms of breast cancer. Approximate equal number of participants from university (69%), urban (63%) and rural areas (58%) described themselves as they had some knowledge about the risk factor and symptoms of breast cancer. Whereas 6% university participants, 40% rural women and 31% women of urban areas did not had any kind of information of the breast cancer risk factors and symptoms. Upon comparison between participants of all the categories, 84% of university participants and 73% of rural participants knew about the symptom of breast cancer which was found to be quite high as compared to urban participants (39%). Only 1% population of rural participants know about the fact about breast cancer which was found to be quite low as compared to urban (26%) and university participants (44%). 56% university participants, 2% rural participants and 3% urban participants knew about the idea how to remain safe from breast cancer. Awareness about the risk factor was found higher in university participants (47%) than urban (7%) and rural participants (9%). 13% university participants, 27% rural and 49% urban participants did not answer this question.

Responses to general questions

Only female get affected by breast cancer and male are not, 58% rural, 74% urban and 9% university participants correctly answer this question. 69% university, 4% rural and 26% urban participants incorrectly answered this question. 19% university participants and 1% rural participants did not have clear about the answer (Table 1). From the data, it is clear that rural population does not have clear information about male breast cancer. 67% University participants, 31% rural and 58% urban participants believed that breast cancer can be transmitted from the parents to their offspring; however 8% university, 40% rural and 36% urban participants answered that breast cancer is not heritable. 9% university participants, 25% rural and 5% urban participants answered that they did not know whether breast cancer is heritable or not, whereas around 16% university participants, 4% rural participants 1% urban participants didn't had clear about the answer (Table 1). 63% university participants, 69% rural and 67% urban participants were well aware about the fact that breast feeding reduces the risk of breast cancer. 13% university participants, 27% rural and 11% urban participants did not the answered and no women participants either from rural or urban have clear idea about this question but 16% university participants had clear vision about the positive effects of breast feeding in reducing breast cancer risk (Table 1).

TABLE 1: Percentage frequency of various parameters related to breast cancer awareness in rural, urban and university participants

Responses to general questions	Correct (%)	Incorrect (%)	Didn't Know (%)	Not Clear (%)
Only female get affected by breast cancer				
Rural Participants	58	4	37	1
Urban Participants	74	26	0	0
University Participants	9	69	3	19
Breast cancer is heritable?				
Rural Participants	31	40	25	4
Urban Participants	58	36	5	1
University Participants	67	8	9	16
Does breast feeding lower the breast cancer risk?				
Rural Participants	69	4	27	0
Urban Participants	67	22	11	0
University Participants	63	9	13	16
Knowledge of breast cancer risk factors				
Being overweight				
Rural Participants	19	81	-	-
Urban Participants	19	81	-	-
University Participants	53	47	-	-
Age				
Rural Participants	61	39	-	-
Urban Participants	24	76	-	-
University Participants	50	50	-	-
Genetics				
Rural Participants	50	50	-	-
Urban Participants	29	71	-	-
University Participants	66	34	-	-
Late Pregnancy				
Rural Participants	5	95	-	-
Urban Participants	82	18	-	-
University Participants	50	50	-	-
Knowledge of breast cancer symptoms				
Painless lump				
Rural Participants	97	3	-	-
Urban Participants	37	63	-	-
University Participants	84	16	-	-
Dimpling of breast skin				
Rural Participants	5	95	-	-
Urban Participants	37	63	-	-
University Participants	50	50	-	-
Nipple discharge				
Rural Participants	5	95	-	-
Urban Participants	67	33	-	-
University Participants	50	50	-	-
Severe body pain				
Rural Participants	2	98	-	-
Urban Participants	12	88	-	-
University Participants	84	16	-	-

Knowledge of risk factors and symptoms of breast cancer

In risk factors of breast cancer 53% university participants, 19% of both rural and urban women believed that being overweight is the risk of having breast cancer. 50% participants from university, 61% rural and 24% urban participants believed age as risk of breast cancer. 66% university, 50% rural and 29% urban participants were believed genetics may be a risk factor in breast cancer. Having late first full term pregnancy may be a risk of breast cancer was believed by 50% university, 82% urban and only 5% rural area participants. Painless lump under armpit in the breast region was the most correctly answered by 84% university participants, 97% rural and 37% urban participants. 50% university participants, 5% rural and 37% urban participants of the study believed that

dimpling of breast skin may be the symptom of breast cancer. 50% of the total university participants, 5% of the rural and 67% of urban participants believed that nipple discharge may be the symptom of breast cancer. However, 84% of university participants incorrectly answered the question that breast cancer patients experience severe body pain. Only 2% of rural women and 12% urban women did not answer this question.

