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RESEARCH ARTICLE

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

Nagammal[1], Devi Nanjappan[2], Gopika B K[3], Devika V J[3] and Bincy Babu[3]

1. Assistant Professor Department of Obstetrics and Gynaecology, Smt. Nagarathnamma College of Nursing Bangalore-560107.
2. Principal, Smt. Nagarathnamma College of Nursing Bangalore.
3. 4th Year B.Sc. Nursing Student Smt. Nagarathnamma College of Nursing.

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Abstract

The escalating incidence of breast cancer among Indian women necessitates a robust focus on health literacy and primary prevention as core strategies for reducing mortality. Although early detection is critical, widespread gaps in awareness within local communities often impede the timely identification of symptoms and the adoption of preventive behaviours. This research was conducted to evaluate the baseline knowledge regarding breast cancer and to determine the effectiveness of a Planned Teaching Programme (PTP) among residents in a selected urban community in Bengaluru. Employing a pre-experimental, one-group pre-test post-test design, data were gathered from 50 participants using a validated tool comprising demographic profiles and a 30-item knowledge scale. The statistical analysis utilized frequency distribution, mean percentages, and inferential tests, including the paired t-test and chi-square, to assess the impact of the intervention. The initial assessment revealed that 70% of the subjects possessed inadequate knowledge, while only 6% reached an adequate level prior to the teaching session. Following the implementation of the PTP, a significant shift was observed: 60% of the participants moved into the moderate knowledge category and 26% achieved an adequate score. The mean knowledge score demonstrated a substantial rise from 14.12 to 20.76, with a paired t-test confirming the improvement was statistically significant ($t = 8.42$, $p < 0.001$). Furthermore, the analysis showed that the source of prior information was the only demographic variable significantly linked to baseline awareness.

These results underline the critical need for structured community outreach and prove that targeted educational modules are highly successful in empowering the public with life-saving preventive information.

Corresponding Author:-Nagammal
Address:-Assistant professor Department of Obstetrics and Gynaecology, Smt. Nagarathnamma college of Nursing Bangalore-560107.

Introduction:-

Breast cancer currently stands as the most frequently diagnosed malignancy among women in India, representing a major public health challenge that requires urgent attention through community-based education. As a primary recommendation by global health bodies, the emphasis on early detection and lifestyle modification serves as a fundamental pillar in the fight against rising cancer mortality. This proactive approach facilitates early diagnosis, enhances the success of clinical treatments, and significantly improves the quality of life for survivors. Nevertheless, in many local settings, these preventive measures are often neglected due to a lack of structured information and persistent social stigmas surrounding breast health. Nursing professionals, acting as essential health educators, are uniquely positioned to transform community attitudes and promote evidence-based screening. However, a disconnect often exists between general awareness and the technical understanding required for effective prevention. While previous research has explored general health habits, there is a scarcity of data focusing specifically on the impact of structured, planned teaching on the preventive competencies of residents in urban community clusters.
This study is designed to measure the current knowledge levels of community residents in Bengaluru and to analyse how a Planned Teaching Programme can function as a transformative educational tool. By pinpointing specific areas of ignorance and providing a successful model for intervention, this research aims to advocate for the integration of oncology education into routine community health services, ultimately fostering a culture of early detection and informed self-care.

In the Indian context, breast cancer has overtaken cervical cancer as the leading cause of mortality among women. In urban centers like Bengaluru, the sedentary lifestyle and changing reproductive patterns have contributed to a steady rise in cases. Unlike Western nations where mammography is routine, Indian women rely heavily on "Self-Awareness" for detection. Prevention in the community involves two tiers: Primary Prevention (lifestyle modifications, diet, and breastfeeding) and Secondary Prevention (early detection via Breast Self-Examination). Unfortunately, myths, lack of privacy, and fear of diagnosis often prevent community members from seeking information. This study evaluates how a structured, community-centered teaching approach can dismantle these barriers.

