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A Quasi Experimental Study to Assess the Effectiveness of Informative Booklet on Knowledge Regarding Risk Factors and Prevention of Breast Cancer Among Girls of Selected Under Graduate College

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Abstract: ***Breast cancer is the most common malignancy in Indian women which ranks as second only to cancer cervix. The average age now considered is 43 to 46 years. Unfortunately, 50% of cases are 21-24 years which is detected very late and responsible for increasing the mortality. Patients diagnosed with localized breast cancer with no axillary node involvement have a 5-year survival rate of 98%. Conversely, only 6% of patients diagnosed with advanced-stage breast cancer and with metastasis to distant sites have the chances that will survive 5 years or more. [1] A study titled "A quasi experimental study to assess the effectiveness of informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college." has been carried out as a partial fulfilment required for being awarded the degree of the Master of Science in Nursing under Maharashtra University of Health Sciences, Nashik Maharashtra. Background of the study: Oncology is the study of cancer or tumors. Since the dawn of time, humanity has been aware of cancer. Hippocrates used the words carcinos and carcinoma to refer to tumors that do not cause ulcers and those that do. This signifies a crab in Greek. The description was given the term "crab" because the cancer's spreading projections, which resembled fingers, reminded people of crabs. The Greek name for crab was translated into the Latin word cancer by the later Roman physician Celsus (28–50 BC). Galen, a Roman physician who practiced from 130 to 200 AD, was the first to use the Greek word for swelling, oncos, to characterize tumors. Oncology, or the study of cancers, has the root term oncos. [2] Both the left and right breasts contain mostly fatty tissue, ducts, and organs. To feed newborns and children, women's breasts produce and secrete milk. The lobules and the milk-producing organs. Sarcomas and lymphomas are the names of these cancers, which are not typically thought of as breast tumors. When cancer cells enter the blood or lymphatic system and are then transported to other areas of the body, breast cancer can spread. [3] A quantitative study was conducted in 2016 with an aim to investigate the incidence and mortality of breast cancer in the world using age-specific incidence rate and mortality rates for the year 2012. It is acquired from the Global Cancer Observatory Project (GLOBOCAN 2012) as well as data about the incidence and mortality of cancer-based on national reports. The study aimed was to investigate the incidence and mortality of breast cancer. In 2012, it was predicted that 1,671,149 new cases of breast cancer were discovered and 521,907 people worldwide lost their lives to the disease. It accounts for 25.1% of all cancers and is the most prevalent malignancy in women, according to GLOBOCAN. It was determined that while relative mortality is highest in less developed countries, breast cancer incidence is greater in developed countries. For early detection and treatment, schooling for women is advised in every nation. [4] India's 2022 breast cancer data tragically, breast cancer claims the lives of 90,000 people annually, one woman per minute in the nation. For every two women who are identified with the disease, one passes away. [5] The age range of 25 to 50 accounts for nearly 50% of instances. Additionally, low survival and high mortality were found in more than 70% of the cases that were in the advanced stage. [6]***

Keywords: Informative booklet, Breast cancer, risk factors and prevention of breast cancer, under graduate college

1. Introduction

Breast cancer is the most common type of cancer which is prevalent in females. This research focuses on learning more about breast cancer. It sheds light on what adolescent girls think or know about breast cancer, its prevention, early detection, and treatment, its ability to counsel females about the disease, and the ability of cancer patients to deal with the burden of treatment, to evaluate their level of knowledge and to ensure their satisfaction with the information provided about breast cancer, which will undoubtedly help them to avoid it and to advise anyone they come into touch with. [7]

