

1 **A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING**
2 **PROGRAMME ON KNOWLEDGE REGARDING BREAST CANCER AND IT'S**
3 **PREVENTION AMONG THE COMMUNITY AREA IN SELECTED**
4 **COMMUNITIES, BENGALURU.**

5 **ABSTRACT**

6 The escalating incidence of breast cancer among Indian women necessitates a robust focus on
7 health literacy and primary prevention as core strategies for reducing mortality. Although
8 early detection is critical, widespread gaps in awareness within local communities often
9 impede the timely identification of symptoms and the adoption of preventive behaviours.
10 This research was conducted to evaluate the baseline knowledge regarding breast cancer and
11 to determine the effectiveness of a Planned Teaching Programme (PTP) among residents in a
12 selected urban community in Bengaluru. Employing a pre-experimental, one-group pre-test
13 post-test design, data were gathered from 50 participants using a validated tool comprising
14 demographic profiles and a 30-item knowledge scale. The statistical analysis utilized
15 frequency distribution, mean percentages, and inferential tests, including the paired t-test and
16 chi-square, to assess the impact of the intervention.

17 The initial assessment revealed that 70% of the subjects possessed inadequate knowledge,
18 while only 6% reached an adequate level prior to the teaching session. Following the
19 implementation of the PTP, a significant shift was observed: 60% of the participants moved
20 into the moderate knowledge category and 26% achieved an adequate score. The mean
21 knowledge score demonstrated a substantial rise from 14.12 to 20.76, with a paired t-test
22 confirming the improvement was statistically significant ($t = 8.42, p < 0.001$). Furthermore,
23 the analysis showed that the source of prior information was the only demographic variable
24 significantly linked to baseline awareness. These results underline the critical need for
25 structured community outreach and prove that targeted educational modules are highly
26 successful in empowering the public with life-saving preventive information.

27 **KEY WORDS:** Breast Cancer Awareness, Community Health Nursing, Planned Teaching
28 Programme (PTP), Preventive Oncology, Knowledge Enhancement, Early Detection.

29
30 **INTRODUCTION**

31 Breast cancer currently stands as the most frequently diagnosed malignancy among women in
32 India, representing a major public health challenge that requires urgent attention through
33 community-based education. As a primary recommendation by global health bodies, the
34 emphasis on early detection and lifestyle modification serves as a fundamental pillar in the
35 fight against rising cancer mortality. This proactive approach facilitates early diagnosis,
36 enhances the success of clinical treatments, and significantly improves the quality of life for
37 survivors. Nevertheless, in many local settings, these preventive measures are often neglected
38 due to a lack of structured information and persistent social stigmas surrounding breast
39 health.

40 Nursing professionals, acting as essential health educators, are uniquely positioned to
41 transform community attitudes and promote evidence-based screening. However, a
42 disconnect often exists between general awareness and the technical understanding required
43 for effective prevention. While previous research has explored general health habits, there is a
44 scarcity of data focusing specifically on the impact of structured, planned teaching on the
45 preventive competencies of residents in urban community clusters.

46 This study is designed to measure the current knowledge levels of community residents in
47 Bengaluru and to analyse how a Planned Teaching Programme can function as a
48 transformative educational tool. By pinpointing specific areas of ignorance and providing a
49 successful model for intervention, this research aims to advocate for the integration of
50 oncology education into routine community health services, ultimately fostering a culture of
51 early detection and informed self-care.

52

53 In the Indian context, breast cancer has overtaken cervical cancer as the leading cause of
54 mortality among women. In urban centers like Bengaluru, the sedentary lifestyle and
55 changing reproductive patterns have contributed to a steady rise in cases. Unlike Western
56 nations where mammography is routine, Indian women rely heavily on "Self-Awareness" for
57 detection.

58 Prevention in the community involves two tiers: Primary Prevention (lifestyle modifications,
59 diet, and breastfeeding) and Secondary Prevention (early detection via Breast Self-
60 Examination). Unfortunately, myths, lack of privacy, and fear of diagnosis often prevent
61 community members from seeking information. This study evaluates how a structured,
62 community-centered teaching approach can dismantle these barriers.

