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Research Article

A Pre-Experimental Study to Assess The Effectiveness of a Structured Teaching Programme on Knowledge Regarding Breast Self-Examination Among Female Students at South Campus, University of Kashmir, Anantnag

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A B S T R A C T

Background: Breast cancer is the most common cancer among women worldwide and a leading cause of cancer-related mortality. According to the World Health Organization, approximately 2.3 million women were diagnosed with breast cancer and about 685,000 deaths occurred globally in 2022. In India, breast cancer accounts for nearly 192,000 new cases and over 91,000 deaths annually, making it the most prevalent cancer among females.

Objectives: To assess pre-test knowledge related to Breast self-examination, to evaluate the effectiveness of STP by comparing pre-test with post-test knowledge regarding Breast self-examination, to find out association between pre-test knowledge regarding breast self examination with selected demographic variables among female students of South Campus, University of Kashmir, Anantnag.

Materials and Methods: A quantitative pre experimental one-group pre-test post-test design was adopted. 40 female students were selected using purposive sampling.

Results: The mean pre -test knowledge score was 15.7 ± 6.077 (52.30%) , which increased markedly to a mean post-test score of 27.98 ± 2. 259 (93.30%). The students with inadequate knowledge decreased from 6 (15%) in pre-test to 0 (0%) in post-test, which indicates the effectiveness of the structured teaching programme.

Conclusion: The structured teaching programme significantly improved knowledge regarding BSE.

Keywords: Assess, Effectiveness, Structured Teaching Programme, Knowledge, Breast Self-Examination

Introduction

Breast cancer is the most common cancer among women worldwide and a leading cause of cancer-related mortality. According to the World Health Organization, approximately 2.3 million women were diagnosed with breast cancer, and about 685,000 deaths occurred globally in 2022.[1] In India, breast cancer accounts for nearly 192,000 new cases and over 91,000 deaths annually, making it the most prevalent cancer among females.[2]

Early detection plays a crucial role in reducing mortality and improving survival outcomes. Breast self-examination (BSE) is a simple, cost-effective, and non-invasive method that promotes breast awareness and facilitates early identification of abnormalities. [3]. However, studies indicate that although awareness of BSE exists, regular and correct practice among young women remains low, mainly due to inadequate knowledge and lack of structured education. [4]

Structured teaching programmes have been shown to significantly improve knowledge and practice of BSE.[5] Therefore, assessing their effectiveness among female students is essential for promoting early detection behaviours.

Need For The Study

Breast cancer poses a significant and growing health burden globally, nationally, and regionally. In Jammu and Kashmir, breast cancer is the leading cancer among women, accounting for approximately 11% of female cancers.[6] Regional data indicate a rising trend, with over 900 cases reported annually and more than 400 deaths projected each year. [7] Reports also suggest that over 9,000 cases were recorded between 2019 and 2023, with an increasing incidence among women under 50 years of age.[8]

A major concern is that more than 50% of cases are diagnosed at advanced stages, largely due to lack of awareness and inadequate screening practices.[9] Despite the importance of breast self-examination, studies reveal that less than 30–40% of young women practice BSE regularly, highlighting a significant gap between knowledge and practice. [4]

India has a large female population, with nearly 355 million women in the reproductive age group, making young females an important target for preventive education.[10] Educational institutions provide an ideal setting for implementing structured teaching programmes.

In the context of South Campus, University of Kashmir, there is limited evidence regarding knowledge of BSE among female students. Considering the rising incidence, high mortality, and low awareness levels in Kashmir, there is a clear need to implement and evaluate structured teaching interventions.

Thus, the present study aims to assess the effectiveness of a structured teaching programme on knowledge regarding breast self-examination among female students.

Materials and Methods

Study Design: A pre-experimental one-group pre-test post-test design was adopted. This design involves measuring outcomes before and after an intervention in the same group without a control group.

Study Setting: The study was conducted at South Campus, University of Kashmir, Anantnag.

Study Population: Female students enrolled in various departments of the campus.

Sample Size and Sampling Technique: A sample size of 40 participants was selected using non-probability purposive sampling based on feasibility and availability during the study period.