Better knowledge of risk factors and measures for prevention, enhanced screening techniques, and the creation of new treatments are all responsible for the decline in female breast cancer incidence and mortality. The multidisciplinary team uses various clinical, histological, and pathological findings to describe, as precisely as possible, the specific characteristics of breast cancer that will determine the most effective treatment strategy for a certain patient. Breast cancer is assumed to have a complex etiology, including hereditary, non-genetic, modifiable, and nonmodifiable components. Studying groups with a greater incidence of breast cancer may reveal genetic, hormonal, or biochemical elements that are potentially causal. These epidemiological

characteristics help detect illness risk factors when they are statistically connected with disease occurrence, exposure to hormones (both endogenous and exogenous) Radiation exposure, lifestyle variables, and family or personal history of breast cancer are some broad categories linked to an elevated risk for breast cancer. [8]

Objectives:

Primary Objective

To assess the effectiveness of the informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.

Secondary Objectives

- To assess the pre- test level of knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.
- To assess the post-test level of knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.
- To evaluate the effectiveness of the informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.
- To associate the knowledge score regarding risk factors and prevention of breast cancer among girls of selected under graduate college with selected demographic variables.

2. Materials and Method

The study was undertaken to assess knowledge regarding risk factors and prevention of breast cancer. A Quantitative research approach with pre-experimental one group pre-test post-test research design was used in this study. Study setting was under graduate college of Maharashtra. The population for the present study included girl students from selected under graduate college. Sample size consisted of 120 girls' students from selected under graduate. The investigator developed the conceptual framework based on 'King's Goal Attainment Theory. The sample were girls of under graduate college from selected college of Maharashtra.120 samples were selected using Simple Random sampling of Probability sampling technique. The tool was structured questionnaire.

Pilot study was conducted on subjects by structured questionnaire in selected college. The findings of the pilot study were analyzed. The pilot study helped the investigator to improve the tool and it provide better insight and clarity regarding the different aspects of the study. The study was found to be feasible, practical and convenient. To obtain content validity of the tool, the prepared self-structured questionnaire and the informative booklet about the knowledge regarding risk factors and prevention of breast cancer evaluator's response sheet and content validity certificate were done by 10 experts in the field of medical surgical nursing, statistician, medicine department physician and language expert with their valuable suggestions and comments. Their suggestions were incorporated in the final preparation of the structured knowledge questionnaire and informative booklet. The reliability of structured questionnaire was established using Parallel Form method of reliability and Karl Pearson's Correlation coefficient formula. The obtained reliability was 0.7740 which showed that the tool was reliable.

After the pilot study main study was conducted in the similar setting but different college. After acquiring consent, the main study was conducted among 120 subjects. The findings were, A convenient sample of 120 subjects was drawn from the study population, who were from selected under graduate college. The data obtained to describe the sample characteristics including age, marital status, religion, type of family, menstrual history, previous knowledge, and source of knowledge about breast cancer respectively. Descriptive and inferential statistical techniques such as frequency distribution, central measures (mean, median, mode) standard deviation. Chi square and correlation co-efficient will be used for data analysis and presented in the form of tables, graphs and diagrams.

Data Analysis and Interpretations

Organization of the findings

The analysis and interpretation of the observations are given in the following section:

- **Section A:** Distribution of subjects in selected under graduate college with regards to demographic variables.
- **Section B:** Assessment of level of pre-test and post-test knowledge regarding risk factors and prevention of breast cancer among girls in selected under graduate college.
- **Section C:** Assessment of effectiveness of informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.
- **Section D:** Association of post-test knowledge score regarding risk factors and prevention of breast cancer among girls of selected under graduate college with their selected demographic variables.

Statistical Analysis

Result

Section A

Distribution of subjects in selected under graduate college with regards to demographic variables.

This section deals with percentage wise distribution of subjects with regards to their demographic characteristics. A convenient sample of 120 subjects was drawn from the study population, who were from selected undergraduate college.

