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EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON BREAST SELF-EXAMINATION AMONG WOMENS OF ASRAWAL KALAN, PRAYAGRAJ

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Abstract : Breast cancer is the most common cancer among women in India, and early detection plays a crucial role in reducing mortality and improving survival. Breast Self-Examination (BSE) is a simple, cost-effective, and non-invasive screening method; however, its practice remains low among rural women due to inadequate knowledge and limited access to health education. The present experimental study aimed to evaluate the effectiveness of a Structured Teaching Programme (STP) on knowledge and practice of Breast Self-Examination among women of Asrawal Kalan village, Prayagraj, Uttar Pradesh. A pre-test and post-test control group design was adopted, and 112 women were selected using purposive and convenient sampling techniques. Data were collected using a structured knowledge questionnaire and an observation checklist for BSE practice. The intervention consisted of a 60-minute Structured Teaching Programme incorporating lectures, audio-visual aids, demonstration on a manikin, hands-on practice, and interactive discussion. Pre-test and post-test assessments were conducted, and data were analyzed using descriptive statistics and paired t-test. The pre-intervention findings indicated poor levels of knowledge and practice of BSE among most participants. Following the intervention, a statistically significant improvement was observed, with the mean knowledge score increasing from 13.42 ± 3.20 to 25.00 ± 2.15 ($t = 28.14$, $p < 0.001$) and the mean practice score improving from 8.35 ± 2.50 to 16.60 ± 1.80 ($t = 26.88$, $p < 0.001$). The study concluded that the Structured Teaching Programme was highly effective in enhancing both knowledge and practice of Breast Self-Examination among rural women, highlighting the importance of regular, structured health education interventions to promote early detection of breast cancer and improve women's health outcomes.

IndexTerms **- Breast cancer, Breast Self-Examination, Structured Teaching Programme, Early detection.**

I. INTRODUCTION

Breast cancer is a major public health problem in India and the most common cancer among Indian women, accounting for approximately 19–34% of all female cancer cases[1]. Nearly 80,000 new cases are reported annually, and about one in 26 women is likely to develop breast cancer in her lifetime[2]. The rising incidence, particularly among younger women, is a growing concern for healthcare professionals and policymakers.

Breast cancer is a malignant tumor arising from the epithelial cells of the breast ducts or lobules. Although risk factors such as early menarche, hormonal influences, obesity, family history, and genetic predisposition are known, effective primary prevention is still lacking. Therefore, early detection through screening remains the most practical strategy to reduce mortality and improve survival [3,4].

The main screening methods include breast self-examination (BSE), clinical breast examination (CBE), and mammography. However, CBE and mammography require medical facilities and trained personnel, which are often inaccessible to women in rural areas like Asrawal Kalan village of Prayagraj, Uttar Pradesh. In contrast, BSE is a simple, safe, non-invasive, and cost-free method that women can perform independently at home [5,6].

BSE involves regular observation and palpation of the breasts to identify abnormal changes such as lumps, skin dimpling, or nipple discharge. It is recommended to be performed monthly, preferably a few days after menstruation. Regular practice helps women recognize normal breast texture and detect abnormalities early. Evidence suggests that women can detect up to 95% of breast cancers and about 65% of early minimal breast cancers through BSE. Proper practice of BSE may reduce breast cancer mortality by approximately 18% [7].

Despite its benefits, BSE practice remains low in rural areas due to lack of knowledge, fear, embarrassment, cultural barriers, and limited health awareness. In villages like Asrawal Kalan, traditional beliefs and poor access to health education further contribute to late diagnosis. Studies indicate that structured educational interventions significantly improve knowledge and practice of BSE among rural women.

In this context, the present study was designed to assess the knowledge and practice of breast self-examination among girls and women of Asrawal Kalan village, Prayagraj (U.P.), and to evaluate the effectiveness of a structured teaching program in improving their awareness and performance of BSE.

II. RESEARCH METHODOLOGY

The study population consisted of adult women residing in Asrawal Kalan. A total of 112 participants were selected using a purposive and convenient sampling technique based on inclusion criteria. The participants were then divided into experimental and control groups to receive the Structured Teaching Programme or routine information, respectively.

2.1Population and Sample

The study population consisted of adult women residing in Asrawal Kalan. A total of 112 participants were selected using a purposive and convenient sampling technique based on inclusion criteria. The participants were then divided into experimental and control groups to receive the Structured Teaching Programme or routine information, respectively.

2.2 Data collection procedure

Data were collected using a standardized, structured questionnaire comprising three sections. Section I assessed socio-demographic characteristics, including age, religion, residential area, monthly family income, and mass media exposure. Section II evaluated knowledge regarding Breast Self-Examination (BSE) using a 30-item multiple-choice questionnaire covering breast anatomy and physiology, definition and importance of BSE, causes of breast cancer, and steps of BSE. Each correct response was scored as one and incorrect as zero, with total scores categorized as excellent (24–30), good (18–23), average (15–17), and poor (<15). Section III assessed BSE practice using a 20-item observation checklist, where each correctly performed step received one score. Practice levels were classified as excellent (16–20), good (12–15), average (10–11), and poor (<10). The tools were validated by subject experts and tested for reliability using the test–retest method, yielding a reliability coefficient of r = 0.84, indicating high reliability.

