RESEARCH ARTICLE

Knowledge of Risk Factors & Early Detection Methods and Practices towards Breast Cancer among Nurses in Indira Gandhi Medical College, Shimla, Himachal Pradesh, India

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Abstract

__Background__: Breast cancer is an increasing health problem in India. Screening for early detection should lead to a reduction in mortality from the disease. It is known that motivation by nurses influences uptake of screening methods by women. This study aimed to investigate knowledge of breast cancer risk factors & early detection methods and the practice of screening among nurses in Indira Gandhi Medical College, Shimla, Himachal Pradesh. __Materials and Methods__: A cross-sectional study was conducted using a self-administered questionnaire to assess the knowledge of breast cancer risk factors, early detection methods and practice of screening methods among 457 nurses working in a Indira Gandhi Medical College, Shimla-H.P. Chi square test, Data was analysed using SPSS version 16. Test of significance used was chi square test. __Results:__ The response rate of the study was 94.9%. The average knowledge of risk factors about breast cancer of the entire population is 49%. 10.5% of nurses had poor knowledge, 25.2% of the nurses had good knowledge, 45% had very good knowledge and 16.3% of the nurses had excellent knowledge about risk factors of breast cancer and early detection methods. The knowledge level was significantly higher among BSC nurses than nurses with Diploma. 54% of participants in this study reportedly practice BSE at least once every year. Less than one-third reported that they had CBE within the past one year. 7% ever had mammogram before this study. __Conclusions:__ Results from this study suggest the frequent continuing medical education programmes on breast cancer at institutional level is desirable.

Keywords: Knowledge - practices - nurses - breast cancer - Shimla

Introduction

Breast cancer is the most commonly occurring female cancer in the world with an age-standardized incidence rate (ASR) of 39 per 100,000, which is more than double that of the second ranked cancer (cervical cancer ASR=15.2 per 100,000). Breast cancer accounts for 23% of all newly occurring cancers in women worldwide and represents 13.7% of all cancer deaths. It is the most frequent cancer in both developed and developing regions (estimated 690,000 new cases in each region) as well as the most frequent cause of cancer death in these regions (280,000 deaths in developing countries) of the world (Yeole and Kurkure, 2003).

Breast cancer is an increasing health problem in India too. The trend of rising incidence rates is likely to continue due to further changes in lifestyle factors such as childbearing and dietary habits. The current age-standardized rate is 19.1 per 100000 per annum. India faces a high burden of breast cancer disease with late stage presentation being a common feature. It has been seen that more than half of the patients present in stages III and IV (Chopra, 2001), and the availability and level of facilities for treatment are variable (Kuraparthy et al., 2007). Survival rates are consequently low (Gajalakshmi et al., 1997), and there is a clear need to improve the availability and accessibility of facilities for diagnosis and treatment, as well as education and awareness (Mittra, 2008).

Regular clinical breast examination and mammography of women according to the internationally accepted guidelines can result in down-staging of breast cancer of asymptomatic women (Anderson et al., 2003). However, there are no national screening programs for breast cancer in India. In the Indian context, educating the women about the risks of breast cancer constitutes a first step towards early detection of breast cancer, so that women would be able to judge their risk and take relevant measures.

The important resources of dissemination of breast cancer knowledge to women are the health-care professionals, educational institutions and media. Among the healthcare professionals, female nurses comprise the group most suited for this purpose. In India a substantial number of nurses are women and culturally, women patients are reluctant to go to male health care providers for problems such as breast diseases.

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The nurses can play an important role in educating women through specially designed educational programs in the clinical setting, as well as, through community outreach strategies that suit our social and cultural setting. In addition, they constitute an important source of information within their social networks (Tessaro, 1997). Since the nurses can have a major influence on the behavior of our women, they need to be knowledgeable themselves about breast cancer risk factors and the importance of early detection through screening.