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65 **IMPACT AND IMPLICATIONS IN THE INDIGENOUS CONTEXT**

66 The findings of this study have significant implications for local and indigenous communities
67 in and around Bengaluru, where cultural traditions, modest family customs, and varying
68 levels of health literacy can influence the acceptance of cancer screening. The knowledge
69 gaps identified among community residents highlight the urgent need to strengthen
70 community health nursing initiatives so that future professionals can effectively advocate for
71 breast health in culturally diverse and sensitive settings.

72 In many local contexts, traditional beliefs and the stigma associated with breast disorders
73 often discourage women from self-examination or seeking clinical advice, making culturally
74 grounded education essential. When community members are equipped with accurate,
75 evidence-based knowledge through a Planned Teaching Programme (PTP), they can better
76 understand the life-saving benefits of early detection while feeling respected within their
77 social framework. Integrating such structured teaching modules into community outreach

78 allows for a more meaningful dialogue, helping to dismantle the fear and myths surrounding
79 a cancer diagnosis.

80 By empowering the community with clear information on prevention and screening, the
81 burden of advanced-stage breast cancer can be reduced. This lead to improved health-seeking
82 behaviour, higher rates of early-stage diagnosis, and enhanced maternal and women's health
83 outcomes—particularly in semi-urban areas where access to specialized diagnostic facilities
84 like mammography may be limited. Thus, the study reinforces the need for culturally
85 responsive health education to promote better survival rates and healthier futures for women
86 within these indigenous and local populations.

87

88 **RESEARCH QUESTIONS**

- 89 1. What is the baseline level of knowledge regarding breast cancer and its prevention
90 among residents in a selected community area in Bengaluru?
- 91 2. What proportion of community participants demonstrate inadequate, moderate, or
92 adequate knowledge regarding breast cancer risk factors and preventive measures?
- 93 3. Is there a significant association between the community residents' socio-
94 demographic variables (such as age, gender, type of family, place of residence, and
95 source of information) and their pre-test knowledge levels?
- 96 4. How effective is a Planned Teaching Programme (PTP) in enhancing the knowledge
97 and awareness of community residents regarding breast cancer and its prevention?

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99

100 **MATERIALS AND METHODS**

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102 **DESIGN**

103 A non-experimental, pre-experimental one-group pre-test post-test design was employed to
104 assess the effectiveness of a Planned Teaching Programme (PTP) on knowledge regarding
105 breast cancer and its prevention among community residents. This quantitative design was
106 chosen to measure the change in knowledge levels at two points—before and after the
107 intervention—and to examine associations with selected socio-demographic variables. The
108 study was conducted in a selected community area in Bengaluru. A convenience sample of 50
109 residents meeting the inclusion criteria participated. Data were collected using a validated
110 structured questionnaire consisting of two sections: socio-demographic items and 30
111 knowledge items (scored 0–30). Descriptive statistics (frequency, percentage, mean, mean
112 percentage, standard deviation) were used to summarize pre-test and post-test knowledge
113 levels. Inferential statistics (paired t-test and chi-square test) were used to determine the
114 effectiveness of the Planned Teaching Programme and to examine associations between pre-

115 test knowledge scores and demographic variables. Ethical considerations included
116 institutional permission, informed written consent from participants, confidentiality of
117 responses, and voluntary participation.

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122 **SETTING**

123 The study was conducted in a selected community area in Bengaluru, Karnataka. Data
124 collection took place in the community setting after obtaining formal permission from the
125 local authorities and institutional heads.

126 **PARTICIPANTS**

127 Participants were a convenience sample of 50 community residents who met the study criteria
128 and provided written consent. Inclusion criteria specified residents who were available and
129 willing to participate at the time of data collection, while those who were absent or declined
130 participation were excluded.

