ORIGINAL ARTICLE

Breast Cancer Awareness amongst Teenage Females: Need of the Hour

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ABSTRACT

Objective: This study was conducted to determine awareness about signs, symptoms and the risk factors of breast cancer and its screening methods amongst female teenage students in the Federal Territory of Pakistan.

Study Design: Descriptive Cross Sectional Study.

Place and Duration of Study: Rawalpindi Medical University, Rawalpindi from 1st March 2018 to 15th June 2018.

Materials and Methods: Using descriptive research design, quantitative data was collected using a close-ended questionnaire derived from literature which was distributed amongst 450 females studying in various institutions of Islamabad, Pakistan. The awareness levels were categorized on a numerical scale of 0 to16; (0-5=unaware), (6-10=moderately aware), (11-16= well-aware). Analysis was done using Statistical Package for Social Sciences Version 23. Three groups were compared by applying chi square test and significance was set at $p<0.05$.

Results: The percentage of the minimally aware teenagers was 40.89%, of moderately aware ones 53.11%, while only 6% females were maximally aware. There was a significant relationship between age of the individuals and awareness levels ($p=0.00$). The total awareness score and information regarding all risk factors of breast cancer was significantly related to education level of individuals, ($p=0.00$).

Conclusion: Our study's results show moderately sufficient awareness about breast cancer symptoms, risk factors and screening methods amongst female teenagers studying in the federal territory of Pakistan.

Key Words: *Awareness, Breast Cancer, Female Teenagers, Pakistan.*

Introduction

Breast cancer is currently the most commonly diagnosed and fatal cancer amongst women in the world. There were approximately 8.8 million deaths due to it in 2015. Breast cancer is the most prevalent cancer in women in 140 countries and the most frequent cause of cancer death in 101 countries. The age standardized incidence rate (ASIR) of breast cancer is highest in Pakistan in Asia as stated by Begum *et al*. Due to high mortality rate, it presents a major global health problem.[1,2]

As stated above the frequency of breast cancer occurrence in Pakistan is maximum amongst Asian countries.[3] Despite Pakistan and India having a similar socio-cultural environment, the incidence rate of breast cancer among the females in Pakistan is significantly higher (50/100,000) than that of Indian women (19/100,000).[4] Information regarding infirmity and fatality of breast cancer in Pakistan's general population is insufficient due to the lack of a cancer report cataloguing system at national level.[5]

Adolescence is a period of rapid change and proper health education during this time is essential to instill good health behaviors amongst young adults. Promotion of health care and attitude towards it, if fostered early in life can yield long lasting results.[4] Breast self-examination (BSE) is deemed to be the best general pre-clinical approach to improve breast health awareness and allows timely detection of any peculiarities.[6] The awareness of young women regarding breast cancer is of utmost relevance because it will serve to transfer the knowledge to their families and social circles and help in timely detection, which will hopefully lead to better treatment outcomes.[5] Lack of awareness amongst the general public often ensues a late diagnosis of breast cancer, diminishing chances of disease-free survival leading to poor treatment prognosis.[5] Healthy survival is significantly influenced by the

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Funding Source: NIL; Conflict of Interest: NIL
Received: January 18, 2019; Revised: November 30, 2020
Accepted: December 01, 2020

time at which breast cancer is diagnosed and treated. The 5 years disease-free survival for breast cancer diagnosed at stage I and II is 85%, whereas it is only 10% at later stage of diagnosis i.e. stage IV.[7] Commonly Pakistani women develop breast cancer at a younger age and are diagnosed when cancer has progressed to a more severe stage as compared to women of the western world [6], because they tend to overlook the early warning signs and consequently medical check-up and treatment is delayed. According to a cancer registry report of Pakistan in 2016, with patients being registered in Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH&RC) located in Lahore and Peshawar and the Karachi Diagnostic Center (KDC); out of a sheer 6,587 malignancies reported, breast cancer was the predominant malignancy among adults (age=>18) with 1,441 cases registered from January to December 2016.[8]

Breast cancer awareness amongst Pakistani people is limited owing to low literacy rates and the general taboo associated with discussion of human body parts specific to one gender.[9]

A very important but rarely known fact is that breast cancer development at a younger age (lesser than 35 years) is liable to be more destructive with comparatively poor progress [10], that is why it is much more important to educate the adolescents about it.

As yet, no such educational investigation has been undertaken to judge the awareness levels of this disease among the young adult female population in this territory. Hence, this study was carried out to assess the awareness corresponding with the risk factors, symptoms and diagnosis methods of breast cancer amongst teenage female students in Islamabad, Pakistan.