Studies in the developing countries show diverse results ranging from poor to good knowledge about breast cancer. Very few studies in this regard have been conducted in India and no such study has been conducted in the state of Himachal Pradesh earlier. So with this background, the present study was sought to assess the knowledge of breast cancer risk factors and practice of screening methods among the nurses in the Indira Gandhi Medical and Nursing College, Shimla-H.P.

Materials and Methods

This cross sectional questionnaire study was conducted among the nurses of Indira Gandhi Medical College (IGMC) Shimla, H.P. Ethical approval to conduct the survey was obtained from the Institutional Review Board of Indira Gandhi Medical College and Hospital, Shimla. All the nurses working in IGMC were informed about the study. Questionnaires' were distributed among them during May 2012.

A self administered questionnaire prepared by the author was employed. Questions were partly drawn using information on breast cancer from the literature. Additional questions were adapted, after modification, from questionnaires used in similar studies (Odusanya and Tayo, 2001; Faiza et al., 2006). The questionnaire was pre-tested by conducting a pilot study on 20 nurses to assure that the nurses understood the questions and were able to answer them without help. The questionnaire was in three parts. The first part was to elicit socio-demographic data on age, profession, marital status and qualification of each study participant. Questions relating to knowledge of breast cancer risk factors and early detection methods were asked in the second part. There were eight questions on risk of breast cancer knowledge (knowledge regarding family history of breast cancer; hormones and reproductive factors; ionizing radiation; diet and diet related factors; benign breast diseases; increasing in age (age at menarche); gender; lack of exercise and four questions on knowledge about breast cancer early detection methods (knowledge on BSE, CBE, MMG, and Ultra sound). These questions were answered with the options "Yes or No". For each 'Yes' answer a score of 1 was given and a score of 0 for 'No'. The total score ranged from 0-12 for knowledge on breast cancer risk factors and early detection methods respectively. The scores were transformed into percentages of correct answers. Those having less than 40% were considered to have poor knowledge, between 40-60% to have good knowledge, between 60-80% very good knowledge and more than 80% to have excellent knowledge. In the third

part questions were asked on the practice of BSE, CBE and mammography among the participants.

The data was analysed using SPSS version 16.Statistical test used was chi square.

Results

Out of 457 total nurses, 434 responded, which means the response rate was 94.9%. Out of 434 questionnaires 428 were completed (98.6%). The mean age of the sample was 28.07±8.1. Majority (57.2%) of the respondents were in the age group of 21-30 years followed by 18.7% in 31-40 years. In the present sample 53.5% (229) nurses were unmarried, 45.0%(194) were married, 0.5%(2) were divorced and 0.7%(3) were widowed. Most of the nurses were from the department of surgery (32.9%), followed by medicine (25.2%), obs/gyn (19.8%), pediatrics (15.4%), cancer centre (5.3%) and radiology (1.6%) (Table 1).

The average knowledge of risk factors about breast cancer of the entire population was 49%. In the present study 10.5% of nurses had poor knowledge, 25.2% of the nurses had good knowledge, 45% had very good knowledge and 16.3% of the nurses had excellent knowledge about risk factors of breast cancer and early detection methods. On comparing the knowledge of breast cancer risk factors and early detection methods among nurses with General nursing diploma and nurses with BSC Nursing, the knowledge level was statistically higher among BSC nurses than nurses with Diploma (p value=0.03) (Table 2).

The total rate of correct responses ranged from 4-11. The statement "Family history of breast cancer is a risk factor for breast cancer" had a highest percentage of correct responses (93.9% or 402 subjects), and the statement "Lack of exercise is a risk factor for breast cancer." had the lowest percentage of correct responses (24.5% or 105 subjects). Other risk factors were recognized by less than eighty percent of participants. 97% of the participants