Inclusion Criteria

- Female students present during data collection
- Female students willing to participate

Exclusion Criteria

- Students with prior formal education on BSE
- Students unwilling to participate

Data Collection Tool

A self-structured questionnaire was developed based on literature review and expert validation. It consisted of:

- **Section A**: Demographic variables
- **Section B**: Knowledge-based multiple-choice questions

Each correct response was awarded one mark. The total score ranged from 0 to 30.

Scoring Criteria

- **Inadequate knowledge**: <50% (0–10)
- **Moderately adequate**: 50–75% (11–20)
- **Adequate**: >75% (21–30)

Reliability

The tool demonstrated good internal consistency (Cronbach's alpha = 0.85).

Intervention (Structured Teaching Programme)

The STP was developed using standard nursing literature and expert consultation. It included:

- Concept and importance of BSE
- Risk factors and warning signs
- Step-by-step BSE procedure
- Frequency and timing

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The programme was delivered through lecture-cum-discussion and demonstration using visual aids. Duration was 30–45 minutes.

Data Collection Procedure

Participants were approached in classrooms after obtaining institutional permission. Written informed consent was obtained. A pre-test was conducted, followed by STP and a post-test after 7 days.

Ethical Considerations

Ethical approval was obtained from the institutional authority. Confidentiality and anonymity were ensured. Participation was voluntary.

Statistical Analysis

Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (paired t-test and chi-square test). A p-value < 0.05 was considered statistically significant.

Results

Interpretation: The majority of participants were aged 21–25 years (50%) and belonged to rural areas (52.5%). Most were undergraduate students (62.5%). Books/journals (37.5%) were the primary source of information.

Interpretation: Most participants (62.5%) had moderate knowledge, while 15% had inadequate knowledge, indicating insufficient baseline awareness of BSE.

Table 1.Frequency and Percentage Distribution of Participants According to Selected Demographic Variables

Variables	Opts	Percentage	Frequency
Age	20 years	17.5%	7
	21 - 25 years	50.0%	20
	26 - 30 years	30.0%	12
	> 30 years	2.5%	1
Residence	Rural	52.5%	21
	Urban	32.5%	13
	Semi-urban	15.0%	6
Qualification	Undergraduate	62.5%	25
	Postgraduate	35.0%	14
	PhD	2.5%	1
	Others	0.0%	0
Source of information	Mass media	2.5%	1
	Health professional	30.0%	12
	Books and journals	37.5%	15
	Peer group	30.0%	12
Department	English	37.5%	15
	Urdu	22.5%	9
	Education	20.0%	8
	Others	20.0%	8

Table 2.Frequency and Percentage Distribution of Participants According to Selected Demographic Variables

Criteria Measure of Pretest Knowledge Score	
Score Level(N= 40)	**Pre Test f(%)**
Inadequate Knowledge.(0-10)	6(15%)
Moderate Knowledge.(11-20)	25(62.5%)
Adequate Knowledge.(21-30)	9(22.5%)

Maximum Score=30 Minimum Score=0

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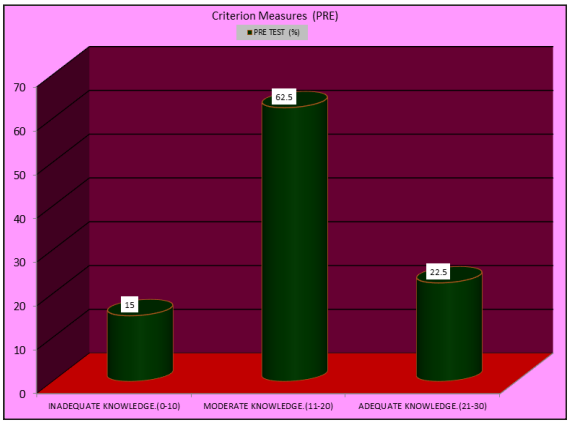

Figure 1.Diagram showing percentage distribution of pre-test knowledge scores

Interpretation: The mean score (52.30%) indicates moderate knowledge, with a wide range (3–28) suggesting variability among participants.

Interpretation: After the intervention, 95% of participants achieved adequate knowledge, indicating a marked improvement.

Interpretation: The high mean score (93.30%) with low variability indicates consistent and excellent knowledge after the intervention.