Table No. 1: Percentage-wise distribution of subjects according to their demographic characteristics

n=120

Demographic Variables	No. of subjects	Percentage (%)
Age(yrs)		
17-19 yrs	54	45.0
20-21 yrs	54	45.0
22-23 yrs	12	10.0
≥24 yrs	0	0
Marital Status		
Married	1	0.8
Unmarried	118	98.3
Divorced	1	0.8
Widow	0	0
Religion		
Hindu	98	81.7
Buddhist	20	16.7
Muslim	2	1.7
Others	0	0
Type of family		
Nuclear	32	26.7
Joint	69	57.5
Divided	13	10.8
Single Parent	6	5.0
Menstrual History		
Regular	99	82.5
Irregular	19	15.8
Early Menarche <12	2	1.7
Other	0	0
Knowledge about breast cancer		
Yes	80	66.67
No	40	33.33
Source of knowledge		
Mother	11	13.8
Sister/Cousin	1	1.3
Aunt	11	13.8
Grandmother	57	71.3
Family history of breast cancer		
Yes	5	4.17
No	115	95.83

Table No.1 shows the percentage-wise distribution of subjects with regard to their demographic characteristics. A convenient sample of 120 subjects was drawn from the study population, who were from selected under graduate college. The data obtained to describe the sample characteristics including age, marital status, religion, type of family, menstrual history, previous knowledge and source of knowledge about breast cancer respectively.

Section B

Assessment of level of knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college.

This section deals with the assessment of the level of knowledge regarding risk factors and prevention of breast cancer among subjects of selected under graduate college. The level of knowledge score is divided under the following headings average, good, very good, and excellent respectively.

Table No. 2: Assessment with level of pre-test knowledge

n=120

Level of pretest knowledge	Knowledge Score Range	Percentage score	Level of Pre-test Knowledge Score	
			No of subjects (f)	Percentage (%)
Average	0-15	(0-50%)	75	91.7%
Good	16-18	(51-60%)	38	8.3%
Very Good	19-22	(61-75%)	7	0%
Excellent	23-30	(>75%)	0	0%
Minimum score			7	
Maximum score			21	
Mean knowledge score			14.09 ± 3.04	
Mean % Knowledge Score			46.97 ± 10.15	

The above table no.2 depicts that 91.7% of subjects from selected under graduate college had an average level of knowledge score and 8.3% of them had a good level of knowledge score.

The minimum knowledge score in the pretest was 7 and the maximum knowledge score in the pretest was 21.

The mean knowledge score in the pretest was 14.09 ± 3.04 and the mean percentage of knowledge score in pre- test was 46.97 ± 10.15.

