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Nurses Knowledge Regarding Risk Factors and Early Detection of Breast Cancer: Bangladesh Perspective

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ABSTRACT

Breast cancer is the most prevalent cancer worldwide with about 1 million new cases annually. In Bangladesh, it has overtaken cancer of the cervix to become the commonest malignancy in women. While studies conducted to assess breast cancer knowledge among women showed satisfactory level in some places. Other reports, especially from developing countries like Bangladesh revealed inadequate knowledge and awareness about the disease. Breast self-examination (BSE), clinical breast examination (CBE) and Mammography are recognized screening methods for breast cancer. Female healthcare professionals have greater influence on women's positive perception of breast cancer and motivation to practice screening methods for early detection of the disease. To assess the perceptions of breast cancer risk factors and early detection measures among nurses in Bangladesh. The study was a cross-sectional descriptive type of study in which exposure the present status is measured simultaneously in a given population as performed on the level of awareness of breast cancer risk factors and early detection measures among nurses. The study populations were 300 respondents that selected areas through random sampling technique from different medical college hospital, general hospital, nursing college/ nursing institute. Data were collected by questionnaires and also by secondary sources that focused on extensive literature review covering relevant national-level studies and reports. Out of 300 respondents, 90.0% respondents said that about whether breast cancer can be prevented and 30(10.0%) were did not know whether breast cancer can be prevented. Most of the respondents 97.7% said that they didn't received radiation treatment for any reasons of breast cancer. Results also showed that 196(65.3%) strongly agree, about the distribution of routine breast cancer screening is necessary for women >40 and only 4(1.3%) disagreed about this. On the other hand, about source of information 61.7% were well known from training institution about prevention of breast cancer.

Keywords: *Breast cancer, risk factors, early detection, awareness, symptoms, treatments*

INTRODUCTION

Breast cancer (BC) in women is a major public health problem worldwide. Breast cancer is a leading cause of cancer-related death in women. This disease is diagnosed in nearly 1.4 million women and is responsible for more than 450,000 deaths every year. According to the WHO, there has been about 20% increase in the number of reported breast cancer patients worldwide which resulted in 522,000 deaths since 2008. According to the US National Cancer Institute, breast cancer is responsible for about 4000 deaths in the USA each year. Breast cancer is not gender specific. The frequency of breast cancer in men is approximately 100-fold lower than in women. In another study, it was estimated that there are approximately 2.5 million survivors of breast cancer that are present in the USA. Breast cancer is a serious disease affecting many women worldwide (Majid et al., 2009). It is an uncontrolled growth of malignant tissue that arises in the breast. According to the Centers for Disease Control and Prevention, 2014 breast cancer is the most common cancer among women and it is the second leading cause of death among women in the United States. Each year more than 1.6 million women are diagnosed with breast cancer worldwide (American Cancer Society,

2015). Even with advanced technology, 40,000 women still die every year from this disease worldwide (Houshian, 2017). Breast cancer is one of the top most public health concerns jeopardizing the lives of many people's worldwide. This kind of cancer is malignant by nature endangers breast tissue, and may involve either the tubules carrying milk or ducts which produce the milk. This type of disease can metastasize to distant areas or invade surrounding tissues. Commonly, the disease happens in women population although males may also suffer from it. Breast cancer is the most common type of cancer and the most frequent cause of cancer-associated death among women in the world. However, the burden is not consistently distributed, and according to the best accessible statistics, there are huge variations in the incidence, mortality, and survival between different countries and regions and within specific regions. Several multifaceted factors influence these variations, including population structure (e.g., age, race, and ethnicity), lifestyle, environment, socioeconomic status, risk factor prevalence, mammography use, disease stage at diagnosis, and access to high-quality care. Also some of contributing factors implicated in steady rise in breast cancer incidence in developing countries are widespread urbanization, changing patterns of reproductive and environmental risks factors, obesity, decreased physical activity, and increasing life expectancy. Breast cancer is the most common malignancy in women worldwide. It was estimated that 1,671,149 new cases of breast cancer were identified and 521,907 cases of deaths due to breast cancer happened worldwide in 2012. According to GLOBOCAN, it is the most common cancer in women, accounting for 25.1% of all cancers. More than half (52.9%) of 1.67 million new breast cancer cases were diagnosed in developing including population structure (e.g., age, race, and ethnicity), lifestyle, environment, socioeconomic status, risk factor prevalence, mammography use, disease stage at diagnosis, and access to high-quality care. Also some of contributing factors implicated in steady rise in breast cancer incidence in developing countries are widespread urbanization, changing patterns of reproductive and environmental risks factors, obesity, decreased physical activity, and increasing life expectancy. Breast cancer is the most common malignancy in women worldwide. It was estimated that 1,671,149 new cases of breast cancer were identified and 521,907 cases of deaths due to breast cancer happened worldwide in 2012.

