



A Study to Assess Effectiveness of Planned Teaching Programme on Knowledge Regarding Breast Cancer and Breast Self Examination among Young Adult Girls in P.M Patel Institute of Bioscience College Anand

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ABSTRACT

BACKGROUND OF THE STUDY :- Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. It consists of more than 100 different diseases. The World Health Organization says that BSE (Breast Self-Examination) is not a tool for regular screening, but it can help women become more aware of their health. It's like a way to remind women to pay attention to their bodies and take care of themselves. Breast cancer is a condition in which tumors are created when aberrant breast cell proliferate uncontrollably.

Breast cancer is the highest public detected cancer among female population in the majority of countries worldwide. Breast self-examination (BSE) is a useful screening tool to empower women and raise awareness about their breast tissues and help detect any breast abnormalities when they occur.

AIMS :- To assess the level of female university students' knowledge and practice of BSE A self-administered.

MATERIAL AND METHOD :- The study utilized a quantitative research approach with pre- experimental one group pre-test post-test designed. The population composed of young adult girls of selected colleges of Anand district. Sample sizes of 70 students were selected using Non probability Purposive sampling technique.

RESULT :- In the pretest, 43 participants scored as Poor, constituting 61.4% of the sample, while 26 participants scored as Average, representing 37.1%. Only 1 participant scored as Good, accounting for 1.4% of the sample.

After the planned teaching programme, there was a noticeable improvement in knowledge scores, with 12 participants scoring as Poor (17.1%), 47 participants scoring as Average (67.1%), and 11 participants scoring as Good (15.1%). These results indicate a shift towards higher knowledge levels post-intervention, demonstrating the effectiveness of the planned teaching programme in enhancing knowledge regarding breast self-examination among young adult girls in the selected colleges of Anand district.

CONCLUSION :- This study contributes valuable insights into the effectiveness of a planned teaching program on breast self-examination (BSE) knowledge among young adult girls in Anand district. The findings suggest that the teaching program significantly enhanced participants' understanding of BSE techniques and practices, as evidenced by the substantial improvement in knowledge scores post-intervention. Despite certain limitations, including a small sample size and reliance on self-reported data, the study highlights the importance of targeted health education interventions in promoting breast health awareness among young women. The demographic analysis provides valuable context for interpreting the study findings, emphasizing the need for culturally sensitive approaches to health education in diverse populations. While further research is warranted to address the study's limitations and assess long-term behavior change, the findings underscore the importance of ongoing efforts to promote breast health education and encourage regular self-examination practices among young women in Anand district and similar settings. Ultimately, by empowering young women with knowledge and skills for early detection and prevention, such interventions have the potential to contribute to improved breast health outcomes and overall well-being in the community.

KEY WORDS :- Assess , Knowledge , Experimental, Study, Effectiveness, Planned teaching programme, Breast cancer, Breast Self examination, Young adult girls.

INTRODUCTION

“Cancer is a word, not a sentence.”

Cancer is a very severe condition. **Breast cancer** is a disease in which cells in the breast grow out of control. **Breast self-examination** is a way for individuals to check their own breasts for any changes or abnormalities.¹

Breast Cancer (BC) is the most common detected cancer among women in the large mainstream (140 of 184) of countries worldwide. More than 2 million new Breast cancer cases with a mortality rate 626.7 per 100,000 were recorded during the year 2018.

According to American Cancer society, Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells.² It consists of more than 100 different diseases. The World Health Organization says that BSE (Breast Self-Examination) is not a tool for regular screening, but it can help women become more aware of their health. It's like a way to remind women to pay attention to their bodies and take care of themselves. Breast cancer is a condition in which tumors are created when aberrant breast cell proliferate uncontrollably.

Breast cancer is the highest public detected cancer among female population in the majority of countries worldwide. Breast self-examination (BSE) is a useful screening tool to empower women and raise awareness about their breast tissues and help detect any breast abnormalities when they occur. This study aimed to assess the level of female university students' knowledge and practice of BSE A self-administered.

The tumors have potential to spread throughout the body and cause death if not to treated. The breast milk duct and milk produce lobules are where breast cancer cell first appear. A lot of young women lack basic information about breast cancer screening, including risk factors and symptoms and warning signals. The most frequent malignancy among women worldwide is breast cancer. Different predictors have an impact on breast self-examination (BSE) practice in developing nations.

