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Research Article

Medical Students' Knowledge and Attitude towards Breast Cancer Risk Factors and Early Detection Practices

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Abstract

Objective: Breast Cancer is the most common malignancy in females and is the leading cause of cancer-related mortality in developing world. In addition to limitation of resources, lack of awareness poses difficulty in diagnosis, treatment and prevention of cancer in developing countries. This has led to advanced stage cancer at the time of presentation resulting in reduced survival. This study was designed to evaluate knowledge and awareness of symptoms and risk factors of breast cancer and practice of Breast Self-Examination among female medical students of two medical universities of Karachi.

Method: This was a cross-sectional survey. A specifically designed questionnaire was administered to the female medical students of aforementioned institutions. The questionnaire was designed to evaluate general demographic data (such as age, marital status), information regarding individuals' knowledge of breast cancer risk factors, use of screening mammography, and breast self-examination.

Result: Total five hundred female medical students participated in this study after meeting the inclusion criteria. The mean age of participants was 20.58 +/- 1.63 years. The majority of participant believed that use of tobacco, hormone replacement therapy, oral contraceptive, and not practicing breastfeeding is a risk factor for breast cancer. The majority (71%) of participants knew about breast self-examination and about 60% knew how to perform it. Most of the participants had knowledge of breast self-examination and knew how to perform it and a small percentage (16%) performed it regularly.

Conclusion: We conclude that knowledge of medical students about breast cancer risk factors is good and they have positive attitude towards promotion of screening and early detection.

Keywords: Breast cancer; Breast self-examination; Medical students

Introduction

Breast Cancer is the most common malignancy in females and is the leading cause of cancer-related mortality in developing world [1]. In addition to limitation of resources, lack of awareness poses difficulty in diagnosis, treatment, and prevention of cancer in developing countries. As reported in Karachi Cancer Registry the age-standardized annual rate (ASR) of breast cancer in Pakistan is the highest ASR reported for any Asian population [2]. Many women do not get screened for breast cancer due to lack of awareness, financial limitations, and lack of accessible facilities especially in rural areas. This has led to advanced stage cancer at the time of presentation resulting in decreased survival [3]. In Pakistan, women tend to have breast cancer at relatively younger age [4], at which mammography is not recommended due to high false positive results [5].

86.6% of breast cancer patients in Pakistan are below age 60 years which is similar to other developing countries like Nigeria [6]. Several other developing countries have previously reported a diagnosis of breast cancer at a relatively earlier age [7,8]. In contrast to that, more than half of the diagnosed cases in United States (US) are above the age of 60 [4]. Similarly in Karachi 60% of the newly diagnosed breast cancers are below the age of 50 years as compared to only 25% in the US [9].

Although breast self-examination is not part of routine breast screening protocols due to high false negative results, this can be of great value in resource constrained countries. Health care professionals being at the helm of screening programs, this study was designed to evaluate knowledge and awareness of symptoms and risk factors of breast cancer and practice of Breast Self-Examination among female medical students of two medical universities of Karachi.

Materials and Methods

This was a cross-sectional survey among female medical students of Dow University of Health Sciences and Sindh Medical University in Karachi, Pakistan. Data was collected and analyzed during the period of February 2016 to August 2016. Convenience sampling method was used. The sample size was calculated using World Health Organization (WHO) sample size calculator. Using 74% as known prevalence of knowledge of breast self-examination, keeping level of significance of 99% and absolute precision of 0.05 we needed at least 511 participants for our study.

A specifically designed questionnaire was administered to the female medical students of aforementioned institutions. They were

Table 1: Demographic characteristics of the participants.

Characteristics	Numbers	frequency
Marital Status		
Single	480	96.0%
Married	17	3.4%
Divorced	1	0.2%
Widowed	2	0.4%
Year of Education		
First year	80	16.0%
Second year	97	19.4%
Third year	142	28.4%
Fourth year	74	14.8%
Final year	107	21.4%
Menstrual status		
Mean age at menarche (SD)	12.92	1.155
Early menarche ≤11 years	53	10.6%
Nulliparity	498	99.6%
Lactation done ever	0	0%

Table 2: Participants knowledge about breast cancer and their risk factors.