According to GLOBOCAN, it is the most common cancer in women, accounting for 25.1% of all cancers. More than half (52.9%) of 1.67 million new breast cancer cases were diagnosed in developing countries in 2012, while the corresponding figure for 1980 was only 35% Although in developed countries breast cancer is mainly a disease of postmenopausal women (50 years), almost half of all breast cancer cases (45%) in developing countries in 2010 were diagnosed in women of reproductive age (15–49 years). In Asia, the incidence of breast cancer peaks among premenopausal women in their forties, whereas among postmenopausal women in Western countries it peaks in their sixties. The mortality of breast cancer is significantly higher in developing countries than in high-income countries. In 2012 nearly 62% of deaths associated with breast cancer occurred in developing countries. Breast cancer incidence in developed countries is higher, while relative mortality is greatest in less developed countries. Five-year relative survival estimates range from 12% in parts of Africa to almost 90% in the United States, Australia and Canada, with the discrepancy associated with a combination of early detection, access to treatment services and cultural barriers. Observed improvements in breast cancer survival in more developed parts of the world over recent decades have been attributed to the introduction of population-based screening applying mammography and the systemic use of adjuvant therapies. These factors act individually or together to cause breast cancer. The most frequent etiological factors include; age factors, age at first birth, early menarche, gender, dietary factors, tobacco smoking, alcohol consumption, low-dose irradiation, obesity, physical activity, lactation, hormonal factors, hormone replacement therapy, steroid hormone receptors, mammographic density, benign breast disease, and genetic factors. Breast cancer (BC) is a common problem worldwide and is one of the major causes of death in females. It is a type of cancer that originates in the breast tissue ranging from noninvasive to metastatic carcinoma. According to the International Agency for Research on Cancer (IARC), approximately, 2.1 million breast cancer cases were diagnosed in females worldwide in the year 2018. Breast cancer cannot be prevented; however its risk can be reduced and can be treated if detected at an early stage. Cancer-screening tests have greatly shown to decrease mortality in breast cancer patients. According to the American Cancer Society (ACS), clinical breast examination (CBE) and mammography has been suggested for the early diagnosis of breast cancer19. Due to lack of knowledge and awareness of breast cancer in the society, many women fail to early diagnosis and treatment opportunities thereby conquering advanced stages of this disease. Breast self-examination (BSE) is a practice of monthly palpation continually to a rigorous set method carried out by the female at the same time of each month. In combination with improved breast awareness, BSE allows women to increase their perception of vulnerability to the risk of breast cancer. This encourages them to participate in effective screening procedures which enable early breast cancer diagnosis and subsequent decrease in mortality.

Bangladesh is one of the most densely populated countries in the world. About 45 million women are at reproductive age, while 13.5 million women are 50years old. As in other South Asian countries, the life expectancy of Bangladeshi women has increased significantly in recent years from 59 years in 1990 to70 years in 2011. Women are the key drivers of the Bangladesh economy and of its social transformation through their enormous contribution in the clothing industries and in microcredit-and micro finance-based development programs. Healthy women are vital for healthy families and communities. However, women's problems generally get a lower priority in Bangladeshi society. Although Bangladesh has made enormous progress in the health care sector especially related to infectious diseases, as recently highlighted by Lancet the issue of cancer is given lower priority at both policy and research levels. Not much information on breast cancer in Bangladesh is available. So far no effort has been made toward creating population-based cancer registries or a central cancer registry to provide comprehensive nationwide data. Therefore, the incidence and prevalence of breast cancer is mostly unknown. The incidence of breast cancer is similar to that in Bangladesh (ASR25.2 per 100,000) [28]. The only hospital-based cancer registry tracks new cancer cases systematically in Bangladesh at the National Institute of Cancer Research and Hospital (NICRH). According to an NICRH report, 5255 breast cancer cases were diagnosed during the period 2005–2010; the mean age of the breast cancer patients was 41.8 years (age range 15-94 years) and over 56% of the cases were women of reproductive age (15-44 years). Similarly, in our neigh-boring country (India), premenopausal patients constitute about 50% of all breast cancer patients. The higher proportion of pre-menopausal cases in Bangladesh might be due to the fact that the overall population is much younger than in high-income countries, and possibly missing cases of older women who often feel shy about seeking medical help as well as getting lower priority for treatment compared to younger family members in South Asian countries. None of the breast cancer cases is detected by organized screening in Bangladesh. Almost all breast cancer case s are detected clinically. Breast cancer can be detected at earlier stages by simple self-examination of the breasts, but most of the patients (more than 90%) seek medical attention at advanced stages: i.e., stages III and IV.