Factors affecting knowledge of the Breast self-examination were reported from the different countries. These are age, marital status, level of education, information of BSE, medical background, access to internet, source of information, and level of income. However, only the education levels and medical background for attitude towards Breast self-examination. Practice factors are almost similar to that of knowledge other than health education on breast cancer, knowing BSE techniques, occupation, and family history of breast cancer were related to women's knowledge, attitude and practice towards Breast self-examination.³

The most prevalent type of cancer in young adult girls is breast cancer. There is sample evidence that a high fat diet, alcohol use, lack of physical activity are all environmental and life style variables that contribute to the development of mammary gland cancer. Which's elimination (primary prevention) might help reduce mortality rate & morbidity rate. The cause of breast cancer is still unknown and there are currently no effective primary prevention techniques or interventions. Early identification of breast cancer remains the top priority, and regular breast self-examination practices have an impact on treatment, quality of life survival and prognosis for those who have the disease.

Common types of breast cancer include: Invasive (infiltrating) ductal carcinoma (IDC): This cancer starts in your milk ducts and spreads to nearby breast tissue. It's the most common type of breast cancer in the United States. Lobular breast cancer: This breast cancer starts in the milk-producing glands (lobules) in your breast and often spreads to nearby breast tissue. It's the second most common breast cancer in the United States. Ductal carcinoma in situ (DCIS): Like IDC, this breast cancer starts in your milk ducts. The difference is DCIS doesn't spread beyond your milk ducts.

Less common breast cancer types include: Triple-negative breast cancer (TNBC): This invasive cancer is aggressive and spreads more quickly than other breast cancers. Inflammatory breast cancer (IBC): This rare, fast-growing cancer looks like a rash on your breast. IBC is rare in the United States. Paget's disease of the breast: This rare cancer affects the skin of your nipple and may look like a rash. Less than 4% of all breast cancers are Paget's disease of the breast.

several risk factors that may increase chances of developing breast cancer. These include: Age: Being 55 or older. Sex: Women and people AFAB are much more likely to develop the condition than men and people AMAB. Family history: If your parents, siblings, children or other close relatives have breast cancer, you're at risk of developing the disease. Genetics: Up to 15% of people with breast cancer develop the disease because they have inherited genetic mutations. The most common genetic mutations involve the BRCA1 and BRCA2 genes. Smoking: Tobacco use has been linked to many different types of cancer, including breast cancer. Drinking beverages containing alcohol: Research shows that drinking beverages containing alcohol may increase breast cancer risk. Having obesity. Radiation exposure: If you've had prior radiation therapy — especially to your head, neck or chest — you're more likely to develop breast cancer. Hormone replacement therapy: People who use hormone replacement therapy (HRT) have a higher risk of being diagnosed with the condition.

The importance of breast self-examination was noticed when an increased proportion of women with early diagnosis of breast cancer were treated in time successfully women can use BSE to their breast when they perform Breast self-examination properly or regularly, they can find any changes in their breast and seek further evaluation. Examination should be done every month at the end of the menses in all menstruating women. Early detection of any abnormalities in the breast and visit with the doctor.

Signs and symptoms of breast cancer may include: A breast lump or thickening that feels different from the surrounding tissue. Change in the size, shape or appearance of a breast. Changes to the skin over the breast, such as dimpling. A newly inverted nipple Peeling, scaling, crusting or flaking of the pigmented area of skin surrounding the nipple (areola) or breast skin Redness or pitting of the skin over your breast, like the skin of an orange.

NEED OF THE STUDY

Breast cancer has become the most prevalent type of cancer affecting women worldwide, and the number of deaths caused by breast cancer is growing every year. Maturation in breast cells cause breast cancer. It can be more dangerous if it became metastatic (i.e., the cancerous breast cells travel to other body parts and develop new tumours.) the cancerous mass in the breast may enlarge and spread to the adjacent lymph nodes, it may also travel to other body organs through blood stream. The tissues around breast (skin, chest) can also get invaded by the developing cancer.

