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Knowledge, Attitude, and Practice Regarding Breast Cancer and Its Prevention Among Adolescent School-Going Girls

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Abstract

Introduction: *Breast cancer claims the lives of over 500,000 women globally each year. In low-resource settings, most women are diagnosed at an advanced stage of the disease, resulting in low 5-year survival rates, typically ranging between 10 and 40%. However, in regions where early detection and basic treatment are both available and accessible, the 5-year survival rate for early-stage localized breast cancer can exceed 80%.* ***Objectives of the Study:*** *The main goal of this study was to evaluate the knowledge, attitude, and practices (KAP) concerning breast cancer and its prevention among adolescent school girls. Additionally, the study aimed to examine the association between KAP levels and selected demographic variables.* ***Methodology:*** *A quantitative, non-experimental, descriptive survey design was adopted for the research. Data was collected from 50 adolescent girls attending Modern Public School in Jhansi, Uttar Pradesh, using a purposive sampling method. A structured questionnaire was employed to assess knowledge (13 items), attitude (10 items), and practices (8 items) related to breast cancer and its preventive strategies. Descriptive statistics were used for data analysis.* ***Results:*** *The findings revealed that 52% of participants had low knowledge levels about breast cancer, while 58% demonstrated a favorable attitude. Despite this, 86% of the girls showed inadequate practices concerning breast cancer prevention. Statistical analysis using the chi-square test showed a significant association between knowledge and age ($p=0.013$), attitude and age ($p=0.012$), and practice and grade/class ($p=0.049$), all at the significance level of $p\leq0.05$.* ***Conclusion:*** *The study concludes that while most adolescent girls possess a favorable attitude and some level of knowledge about breast cancer, their preventive practices remain insufficient. Furthermore, there is a statistically significant relationship between knowledge, attitude, and practice and demographic factors such as age and academic grade.*

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Keywords: Knowledge, attitude, practice, assessment, breast cancer, preventive measures and adolescent girls, breast self-examination (BSE)

INTRODUCTION

According to the World Health Organization (WHO), breast cancer is a condition where abnormal cells in the breast begin to grow uncontrollably, eventually forming tumors. If not treated in time, these tumors can spread to other parts of the body and become life-threatening. On March 13, 2024, the WHO's Global Breast Cancer Initiative shared important global statistics about the disease. They reported that around 670,000 women worldwide died due to breast cancer in

2022. The primary risk factors are age and biological sex, with no single identifiable cause in most cases [1].

In 2022, breast cancer was the most commonly diagnosed cancer among women in 157 out of 185 countries. While rare, men can also develop breast cancer, accounting for about 0.5 to 1% of total cases.

Each year, breast cancer results in the deaths of over half a million women globally. In low-resource areas, most cases are diagnosed at a later stage, where 5-year survival rates range from just 10 to 40%. In contrast, in regions with access to early detection and basic medical care, the survival rate for early-stage breast cancer can exceed 80%. Early detection is possible through two primary approaches: early diagnosis and routine screening [2].

Nowadays cancer is becoming a very prevalent disease worldwide; among the cancer, breast cancer is getting attention nowadays in India. One of the NGO named Premansh Foundation is a Section 8 registered not-for profit organization founded by Dr Shikha Shukla and Mr. Anurag Shukla at Noida, Uttar Pradesh, stated in one of the website blogs that there is critical situation in India, with breast accounting for 1 in 4 cancer cases among women [3].

MATERIAL AND METHODS

A quantitative non-experimental descriptive survey research approach is used for the study. The sampling technique adopted in this study was convenience sampling technique for the selection of 50 adolescent's school going girls who were available and willing to take participation in the study at the time of data collection. A planned teaching program through PowerPoint presentation was given to the adolescent girls as an intervention and to create awareness about prevention of breast cancer. It was a one-day teaching program and it took 3–4 h to conduct the survey and collect the information.

The ethical consideration for the study was taken from the school ethics committee of Modern Public School, Jhansi, Uttar Pradesh, and written informed consent was also taken from each subject. The data was compiled and arranged using Microsoft Excel, and analyzed through the application of both descriptive and inferential statistical methods.

RESULTS

Section 1: Background Profile of the Subjects

The data presented in the Table 1 shows frequency and percentage of subjects by their age, grade/class, residence, family history of breast cancer.