In Bangladesh, general health education is poor, and few people are aware of cancer. Literatures earaches yielded only two reports on breast cancer knowledge and awareness among urban people of Dhaka city. One study conducted on 175 women of reproductive age showed that 41% of the participant shad not even heard of breast cancer. About 94% of them mentioned that breast cancer is not a disease of old age. This perception might have been acquired from the fact that the majority of the breast cancer cases in Bangladesh occur at a relatively young (premenopausal) age.

OBJECTIVE OF THE STUDY

The objective of the study is as follows:

1. To assess the perceptions of breast cancer risk factors and early detection measures among nurses in Bangladesh.

METHODOLOGY OF THE STUDY

In a broader sense of the term, methodology considers all techniques, strategies, approaches to be applied at every phases of conducting the research, especially, in collecting, processing and analyzing information. Methodological consideration also involves the reliability and validity of techniques and findings. Documentary analysis has used for the study. Data are facts, figures and other relevant materials, past and present, serving as the bases for study and analysis.

Study Design: It was a cross-sectional study. A cross-sectional study was a descriptive types of study in which exposure the present status is measured simultaneously in a given population.

Study Area: The study was conducted in Rangpur Medical College & Hospital.

Study Population: All those breast cancer women who come for treatment from Rangpur District in Bangladesh during the study period constituted the study population.

Sampling Method and Technique: The study sample was 300 respondents were selected through purposive sampling from selected sampling area.

Selection Criteria

Inclusion criteria of the respondents: All those breast cancer women from Rangpur District.

Exclusion criteria: Unwilling to participate in the study.

Data Collection Tools: Questionnaires were used as a form of collecting data. A self administered structured questionnaire was prepared in the light of objectives. Data were collected through appropriate questionnaire which was prepared for the study. Closed-ended questions were used in the questionnaire. A questionnaire in English was developed and finalized through pre-test and used for data collection. A partially structured questionnaire, which was duly pre-tested, was used to collect data from the respondents.

Data Collection Procedure: Data was collected from primary Sources. The data was collected purposively selected respondent for Pregnancy, Childbirth, Birth preparedness and safe delivery. The secondary data collection method has focused on extensive literature review covering relevant national-level studies and reports. Websites of relevant organizations were analytically surfed through. Besides, newspapers, conference proceedings, working papers, Journals, Articles, Term paper, Research Report and other sources of information were also explored to the optimum level. All the data obtained from secondary sources were analyzed and eventually a conclusion is drawn resulting in incorporating our ideas and experiences.

Methods of Data Collection: Data was collected through interview method, i.e. Interviewers collect data from the respondents through administered questionnaire by face - to - face interview.

Data Processing and Data Analysis: The data analysis stage was really an attempt to answer the relevant research questions by examining and assessing the collected information to identify patterns and meanings. The gathered data was interpreted and analyzed. After proper verification, data were coded and entered into the computer by using SPSS programme.

Table 1: The baseline characteristics of the respondents (n=300)

Variables	Categories	Perception	
		Good	Poor
Age	Below 20 years	0	4
	21-30 years	69	148
	31-40 years	7	39
	40 + years	15	18
Marital Status	Married	44	98
	Single	47	111
Professional qualification	Diploma	55	146
	Graduate	27	54
	Post Graduate	9	9
Menstrual cycle	Before 12 years	6	11
	At or after 12 years	85	198
Age at birth to first child	20 years or younger	0	3
	21- 24 years	7	13
	25-29 years	20	57
	30 or older years	5	8
	No child	59	128
Family history of breast cancer	None	89	205
	One member	1	4
	More member	1	0
History of benign breast biopsies	None	82	203
	One time	9	6
Biopsy result	No result/Unknown	82	203
	No, atypical hyperplasia	8	6
	Yes, atypical hyperplasia	1	0
Age to start of using birth control Pills	Never use BCPs	79	187
	21-24 years	5	8
	25-29 years	4	13
	30+ years	3	1
Stop using birth control pills	Not applicable	79	188
	Currently using	4	8
	Stop 1-4 years ago	2	7
	Stop 5-9 years ago	0	2