Breast cancer most commonly spreads to nearby lymph nodes, in which case the breast cancer is still considered a local or regional disease, it can also spread further through the body ⁴

In 2022, there were 2.3 million women diagnosed with breast cancer and 670000 deaths globally, which make it the most common cancer among adults. In 95% of countries, breast cancer is the first or second leading cause of female cancer death. Yet survival from breast cancer is widely inequitable between and within countries; nearly 80% of death from breast cancer occur in low and middle income countries. ⁵

The key to reduce mortality of breast cancer is early diagnosis and treatment. At present, mammography is the most commonly used method to detect breast cancer. However, because of the huge amount of data and the poor imaging features of early breast cancer, early diagnosis is very difficult. With the development of image processing technology and early diagnosis technology, image processing of breast pathology has become an important way of early diagnosis of breast cancer, which mainly include the study of masses, classification, breast density. ⁶

Current trends point out that a higher proportion of the disease is occurring at a younger age in Indian women, as compared to the West. The National Cancer Registry Program analysed data from cancer registries for the period from 1988 to 2013 for changes in the incidence of cancer. All population-based cancer registries have shown a significant increase in the trend of BC [6]. In India in 1990, the cervix was the leading site of cancer followed by BC in the registries of Bangalore (23.0% vs 15.9%), Bhopal (23.2% vs 21.4%), Chennai (28.9% vs 17.7%) and Delhi (21.6% vs 20.3%), while in Mumbai, the breast was the leading site of cancer (24.1% vs 16.0%). By the years 2000-2003, the scenario had changed, and breast had overtaken as the leading site of cancer in all the registries except in the rural registry of Barshi (16.9% vs 36.8%). ⁷

There are several imaging techniques that are available to evaluate the breast. Breast cancer diagnosis often begins with an exam and a discussion of symptoms. Imaging tests can look at the breast tissue for anything that's not typical. To confirm whether there is cancer or not, a sample of tissue is removed from the breast for testing.

Breast cancer is of the following types, based on its location: 1) lobular carcinoma 2) ductal carcinoma .1) lobular carcinoma: it occurs in the glands that make milk. 2) ductal carcinoma: it occurs in the ducts that carry milk to the nipple. Two main categories of breast cancer are: A) Invasive or infiltrating ductal carcinoma B) Non-invasive or In situ breast cancer A) invasive or infiltrating ductal carcinoma: - This cancer arise in the lobules, and spreads to the adjacent tissues and other body parts. Sub types of Invasive or infiltrating ductal carcinoma 1) adenoid cystic carcinoma 2) low grade adeno squamous carcinoma 3) medullary carcinoma 4) mucinous carcinoma 4) papillary carcinoma 5) tubular carcinoma. B) Non-invasive or In situ breast cancer: it does not spread from the primary source to other parts of the breast. Sub types of Non-invasive or In situ breast cancer 1) ductal carcinoma in situ 2) lobular carcinoma in situ.

Obesity is a well-known risk factor for postmenopausal breast cancer. In contrast, the relationship between obesity and stage of breast cancer at diagnosis is less clear. We hypothesized that increased breast size in obese women may delay discovery of breast tumors.

Now days, breast cancer is the most frequently diagnosed life-threatening cancer in women and the leading cause of cancer death among women. Since last two decades, researches related to the breast cancer has lead to extraordinary progress in our understanding of the disease, resulting in more efficient and less toxic treatments. Increased public awareness and improved screening have led to earlier diagnosis at stages amenable to complete surgical resection and curative therapies. Consequently, survival rates for breast cancer have improved significantly, particularly in younger women. This article addresses the types, causes, clinical symptoms and various approach both non- drug (such as surgery and radiation) and drug treatment (including chemotherapy, gene therapy etc.) of breast cancer.

Breast cancer is an increasing public health problem. Substantial advances have been made in the treatment of breast cancer, but the introduction of methods to predict women at elevated risk and prevent the disease has been less successful. Here, we summarize recent data on newer approaches to risk prediction, available approaches to prevention, how new approaches may be made, and the difficult problem of using what we already know to prevent breast cancer in populations. During 2012, the Breast Cancer Campaign facilitated a series of workshops, each covering a specialty area of breast cancer to identify gaps in our knowledge. The risk-and- prevention panel involved in this exercise was asked to expand and update its report and review recent relevant peer-reviewed literature. The enlarged position paper presented here highlights the key gaps in risk-and-prevention research that were identified, together with recommendations for action. The panel estimated from the relevant literature that potentially 50% of breast cancer could be prevented in the subgroup of women at high and moderate risk of breast cancer by using current chemoprevention (tamoxifen, raloxifene, exemestane, and anastrozole) and that, in all women, lifestyle measures, including weight control, exercise, and moderating alcohol intake, could reduce breast cancer risk by about 30%. Risk may be estimated by standard models potentially with the addition of, for example, mammographic density and appropriate single-nucleotide polymorphisms. This review expands on four areas:

- (a) the prediction of breast cancer risk, (b) the evidence for the effectiveness of preventive therapy and lifestyle approaches to prevention, (c) how understanding the biology of the breast may lead to new targets for prevention.