The Structured Teaching Programme consisted of lectures, audio-visual aids (charts, posters, flip books, and flash cards), demonstration on a manikin, hands-on practice, and interactive discussions to clarify doubts. The intervention session lasted approximately 60 minutes and was administered only to the experimental group.

Formal permission was obtained from the Gram Pradhan of Asrawal Kalan, Prayagraj. The study purpose was explained to participants, and written informed consent was obtained. A pre-test was conducted for both experimental and control groups using the structured questionnaire and observation checklist. Following this, the intervention was delivered to the experimental group. A post-test was conducted for both groups 15 days after the intervention using the same tools to assess effectiveness.

2.3 Statistical tools and analysis

The collected data were reviewed daily for completeness and consistency, manually edited, coded, and entered into SPSS version 20 for analysis. Descriptive statistics, including mean, standard deviation, frequency, and percentage, were used to summarize the data. Inferential statistics were applied using the paired t-test to compare pre-test and post-test scores. The level of statistical significance was set at $p < 0.05$.

2.4 Ethical consideration

Ethical clearance was obtained from the Institutional Ethics Committee of United University. Written informed consent was secured from all participants after clearly explaining the study objectives, potential benefits, and possible risks. Confidentiality and anonymity were strictly maintained, and participants' identities were not recorded on any data collection instruments. Participants with suspicious findings during Breast Self-Examination were referred to qualified clinicians for further evaluation and appropriate management.

III. RESULTS AND DISCUSSION

3.1 Socio-Demographic Characteristics

The analysis of the 112 participants reveals that the 40.2% (n = 45) were in the age group of 26–35 years, followed by 33.9% (n = 38) aged 18–25 years, while 25.9% (n = 29) were above 35 years. The majority of the participants were Hindu (82.1%, n = 92), followed by Muslims (14.3%, n = 16) and others (3.6%, n = 4). Nearly half of the participants (48.2%, n = 54) had a monthly family income of less than ₹5,000, whereas 37.5% (n = 42) reported an income between ₹5,001 and ₹10,000, and 14.3% (n = 16) had an income above ₹10,000. With regard to media exposure, 42.9% (n = 48) had low or occasional exposure, 37.5% (n = 42) had no exposure, and only 19.6% (n = 22) reported high or regular exposure to mass media. In terms of educational status, 39.3% (n = 44) of the participants had completed primary school education, followed by 35.7% (n = 40) with middle school education, while 25.0% (n = 28) had secondary school education.

Table-1: This table establishes the baseline demographics for your study population.

Variables	Category	Frequency (f)	Percentage (%)
Age (Years)	18–25	38	33.9%
	26–35	45	40.2%
	>35	29	25.9%
Religion	Hindu	92	82.1%
	Muslim	16	14.3%
	Others	4	3.6%
Monthly Family Income	< ₹5,000	54	48.2%
	₹5,001 – ₹10,000	42	37.5%
	> ₹10,000	16	14.3%
Media Exposure	High (Regular)	22	19.6%
	Low (Occasional)	48	42.9%
	No Exposure	42	37.5%

Education	Primary School	44	39.3%
	Middle School	40	35.7%
	Secondary School	28	25.0%

The socio-demographic profile of the participants indicated that the majority belonged to the reproductive age group, with 40.2% of the participants aged between 26–35 years. Most of the participants were Hindu (82.1%) and nearly half (48.2%) had a monthly family income of less than ₹5,000, reflecting a predominantly low socioeconomic background. In addition, a considerable proportion of participants had low or no exposure to mass media (80.4%) and limited educational attainment, with the majority having education only up to primary or middle school level. These factors may have contributed to inadequate baseline knowledge and poor practice of BSE observed during the pre-intervention assessment the agreement between the present results and those of BK and Kaphle, 2023[8] may be attributed to similar experimental conditions.

3.2: Effectiveness of STP on Knowledge Levels

The distribution of participants according to knowledge categories showed that during the pre-intervention phase, more than half of the participants (53.6%, n = 60) had poor knowledge, followed by 33.9% (n = 38) with average knowledge and 12.5% (n = 14) with good knowledge, while none of the participants were in the excellent category. After the intervention, a marked improvement was observed, with 64.3% (n = 72) achieving excellent knowledge and 27.7% (n = 31) attaining good knowledge, whereas only 8.0% (n = 9) remained in the average category and none were categorized as poor. The mean knowledge score increased from 13.42 ± 3.20 in the pre-intervention phase to 25.00 ± 2.15 in the post-intervention phase, with a mean difference of 11.58, indicating a substantial improvement in knowledge following the intervention.

Table-2 This shows the shift in understanding regarding breast anatomy, cancer causes, and BSE importance.