Out of total subjects' residence, 44 (88%) belong to urban area and 6 (12%) belong to rural area. Frequency and percentage was computed for demographic characteristics of Adolescent school going girls. Regarding the Age of adolescent girls, 46 (92%) belong to 12–14 years, 4 (8%) belong to 15–17 years and 0 (0%) belongs to 18–19 years of age. Frequency and percentage was computed for demographic characteristics of Adolescent school going girls regarding class/Grade 6th–8th: class 8 (16%), 9th–10th class 41 (82%) and 11th–12th class 1 (2%). Frequency and percentage was computed for demographic characteristics of Adolescent school going girls regarding family history of breast cancer: 9 (18%) have family history of breast cancer, 35 (70%) have no family history of breast cancer, 4 (8%) may have family history of breast cancer and 2 (4%) do not know the family history of breast cancer (Figures 1–4).

The data in Table 2 reveals the score and percentage distribution of level of knowledge among adolescent school going girls regarding breast Cancer and its prevention. Out of 50 students, 26(52%) had poor knowledge, 22(44%) had fair knowledge, and 2(4%) had good knowledge on breast cancer and its prevention.

Table 1. Frequency and percentage distribution of adolescent's school going girls according to the demographic variables (N=50).

S.N.	Sample characteristics	Frequency	Percentage (%)
1	***Residence***		
	Urban	44	88
	Rural	6	12
2	***Age of Adolescent Girls***		
	12–14 years	46	92
	15–17 years	4	8
	18–19 years	0	0
3	***Grade/class***		
	6th–8th Class	8	16
	9th–10th Class	41	82
	11th–12th Grade	1	2
4	***Family history of breast cancer***		
	Yes	9	18
	No	35	70
	Maybe	4	8
	Don't Know	2	4

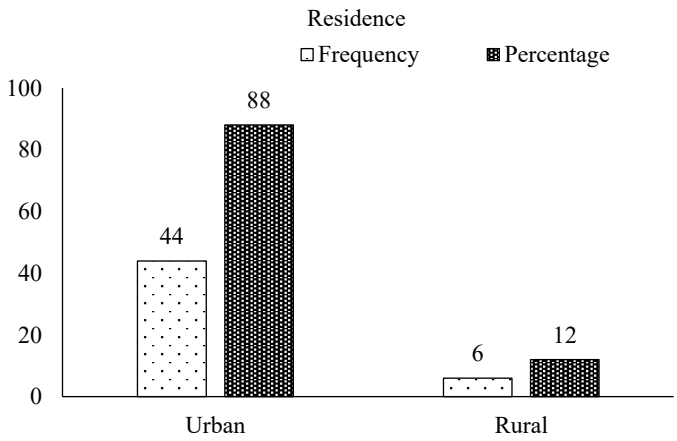

Figure 1. A 3 D column diagram representing the frequency and percentage distribution of adolescent school going girls in terms of their residence.

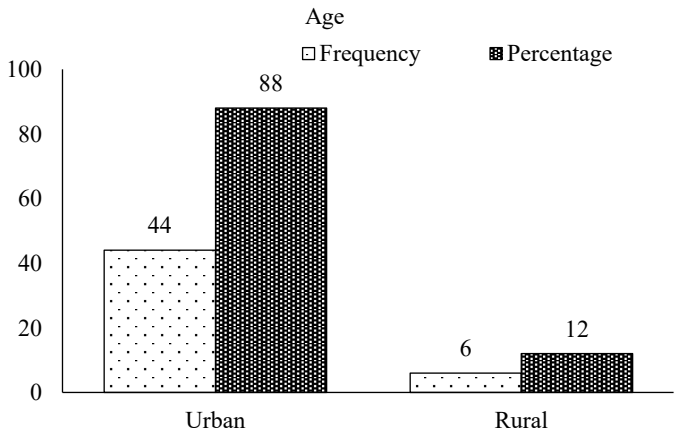

Figure 2. 2 D column diagram representing the frequency and percentage distribution of adolescent school going girls in terms of their age.