Table 1. Participants According to their Sociodemographic Variables

		Number	%
Age in years:	>20	69	16.1
	21-30	245	57.2
	31-40	80	18.7
	41-50	24	5.6
	51-60	10	2.3
	Total	428	100
Marital Status:	Unmarried (Single)	229	53.7
	Married	194	45.1
	Divorced	2	0.5
	Widowed	3	0.7
Department:	Surgery	140	32.7
	Obs/Gynae	107	25.2
	Medicine	85	19.8
	Pediatrics	66	15.4
	Radiology	7	1.6
	Cancer Centre	23	5.3
Educational level:	General Nursing Diploma	282	65.8
	BSC Nursing	146	34.2

Table 2. Knowledge about Risk Factors of Breast Cancer and Early Detection Methods According to Educational Level

Educational Level	Poor Knowledge		Good Knowledge		Very Good Knowledge		Excellent Knowledge		Total	
	N	%	N	%	N	%	N	%	N	%
General Nursing Diploma										
	27	16.4	42	25.6	72	43.9	23	14.1	164	100
BSC Nursing	18	6.8	66	24.9	133	50.4	47	17.9	264	100
Total	45	10.5	108	25.2	205	45	70	16.3	428	100

*P value 0.03

Table 3. Participants Correct Knowledge of Risk Factors and Awareness of Breast Cancer

Variable	General Nursing Diploma (%)	BSC Nursing Degree (%)	Total
Risk Factors			
Family history of breast cancer.	182 (45.2)	220 (54.8)	402 (93.9)
Diet and diet related factors	152 (44.9)	187 (55.1)	339 (79.2)
Hormones and reproductive factors	147 (46.4)	170 (53.6)	317 (74.0)
Ionizing radiations	137 (44.5)	171 (55.5)	308 (71.9)
Benign breast diseases	152 (49.1)	157 (50.9)	309 (72.2)
Increasing with age (age at menarche)	136 (43.4)	177 (56.6)	313 (73.1)
Gender (being female)	147 (44.1)	187 (55.9)	334 (78.0)
Lack of exercise	39 (37.1)	66 (62.9)	105 (24.5)
Awareness about early detection methods			
BSE (Breast Self Examination)	175 (42.2)	240 (57.8)	415 (97.0)
CBE (Clinical Breast Examination)	130 (38.9)	204 (61.1)	334 (78.0)
Mammography (MMG)	160 (42.0)	221 (58.0)	381 (89.0)
Ultra sound	49 (45.0)	59 (55.0)	108 (25.2)

Table 4. Practice of Screening Methods among Nurses

Variable	General Nursing Diploma N (%)	BSC Nursing Degree N (%)	Total
Perform BSE at least once a month	110 (47.4)	122 (52.6)	232 (54)
Performed CBE within last 1 year	64 (47)	73 (53)	137 (32)
Had mammography in the past	17 (56)	12 (44)	30 (7)

*P value 0.091

were aware of BSE. However, a lesser proportion (78% or 334) was familiar with CBE, 89% were aware of mammography as a screening method for breast cancer and 25.2% were aware of ultrasound. The percentage of correct responses to the knowledge questions was higher among nurses with BSC degree (Table 3).

Tables 4 summarizes breast cancer screening practices among respondents. Fifty four percent of participants in this study reportedly practice BSE at least once every year. Less than one-third affirming that they had CBE within the past one year. Majority of those that had CBE did so because of breast symptoms. Only 30 participants (7%) ever had mammogram before this study. The screening practices were more among nurses with BSC degree than nurses with General Nursing Diploma but could not reach the statistical significance.

Discussion

The knowledge level and attitude of health professionals are important factors in the control of breast cancer. It is obvious that health will improve in a society in which health personnel play an active role in health education and are a good role model in the society.

It is important that health personnel are aware of the risk factors for breast cancer, in order to guide the patients for the necessary screenings (Kottke et al., 1995; Lee, 2003; Stojadinovic, 2011).