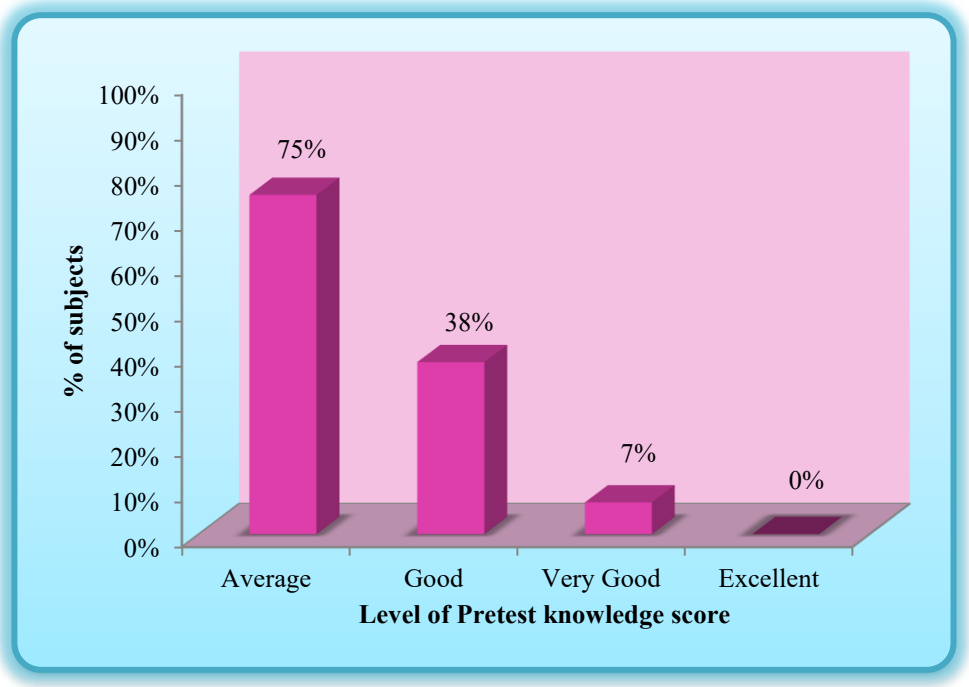

Figure 1: Assessment with pre-test knowledge score

Table No. 3: Assessment with level of post-test knowledge

Level of Post test knowledge	Knowledge Score Range	Percentage score	Level of Post test Knowledge Score	
			No of subjects (f)	Percentage (%)
Average	0-15	(0-50%)	0	0
Good	16-18	(51-60%)	9	7.50
Very Good	19-22	(61-75%)	28	23.33
Excellent	23-30	(>75%)	83	69.17
Minimum score			16	
Maximum score			29	
Mean knowledge score			23.85 ± 2.75	
Mean % Knowledge Score			79.50 ± 9.19	

n = 120

The above table no.3 shows that 7.50% of subjects from selected under graduate college had a good level of knowledge score, 23.33% of them had a very good and 69.17% of them had an excellent level of knowledge score.

The minimum knowledge score in the post-test was 16 and the maximum knowledge score in post-test was 29.

The mean knowledge score in the post-test was 23.85 ± 2.75 and the mean percentage of knowledge score in the post-test was 79.50± 9.19

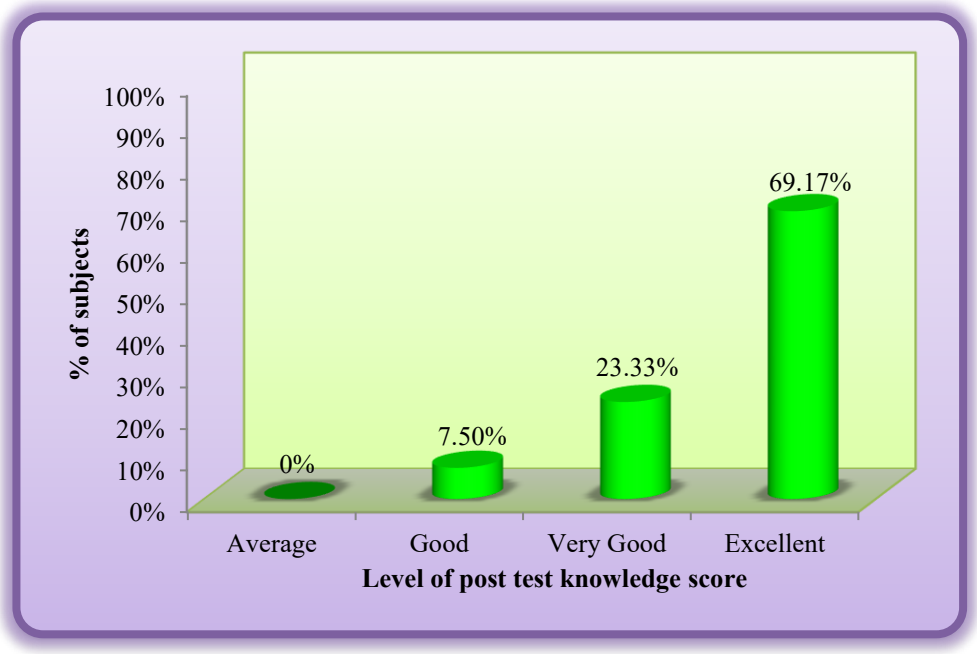

Figure 2: Assessment with post-test knowledge score

Table No. 4: Significance of difference between knowledge score in pre and post-test of subjects

n=120

Test	Mean	SD	Mean Difference	t-value	p-value
Pre Test	14.09	3.04	9.75±3.99	26.73	0.011S, p<0.05
Post Test	23.85	2.75			