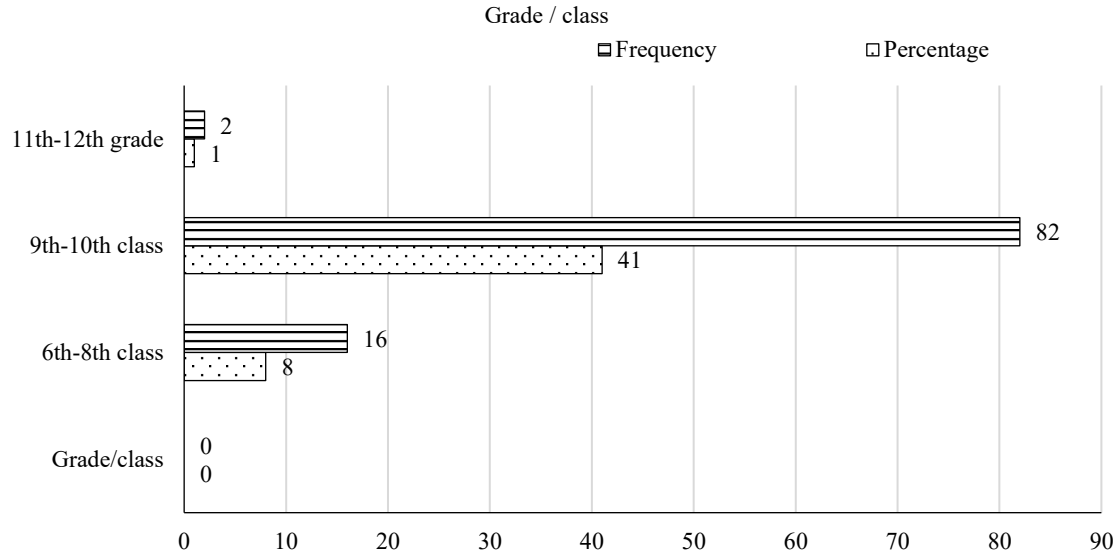

Figure 3. A 3 D bar diagram representing the frequency and percentage distribution of adolescent school going girls in terms of their Grade/class.

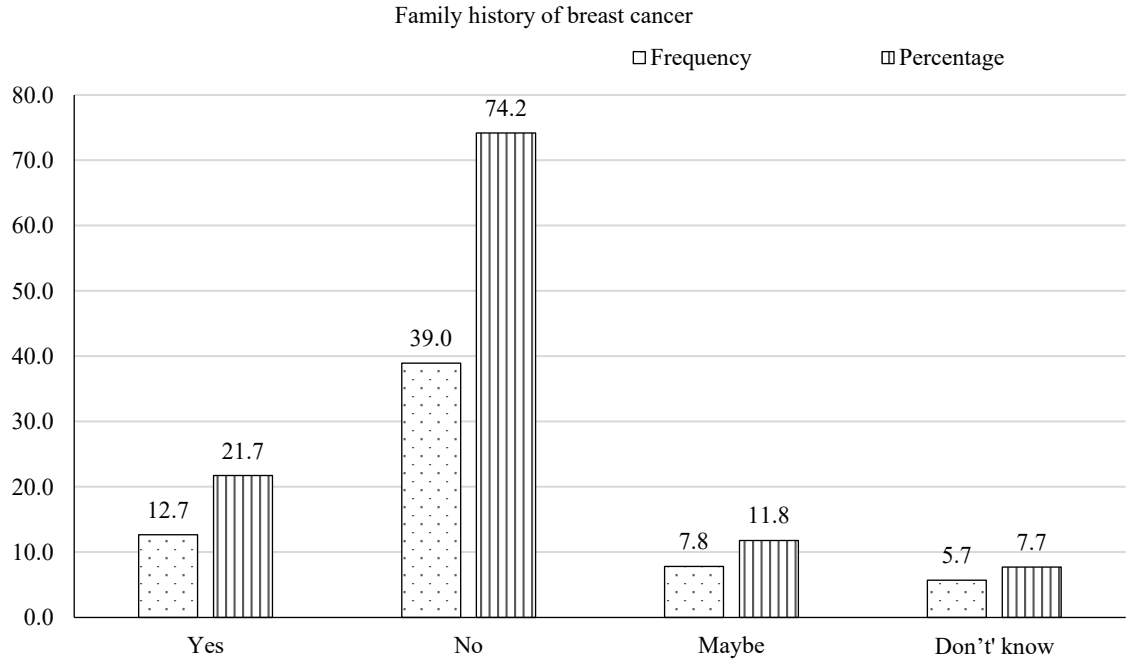

Figure 4. A 3 D column diagram representing the frequency and percentage distribution of adolescent school going girls in terms of their family history of breast cancer.