Interpretation: The comparison of pre-test and post-test knowledge levels shows a remarkable improvement in participants' knowledge regarding breast self-examination (BSE) following the structured teaching programme.

Table 3.Descriptive Statistics of Pre-Test Knowledge Scores

Descriptive Statistics	Mean	S.D	Median Score	Maximum	Minimum	Range	Mean%
Pretest Knowledge	15.70	6.077	15.5	28	3	25	52.30

Maximum=30, Minimum=0

Table 4.Frequency and Percentage Distribution of Post-Test Level of Knowledge

Criteria Measure of Posttest Knowledge Score	
Score Level(N= 40)	**Post Test f(%)**
Inadequate Knowle Dge.(0-10)	0(0%)
Moderate Knowledge.(11-20)	2(5%)
Adequate Knowledge.(21-30)	38(95%)

Maximum Score=30 Minimum Score=0

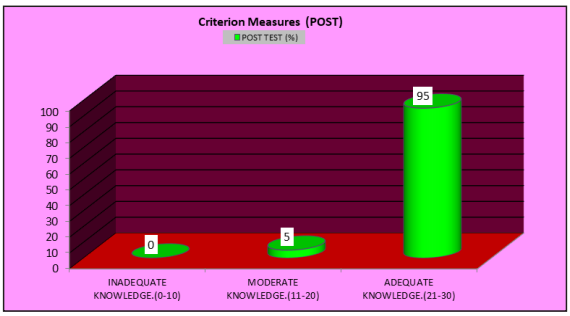

Figure 2.Diagram showing percentage distribution of post-test knowledge scores

Table 5.Descriptive Statistics of Post-Test Knowledge Scores

N=40

Descriptive Statistics	Mean	S.D	Median Score	Maximum	Minimum	Range	Mean%
Posttest Knowledge	27.98	2.259	28	30	20	10	93.30

Maximum=30, Minimum=0

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In the pre-test, the majority of participants 25 (62.5%) had moderate knowledge, 9 (22.5%) had adequate knowledge, and 6 (15%) had inadequate knowledge. However, in the post-test, a significant shift was observed, where 38 (95%) participants attained adequate knowledge, 2 (5%) remained in the moderate category, and none (0%) had inadequate knowledge.

Interpretation: The results indicate a substantial improvement in knowledge regarding breast self-examination following the structured teaching programme. The mean pre-test knowledge score was 15.7 ± 6.077 (52.30%), which increased markedly to a mean post-test score of 27.98 ± 2.259 (93.30%).

The mean difference of 12.280 reflects a considerable gain in knowledge after the intervention. The calculated paired t-value (t = 13.68) is much higher than the table value (2.02) at the 0.05 level of significance, and the p-value is < 0.001, indicating that the difference is highly statistically significant.

This clearly demonstrates that the structured teaching programme was highly effective in improving the knowledge of participants regarding breast self-examination. The results confirm that the improvement in knowledge was not due to chance but was a direct outcome of the educational intervention.

The chi-square analysis was performed to determine the association between pre-test knowledge levels on breast self-examination (BSE) and selected socio-demographic variables.

The findings reveal that there was no statistically significant association between pre-test knowledge scores and most of the selected variables, including age ($\chi^2 = 7.233$, $p = 0.300$), residence ($\chi^2 = 4.312$, $p = 0.365$), source of information ($\chi^2 = 1.084$, $p = 0.982$), and department ($\chi^2 = 2.007$, $p = 0.919$), as the p-values were greater than 0.05. This indicates that participants' baseline knowledge regarding BSE was independent of these variables.

