

Impacts of Educational Interventions on the Enhancement of Knowledge of Breast Cancer and Breast Self-Examination among Young Females

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Abstract

Background: Breast cancer is one of the most common malignancies after cervical cancer. Prevention and prognosis depend on earlier detection. Breast self-examination may be a good technique, where facilities are inadequate for mammography and clinical breast examination.

Objective: To assess the knowledge regarding breast cancer and breast self-examination, and to determine the impact of educational intervention among young females.

Methods: A quasi-experimental study method was utilized to conduct this study. A total of 30 participants were selected through a nonprobability convenient sampling technique. An adopted questionnaire was utilized to collect data. The questionnaire consisted of two sections, demographic characteristics and knowledge-related items (21 Items). An additional checklist (13 Items) was prepared to assess knowledge. Maximum points were 86, 01 points each for the item related to the knowledge section of the questionnaire, and 5 points for each of checklist-related items (Total = 65). Those who obtained ≤ 43 points had poor knowledge, and those who obtained > 43 points were regarded to have good knowledge. Data were collected before the educational session (presentation, video, demonstration), and after the intervention. Wilcoxon test was used to compare pre and post-intervention data.

Results: A total of 30 females participated in the study. In the pretest, 21 (70%) participants had poor knowledge and 9 (30%) had good knowledge. In the post-test, 4 (13.3%) had poor knowledge while 26 (86.7%) had good knowledge. The results were statistically significant ($p < 0.001$) using the Wilcoxon sign test.

Conclusion: The findings of the current study reveal that the young female population possesses poor knowledge about breast cancer and breast self-examination. However, educational interventions can be used to enhance knowledge regarding breast cancer and breast self-examination.

Keywords: Breast cancer, breast self-examination, female, knowledge, malignancy.

INTRODUCTION

Breast cancer is the second most common malignancy after cervical cancer and is the most commonly diagnosed cancer among females worldwide, also the fifth leading cause of death estimated at 685,000 in 2020 [1, 2]. In addition, globally 2.3 million new cases of breast cancer were diagnosed in 2020 and it has been estimated as the most common malignancy in low and middle-income countries [3, 4]. Moreover, it affects 1 in 9 females in Pakistan and it is documented that almost 4,000 deaths occur on account of it which puts Pakistan at a higher mortality rate in Asia [4, 5]. The five-year data of cancer incidence (2017-2021) in Karachi revealed breast cancer as the leading cancer among females, documenting 11548 cases of breast cancer for the age of ≥ 20 years which is touching an alarming proportion [6].

Massive screening programs for early detection may help reduce the incidence of breast cancer given such a high burden in Pakistan [7]. The previous research studies recommend three methods for timely diagnosis

of breast cancer, namely Breast Self-examination (BSE), Clinical breast examination (CBE) by a physician, and mammography [8]. Although mammography is a universally accepted screening method for breast cancer, self-breast examination may serve as a useful technique where facilities for mammography and clinical breast examination are deficient [9]. Additionally, the researchers believe that through self-breast examination a malignant tumor as small as one centimeter can be detected by the patient [10]. Therefore, the World Health Organization has strongly recommended BSE for reducing the mortality rate in those regions where facilities for mammography and CBE are not sufficient [11].

On account of the scarcity of facilities, resources, and low awareness, 9.5% of the urban and 4.8% of the rural population of regions like Pakistan go through clinical screening for breast cancer [12]. Furthermore, researchers have argued that an increase in knowledge of breast cancer promotes the behaviour regarding BSE and awareness increases the performance of BSE [8]. Ultimately education among females may result in higher detection of breast cancer as a study has demonstrated that 65% of breast lumps were detected by the patients themselves [11].

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Received: September 09, 2023; Revised: October 16, 2023; Accepted: October 16, 2023
DOI: <https://doi.org/10.37184/jlnh.2959-1805.1.24>

Given the huge health problems stemming from a lack of knowledge and awareness regarding breast cancer and breast self-examination, it is imperative to assess the knowledge and identify interventions to improve awareness among females. Educational programs are required to boost awareness and level up knowledge among females in the population of Pakistan [13]. Locally no study was identified to be carried out in this context. Therefore, the findings of the current study may be utilized by health professionals and health administration to create awareness among local females. So, the objective of the current study was to assess knowledge regarding breast cancer (BC) and breast self-examination (BSE) and determine the impact of educational interventions among females.