This table no.4 depicts the Significance of difference between pretest and post-test knowledge scores of subjects regarding risk factors and prevention of breast cancer from selected under graduate college. Mean, standard deviation, and mean difference values are compared and the student's paired 't' test is applied at a 5% level of significance. The pre-test mean score of the knowledge was 14.09 and standard deviation of 3.04, were as in the post-test mean scores was 23.85 and standard deviation of 2.75. The mean difference in pre-test and post-test scores was 9.75 ± 3.99. The tabulated value for n=120-1 i.e.119 degrees of freedom was 1.98. The calculate 't' value i.e. 26.73 is much higher than the tabulated value at a 5% level of significance for the overall knowledge score of subjects which is a statistically acceptable level of significance. Hence it is statistically interpreted that the informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls from selected under graduate college was effective. Thus, the H_1 is accepted.

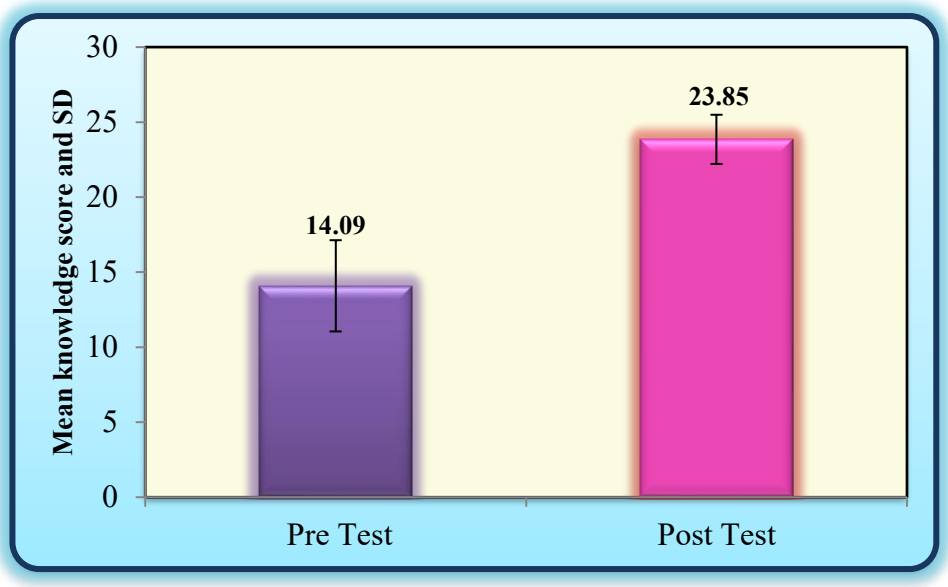

Figure 3: Significance of difference between knowledge score in pre and post-test of subjects

Section D

Association of level of posttest knowledge score regarding risk factors and prevention of the breast cancer among girls of selected under graduate college with their selected demographic variables

With regard to the fourth objective of the study, the result shows that there was a significant association between previous knowledge of subjects with post-test knowledge score regarding risk factors, and prevention of breast cancer among girls of selected under graduate college was effective. The findings of the result show that, the association of knowledge score with knowledge regarding breast cancer of girls from selected under graduate college. The tabulated 'χ^2' value was 5.66 (df=2) which is less than the calculated 'χ^2' i.e. 6.90 at a 5% level of significance. Also, the calculated 'p'=0.032 was less than the acceptable level of significance i.e. 'p'=0.05. Hence it is interpreted that knowledge regarding breast cancer in girls is statistically associated with their post-test knowledge score.