Variables	Categories	Perception	
		Good	Poor
	Stop 10-14 years ago	0	1
	Stop 15+ years ago	6	3
History of mammogram	Yes	6	3
	No	85	206
History of others cancer	Ovarian cancer	0	1
	None	91	208
Family history of any cancer	Breast cancer	3	5
	None	88	204
History of exercise	Yes	43	62
	No	48	147
Exposed to pollution	Yes	2	8
	No	89	201
History of using birth control measures	Yes	8	8
	No	83	201
History of taking birth control pills	Not applicable	81	190
	Yes	10	19
History of treatment of infertility	Yes	4	9
	Not Applicable	87	200
History of treatment for menopausal symptoms	Yes	1	0
	No	90	209
BSE training	Yes	90	21
	No	1	0
	No opinion	0	188
Knowledge about risk factors and prevention	Yes	81	175
	No	10	34
Source of information about breast cancer	Training institution	71	114
	From relative/ friends	0	9
	During training course	5	32
	From medical person	4	15
	From mass media	1	4
	No opinion	10	35
Know about prevention of breast cancer	Yes	90	180
	No	1	29
Early detection measures of breast cancer	Breast self examination	76	161
	Clinical breast examination	11	12
	Mammography	4	34
	Ultrasound	0	2
Practice sports or physical exercise	Yes	39	43
	No	52	166
Times of practice of physical exercise	Several times a week	30	25
	once or twice a week	6	14
	Less than once a week	4	4
	Not applicable	51	166
History of radiation therapy	Yes	1	6
	No	90	203
History of personal health	Polycystic ovarian syndrome	1	0
	Tubal Ligation	0	5
	None	90	204
Breast feeding practice	Yes	28	77
	No	63	132
BMI	Below 18.4 (underweight)	10	30
	18.5-24.9 (normal)	60	143

Variables	Categories	Perception	
		Good	Poor
	25.0-29.9 (overweight)	18	31
	30 and above (obese)	3	5
Routine breast cancer screening is necessary	Strongly agree	65	131
	Agree	26	74
	Neither agree or Disagree	0	4

Table 1, shows that respondent's showing results of baseline characteristics.

Table 2: Percentage distribution of key risk factors of Breast Cancer

Key risk factors of breast cancer	Frequency	Percentage
Age	3	1.0
Age at first period	11	3.8
Age at the time of birth of first child	3	1.0
Family history of breast cancer	3	1.0
Number of past biopsies	2	0.7
Number of breast biopsies showing atypical hyperplasia	1	0.3
Race	2	0.7
No breast feeding practice	4	1.3
Give 2 opinion	70	23.3
Give 3 opinion	201	67.0
Total	**300**	**100**

Table 2, shows that respondent's showing results of distribution of key risk factors of breast cancer. Out of 300 respondents, highest Give 3 opinion was 201 (67.0%) and lowest 1(0.3%) was key risk factors of breast cancer. Others are in different percentage.

Table 3: Percentage distribution of preventive measures of breast cancer

Preventive measures of breast cancer	Frequency	Percentage
Lowering risk e.g. exercise / diet	3	1.0
Regular screening	19	6.3
Breast cancer chemoprevention	1	0.3
Preventive surgery for women with very high breast cancer risk	2	0.7
Population awareness	2	0.7
Breast feeding practice	1	0.3
Give 2 opinion	87	29.0
Give 3 opinion	148	49.0
Give 4 opinion	7	3.0
No opinion	30	10.0
Total = N	**300**	**100**

Table 3, shows that respondent's showing results of distribution of factors which preventive measures of breast cancer. Out of 300 respondents, highest Give 3 opinion was 148(49.0%), Give 2 opinion was 87 (29%), Give 4 opinion was 7(3%), No opinion was 30(10%) and lowest 1(0.3%) was Breast cancer chemoprevention & Breast feeding practice which factors preventive measures of breast cancer. Others are in different percentage.