Comparison of some characteristics of breast cancer risk factors

9% of the university participants, 4% rural women and 8% participants had no pregnancy history. 1-2 pregnancy history was reported in 3% university participants, 34% rural women and 42% women of urban areas. 3-4 pregnancy history was reported much higher in rural

participants (36%) than those urban participants (6%). None of the university participants had more than 2 pregnancy history. 4 pregnancies were only reported in 17% rural participants. 87% of rural participants had first child before the age of 25 year old which was very high as compared to the urban participants (2%) and university participants (3%). Majority of urban participants (46%) had first child in age group of 26-30 years. None of participants of all the three categories had first-degree relatives with breast cancer. However, 16% of urban participants and 4% of rural participants had second-degree relatives with breast cancer. 12% participants of university, 74% rural participants and 49% urban participants never took the oral contraceptives. Neither rural nor urban and university participants use oral contraceptive drugs regularly.

Life style factors included in present study were smoking; drinking alcohol, physical exercise and sleeping hours.

Only 2% of rural participants were found to do smoke, whereas no participants from university and urban population reported. No participant either from rural, urban or university women drink alcohol. 13% university participant, 59% rural and 11% urban participants never take part in physical exercise. However a very low percentage frequency of participants from urban and rural area regularly does physical exercise (3% & 27% respectively) as compared to university participants (58%).

Awareness Strategies

The most effective awareness strategy was television/radio for rural participants (89%), university participants (41%) and urban participants (40%). Only 12% university participants, 18% urban women and 6% rural women get benefits from print media. Internet was effective awareness strategy for urban (42%) and university participants (47%) as compared to the participants of rural area (5%) (Fig. 2).

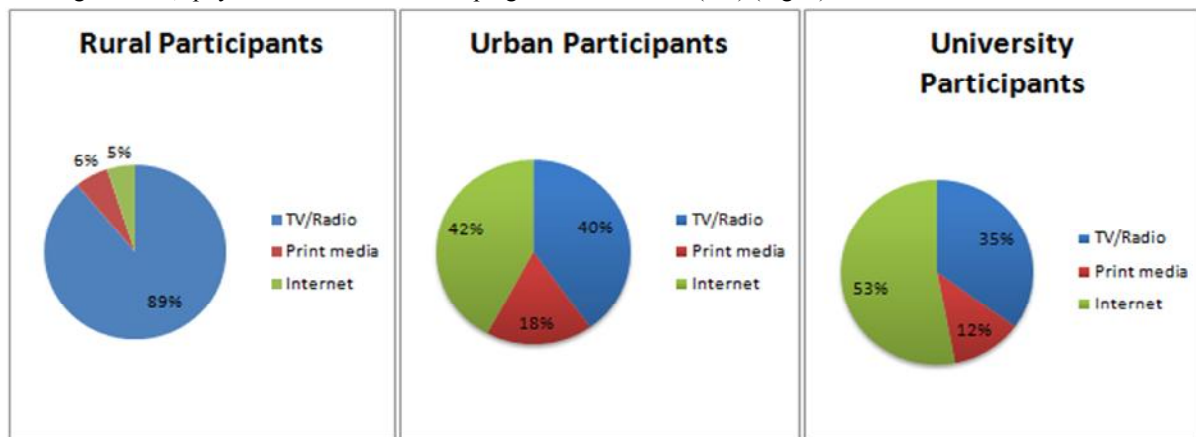


FIGURE 2: Effective awareness strategies in awareness about breast cancer.

DISCUSSION

All the women of sample population knew something about breast cancer. It was observed that women with high education usually had higher level of knowledge of breast cancer. 25% university participants who had higher educational background were well aware about risk factors and symptoms which were found to be comparatively high as compared to rural participants (2%). One goal of this study was to assess the risk of breast cancer and awareness among the population. This study has analyzed the information levels of women concerning risk factors of breast cancer, their risk perceptions and anxiety levels about breast cancer. Previous reports confirmed that the deficit in knowledge of symptoms and risk factors might be the reasons for the delayed presentation of breast cancer in developing countries (Usmani *et al.*, 1996; Harirchi *et al.*, 2000; Okobia *et al.*, 2006). However, in developed nations where there is a diminution in mortality and improved treatment modalities, delayed presentation remains a problem for older women as seen in British, American, and Australian women (Breslow *et al.*, 1997; Ramirez *et al.*, 1999; Paul *et al.*, 1999; Peto *et al.*, 2000; Grunfeld *et al.*, 2002). It is noteworthy that women in the older age group, who are at increased risk of developing breast cancer lack the sufficient knowledge about risk factors and symptoms of breast cancer (Ford *et al.*, 1985).

