

Evaluate the Effectiveness of Educational Program Regarding Breast Cancer in Terms of the Knowledge and Attitude among Women in Rural Area, Kheda District

Gondaliya Parita¹, Solanki Payal², Bhabhor Payal³, Patel Prachi H.⁴, Patel Prachi K.⁵

Research Guide: Ms. Angel Christian, Assistant Professor, Dinsha Patel College of Nursing, Gujarat

Abstract: Breast cancer is the most common cancer among women worldwide and a major cause of death. Early detection greatly improves survival, but awareness and timely healthcare access remain limited, especially in rural areas of India. Women often face challenges such as lack of education, cultural barriers, and poor access to screening and treatment, leading to lower survival rates. In regions like Kheda district, Gujarat, there is limited understanding of women's knowledge and attitudes toward breast cancer. This study aims to assess awareness and perceptions among rural women, helping identify gaps and guide effective community-based health education programs. A research design adopted in the study is pre-test -post-test research design. The pilot study was conducted PHC salun Kheda District. The main study was conducted at PHC and rural area of Palana, Kheda district. The study showed before the educational program, most women had average knowledge about breast cancer (83), with only 11% having good knowledge. After the program, there was a significant improvement, with only 98% of women having a good knowledge and none having poor knowledge. Attitude also improved, as initially 96 % had an unfavourable attitude, will after the program 89% had a moderately favourable attitude and 11% developed a favourable attitude, with a no unfavourable attitude remaining. The main knowledge score increased from 12.83 to 17.96 and the mean attitude score improved from 54.42 to 57.60, indicating that the educational program was effective in enhancing both knowledge and attitude regarding breast cancer prevention. The study attempted to evaluate the effectiveness of educational program on knowledge and attitude towards breast cancer among women in rural area of Kheda district and found that the educational program was effective in increasing knowledge and improving attitude regarding breast cancer among women in rural area of Kheda district. A significant improvement in knowledge was observed after the administration of educational program on breast cancer. The majority of women 98 (98.0%) had good level of knowledge, A significant improvement in the attitude of women was observed after the administration of educational program on breast cancer. The majority of women 89 (89.0%) had a moderately favourable attitude.

Keywords: Breast cancer, Knowledge, Attitude, Women.

1. Introduction

Breast cancer is the most common cancer among women worldwide and a leading cause of cancer-related deaths. Early detection and timely treatment can significantly improve survival, but awareness and health-seeking behavior remain low, especially in rural areas of developing countries like India.

In India, breast cancer cases are increasing in both urban and rural populations. However, women in rural areas face challenges such as limited awareness, cultural barriers, and poor access to screening and treatment facilities. These factors often lead to late diagnosis and lower survival rates compared to developed countries. Breast cancer is influenced by factors like age, genetics, hormonal changes, and lifestyle. Although advancements in diagnosis and treatment have improved survival globally, outcomes in India remain poor due to lack of awareness and healthcare access. Survivors often experience physical and psychological issues such as fatigue, pain, depression, fear of recurrence, and body image concerns, which affect their quality of life. There is limited research on women's knowledge and attitudes toward breast cancer in rural regions like Kheda district, Gujarat. This study aims to assess these aspects and identify gaps to improve public health interventions.

2. Need of the Study

Breast cancer is most common cancer among Indian women, accounting for **28.2%** of all new female cancer cases nationwide. India sees approximately **138,000** new cancer cases annually, with breast cancer leading among women. According to NFHS and other survey only **1%** eligible women (45+) undergo mammography in India.

Gujrat recorded 9,414 new breast cancer in 2018, a sharp increase from **8,001** in **2016** a **13 %** rise over just two years, exceeding the national average rise of **12.4 %**, mortality from breast and cervical cancer in Gujrat rose by **27 %** between 2014 and 2023, in line with the national upward trend (~26%). on average, **16** women die daily in Gujrat from breast and uterine cancer- totaling over **20,300** lives lost in five years. over **50 %** of breast cancer cases in Gujrat are diagnosed at loco-regional or advanced stages, significantly reducing survival chances. National five – years survival rates are **66.4%** but areas like Ahmedabad (urban Gujarat) perform slightly above average (~ **72.7 %**) primarily due to earlier detection.

Adolescent girls aren't high-risk, but early health education promotes self-examination and long-term preventive habits. Mothers often determine healthcare practice at home; their attitude influence early detection behaviors. There is a research gap: limited studies jointly targeting both

adolescent girls and their mothers, especially in rural settings like Kheda.

3. Objectives

- 1) To assess the level of knowledge of women before and after administration of an educational program on breast cancer, its risk factors, symptoms, and screening methods in selected rural area of Kheda district.
- 2) To evaluate the attitude of women before and after administration of an educational program on breast prevention and their influence on their health behavior.