Impact and Implications In The Indigenous Context:-

The findings of this study have significant implications for local and indigenous communities in and around Bengaluru, where cultural traditions, modest family customs, and varying levels of health literacy can influence the acceptance of cancer screening. The knowledge gaps identified among community residents highlight the urgent need to strengthen community health nursing initiatives so that future professionals can effectively advocate for breast health in culturally diverse and sensitive settings. In many local contexts, traditional beliefs and the stigma associated with breast disorders often discourage women from self-examination or seeking clinical advice, making culturally grounded education essential. When community members are equipped with accurate, evidence-based knowledge through a Planned Teaching Programme (PTP), they can better understand the life-saving benefits of early detection while feeling respected within their social framework. Integrating such structured teaching modules into community outreach allows for a more meaningful dialogue, helping to dismantle the fear and myths surrounding a cancer diagnosis. By empowering the community with clear information on prevention and screening, the burden of advanced-stage breast cancer can be reduced. This lead to improved health-seeking behaviour, higher rates of early-stage diagnosis, and enhanced maternal and women's health outcomes—particularly in semi-urban areas where access to specialized diagnostic facilities like mammography may be limited. Thus, the study reinforces the need for culturally responsive health education to promote better survival rates and healthier futures for women within these indigenous and local populations.

Research Questions:-

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

Materials and Methods:-

Design:-

A non-experimental, pre-experimental one-group pre-test post-test design was employed to assess the effectiveness of a Planned Teaching Programme (PTP) on knowledge regarding breast cancer and its prevention among community residents. This quantitative design was chosen to measure the change in knowledge levels at two points—before and after the intervention—and to examine associations with selected socio-demographic variables. The study was conducted in a selected community area in Bengaluru. A convenience sample of 50 residents meeting the inclusion criteria participated. Data were collected using a validated structured questionnaire consisting of two sections: socio-demographic items and 30 knowledge items (scored 0–30). Descriptive statistics (frequency, percentage, mean, mean percentage, standard deviation) were used to summarize pre-test and post-test knowledge levels. Inferential statistics (paired t-test and chi-square test) were used to determine the effectiveness of the Planned Teaching Programme and to examine associations between pre-test knowledge scores and demographic variables. Ethical considerations included institutional permission, informed written consent from participants, confidentiality of responses, and voluntary participation.

Setting:-

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

Participants:-

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

Sample Characteristics:-

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

Research Instrument:-

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

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

Data Collection:-

Data collection was carried out in June 2024 at selected community areas in Bengaluru, after obtaining necessary permissions from local authorities and institutional heads. Participants were selected using convenience sampling, and only those who met the inclusion criteria and provided written informed consent were included in the study. At the beginning of the session, the investigators introduced themselves, explained the purpose and significance of the study, and assured the participants of their confidentiality and the voluntary nature of their participation. The structured questionnaire was first administered as a pre-test to assess the baseline knowledge of the residents regarding breast cancer and its prevention. Immediately following the pre-test, the Planned Teaching Programme (PTP) was implemented. The intervention involved a structured teaching session supported by visual aids such as charts, flashcards, and a demonstration of Breast Self-Examination (BSE). Participants were encouraged to clarify doubts during the session. After the intervention, the same structured questionnaire was administered as a post-test

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

Ethical Considerations:-

Ethical principles were strictly followed to protect the rights and dignity of the community participants. Formal permission was obtained from the Principal of Smt. Nagarathnamma College of Nursing, and approval was taken from the research guide and local community leaders. Participants were fully informed about the purpose, significance, and procedures of the study, and the voluntary nature of their participation was emphasized. Written informed consent was obtained from each resident prior to the pre-test, and they were clearly informed that they could withdraw from the study at any stage without any penalty or negative consequences. Confidentiality and anonymity were ensured by avoiding any personal identifiers in the questionnaires and in the reporting of findings. All collected data were stored securely and utilized solely for research purposes. No physical, psychological, or social harm was caused to the participants during the Planned Teaching Programme (PTP). The study strictly adhered to the fundamental ethical principles of respect, beneficence, and justice.