Among the risk factors assessed in the present study, family history of breast cancer was the most commonly identified risk factor, consistent with recent cross-sectional studies of knowledge and belief conducted similarly. Approximately 15% to 20% of women who developed breast cancer had a family history of the disease (Offit *et al.*, 2004). The risks increase for a higher number of first and second degree relatives diagnosed with breast cancer (Mahoney *et al.*, 2008). In our study the ratio of number of second-degree relatives with breast cancer among rural, urban and University participants came to be 4:0:16. A history of ovarian cancer in other relatives (in the mother's or father's families) also increases the risk of breast cancer (Mahoney *et al.*, 2008). Certain reproductive variables (age at menarche, age at natural menopause, the interval between age at menarche and age at natural menopause, having late full-term pregnancy, breastfeeding history) strongly influence a woman's risk for developing breast cancer in her lifetime (Brower *et al.*, 2010; Secginli *et al.*, 2011). The late age at first full-term childbirth (older than 30 year-old) and null parity are common factors for breast cancer. The main age group for first full term pregnancy in rural women found to be 18-25 years in this survey. However, 21-26 years was more common age of pregnancy in urban group. The protective effects of early age at first full-term pregnancy, parity and lactation are

important factors which can contribute to reducing breast cancer risk (Okobia *et al.*, 2005).

Women who have early age at menarche (<12 years) have a 30% increased risk of breast cancer while those who have a late age at menopause (>60 years) will have a 20-50% increased risk of disease (Singletary *et al.*, 2003). 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 (Singletary *et al.*, 2003). Moreover, women who have five or more children have half the risk of breast cancer as women who have never had a child (Yeole *et al.*, 1990). These associations are more consistently observed for hormone receptor positive breast cancer. Recognizing the symptoms of breast cancer is essential for early self detection and treatment of breast cancer.

The majority of our study participants had correct beliefs about breast cancer management and its outcomes. They however, had negative perception about breast cancer treatment by considering being a long term and painful process. The results of this survey suggest the need for educational programs as tools for improving the current knowledge of breast cancer, targeting women through the mass media and perhaps clinical settings. Although, television and radio appear to be better media to reach a wider audience, however benefits of internet are limited only to people who have access to them. Most rural women got knowledge about the breast cancer through television and radio. Meanwhile, most urban women and university participants used internet to gain knowledge about breast cancer. Nearly half of the participants in this study were older than fifty years old and therefore, they were in a risky age group for breast cancer. The study was conducted among the students of M.D University, Rohtak, and rural area near Rohtak and in urban area Rohtak city and therefore might not be a representative of other states across India.

CONCLUSIONS

This study was an assessment of basic knowledge of breast cancer and attitude towards breast cancer risk factors. Overall, the participants had limited knowledge of risk factors, signs and symptoms of breast cancer. However rural women still showed the knowledge deficits in various aspects. Women with a family history of breast cancer have a high risk of breast cancer. They should be referred for genetic counseling, physical examination and mammography regularly.

Furthermore, participants had negative perception towards breast cancer treatment and its outcomes. Available data suggests the need of intensive breast cancer awareness campaign which emphasizes on the importance of early detection and reporting for improving the current knowledge of breast cancer. Proper counseling should be given routinely by healthcare providers within hospitals and clinics to improve breast cancer knowledge. The decrease in the knowledge of breast cancer with the decrease in the education level emphasizes the need to strengthen the public awareness programmes concentrating more on the women with a lower educational background. Government should also

emphasize on large scale awareness programmes to aware the women about breast cancer so that the cancer can be detected in early stage and help in reducing the mortality rate.

ACKNOWLEDGMENT

Authors are grateful to University grants commission (F-40-287/2011 (SR), New Delhi for financial support in research work. The authors acknowledge the M.D. University Rohtak and Health University, Rohtak for providing the help and support.

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