The average knowledge of breast cancer risk factors of the population is 49% which means the nurses have good level of knowledge and is higher than that seen in other developing countries (Cockburn et al., 1989; Ahmed et al., 2006).The present study shows that 43.9% of nurses in the Indira Gandhi Medical College and Hospital,Shimla had very good knowledge and 14.1% had excellent knowledge of breast cancer risk factors which is higher than as reported by Odusanya (2001). Nurses who are BSC in Nursing had statistically higher knowledge than the nurses with General Nursing Diploma.

When we questioned our study group about the risk factors for breast cancer; it was found that the ones most known were: family history (93.9%%), radiation exposure (71.9%), and diet and related factors (79.2%), the ones least known were physical inactivity (25.4%). Similar results were obtained in studies from different countries, performed upon health personnel (Bekker, 1999; Haji-Mahmoodi et al., 2002; Jebbin, 2004; Ahmed et al., 2006; Yaren et al., 2008; Akhigbe, 2009). According to these results, it can be concluded that though the knowledge about the risk factors for breast cancer, is higher among the nurses in IGMC as compared to other developing countries but still the knowledge about risk factors about levels need to be improved specially those least known, should be emphasized during the education of health personnel.

Fifty four percent carried out the procedure of BSE at least once every month. However, lower rates of BSE were found among health workers who participated in a community based study in Port Harcourt, Southern Nigeria (Haji-Mahmoodi, 2002) and only 6% among healthcare workers in Iran perform BSE monthly (Okobia, 2006). Community-based studies in developing nations often report low rates of regular BSE among women (Jacob, 1989; Dundar, 2006). In contrast, higher rates are commonly found among women from developed countries where breast cancer awareness is believed to be better (Jacob, 1989; Rosenman, 1995).

Practice of CBE by study participants is rather poor. Only 32% have had the procedure in the past 1 year which is also reported by Odusanya and Tayo (2001). Low rates of CBE were reported in earlier studies among nurses and community-dwelling women in Nigeria (Okobia, 2006). Azaiza et al. (2006) reported that barriers to regular performance of CBE by women include feeling of discomfort and embarrassment, belief that CBE is a painful procedure and belief that there is no cure for cancer.

Majority of participants in this study were aware of mammography as a screening method for early breast cancer. However, only 7% among participants ever had mammogram. Reports from developing nations often indicate low rates of mammography screening practice (Dundar, 2006; Okobia, 2006). In contrast, significantly higher rate of mammography screening is often reported

among women in advanced countries.

Breast self-examination, CBE and mammography are recognized methods of screening for breast cancer and adoption of mammography screening has led to reduction in mortality from the disease in women over 50 years (Olsen AH). Although, some countries with population-based breast cancer screening program use all the three methods, others recommend use of either one or two (Moss, 1998) The American cancer society guidelines for cancer screening recommend annual mammogram and CBE for women above the age of 40 years. Furthermore, monthly BSE is made optional with emphasis on the importance of breast self-awareness outside a structured BSE (Smith, 2005).

In many developing countries like India, priority is given to child and maternal health as well as control of communicable diseases in the allocation of funds. Considering the poor economy of the country, provision of facilities for routine mammography screening of women at risk may not be justifiable. Adoption of routine and regular BSE and CBE appear to be more realistic and affordable methods of breast cancer screening in India.

In conclusion, the level of good knowledge of breast cancer risk factors among nurses working in Indra Gandhi Medical College Shimla of Karachi was low (25%). The knowledge of breast cancer risk factors and early detection methods was higher among nurses with BSC Nursing than the nurses with General nursing diploma. Half of the participants practice BSE at least once a year and less than one third affirmed that they had CBE in the past one year.Further the practice of mammography was quite low. Considering their leading role in breast cancer awareness and information dissemination, efforts should be made by Government and Non-Governmental agencies to improve breast cancer knowledge among nurses in IGMC, Shimla. Frequent continuing medical education programmes on breast cancer at institutional level is desirable. In addition, greater emphasis needs to be placed on breast cancer in the curricula of nursing and other healthcare training institutions so that graduates of such schools are better informed about the disease.

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