Participant's knowledge of breast cancer	All	1st Year	2nd Year	3rd Year	4th Year	5th Year
Breast cancer affect all ages	48.2%	58%	50%	54%	41%	38%
Breast cancer affect all economic and social groups	68.8%	71%	69%	76%	65%	61%
Breast cancer is contagious	21.4%	33%	24%	23%	24%	7%
Breast cancer can be treated	89.2%	91%	92%	87%	80%	96%
Early detection improve treatment	94.4%	96%	95%	94%	88%	99%
Breast cancer is fatal	76.0%	84%	83%	77%	72%	65%
Participant know about breast self-examination	71.4%	44%	74%	64%	82%	93%
Participant know how to perform BSE	59.4%	24%	60%	53%	72%	86%
Participant believe that following is a risk factors for development of breast cancer						
Ethnic background	50.2%	40%	49%	39%	51%	71%
Socioeconomic status	38.4%	29%	29%	41%	46%	45%
Early age of menarche	56.2%	54%	57%	39%	49%	84%
Late age of menopause	61.0%	64%	64%	48%	54%	79%
Use of tobacco	70.4%	68%	72%	73%	70%	67%
Oral contraceptive use	79.6%	70%	77%	84%	84%	78%
Hormonal replacement therapy	80.3%	71%	79%	80%	78%	88%
Having children	25.7%	36%	33%	27%	19%	12%
Having no children	61.4%	44%	70%	46%	61%	86%
Practicing breast feeding	24.7%	43%	24%	25%	19%	12%
Not practicing breast feeding	75.8%	53%	76%	75%	80%	87%

Note: Only positive responses are included in this table.

explained about the study and informed consent was obtained. The participants who did not give consent were excluded from the study. The questionnaire was designed to evaluate general demographic data (such as age, marital status), information regarding individuals' knowledge of breast cancer risk factors, use of screening mammography, and breast self-examination. The data was entered and analyzed on SPSS version 20 (SPSS INC, Chicago, IL, USA). Descriptive analysis was performed to calculate frequencies or percentages of categorical variables.

Ethical approval for the study was taken from institutional review board prior to the commencement of data collection.

Results

Total five hundred female medical students participated in this study after meeting the inclusion criteria. The mean age of participants was 20.58 +/- 1.63 years. Most (96%) of the participants were single. Mean age at menarche was 12.92 +/- 1.15 years. Other demographic details are as shown in Table 1.

Table 2 shows the participant's knowledge about breast cancer and its risk factors. The majority of participant believed that use of tobacco, hormone replacement therapy, oral contraceptive, and not practicing breast feeding is a risk factor for breast cancer. The majority (71%) of participants knew about breast self-examination and about 60% knew how to perform it. The majority of participants responded in a positive way towards the fact that early detection improves outcome of breast cancer (94.4%). Table 3 shows participants' knowledge, attitude and practice towards breast health care. Most of the participants had knowledge of breast self-examination and knew how to perform it and a small percentage (16%) performed it regularly.

Discussion

Cancer is becoming a serious health threat in many countries including those in Asia [1]. According to globalocan cancer report 20121, every fourth (25.2%) cancer among women in the world is breast cancer but this ratio is 40.2% in Pakistan [10].

Lack of awareness of breast cancer risk factors has a huge impact on poor breast cancer screening practices. Studies have identified poor attitude towards treatment due to lack of awareness, scarcity of resources, poverty and illiteracy [11-17]. Studies have also shown that increasing women's awareness of breast cancer reduces the problems to diagnosis and treatment [12]. In our study, only half of first-year students knew about breast self-examination but almost all final year students knew about it. Similarly knowledge of some known risk factors like old age, early age at menarche, late age at menopause, use of oral contraceptive pills, hormone replacement therapy, and cigarette smoking is comparatively higher with increasing years of medical education. Good knowledge about common medical problems amongst medical students has been demonstrated by Asif M et al. also [13].