131 **SAMPLE CHARACTERISTICS**

132 The sample size (N=50) primarily consisted of participants in the age groups of under 20
133 years and 20–29 years, with a majority being female (72%). Additional demographic
134 variables such as gender, source of previous information, place of residence, and type of
135 family were recorded as part of the socio-demographic questionnaire. Recruitment was
136 performed through non-probability convenience sampling. Confidentiality, voluntary
137 participation, and written consent were strictly maintained throughout the study duration.
138 Institutional permission and expert guidance from the research supervisor were obtained prior
139 to the commencement of data collection.

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142 **RESEARCH INSTRUMENT**

143 The research instrument used in this study was a structured questionnaire developed to assess
144 knowledge regarding breast cancer and its prevention among community residents. It
145 consisted of two sections. Section A included socio-demographic variables such as age,
146 gender, previous source of information, place of residence, and type of family. Section B
147 contained 30 multiple-choice knowledge questions related to the anatomy of the breast, risk
148 factors of breast cancer, clinical manifestations, preventive measures, and the technique of
149 Breast Self-Examination (BSE).

150 Each correct answer was given a score of 1 and each incorrect answer a score of 0, with a
151 total score ranging from 0 to 30. Based on the scores, knowledge was categorized as
152 inadequate (<50% or 0–15), moderate (51–75% or 16–22), and adequate (>75% or 23–30).
153 The tool was developed in English, validated by experts in the field of Medical-Surgical
154 Nursing and Oncology, and pre-tested for clarity and accuracy. Reliability was ensured
155 through internal consistency. The questionnaire was suitable for objective and efficient
156 assessment while maintaining anonymity and minimizing response bias.

157

158 **DATA COLLECTION**

159 Data collection was carried out in June 2024 at selected community areas in Bengaluru, after
160 obtaining necessary permissions from local authorities and institutional heads. Participants
161 were selected using convenience sampling, and only those who met the inclusion criteria and
162 provided written informed consent were included in the study. At the beginning of the
163 session, the investigators introduced themselves, explained the purpose and significance of
164 the study, and assured the participants of their confidentiality and the voluntary nature of their
165 participation.

166 The structured questionnaire was first administered as a pre-test to assess the baseline
167 knowledge of the residents regarding breast cancer and its prevention. Immediately following
168 the pre-test, the Planned Teaching Programme (PTP) was implemented. The intervention
169 involved a structured teaching session supported by visual aids such as charts, flashcards, and
170 a demonstration of Breast Self-Examination (BSE). Participants were encouraged to clarify
171 doubts during the session. After the intervention, the same structured questionnaire was
172 administered as a post-test to assess the improvement in knowledge.

173 The completed questionnaires were collected immediately to prevent discussion among
174 participants or any external influence on the results. Anonymity was strictly maintained, and
175 participants were encouraged to provide honest responses. The collected data were
176 subsequently organized, coded, and entered into a master sheet for statistical analysis using
177 descriptive and inferential methods based on the established study objectives.

178

179 **ETHICAL CONSIDERATIONS**

180 Ethical principles were strictly followed to protect the rights and dignity of the community
181 participants. Formal permission was obtained from the Principal of Smt. Nagarathamma
182 College of Nursing, and approval was taken from the research guide and local community
183 leaders. Participants were fully informed about the purpose, significance, and procedures of
184 the study, and the voluntary nature of their participation was emphasized.

185 Written informed consent was obtained from each resident prior to the pre-test, and they were
186 clearly informed that they could withdraw from the study at any stage without any penalty or
187 negative consequences. Confidentiality and anonymity were ensured by avoiding any
188 personal identifiers in the questionnaires and in the reporting of findings. All collected data

189 were stored securely and utilized solely for research purposes. No physical, psychological, or
190 social harm was caused to the participants during the Planned Teaching Programme (PTP).
191 The study strictly adhered to the fundamental ethical principles of respect, beneficence, and
192 justice.

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197 **STATISTICAL ANALYSIS**

198 The collected data were coded, organized, and analysed according to the study objectives
199 using descriptive and inferential statistics. Descriptive statistics such as frequency,
200 percentage, mean, mean percentage, and standard deviation (SD) were used to summarize
201 demographic variables and assess pre-test and post-test knowledge levels regarding breast
202 cancer and its prevention. Knowledge was categorized into inadequate, moderate, and
203 adequate levels.