Table 2. Frequency and percentage distribution of knowledge levels among adolescent school girls regarding breast cancer and its preventive measures (N=50).

Knowledge	Frequency	Percentage (%)
Good (7 and above)	2	4
Fair (4–6)	22	44
Poor (0–3)	26	52

The data in the Table 3 presents the mean (6.54), Median (7), Mode (7) and standard deviation (1.692842) of knowledge scores (Figure 5).

Table 3. Mean median, mode and standard deviation of knowledge scope.

Total score	Possible Range of score	Obtained range of score	Mean	Median	Mode	Standard deviation
13	0–13	3–11	6.54	7	7	1.692842

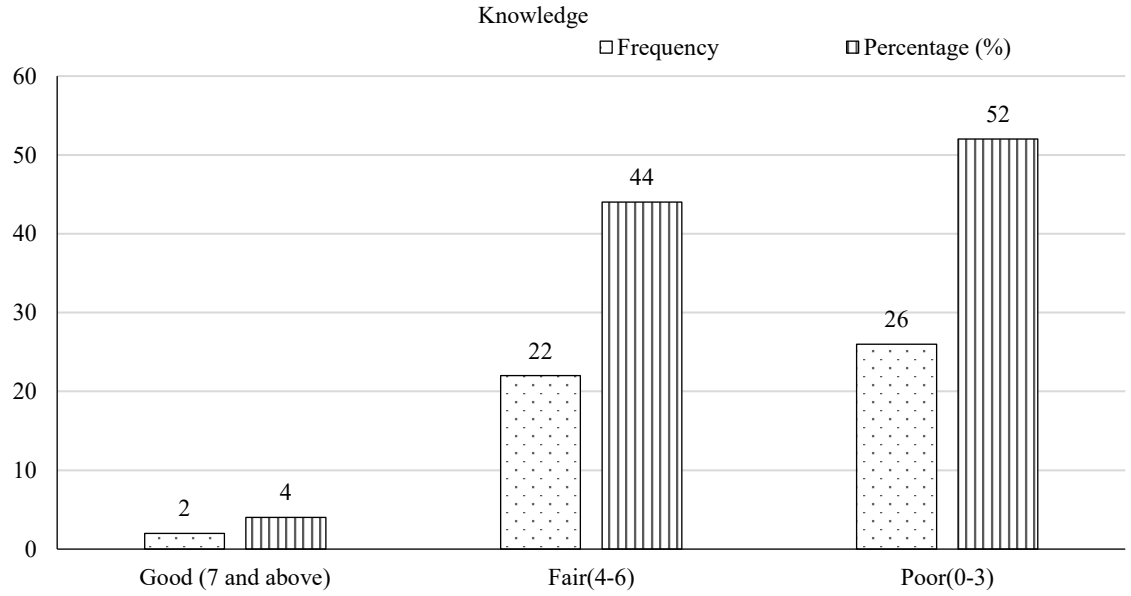

Figure 5. 3-D Bar diagram representing the frequency and percentage of adolescent school going girls in terms of Knowledge.

Table 4. Association between the levels of knowledge on breast cancer among adolescents school going girls (N=50).

S. N.	Sample Characteristics	Percentage of Obtained Knowledge Scores			Chi-square	D.F	Value of p
		Poor	*Fair*	*Good*			
1	*Age of Adolescent Girls*						
	12–14 years	10	7	3	12.5171	4	0.01389
	15–17 years	3	12	1			
	18–19 years	4	4	6			
2	*Grade/Class*						
	6th–8th Class	25	3	2	5.2106	3	0.2663
	9th–10th Class	5	2	1			
	11th–12th Grade	6	4	2			
3	*Family History of Breast Cancer*						
	Yes	1	1	2	7.4785	4	0.2788
	No	15	5	2			
	Maybe	9	1	1			
	Don't know	10	1	2			

**Significant at level of p<0.05*

The chi-square test revealed that there was significant association between ages of adolescent school-going girls (Table 4).

The data in Table 5 reveals the frequency and percentage distribution of level of attitude among adolescent school-going girls regarding breast cancer and its prevention. Out of 50 students, 29(58%) had favorable attitude, and 21(42%) had unfavorable attitude toward breast cancer and its prevention.