Several authors have emphasized the value of Clinical Breast Examination and Breast Self-Examination in the early diagnosis of the breast cancer [14]. A study was conducted to evaluate the performance of Breast Self-Examination (BSE) against Clinical breast examination conducted by the trained health personnel. The result of the test showed 68% agreement between findings of examinations done by the experts and respondents [15]. Although educated women and professional women in the field of medicine and nursing had

Table 3: Participant's knowledge attitude and practice towards breast health care.

Participant's practice regarding breast cancer	All	1st Year	2nd Year	3rd Year	4th Year	5th Year
Ever perform BSE	38.0%	23%	43%	35%	43%	47%
Perform BSE regularly	16.2%	13%	22%	9%	18%	22%
Had a clinical breast examination	15.4%	21%	20%	12%	19%	9%
Would seek care for any symptoms	67.4%	61%	60%	65%	72%	79%
Would seek mammography for symptoms	61.0%	51%	61%	58%	59%	74%
Would seek screening if had positive family history	75.0%	74%	72%	67%	77%	89%
Would seek screening if had no positive family history	37.8%	35%	35%	37%	39%	43%
Participants knowledge about mammography						
Know about mammogram	77.4%	66%	81%	70%	77%	93%
Can mammogram detect cancer	85.2%	76%	90%	84%	80%	94%
Do mammogram help in treatment	77.0%	66%	79%	76%	73%	88%
Can mammogram cause cancer	25.8%	29%	32%	25%	26%	19%
Is Mammogram painful	23.0%	29%	24%	23%	23%	19%
Is Mammogram embarrassing	39.2%	46%	39%	38%	46%	32%
Is Mammogram against family believes	22.4%	20%	18%	24%	31%	21%
Age > 40 year should undergo mammography	67.8%	55%	65%	65%	74%	79%
Ever undergone mammography	11.2%	13%	15%	9%	9%	11%
Participant's attitude towards breast health care						
Is Adequate care available in Pakistan	38.3%	35%	39%	37%	31%	48%
Is there limited access to treatment	68.9%	70%	70%	67%	76%	65%
Is there limited affordability	76.4%	76%	73%	73%	84%	79%
Is there transportation issues	61.3%	58%	53%	61%	68%	67%
Is there Personal security issues	66.7%	70%	55%	70%	68%	70%
Believe that symptoms will resolve spontaneously	44.5%	33%	44%	46%	43%	52%

Note: Only positive responses are included in this table.

greater knowledge of BSE, the majority did not perform it [16-21].

Although mammography remains the best screening tool in the early detection of breast cancer and reduces mortality by up to 20% in women over 50 years, but it is beneficial only if done at regular intervals [16]. Most women in Pakistan received their first mammography at the time of diagnosis of breast cancer [17]. In Pakistan, women commonly present with large masses, which reflects delay in detection of breast cancer. In most cases, these masses were discovered incidentally (93%) and only rarely patients carried out regular self-examination or underwent screening mammography [18]. In our study, most medical students knew the importance of mammography in diagnosing breast cancer and most of them would recommend mammography for any women greater than 40 years old.

It has also been found that Pakistani women commonly present with early metastases as compared to those in developed countries [5]. There is also a demonstration of the advanced stage of disease at the time of diagnosis with 63% of the cases being discovered at advanced stages (III and IV). Advanced stages at the time of diagnosis demonstrate a lack of routine screening, knowledge, and awareness of early detection procedures [19]. This is in contrast to developed countries where there is increased frequency of detection of Ductal

Carcinoma in Situ (DCIS) due to cancer screening programs [20,21].

Conclusion

We conclude that knowledge of medical students about breast cancer risk factors is good and they have positive attitude towards promotion of screening and early detection.

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