204 Inferential statistics included the paired t-test to evaluate the effectiveness of the Planned
205 Teaching Programme (PTP) and the chi-square (χ^2) test to determine the association
206 between pre-test knowledge scores and selected demographic variables such as age, gender,
207 source of information, place of residence, and type of family. A significance level of

208 $p < 0.05$ was used to determine statistical significance. Results were presented in structured
209 tables and figures to support clear interpretation and comprehensive discussion of the
210 findings.

211

212 **RESULTS**

213 The study aimed to assess the effectiveness of a Planned Teaching Programme (PTP) on
214 knowledge regarding breast cancer and its prevention among residents in selected community
215 areas of Bengaluru. Data were collected from 50 participants using a structured questionnaire
216 in pre-test and post-test formats. The results are presented in four sections: socio-
217 demographic characteristics, criteria-wise knowledge analysis, overall pre-test and post-test
218 knowledge scores, and association between pre-test knowledge and selected socio-
219 demographic variables.

220 **Section I: Socio-demographic characteristics**

221 **Table 1: Distribution of community residents according to demographic variables**

222 (N = 50)

S1.no	Demographic data	Frequency	Percentage
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1	Age (years)		
	Under 20	10	20%
	20-29	33	66%
	30-39	4	8%
	40-49	3	6%
2	Gender		
	Male	14	28%
	Female	36	72%
3	Place of residence		
	Rural	13	26%
	Urban	37	74%
4	Type of family		
	Nuclear	41	82%
	Joint	9	18%

223

224 Table 1 shows that the majority of participants belonged to the age group of 20–29 years
 225 (66%). Most respondents were female (72%), with males accounting for 28% of the sample.
 226 In terms of residence, 74% of the participants were from urban areas, while 26% were from
 227 rural settings. Regarding family structure, the vast majority lived in nuclear families (82%),
 228 while 18% were from joint families.

229

230 Section II: Criteria-wise knowledge analysis

231 **Table 2: Criteria-wise distribution of knowledge levels (N = 50)**

Level of knowledge	score	Pre-test	Post-test
		Freq (%)	Freq (%)
Inadequate	< 50%	35 (70%)	7(14%)
Moderate	51-75%	12 (24%)	30 (60%)
Adequate	>75%	3 (6%)	13 (26%)

232

233 Table 2 depicts the level of knowledge regarding breast cancer and its prevention before and
234 after the Planned Teaching Programme. In the pre-test, 70% of the participants had
235 inadequate knowledge, 24% had moderate knowledge, and only 6% demonstrated adequate
236 knowledge. After the intervention, knowledge improved substantially: 60% achieved
237 moderate knowledge and 26% attained adequate knowledge. These results reflect a marked
238 improvement in community awareness following the structured PTP.

239

240 Section III: Overall knowledge scores

241 **Table 3: Overall knowledge score analysis (N = 50)**

Variable	Mean	Std. deviation	Std. Error Mean	t value	p value
Pre-test score	14.12	6.64	0.550	8.42	<0.001
Post-test score	20.76	6.39	0.639	df (49)	(sig)

242

243 Table 3 compares the mean knowledge scores before and after the intervention using a paired
244 t-test. The mean pre-test score was 14.12, while the post-test mean score increased to 20.76.
245 The calculated t-value was 8.42 with df = 49 and a highly significant p-value of < 0.001 (p <
246 0.05). This confirms that the Planned Teaching Programme was statistically significant in
247 enhancing knowledge about breast cancer and its prevention.

248

249 Section IV: Association between knowledge and demographic variables

250 **Table 4: Association between socio-demographic variables and pre-test knowledge (N =**
251 **50)**

Variable	χ^2 value	p-value	Inference
Gender	0.41	0.52	Not Significant
Age (years)	1.86	0.60	Not Significant
Place of residence	0.88	0.35	Not Significant

Type of family	0.56	0.45	Not Significant
Source of information	5.92	0.05	Significant

252

253 Table 4 examines the association between pre-test knowledge levels and selected
 254 demographic variables. A statistically significant association was found between knowledge
 255 levels and the **source of information** ($\chi^2 = 5.92$, $p = 0.05$). No significant associations
 256 were found for age, gender, residence, or family type. This suggests that while baseline
 257 knowledge was influenced by the participants' exposure to media or health workers, the PTP
 258 intervention was effective across all demographic subgroups.