Hypothesis

H1: The mean post-test knowledge score of women will be significantly higher than the mean pre-test knowledge score after administration of educational program on breast cancer as evident from the structured knowledge questionnaire at 0.05 level of significance.

H2: The mean post-test attitude score of women will be significantly higher than their mean pre-test attitude score after the administration of educational program on breast cancer as evident from the 5-point Likert scale at 0.05 level of significance.

4. Methodology

Study Research Design & Setting: A quantitative, pre-test post-test research design was employed to assess The knowledge and attitude related to breast cancer among the women in Kheda district. The study was 100 women in selected area.

Eligibility Criteria: The study included women aged 20 to 60 years who were residing in the selected rural households or communities and were willing to participate by providing informed consent. Women who were outside the specified age range, not residing in the selected rural areas during study period, or unwilling to provide consent were excluded. Additionally, women who were mentally or physically unable to understand the language of the questionnaire, unable to understand the language of the questionnaire, or suffering from any serious illness or cognitive impairment that could limit their participation were also excluded from the study.

Sample Size & Sampling Technique: The sample for this study considered of women who met the predefined inclusion and exclusion criteria, with a total sample size of 100 participants.

Sample size determination is a crucial aspect of any empirical study, as it ensures that the number of observations is adequate to make valid inferences about the target population.

A well-defined sample size enhances the reliability and generalizability of the study findings. In this study, participants were selected using a random sampling technique, which is considered an effective method to minimize selection bias and improve the representativeness of the sample.

This approach ensured that each eligible participant had an equal chance of being included in the study, thereby increasing the accuracy and validity of the research outcomes.

Data Collection Procedure: The investigator has taken permission from the higher the investigator conducted face to face interview to collect data by using demographic data sheet, structured questionnaire tool and educational teaching program.

Teaching Plan: Based on the study findings, a simple and easy to understand identified gaps in knowledge and attitude regarding breast cancer among the women. It aims to enhance their understanding and promote better knowledge in daily lifestyle.

To ensure clarity and practical application, the PPT was prepared in the local language with clear instruction, step-by-step guidelines, and practical tips for effective implementation.

Description of the tool:

The data collection tool was a structured instrument developed by the researchers to assess knowledge and attitude regarding breast cancer. It consisted of three sections:

Part 1: captured demographic details including age, marital status, educational qualification, types of family, diet, occupation, family history of breast cancer, history of breast fibroids or lump, menopause, P.C.O.D.

Part 2: Comprised a 20 multiple choices questionnaire on breast cancer. And

Part 3: included 5-point Likert scale used by the researcher during on-site visits to directly assess knowledge and attitude about breast cancer, minimizing reporting bias. The tool was validated by seven nursing experts, indicating strong content validity. For better comprehension and applicability, it was prepared in the English and Gujarati language.

Ethical Consideration

Ethical clearance for the study was received from the Institutional Ethical Committee of Maganbhai Adenwala Mahagujarat University, Nadiad. Before data collection, formal permissions were obtained from the institution, health center, and individual participants. Informed consent was obtained after explaining the study's objectives and procedures. Participant confidentiality was strictly maintained by using coded identifiers during data entry and analysis, ensuring confidentiality.

5. Result

Table 1: Frequency and percentage distribution of Women's according to their selected demographic variables (n = 100).

Demographic Variables	Category	Frequency	Percentage
Age in years	20-30 years	30	30.0%
	31-40 years	24	24.0%
	41-50 years	21	21.0%
	51-60 years	25	25.0%
Marital Status	Single	19	19.0%
	Married	72	72.0%
	Divorce	1	1.0%
	Widow	8	8.0%
Educational Qualification	Primary education	14	14.0%
	Secondary education	28	28.0%
	Higher education	13	13.0%
	Graduation	45	45.0%
Type of Family	Nuclear	23	23.0%
	Joint	76	76.0%
	Extended	1	1.0%
Diet Pattern	Vegetarian	92	92.0%
	Mixed	8	8.0%
Occupation	Homemaker	68	68.0%
	Government job	2	2.0%
	Private job	17	17.0%
	Business	3	3.0%
	Other	10	10.0%
Family History of Breast Cancer	No	93	93.0%
	Mother	3	3.0%
	Any other	4	4.0%
	Yes	1	1.0%

History of Breast Fibroids or Lump	No	99	99.0%
Menopause Status	Yes	29	29.0%
	No	71	71.0%
PCOD	Yes	1	1.0%
	No	99	99.0%

Table 1: The table shows that most women were aged 20–30 years (30%), married (72%), graduates (45%), belonged to joint families (76%), and followed a vegetarian diet (92%). Most participants were homemakers (68%) and had no family history of breast cancer, breast lump history, or PCOD.

Table 2: Presents the frequency and percentage distribution of women according to their pretest and post- test level of knowledge regarding breast cancer among women in the rural area of Kheda district (n = 100).