Breast cancer is the most common cancer and the second leading cause of cancer-related death in women worldwide. Despite the early detection of breast cancer and increasing knowledge of its biology and chemo-resistance, metastatic breast cancer is largely incurable disease. We provide a review of the inter tumor and intratumor heterogeneity, explain the differences between triple-negative breast cancer subtypes. Also, we describe the interaction of breast tumor cells with their microenvironment cells and explain how this interaction contributes to the tumor progression, metastasis formation and resistance to the treatment.

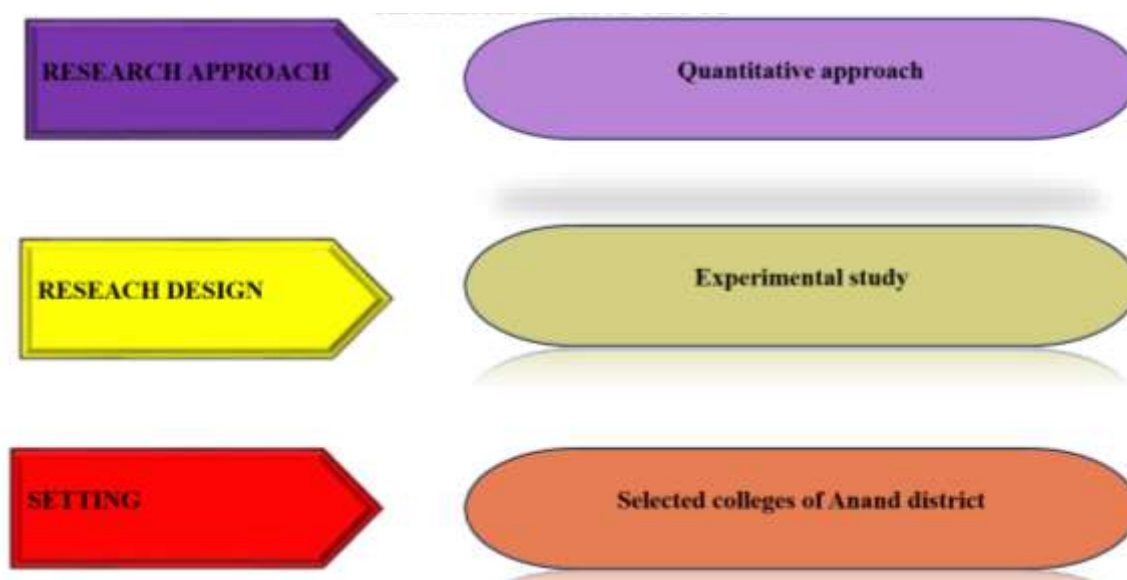
Breast cancer is the most common form of cancer among women worldwide. Early detection is central to improving disease outcomes. Three main screening methods – mammography, breast self-examination (BSE), and clinical breast examination (CBE) – have been developed and tested in Western nations. There is ongoing debate regarding the efficacy of BSE and CBE in terms of mortality reduction, and a number of international organizations no longer recommend them as screening methods. In technically less developed countries.