The Table 6 displays the mean, median, mode, and standard deviation of the attitude scores. The results show that the mean score (5.74) is slightly lower than both the median (6) and the mode (6), while it is higher than the standard deviation (1.468) (Figure 6). The chi-square test revealed that there was significant association between age of adolescent school-going girls (Table 7).

Table 5. Frequency and percentage distribution of Attitude among adolescent school going girls regarding breast cancer and its prevention (N=50).

Attitude	Frequency	Percentage
Favorable (6–10)	29	58
Unfavorable (0–5)	21	42

Table 6. Mean median mode and standard deviation of the attitude (N=50).

Total score	Mean	Median	Mode	Standard Deviation
10	5.74	6	6	1.468

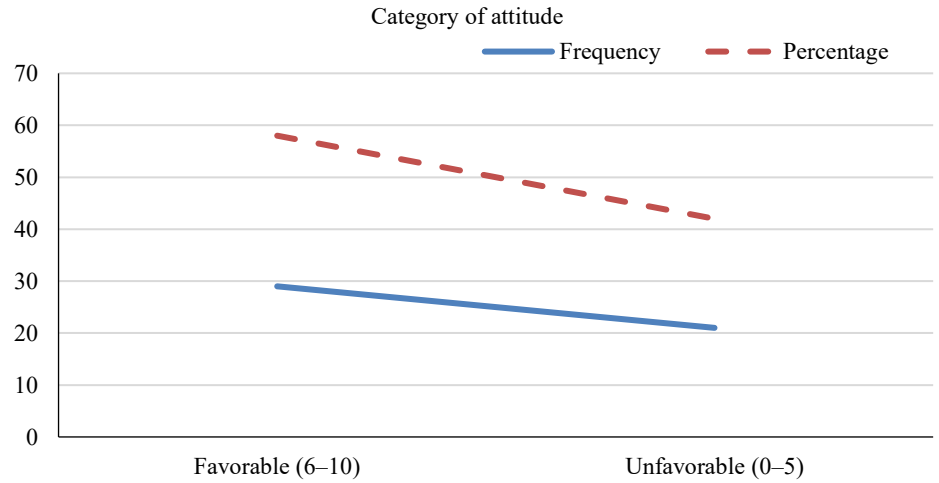

Figure 6. A line diagram representing the percentage and frequency distribution of attitude among adolescent school going girls regarding breast cancer and its prevention.

Table 7. Association between attitude among adolescents school going girls regarding breast cancer and its prevention (N=50).

S.N.	Sample characteristics	Attitude Score Obtained		Chi-square	D.F	Value of p
		Favorable	*Unfavorable*			
1	*Age of Adolescent Girls*					
	12–14 years	6	10	8.8406	2	0.0120*
	15–17 years	8	3			
	18–19 years	19	4			
2	*Grade/Class*					
	6th–8th Class	7	2	1.2055	2	0.5473
	9th–10th class	6	5			
	11th–12th Grade	20	10			
3	*Family History of Breast Cancer*					
	Yes	10	4	5.2851	3	0.1520
	No	5	6			
	Maybe	10	5			
	Don't Know	3	7			

**Significant at level of p<0.05*

Table 8 illustrates the frequency and percentage distribution of practice levels related to breast cancer and its prevention among adolescent school girls. Out of a total of 50 participants, 43 students (86%) demonstrated inadequate practice, while only 7 students (14%) showed adequate practice in relation to breast cancer awareness and preventive measures.

The data in Table 9 presents the mean, median, mode and standard deviation of practice scores. The data indicate that the mean (3.26) is greater than median (3), mode (2) and standard deviation is (1.860) (Figure 7).

DISCUSSION

In the current study, researchers evaluated the levels of knowledge, attitude, and practice regarding breast cancer and its prevention among adolescent school girls. A comparable study by Mohebi et al., titled "Female High School Students' Knowledge and Attitude Toward Breast Cancer", found that 87% of students lacked awareness or had incorrect information about breast cancer screening [4]. While many participants were aware of the potential risk of developing breast cancer, they had limited understanding of its symptoms, risk factors, and preventive strategies. Notably, students with a family history of breast cancer scored higher in terms of mammography awareness than those without such a background. Similarly, in the present study, 52% of students showed a poor level of knowledge, and results indicated a link between knowledge levels and factors such as age, grade, and family history.