METHODS

A pretest-posttest quasi-experimental study design was applied to conduct this study from July to November, 2021, in Wah Cantt, Taxila. The study population consisted of 30 young females belonging to Wah Cantt, Taxila, selected through a nonprobability convenient sampling technique. Young females of 16 to 20 years from Wah Cantt were included in the study. Those belonging to medical professionals and having surgical trauma were excluded from the study. Ethical approval was obtained from the Institute of Nursing Wah Medical College. The purpose of the study was explained to all the participants and were assured that their identity would remain confidential and they could withdraw from the study at any time. A written informed consent was obtained from all the participants. An adopted questionnaire was utilized to collect data from the participants with Cronbach's alpha $\alpha = 0.78$, determined by the principal author [14]. The questionnaire consisted of two sections, the first section was related to demographic characteristics, and the second section was composed of 21 knowledge-related items about breast cancer and breast self-examination. An additional checklist was prepared of 13 questions to assess the demonstration of BSE. One mark was awarded to the correct answer in 21 knowledge-related items while a 0 mark was awarded to the incorrect answer (correct = 1, incorrect = 0). Five marks were given to the correct answer in the checklist for the BSE demonstration while 0 was awarded to the incorrect answer of 13 items (correct = 5, incorrect = 0). So, the total marks were 86. Those obtaining 43 and less marks were considered as having poor knowledge and those above 43 marks were having good knowledge. Pretest data were collected from all the participants. An educational session was arranged for the participants to aware them of breast cancer and breast self-examination.

After giving them 8 hours to relax the post-session date was collected.

A Statistical Package of Social Sciences (SPSS 23) was utilized for analysis. Frequency and percentages were calculated for demographic variables like qualification, family history of cancer, marital status, and residence. Mean and standard deviation were calculated for age, pre-test, and post-test knowledge score. Shapiro-Wilk test was applied to find out the test of normality. A Wilcoxon sign test was calculated to compare the pre-test and post-test knowledge of the participants. For non-parametric Wilcoxon test, a p-value of ≤ 0.05 was considered significant at 95% CI.

RESULTS

The total number of participants included in the study was 30. The mean age of the participants was 18.36 ± 1.40 years. All of them were Punjabis by race and belonged to Wah Cantt, Taxila. The response rate was 100%. Table 1 shows the demographic characteristics of the participants.

Table 1: Demographic characteristics of participants.

Demographic Variables	Frequency (%)
Qualification	
Matric	10 (33.3)
Intermediate	18 (60)
Graduated	2 (6.7)
Marital Status	
Unmarried	21(70)
Married	9(30)
Family History of Cancer	
Yes	4(13.3)
No	26(86.7)
Location	
City	11(36.7)
Town	12(40)
Rural	7(23.3)

Significant findings were obtained when the Shapiro-Wilk test was applied. Moreover, significant difference were obtained when the non-parametric Wilcoxon sign test was applied to the result of pretest and post-test data presented in Table 2 and Fig. (1).

DISCUSSION

The current study was conducted to assess the level of knowledge regarding breast cancer (BC) and self-breast examination (SBE) and the effectiveness of educational interventions among young females residing in Wah Cantt, Taxila. In the current study, most of the participants demonstrated poor knowledge regarding self-breast examination and breast cancer. In one of the previous

Table 2: Comparison of pretest and post-test.

Knowledge Level		Test Statistics	Standardized Test Statistics	p-value
Pre-test		411.30	4.205	0.000
Minimum	16			
Maximum	76			
Mean	42.167±20.83			
Post-test				
Minimum	41			
Maximum	86			
Mean	64.60±12.85			

The Wilcoxon test was applied, p-value of < 0.05 was taken as a significant.