Table 4: Percentage distribution of source of information about prevention of breast cancer

Source of information about prevention of breast cancer	Frequency	Percentage
Training institution	185	61.7
From relative/ friends	9	3.0
During training course	37	12.3
From medical person	19	6.3
From mass media	5	1.7
No opinion	45	15.0
Total	**300**	**100**

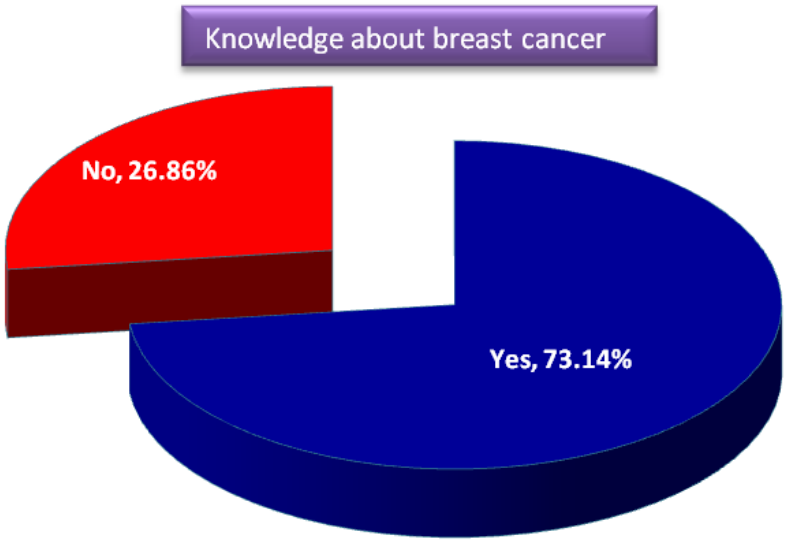
Table 4, shows that respondent's showing results of distribution of Source of information about prevention of breast cancer. Out of 300 respondents, Training institution was 185(61.7%), During training course was 37(12.3%), From medical person was 19(6.3%), No opinion was 45(15.0%) and lowest 5(1.7%) was From mass media which Source of information about prevention of breast cancer.

Table 5: Percentage distribution of early detection measures of breast cancer

Early detection measures of breast cancer	Frequency	Percentage
Breast self examination	237	79
Clinical breast examination	23	7.7
Mammography	38	12.7
Ultrasound	2	0.7
Total	**300**	**100**

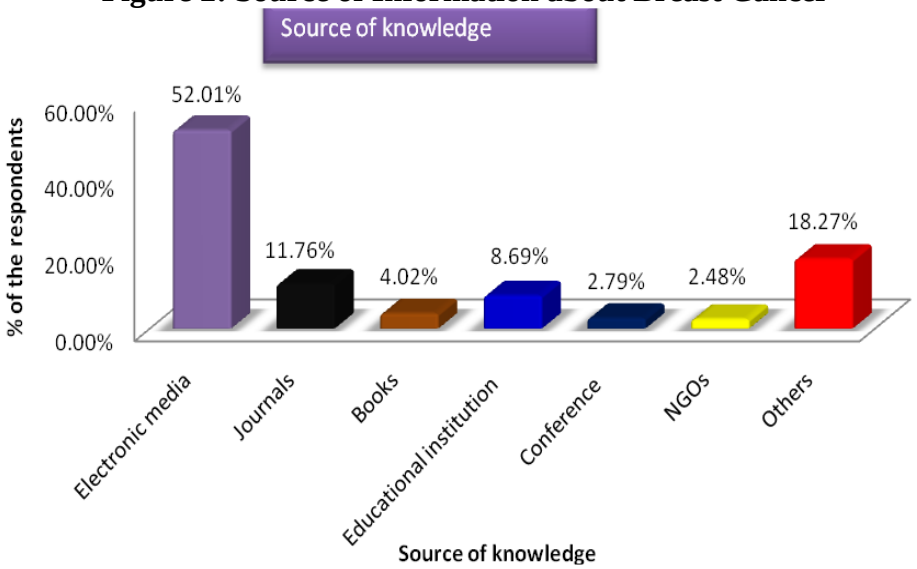
Table 5, shows that respondent's showing results of distribution of early detection measures of breast cancer. Out of 300 respondents, Breast self examination was 237 (79%), clinical breast examination was 23 (7.7%), Mammography was 38 (12.7%) and Ultrasound was 2(0.7%) of early detection measures of breast cancer.