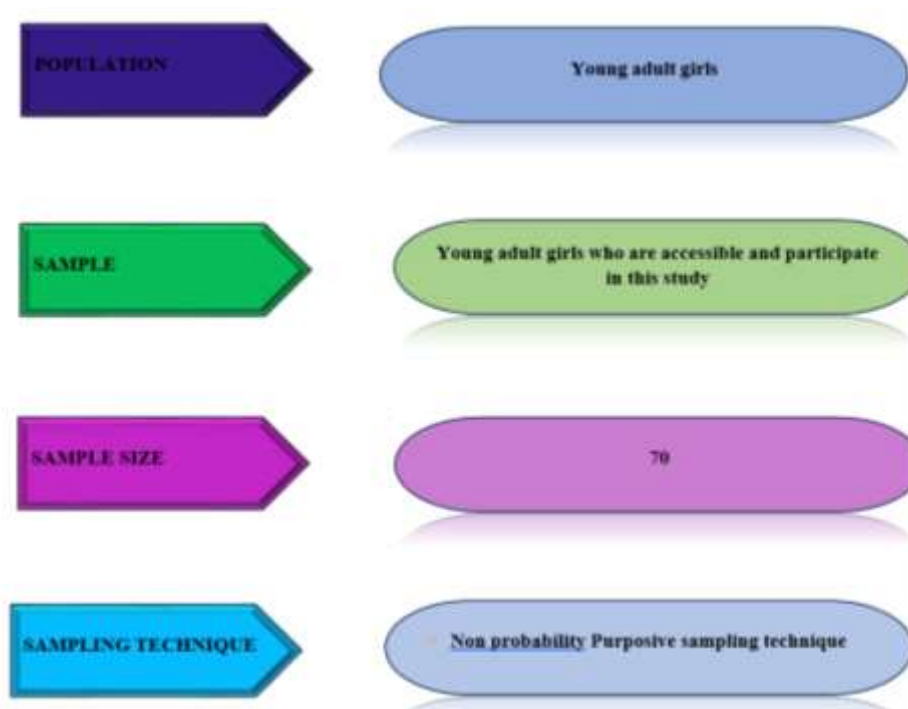
The aim of this study was to investigate the relationship between the performance of breast self-Examination (BSE) and age, place of residence, ethnic background and religion, as well as whether a group willing to take part in an interview regarding BSE mirrored the whole population. The importance of younger women performing the examination is stressed. Due to nurses being strategically located in a wide range of geographical locations, allowing them to meet women in different settings, they are a good choice for motivating women to practise Breast Self-Examination.

1. **Nurduman Aidossov, 2023** An early diagnosis is vital for reducing the fatality rate in the fight against breast cancer. In the current study, a novel intelligent integrated diagnosis system is proposed using IR thermal images with Convolutional Neural Networks and Bayesian Networks to achieve good diagnostic accuracy from a relatively small dataset of images and data, one physician can understand which factors/features play critical roles for the diagnosis. The results of the study showed an accuracy that varies for the most successful models amongst four implemented approaches from approximately 91% to 93%, with a precision value of 91% to 95%, sensitivity from 91% to 92 %, and with specificity from 91% to 97%. In conclusion, we have achieved accurate diagnosis with understandability with the novel integrated approach.

2. **Bart J Harvey, 1997** measure the effect of breast self-examination (BSE) technique and frequency on the risk of death from breast cancer. Case-control study nested within the Canadian National Breast Screening Study (NBSS). The case subjects were 163 women who had died from breast cancer and 57 women with distant metastases. Ten control subjects matched by 5-year age group, screening centre, year of enrolment and random allocation group were randomly selected for each case subject. Self-reported BSE frequency before enrolment in the NBSS, annual self-reports of BSE frequency during the program and annual objective assessments of BSE technique. Relative to women who, when assessed 2 years before diagnosis, examined their breasts visually, used their finger pads for palpation and examined with their 3 middle fingers, the OR for death from breast cancer or distant metastatic disease for women who omitted 1, 2 or 3 of these components was 2.20 (95% confidence interval [CI] 1.30 to 3.71, $p = 0.003$). The OR for women who omitted 1 of the 3 components was 1.82 (95% CI 1.00 to 3.29, $p = 0.05$), for those who omitted 2 of the 3

RESEARCH METHODOLOGY





➤ **EXCLUSIVE CRITERIA OF SAMPLING: -**

- The young adult girls who have adequate knowledge regarding the breast cancer and Breast self-examination.

➤ **INCLUSIVE CRITERIA OF SAMPLING: -**

- The young adult girls who have inadequate knowledge regarding breast cancer and breast self-examination.
- The young adult girls who have high risk for occurring breast cancer.
- The young adult girls who are present at that time.
- The young adult girls who are willing to participate.
- The young adult girls who are under 18-24 age.

DESCRIPTION OF TOOLS :-

SECTION A: -

- Demographic data: -
- Age, sex, type of family, Religion

SECTION B: -

- Questionnaire regarding knowledge of breast cancer and breast self-examination.