Pretest and Posttest Level of Knowledge	Knowledge Pretest Level		Knowledge Posttest Level	
	Frequency	Percentage	Frequency	Percentage
Average	83	83.0%	2	2.0%
Good	11	11.0%	98	98.0%
Poor	6	6.0%	0	0%

Table 2: The table shows that before the intervention, most women had average knowledge (83%) regarding breast cancer, while after the intervention, the majority had good knowledge (98%). Poor knowledge decreased from 6% in the pretest to 0% in the posttest, indicating improvement in knowledge levels.

Table 3: Shows the frequency and percentage distribution of women according to their pretest and post-test level of attitude regarding breast cancer prevention among women in the rural area of Kheda district (n = 100).

Pretest and Posttest Level of Attitude	Attitude Pretest Level		Attitude Posttest Level	
	Frequency	Percentage	Frequency	Percentage
Unfavourable Attitude	4	4%	0	0%
Moderate Favourable Attitude	96	96%	89	89%
Favourable Attitude	0	0%	11	11%

Table 3: The table shows improvement in women's attitude regarding breast cancer prevention after the post-test, with favourable attitude increasing from 0% to 11% and unfavourable attitude reducing from 4% to 0%.

Table 4: Presents the descriptive statistics of pretest and post -test knowledge and attitude scores regarding breast cancer among women in the rural area of Kheda district (n = 100).

Descriptive Statistics	Range	Minimum	Maximum	Mean	Std. Deviation
Knowledge Pretest	15	5	20	12.83	2.24
Knowledge post-test	5	15	20	17.96	0.53
Attitude Pretest	36	28	64	54.42	5.38
Attitude Posttest	35	45	80	57.60	7.52

Table 4 shows the descriptive statistics of pretest and post-test knowledge and attitude scores regarding breast cancer among women in the rural area of Kheda district (n=100). The mean knowledge score increased from 12.83 in the pretest to 17.96 in the post-test, indicating improvement in knowledge after the educational program. Similarly, the

mean attitude score increased from 54.42 in the pretest to 57.60 in the post-test, showing a positive change in attitude. The findings suggest that the educational program was effective in improving both knowledge and attitude regarding breast cancer among rural women.

Table 5: Comparison of Pretest and Post-test Mean Knowledge and Attitude Scores among Women Regarding Breast Cancer Using Paired t-Test (n = 100)

Paired -t test Comparison	Mean	Std. Deviation	Mean Difference	Paired-t Score	df	Sig. (2-tailed)
Knowledge Pretest	12.83	2.24	5.13	22.48	99	0.000 S
Knowledge post-test	17.96	0.53				
Attitude Pretest	54.42	5.38	3.18	3.13	99	0.002 S
Attitude Posttest	57.60	7.52				

Table 5 shows the comparison of pretest and post-test mean knowledge and attitude scores regarding breast cancer among women using the paired t-test (n=100). The mean knowledge score increased from 12.83 ± 2.24 in the pretest to 17.96 ± 0.53 in the post-test, with a mean difference of 5.13 and a paired t-value of 22.48, which was statistically significant ($p=0.000$). Similarly, the mean attitude score increased from 54.42 ± 5.38 in the pretest to 57.60 ± 7.52 in the post-test, with a mean difference of 3.18 and a paired t-value of 3.13, which was also statistically significant ($p=0.002$). The findings indicate that the educational program was effective in improving both knowledge and attitude regarding breast cancer among women.

Table 6: Correlation Between Knowledge and Attitude Scores of Women Regarding Breast Cancer in Pretest and Posttest (n = 100)

Variables	Pearson Correlation (r)	p-value	Remark
Knowledge Pretest & Attitude Pretest	0.185	0.065	NS
Knowledge Posttest & Attitude Posttest	-0.012	0.908	NS

Table 6 shows the correlation between knowledge and attitude scores regarding breast cancer

among women in pretest and post-test (n=100). In the pretest, the Pearson correlation coefficient was 0.185 with a p-value of 0.065, indicating a weak positive correlation that was not statistically significant. In the post-test, the correlation coefficient was -0.012 with a p-value of 0.908, showing no significant correlation between knowledge and attitude scores. Therefore, there was no statistically significant relationship between knowledge and attitude regarding breast cancer among the women at the 0.05 level of significance.

6. Discussion

The present finding of this study reveal critical insights into the knowledge and attitude related to breast cancer among women in kheda district. Interestingly, while the participants had a Moderate mean knowledge score (12.83 ± 5.13).

7. Conclusion

The study concluded that the educational program was effective in improving knowledge and attitude regarding breast cancer among women in the rural area of Kheda district.

After the intervention, most women showed good knowledge and a more favorable attitude towards breast cancer prevention.

The increase in mean knowledge and attitude scores was statistically significant, proving the effectiveness of the program.

However, no significant correlation was found between knowledge and attitude scores in both pretest and post-test assessments.

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