Figure 1: Knowledge about breast cancer among the respondents



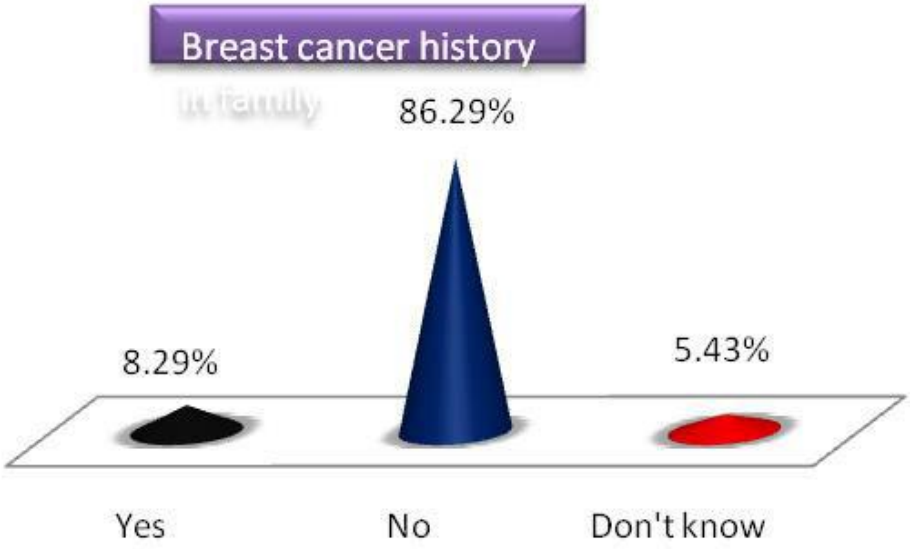
Knowledge about breast cancer among the respondents has shown in the above graph. From the result it was found that Majority of the respondents (73.14%) have knowledge about breast cancer On the other hand, around 26.86% respondents were unknown to breast cancer. Rest of the study conducted on the 300 respondents.

Figure 2: Source of Information about Breast Cancer



Source of Information about Breast Cancer have shown in the above graph. From the result it was found that most of the respondents had been informed about breast cancer from electronic media (52.01%). As the source of this information, other sources (18.27%) such as relatives, neighbors, colleagues and so on were the second highest one.

Figure 3: History of Breast Cancer in their Family



History of Breast Cancer in their Family has shown in the above graph. From the result it was found that most of the respondents (86.29%) had no history of breast cancer in their family. Only 8.29% had family history of breast cancer.

DISCUSSION

Breast cancer in women is a major health burden both in developed and developing countries. It is the second leading cause of death in women worldwide as well as in Bangladesh. Recent global cancer statistics shows that global incidence is rising at a faster rate especially in developing countries like Bangladesh. The incidence, mortality and survival rate in different parts of the world vary from 4 to 10 fold. The study found that breast cancer risk factors perception among nurses in different health care institutions, 30.33% nurses had good perception while 69.67% had poor perception on both breast cancer risk factors and early detection measures. In Karachi, Pakistan, a cross-sectional survey of breast cancer risk factors knowledge among nurses in teaching hospitals revealed that 35% of nurses had good knowledge of risk factors while 40% had fair knowledge and 25% had had poor knowledge. The study also found age (P value= 0.01) was significant factor for perception of breast cancer risk factors and early detection measures among the female nurses. There is a significant lack of information and research that addresses young women's perceived barriers to breast cancer knowledge. A Jordanian study conducted among 163 nurses and 178 teachers showed that profession, age and family history significantly influenced breast cancer awareness. In our study, we found only 3% nurses were done mammogram (P value= 0.026) for dense breast tissue. Most importantly, it is widely recognized that mammogram is one good measure for early detection for breast cancer. Moreover, the mammogram was very less among the nurses. Mammography, Ultrasound (US) and CBE were not commonly known and was attributed to lack or absence of such services in the respective countries and also lack of specialized consultants on breast cancer. Most of the nurses (65.6%) considered that mammography decreases the mortality in breast cancer Early diagnosis can be successfully achieved by mass screening either by Mammography, Clinical Breast Examination (CBE) and Self breast examination (SBE) or by the combination of three. Though it is well documented that mammography is the best choice for screening, breast self examination is also equally important and beneficial for mass awareness especially in country with limited recourses. A cross-sectional Turkey study raveled in a university hospital in Ankara. The mean age of the women was 52.1 ± 9.98 years. Sixteen percent of the women had a family history of breast cancer. The majority of participants had mammograms (75.8%) before and had gained knowledge about breast cancer and it's screening (73.7%). The leading source of information about breast cancer was physicians (46.2%). Physician recommendations, having breast-related complaints, and family history of breast cancer were important reasons to obtain mammography. In a developing country like Bangladesh and it is not a realistic approach to pursue a population based mass screening program. According to stepwise approach of Global Summit Panel 2002 Breast Self Examination would be the approach for early detection