Knowledge Category	Score Range	Pre-Intervention f (%)	Post-Intervention f (%)
Excellent	24–30	00 (0.0%)	72 (64.3%)
Good	18–23	14 (12.5%)	31 (27.7%)
Average	15–17	38 (33.9%)	09 (8.0%)
Poor	<15	60 (53.6%)	00 (0.0%)
Total		112 (100%)	112 (100%)

The pre-intervention findings revealed that more than half of the participants (53.6%) had poor knowledge regarding BSE, and none demonstrated excellent knowledge. Similarly, 67.9% of the participants exhibited poor practice of BSE prior to the intervention, with no participant performing BSE at an excellent level. These findings highlight a significant gap in awareness and practical skills related to BSE among the study population, emphasizing the need for structured educational interventions. In line with the present investigation, Chinnarani et al., 2023[9] also reported comparable outcomes.

3.3: Effectiveness of STP on Practice Scores

The distribution of participants according to practice categories revealed that during the pre-intervention phase, the majority of participants (67.9%, n = 76) demonstrated poor practice of Breast Self-Examination, followed by 23.2% (n = 26) with average practice and 8.9% (n = 10) with good practice, while none of the participants exhibited excellent practice. Following the intervention, a substantial improvement in practice was observed, with 60.7% (n = 68) achieving excellent practice and 30.4% (n = 34) demonstrating good practice, whereas only 8.9% (n = 10) remained in the average category and none were classified as having poor practice. The mean practice score increased from 8.35 ± 2.50 in the pre-intervention phase to 16.60 ± 1.80 in the post-intervention phase, with a mean difference (gain) of 8.25, indicating a significant improvement in practice after the intervention.

Table-3 This reflects the success of the manikin demonstration and hands-on practice session.

Practice Category	Score Range	Pre-Intervention f (%)	Post-Intervention f (%)
Excellent	16–20	00 (0.0%)	68 (60.7%)
Good	12–15	10 (8.9%)	34 (30.4%)
Average	10–11	26 (23.2%)	10 (8.9%)
Poor	<10	76 (67.9%)	00 (0.0%)
Total		112 (100%)	112 (100%)
Mean Practice Score		8.35	16.60
Standard Deviation		±2.50	±1.80
Mean Difference (Gain)		---	8.25

Following the implementation of the Structured Teaching Programme, a marked improvement was observed in both knowledge and practice levels. Post-intervention results showed that 64.3% of participants attained excellent knowledge, while 27.7% achieved good knowledge, with none remaining in the poor category. The mean knowledge score increased substantially from 13.42 ± 3.20

in the pre-test to 25.00 ± 2.15 in the post-test, with a mean difference of 11.58. The paired t-test value of 28.14 at $p < 0.001$ confirmed that this improvement was statistically highly significant. Comparable results have been reported earlier by Pleasant et al., 2025[10].

3.4 Paired t-test Comparative Analysis

The paired t-test analysis revealed a statistically significant improvement in both knowledge and practice scores following the intervention. The mean knowledge score increased from 13.42 ± 3.20 in the pre-test to 25.00 ± 2.15 in the post-test, with a mean difference of 11.58. The calculated paired t-value was 28.14, which was statistically significant at $p < 0.001$. Similarly, the mean practice score improved from 8.35 ± 2.50 during the pre-test to 16.60 ± 1.80 in the post-test, showing a mean difference of 8.25. The paired t-value for practice was 26.88, which was also statistically significant at $p < 0.001$. These findings indicate that the structured teaching programme was highly effective in improving both knowledge and practice related to Breast Self-Examination.

Table-4 The following table provides the effect of Structured Teaching Programme paired t-test analysis.

Assessment Domain	Test	Mean ($\bar{x}$)	SD (σ)	Mean Diff.	Paired t-value	p-value
Knowledge	Pre-test	13.42	3.20	11.58	28.14	< 0.001 **Significant**
	Post-test	25.00	2.15			
Practice	Pre-test	8.35	2.50	8.25	26.88	< 0.001 **Significant**
	Post-test	16.60	1.80			

A similar trend was observed in the practice of BSE. Post-intervention, 60.7% of participants demonstrated excellent practice and 30.4% showed good practice, while none remained in the poor category. The mean practice score increased from 8.35 ± 2.50 during the pre-test to 16.60 ± 1.80 in the post-test, with a mean gain of 8.25. The paired t-test value of 26.88 at $p < 0.001$ further established the statistical significance of this improvement. The agreement between the present results and those of Gupta *et al*., 2009[11], Singh *et al*., 2025[12] may be attributed to similar experimental conditions.

The significant enhancement in knowledge and practice can be attributed to the comprehensive nature of the Structured Teaching Programme, which included lectures, audio-visual aids, demonstration using a manikin, hands-on practice sessions, and interactive discussions. The use of multiple teaching methods likely facilitated better understanding, retention of information, and skill acquisition among participants, especially considering their limited educational background.

IV. Conclusion

Overall, the findings of the study confirm that the Structured Teaching Programme was highly effective in improving both knowledge and practice related to Breast Self-Examination. The statistically significant improvements observed in post-test scores underscore the importance of structured, need-based educational interventions in empowering women with essential self-care practices for early detection of breast abnormalities.

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