Supporting evidence comes from a study by Umalakshmi, Professor at VHS, M.A. Chidambaram College of Nursing, Chennai, titled "A Study to Assess the Knowledge on Preventive Measures of Breast Cancer among Adolescent Girls at Selected Settings, Chennai" [5]. This study revealed that 20% of participants had poor knowledge, 70% had moderate knowledge, and only 10% demonstrated good knowledge regarding breast cancer.

Table 8. Frequency and percentage distribution of practice score among adolescent school-going girls (N=50).

Practice	Frequency	Percentage
Adequate (4–8)	7	14
Inadequate (0–3)	43	86

Table 9. Mean median mode and standard deviation of the practice (N=50).

Total score	Mean	Median	Mode	Standard deviation
8	3.26	3	2	1.860

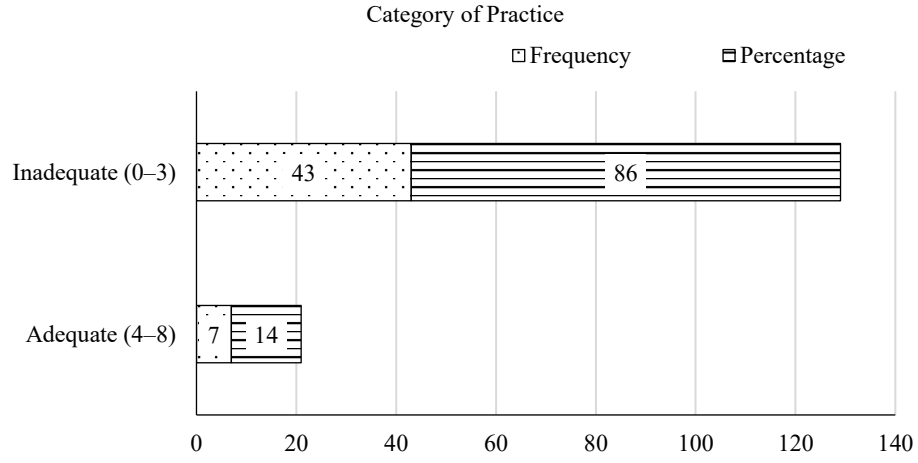

Figure 7. A stacked bar diagram representing the percentage and frequency distribution of practice regarding breast cancer and its prevention among adolescent school going girls.

It also highlighted a significant association between knowledge of preventive measures and demographic factors like age. In alignment with these findings, the current study observed that 52% of participants had poor knowledge, 44% had fair knowledge, and only 2% had a good understanding of breast cancer. Furthermore, among the 50 students surveyed, 43 (86%) showed inadequate practice, while only 7 (14%) demonstrated adequate preventive practices.

Another relevant study by Jadhav et al., titled "Knowledge, Attitude, and Practice of Breast Self-Examination Is Associated With General Self-Care and Cultural Factors: A Study from Tamil Nadu, India", reported that a majority of participants had insufficient knowledge (58%), unfavorable attitudes (73.8%), and poor breast self-examination (BSE) practices (89.6%) [6]. Similarly, in the present study, 52% of the girls had poor knowledge, 44% had inadequate practice, but their attitudes toward breast cancer prevention were largely positive.

In a separate study by Dahiya et al., titled "Knowledge and Practices Related to Screening for Breast Cancer Among Women in Delhi, India", it was found that 67% of participants identified pain or discharge from the breast or nipple as a symptom, and 57% recognized a breast lump as a primary indicator of breast cancer [7]. In line with this, the current study also observed that adolescent girls exhibited limited knowledge and inadequate practices regarding breast cancer and its early detection [7–10].

CONCLUSION

Based on the study findings, the following conclusions were made:

- The majority of participants demonstrated limited knowledge regarding breast cancer and its preventive strategies.
- Most of the respondents exhibited a positive attitude toward breast cancer awareness and prevention.
- A significant portion of the participants showed insufficient practical application of preventive measures related to breast cancer.

Limitations

- The information collected from the subjects was based solely on responses obtained through a structured questionnaire schedule.
- The study was confined to a small number of subjects, which limits the generalization of the findings of the study.
- Tool used for the data collection was developed for the purpose of the study by investigators as no standard tools could be found.

Conflict of Interest

There is no conflict of interest in the study.

Declaration

Ethical approval and consent to participate

Prior conducting the study an informed consent has been taken from the sample.

Funding Statement

No extra fund is taken from any other source of mean.

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