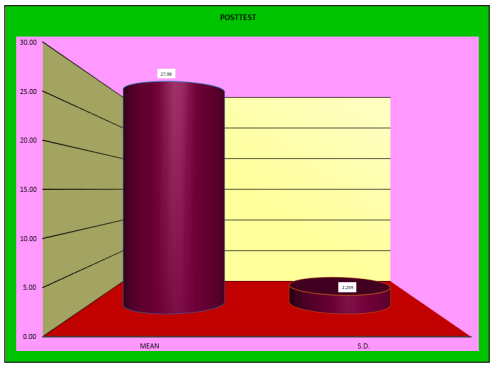

Figure 3.Diagram representing descriptive statistics of post-test knowledge

Table 6.Comparison of Pre-Test and Post-Test Knowledge Levels

Criteria Measure of Knowledge Score		
Score Level(N= 40)	**Pre Test f(%)**	**Post Test f(%)**
Inadequate Knowledge.(0-10)	6(15%)	0(0%)
Moderate Knowledge.(11-20)	25(62.5%)	2(5%)
Adequate Knowledge.(21-30)	9(22.5%)	38(95%)

Maximum=30, Minimum=0

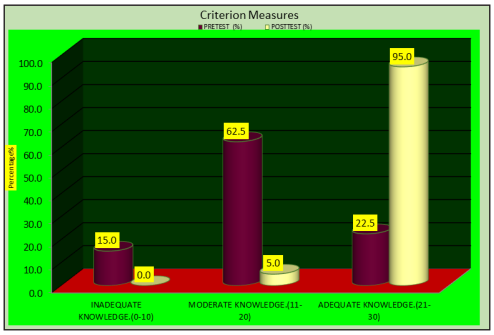

Figure 4.Diagram showing comparison of pre-test and post-test knowledge levels

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Table 7.Comparison of Mean Pre-Test and Post-Test Knowledge Scores Using Paired t-Test

Paired T Test	Mean±S.D	Mean%	Range	Mean Diff.	Paired T Test	P value	Table Value at 0.05
Pretest Knowledge	15.7±6.077	52.30	3-28	12.280	13.68 Sig	<0.001	2.02
Posttest Knowledge	27.98±2.259	93.30	20-30				

Significance Level 0.05, Maximum=30, Minimum=0

Table 8.Association of Pretest Knowledge Scores With Selected Socio-Demographic Variables

Variables	Opts	Adequate Knowledge	Moderate Knowledge	Inadequate Knowledge	Chi Test	P Value	df	Table Value	Result
Age	20 years	2	5	0	7.233	0.300	6	12.592	Not Significant
	21 - 25 years	5	12	3					
	26 - 30 years	2	8	2					
	> 30 years	0	0	1					
Residence	Rural	5	12	4	4.312	0.365	4	9.488	Not Significant
	Urban	3	10	0					
	Semi-urban	1	3	2					
Qualification	Undergraduate	8	13	4	10.378	0.035	4	9.488	Significant
	Postgraduate	1	12	1					
	PhD	0	0	1					
	Others	0	0	0					
Source of information	Mass media	0	1	0	1.084	0.982	6	12.592	Not Significant
	Health professional	3	7	2					
	Books and journals	4	9	2					
	Peer group	2	8	2					
Department	English	3	10	2	2.007	0.919	6	12.592	Not Significant
	Urdu	3	4	2					
	Education	2	5	1					
	Others	1	6	1					

Discussion

However, a statistically significant association was found between educational qualification and pre-test knowledge ($\chi^2 = 10.378$, $p = 0.035$), as the p-value was less than 0.05. This suggests that participants with higher educational qualifications tended to have better baseline knowledge about breast self-examination.

The present study demonstrated a statistically significant improvement in knowledge regarding breast self-examination following the structured teaching programme. The findings are consistent with previous studies, which have reported that structured educational interventions significantly enhance awareness and understanding of BSE among young women.

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The substantial increase in post-test scores highlights the effectiveness of interactive teaching methods, including demonstration and discussion. These approaches facilitate better comprehension and retention of information compared to passive learning methods.

The lack of association between most socio-demographic variables and knowledge suggests that educational interventions are broadly effective across different groups. However, the significant association with educational qualification indicates that baseline academic exposure may influence knowledge acquisition.

These findings emphasize the importance of incorporating structured health education programmes into academic curricula and community health initiatives to promote early detection practices.

Conclusion

The study concludes that the structured teaching programme was highly effective in improving knowledge regarding breast self-examination among female students. Integrating such programmes into academic curricula can enhance early detection practices and reduce breast cancer burden.

Recommendations

- Conduct large-scale studies with control groups
- Include practical demonstrations and skill assessment
- Implement community-based awareness programmes

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