in limited resources countries. Present study showed that 5.7% nurses with early menarche while 94.3% were said that their menarche started was after 12 years. A study done among nurses in rural region of Turkey, found that the risk factors and symptoms of breast cancer were generally well known, except for early menarche (23.2%) and late menopause (28.8%).

Preventive behavior is essential for reducing cancer both morbidity and mortality. Knowledge is a necessary predisposing factor for behavioral change. Knowledge also plays an important role in improvement of health seeking behavior. In our study, knowledge on preventive measures (P value= 0.001) of breast cancer played an important role on level of perception. Not only that knowledge might dramatically improve the attitude, disbelieve, and misconception and consequently enhance screening practice. Beside this, several studies also show that knowledgeable women are more likely to adhere to recommended breast cancer screening. In their study they found that the nurses knew the answers to most of the questions on risk factors of the breast cancer except for smoking (24.6%) and oral contraceptives (21.6%). Out of 431 participants 401 (93.0%) nurses practiced BSE and 7% nurses never practiced BSE. The most common reason for not to practice BSE were “too busy” “forgot” and “not necessary”. More than half (53.6%) of the nurses had their breast examination by a doctor in the past one year, 69.7% by a specialist and 30.3% by their family physician. 68.8% nurses who were more than 50 years of age and 31.1% who were less than 50 years of age had history of mammography test. The overall good perception of breast cancer early detection measures was low (30.33%) that is, about 30 of every 100 nurses. The perception of breast cancer early detection methods among the nurses of Bangladesh is low and is similar to that seen in other developing countries like Nigeria, Pakistan, and Jordan. Given the lower incidence of breast cancer in the Uganda, from the findings, the method known method of early detection was Breast self examination (79%) followed by clinical breast examination (7.7%), mammography (12.7%). However, only 0.7% nurses showed interested for ultrasound of breast cancer early detection measures.

CONCLUSION

Throughout the world as well as our country, number of breast cancer patient is increasing day by day. Breast cancer in women is a major health burden in Bangladesh. Results of this study showed that all of the women from Rangpur Division of Bangladesh heard about breast cancer but they did not have proper knowledge. Respondents were found having a low level of knowledge scores on the sign and symptoms, diagnosis and treatment of breast cancer. Knowledge about importance of screening and practice of it was also very low. But they are less risky position because without knowing they practice some factors such as breast feeding, physical exercise, intake of nutritious food etc. which lower the risk of breast cancer. Nevertheless, policy makers and health professionals are not that much concern about this alarming condition. This study recommends a greater focus on breast cancer education program to improve the knowledge and change misconceptions, as these are the basis for sound attitudes and behaviors of participants towards breast cancer awareness.

RECOMMENDATIONS

Based on the low awareness of breast cancer risk factors and early detection measures among the nurses and midwives surveyed in this study, the promotion of future health policies, such as mandatory continuing education, which involves breast cancer screening guidelines and general breast cancer awareness, may be justified. There is need for the Ministry of Health, hospital management, training institutions and others to. Breast cancer awareness and access programs need to be prioritized through innovative approaches adapted to local conditions for the early detection of and screening for breast cancer. Collaborative efforts are necessary to integrate existing community based primary healthcare services for breast cancer management. Government has to devise a strategy for cost-effective chemotherapy drugs for cancer patients. Developing countries alone cannot solve this problem without support from the international community. Effective leadership is lacking in developing countries. In fact, this is the key to establishing effective collaboration across health sectors and overcoming existing mismanagement and complicated bureaucratic systems.

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