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260

261 **DISCUSSION**

262 The present study evaluated the effectiveness of a Planned Teaching Programme (PTP) on
 263 knowledge regarding breast cancer and its prevention among community residents in
 264 Bengaluru. The findings showed that most participants had only inadequate knowledge in the
 265 pre-test, indicating a limited understanding of breast cancer risk factors and screening
 266 methods despite the increasing prevalence of the disease. After the intervention, post-test
 267 scores increased significantly, demonstrating that the Planned Teaching Programme was
 268 highly effective in improving the residents' knowledge. This supports existing evidence that
 269 structured, face-to-face educational interventions can significantly strengthen health literacy
 270 regarding preventive oncology.

271 These results are consistent with previous studies in India that reported inadequate knowledge
 272 among the general public regarding early warning signs of breast cancer and the technique of
 273 Breast Self-Examination (BSE). Although community members may have some exposure
 274 through social media or peers, their understanding often remains incomplete or based on
 275 myths without focused instructional methods. The significant improvement in post-test
 276 scores, with the mean rising from 14.12 to 20.76, highlights the need for structured and
 277 visually supported teaching approaches in community health outreach.

278 The study also found no significant association between most demographic variables (age,
 279 gender, residence, and family type) and pre-test knowledge, suggesting that knowledge gaps
 280 were common across different community subgroups. This aligns with earlier research
 281 showing that demographic factors alone do not guarantee a high understanding of cancer
 282 prevention strategies. However, a significant association was found with the source of
 283 previous information ($p = 0.05$), indicating that those with prior exposure to health workers
 284 or specific media had a slight baseline advantage.

285 Limitations of the study include the use of convenience sampling, a single-community
286 setting, and the reliance on a structured questionnaire, which may limit generalizability and
287 introduce response bias. However, the findings still provide valuable insights into the urgent
288 need for enhanced teaching strategies to prepare community residents for proactive health-
289 seeking behaviours.

290 Overall, the study demonstrates that a Planned Teaching Programme is an effective tool for
291 improving knowledge regarding breast cancer and its prevention. Continued emphasis on
292 structured, evidence-based teaching methods is essential to strengthen public competence in
293 supporting early detection and improving long-term health outcomes for women.

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299 **CONCLUSION**

300 This study showed that community residents in Bengaluru had only inadequate baseline
301 knowledge regarding breast cancer and its prevention, indicating notable gaps in their
302 understanding of risk factors, symptoms, and screening techniques. The significant
303 improvement in post-test scores following the Planned Teaching Programme (PTP)
304 demonstrates that structured educational interventions are effective in enhancing public
305 health literacy. These results point to the need for a stronger integration of oncology
306 awareness and Breast Self-Examination (BSE) training within community health outreach
307 programs.

308 The findings also carry broader implications for women's health, as well-informed
309 community members are better equipped to identify early warning signs, seek timely medical
310 intervention, and adopt preventive lifestyles. Strengthening knowledge in this area
311 contributes to improved clinical outcomes, early-stage diagnosis, and reduced mortality rates
312 associated with breast cancer.

313

314 Future studies involving larger samples and longitudinal designs are recommended to
315 increase generalizability and track actual changes in screening behaviour. Further research on
316 long-term knowledge retention, a comparison of different teaching media (such as digital vs.
317 traditional), and the application of this knowledge in routine health-seeking practices would
318 provide deeper insight into effective community health strategies.

319 The study highlights the importance of targeted, evidence-based instruction in improving
320 community competence in breast cancer prevention and advancing public health outcomes
321 for women in urban settings.

322

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334 CONFLICT OF INTEREST

335 The authors declare that there are no financial, personal, or professional conflicts of interest
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339

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