3. Discussion

Breast cancer is made up of various subtypes, each of which is associated with a variety of clinical outcomes. The development of specific cancer-preventative and therapeutic therapies depends on an understanding of this heterogeneity. The main cause of cancer related death in women worldwide is breast cancer. Several critical unresolved clinical and scientific issues persist despite great advancements in the detection and treatment of breast cancer.

For young women to be informed and to raise awareness, this research outlines the knowledge surrounding breast cancer risk factors, symptoms, causative causes, and preventive measures. It places a particular emphasis on these aspects.

The Present study titled, "A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF INFORMATIVE BOOKLET ON KNOWLEDGE REGARDING RISK FACTORS AND PREVENTION OF BREAST CANCER AMONG GIRLS OF SELECTED UNDER GRADUATE COLLEGE."

The study was undertaken to assess knowledge regarding risk factors and prevention of breast cancer. A Quantitative research approach with pre-experimental one group pre-test post-test research design was used in this study. Study setting was under graduate college of Maharashtra. 120 subjects were selected for the study using simple random sampling techniques. In this study, data was collected using structured knowledge questionnaires, and data was analyzed by using descriptive and inferential statistics, based on the objectives and hypothesis of the study. The method of data collection adopted for the study was a paper and pen test to answer the structured questionnaire.

The written informed consent was obtained from all the participants. Pre-test was done for the 1st day and then disseminated the informative booklet to all the participants. Their doubts were clarified. The subjects were required a mean time of 30 minutes to complete the structured questionnaires. Once the questionnaire was completed, the investigator collected them all again. After the completion of the pre-test informative booklet was disseminated among all the participants. This was done on the same day and with the same gathering of the subjects. Post post-test was conducted on the 7th day, to evaluate the effectiveness of the informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls based on criterion measurement (Average, Good, Very Good, and Excellent). The questionnaire completion by the subjects was done in the presence of the investigator to avoid contamination and bias in the collection of data.

The findings were discussed on the basis of demographic characteristics and objective. The findings of the study have been discussed with the reference to objective of the study and with finding of other studies.

The hypothesis was tested statistically with the distribution of pre-test and post-test mean scores. The level of knowledge during the pre-test and post-test were compared to prove the effectiveness of planned teaching. The tabulated value was compared with the calculated 't' value. The pre-test mean score of the knowledge was 14.09 and standard deviation of 3.04, were as in the post-test mean score was 23.85and standard deviation of 2.75. The mean difference in pre-test and post-test scores was 9.75 ±3.99. The calculated 't' value was 26.73, is much higher than the tabulated value at a 5% level of significance for the overall knowledge score of girls which is a statistically acceptable level of significance. Hence it is statistically interpreted that the informative booklet on knowledge regarding risk factors and prevention of breast cancer among girls of selected undergraduate college was effective. Thus, the H_1 is accepted. This indicates that the informative booklet was effective in improving knowledge regarding the risk factors and prevention of breast cancer among girls from selected under graduate college.

4. Conclusion

After the detailed analysis, this study leads to the following conclusion that, the study population was aware of cancer breast. But not having adequate knowledge regarding the risk factors. Risk factors are important to know as they can control their risk factors by assessing their risk category, which can help in early detection of the disease which tremendously increases their chance of survival. Most of the under graduate girls had an average level of knowledge regarding the risk factors and prevention of breast cancer in the pre-test and their level of knowledge regarding the risk factors and prevention of breast cancer had improved to a great extent after the dissemination of the informative booklet which was revealed in the post-test. This result shows the imperative need to utilize the informative booklet in the improvement of knowledge regarding risk factors and prevention of breast cancer among girls of selected under graduate college and it will improve the safety of the life by preventing the incidence of breast cancer among the girls.

The investigator concludes that the knowledge of the target population was significantly improved. They can utilize their knowledge and can adopt healthy lifestyle changes. These findings should be used to design awareness strategies for

primary as well as preventive measures of breast cancer, thereby decreasing the burden of breast cancer in the community area.

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