Materials and Methods

This descriptive cross-sectional study was carried out amongst teenage females studying in various institutions across Islamabad, from 1st March 2018 to 15th June 2018. The ethical approval for the study was obtained from Institutional Research Forum of Rawalpindi Medical University. The study population consisted of consenting females aged 13-19 years (n = 450) with no prior history of breast cancer and excluding students getting medical education or the like. The sample size was calculated using the WHO calculator. Data, being parametric in nature, was gathered using a close-ended questionnaire derived from literature. Those unwilling to participate were not given the questionnaire. The study population was divided into three groups based on education: Matric/ O Levels, FSc/A levels and Undergraduate.

The questionnaire consisted of 26 questions regarding breast cancer, under 4 sub-headings: Socio-demographic characteristics such as name, age and educational level of the participant; general knowledge regarding breast cancer; knowledge of its risk factors and information about its screening (including knowledge of Breast Self-Exam (BSE) and Clinical Breast Exam (CBE) and family history of incidence of breast cancer). Amongst the first questions asked after the socio-demographic section were: whether the person had heard of breast cancer and its incidence rate, along with their source of information.

Knowledge regarding risk factors was reviewed by requesting the respondents to determine which of the following were potential symptoms or hazards for breast cancer – presence of a lump or nodule in the breast, pain/redness/swelling etc.(Table I)

Comprehension of BSE was assessed with three questions including knowledge about frequency of BSE, information in regard to the appropriate time for BSE and information by whom BSE should be carried out by. Furthermore, they were asked if anyone they knew had undergone CBE (clinical breast-exam) or been diagnosed with breast cancer.

Each accurate response scored one point and each inaccurate response scored zero. The awareness levels were categorized on a numerical scale of 0 to 16; 0 - 5: Unaware, 5 - 10: Moderately Aware, 10 - 16: Well Aware. $P<0.05$ was fixed as the significance demarcation.

The participants were also requested to search about breast cancer and its risk factors if they were unaware of it, at the end of the study.

Data analysis was done using Social Package for Statistical Sciences (SPSS) version 23. Descriptive results were computed with frequencies while the inferential statistics were determined by chi-square tests along with their *p* values.

Results

Our study enrolled 450 female participants aged 13-19 years (mean 16.46 $\pm$ 1.65 years). Only 47.6% of the participants were familiar with the incidence rate of

breast cancer in Pakistan, and of it being the most prevalent cancer in the country. Media (35.3%) and books (15.6%) were the most popular information sources about breast cancer amongst the study participants.

Presence of redness and swelling were the most commonly known symptoms regarding breast cancer (54.4%). 34.2% of the students knew that breast cancer is hereditary and 54.2% regarded a breast lump or nodule as a symptom. Around 30% considered obesity and physical inactivity to be risk factors. Moreover, 44.7% of the respondents were aware that breast feeding does not cause breast cancer.

Table I: Perception of Participants about the Manifestations and Risk Factors of Breast Cancer and its Relationship with Total Awareness Levels

S.No	Symptoms and Risk Factors	Correct Answer n (%)	Incorrect Answer n(%)	*Significance P=<0.05*
1	Presence of lump/ nodule	244 (54.2%)	206 (45.8%)	*p*=0.000*
2	Pain/Redness/Swelling	245 (54.4%)	205 (45.6%)	*p*=0.000*
3	Hereditary predisposition	154 (34.2%)	296 (65.8%)	*p*=0.935
4	Advancing age	223 (49.6%)	227 (50.4%)	*p*=0.040*
5	Breast feeding	201 (44.7%)	249 (55.4%)	*p*=0.000*
6	First child birth later than 30	70 (15.6%)	380 (84.5%)	*p*=0.026*
7	Use of contraceptive pills	109 (24.2%)	341 (75.7%)	*p*=0.103
8	Physical inactivity	120 (26.7%)	330 (73.3%)	*p*=0.843
9	Trauma to the breast	87 (19.3%)	363 (80.7%)	*p*=0.000*
10	Obesity	136 (30.2%)	314 (69.8%)	*p*=0.031*
11	Can men have breast cancer?	139 (30.9%)	311 (69.1%)	*p*=0.001*

The percentage of the minimally aware teenagers, (cut-off value=0) was 40.89%, of moderately aware ones (cut off value=10) 53.11%, while only 6% females (cut-off value=15) were maximally aware. Older respondents (17-19 years) had better understanding of the specificities of breast cancer than younger respondents. Majority of the respondents received a score of 6 (13.3%) and 8 (13.1%) out of 16 and were regarded as moderately aware. The total awareness score and knowledge pertaining to all risk factors of breast cancer was significantly related to education level of individuals, (*p*=0.00 each). There was convincing relationship between age of the individuals and awareness levels (*p*=0.00).