Statistical Analysis:-

The collected data were coded, organized, and analysed according to the study objectives using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage, mean, mean percentage, and standard deviation (SD) were used to summarize demographic variables and assess pre-test and post-test knowledge levels regarding breast cancer and its prevention. Knowledge was categorized into inadequate, moderate, and adequate levels. Inferential statistics included the paired t-test to evaluate the effectiveness of the Planned Teaching Programme (PTP) and the chi-square (chi^2) test to determine the association between pre-test knowledge scores and selected demographic variables such as age, gender, source of information, place of residence, and type of family. A significance level of $p < 0.05$was used to determine statistical significance. Results were presented in structured tables and figures to support clear interpretation and comprehensive discussion of the findings.

Results:-

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

Section I: Socio-demographic characteristics:-

Table 1: Distribution of community residents according to demographic variables (N = 50)

S1.no	Demographic data	Frequency	Percentage
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%

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

Section II: Criteria-wise knowledge analysis:-

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%)

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

Section III: Overall knowledge scores:-

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)

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

Section IV: Association between knowledge and demographic variables:-

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

Variable	**χ2 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**

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

Discussion:-

The present study evaluated the effectiveness of a Planned Teaching Programme (PTP) on knowledge regarding breast cancer and its prevention among community residents in Bengaluru. The findings showed that most participants had only inadequate knowledge in the pre-test, indicating a limited understanding of breast cancer risk factors and screening methods despite the increasing prevalence of the disease. After the intervention, post-test scores increased significantly, demonstrating that the Planned Teaching Programme was highly effective in improving the residents' knowledge. This supports existing evidence that structured, face-to-face educational interventions can significantly strengthen health literacy regarding preventive oncology. These results are consistent with previous studies in India that reported inadequate knowledge among the general public regarding early warning signs of breast cancer and the technique of Breast Self-Examination (BSE). Although community members may have some exposure through social media or peers, their understanding often remains incomplete or based on myths without focused instructional methods. The significant improvement in post-test scores, with the mean rising from 14.12 to 20.76, highlights the need for structured and visually supported teaching approaches in community health outreach.

The study also found no significant association between most demographic variables (age, gender, residence, and family type) and pre-test knowledge, suggesting that knowledge gaps were common across different community subgroups. This aligns with earlier research showing that demographic factors alone do not guarantee a high understanding of cancer prevention strategies. However, a significant association was found with the source of previous information ($p = 0.05$), indicating that those with prior exposure to health workers or specific media had a slight baseline advantage. Limitations of the study include the use of convenience sampling, a single-community setting, and the reliance on a structured questionnaire, which may limit generalizability and introduce response bias. However, the findings still provide valuable insights into the urgent need for enhanced teaching strategies to prepare community residents for proactive health-seeking behaviours. Overall, the study demonstrates that a Planned Teaching Programme is an effective tool for improving knowledge regarding breast cancer and its prevention. Continued emphasis on structured, evidence-based teaching methods is essential to strengthen public competence in supporting early detection and improving long-term health outcomes for women.

Conclusion:-

This study showed that community residents in Bengaluru had only inadequate baseline knowledge regarding breast cancer and its prevention, indicating notable gaps in their understanding of risk factors, symptoms, and screening techniques. The significant improvement in post-test scores following the Planned Teaching Programme (PTP)

demonstrates that structured educational interventions are effective in enhancing public health literacy. These results point to the need for a stronger integration of oncology awareness and Breast Self-Examination (BSE) training within community health outreach programs. The findings also carry broader implications for women's health, as well-informed community members are better equipped to identify early warning signs, seek timely medical intervention, and adopt preventive lifestyles. Strengthening knowledge in this area contributes to improved clinical outcomes, early-stage diagnosis, and reduced mortality rates associated with breast cancer.Future studies involving larger samples and longitudinal designs are recommended to increase generalizability and track actual changes in screening behaviour. Further research on long-term knowledge retention, a comparison of different teaching media (such as digital vs. traditional), and the application of this knowledge in routine health-seeking practices would provide deeper insight into effective community health strategies. The study highlights the importance of targeted, evidence-based instruction in improving community competence in breast cancer prevention and advancing public health outcomes for women in urban settings.

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Conflict of Interest:-

The authors declare that there are no financial, personal, or professional conflicts of interest that could have influenced the conduct or outcomes of this research.

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