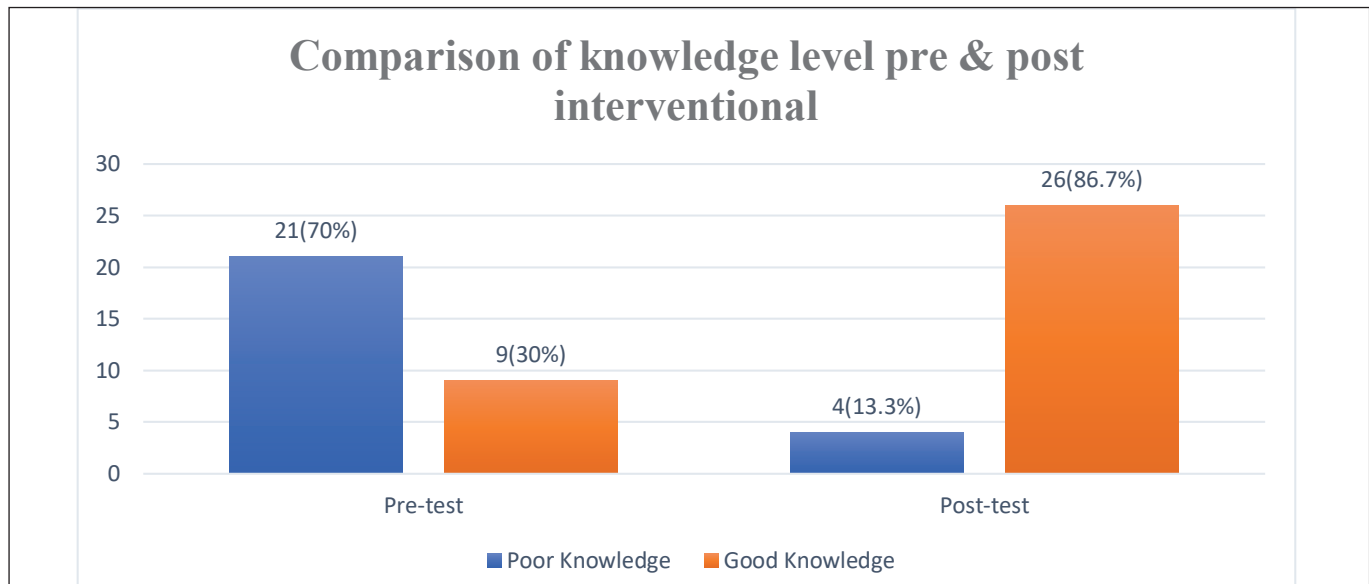


Fig. (1): Comparison of knowledge level pre & post interventional.

research projects, the respondents who did not perform the SBE claimed that it was due to a lack of knowledge/skills and called for continuous education regarding breast cancer and SBE [9]. Similarly, other studies conducted in Nigeria and Saudi Arabia also revealed poor knowledge in nearly half of the participants [15, 16]. On the other hand, the current findings contradicted the previous findings where 79.8% had good and acceptable knowledge [17]. The huge contradiction is because the previous study was carried out on female health workers in Iran. A study conducted in Ethiopia found more than half of the participants (56%) to have adequate knowledge [18]. This difference in findings is because the previous study was conducted where the participant’s age was between 20 to 70. In the same way, a study conducted in Indonesia showed that nearly half of the participants had previously performed BSE, the practice was attributed to maturity in age and education level [19]. It is of paramount importance to enhance

the knowledge of females, so that we may prevent the negative health impact of breast cancer among females in our country. Consequently, training and educational sessions are needed to be arranged which will help reduce the burden of disease in this context. A previous study conducted in Pakistan documented that 14% had poor knowledge, 59% had fair knowledge and 27% had good knowledge [20]. The latter study was conducted among the participants of the educational institutions where most of the participants were students. Their current study may be responsible for the findings of the study.

Our findings showed significant improvement (p-value = 0.002) in the knowledge level among females when pre and post-test data were compared. This finding is in line with the previous quasi-experimental study where the mean score of knowledge was enhanced (p<0.001) in the experimental group [10]. In line with the same findings, another study also showed a drastic improvement

($p < 0.05$) between the baseline data and post-intervention data [14]. A study carried out on adolescents in Nigeria also improves significantly regarding breast cancer and BSE [21]. Similarly, another quasi-experimental study was conducted on female university students where they found inadequate knowledge which was improved significantly after educational interventions [22]. The research findings are adequate to support that educational interventions and training sessions are the tools through which knowledge and awareness can be leveled up. Consequently, the earlier and timely detection of malignancy will be possible and treatment will be initiated on the spot which will reduce the morbidity and mortality among females.

The study is limited in its sample size, generalizability would have been improved if the sample size was large. The findings are only generalizable to young educated females in Pakistan.

CONCLUSION

The findings of the current study revealed that our female younger population possesses poor knowledge regarding breast cancer and breast self-examination. Furthermore, educational interventions are the best tool to enhance knowledge regarding Breast cancer and breast self-examination.

ETHICAL APPROVAL

Ethical approval was obtained from the Institutional Review Committee of the Institute of Nursing, Wah Medical College, Wah Cantt, Taxila (REF letter No. IoN/WMC1786/008/Admin). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/ or national research committee and with the Helsinki Declaration.

CONSENT FOR PUBLICATION

Written informed consent was taken from the participants.

AVAILABILITY OF DATA

The data set may be acquired from the corresponding author upon a reasonable request.

FUNDING

Declared none.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

Declared none.

AUTHOR'S CONTRIBUTION

All the authors contributed equally to the publication of this article.

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