Regarding breast self-exam (BSE), an important finding was that three quarters of the students did not know about it and its importance as an efficient diagnostic tool of breast cancer and neither

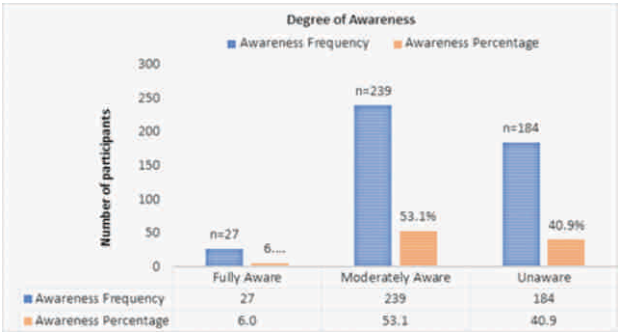

Fig 1: Status of Breast Cancer Awareness in Study Population

performed it. Moreover, out of the 28% who knew about breast self-exam, 60% did not perform it. Only 11% of the total participants actually practiced the examination.

One factor that was found to positively increase the knowledge regarding breast cancer was having a near relation who had suffered from it (n=109). It did not however appear that those with previous family history of breast cancer had necessarily good awareness (good score) of all aspects of it. But still, most of the participants (68%), with a previous familial breast cancer diagnosis were moderately aware (n=74). Whereas, only 0.06% (n=7) of the respondents with a previous family history of breast cancer were fully aware of its symptoms and risk factors while 26% (n=28) were unaware. Only 30.9% of the participants were appreciative of the fact that men could develop breast cancer too, highlighting lack of good knowledge.

The results were analyzed based on the three education groups: FSC/A Levels (n=209), Matric/O levels (n=179), Undergraduate (non-medical students) (n=62).Education was compared against age, marital status, source of information of breast cancer, previous breast cancer diagnosis in the family and the information about incidence of breast cancer and its possible risk factors (presence of lump nodule in breast, redness/swelling/, hereditary factors, advancing age, breast-feeding, primiparous age more than 30, contraceptive pills, physical inactivity, obesity). Further on, education level was compared with the knowledge of BSE, its practice and attitudes towards the development of any risk factors.

Discussion

This study involves a population with an outlook on the incidence rate of breast cancer in Pakistan

(47.6%) with a relationship between age of the individuals and awareness levels (p=0.00). More than half the teenage females had moderate awareness (53.11%) along with a portion of the partakers who knew about breast self-exam (28%).

It is relatable to a study regarding awareness levels of breast cancer among students of Southern Punjab, Pakistan [11], in which the most favored sources of information regarding breast cancer were common with our study: television and school/college education in relation to media (35.3%) and books (15.6%). In another study on the population of Bahawalpur, no significant association was found between education level and the knowledge of breast cancer (p=0.100).[12]

Our results were consistent with a Nigerian study in which 55% of the study population had poor knowledge of symptoms and risk factors.[1] The awareness scores of our female participants are similar to previous studies carried out in Pakistan[11,13] and comparable with an Indian study in which 57% participants showed moderate awareness score in correlation to our 53%.

Breast self examination is an easy examination that can be performed by the women themselves. Its regular practice can help in the early detection of the disease, improving survival prospects.[14] In our study, only 1/5th of the females aware of BSE actually performed it. This was in correspondence with a Jordanian study which had a small population having BSE awareness (34.9%) and only 61.1% of those had affirmative performance response as compared to our 40% of the 28% group.[15]

Owing to a small sample size, the statistics of our study cannot be generalized on all the Pakistani population. This exploratory study is the first of its kind to be carried out on teenage females in Pakistan as opposed to the previous studies that have been carried out mostly on older age groups of the health profession. It was conducted to appraise the breast cancer awareness in adolescent population as a benchmark to designing a target-specific awareness-based breast cancer early detection program.

Conclusion

Our study's results show moderately sufficient awareness about breast cancer symptoms, irs risk factors and screening methods amongst female teenagers studying in the federal territory of Pakistan.

Acknowledgements

We are extremely grateful to the participants from Punjab College, Beaconhouse AGAL, Beaconhouse Margalla Campus, IMCG I-8/4, IMSG I-8/1, PBF College, OPF Girls College, Benchmark School System, PakTurk School and college, SKANS School of accountancy, HITEC, Foundation University and NUST for participating in this study. We would also like to thank the Rawalians Students Research Society (RSRS) and the Physiology Department of Rawalpindi Medical University for all the help they provided in this study.

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