PILOT STUDY

The pilot study is a small preliminary or miniature investigation of the same general character as the major study, which is designed to acquaint the researcher with study problem that can be corrected in the preparation for the original research study." It is done to provide the researcher with an opportunity to try out the procedures for collecting data.

The objectives of the pilot study:

Find out the time required for the research study

Identify whether respondent understand the wording of the questions Refinement of the instrument

Find out the expected hurdles during main study

The pilot study pre-test was conducted on 10/1/2024 and post test was conducted on 24/1/2024 in Initially investigator obtains permission from the concerned authority. The sample were selected by Non probability Purposive sampling technique consent was obtained from the 10 samples which comprises 10% of total population, by exapaling by nature of the study. The collect data was analyzed by using descriptive and inferential statistics.

DATA COLLECTION METHOD:-

The formal permission was obtained for the approval of the study from D.M. Patel arts and

S.S. Patel commerce college Ode, Anand. Pre-test was conducted on 9/2/2024 and post test was conducted on 23/2/2024. The data collection done within a given period of 2 weeks. The investigator selected 70 young adult girls meeting the inclusion criteria for data collection by using Non probability Purposive sampling technique. The investigator selected the subject and established the rapport by explaining purpose of the study, the co-operation required and the anonymity assured before obtaining verbal consent. Initially the demographic tool, self - structured questionnaire, to the sample to know existing level of knowledge regarding Breast cancer and Breast self-examination then health awareness programme was given to the samples of the study. After 7 days post-test was administered to assess the effectiveness of the health awareness programme among young adult girls.

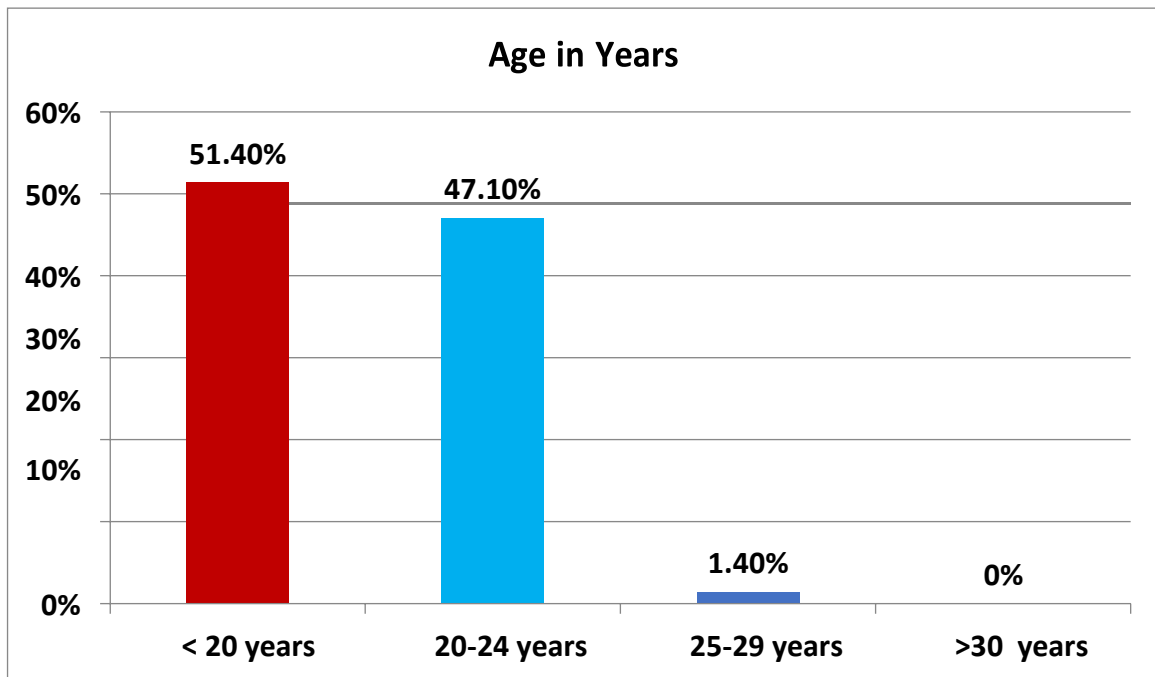
RESULT :-

Table No. 1 Frequency and percentage distribution of demographic variables of young adult girls. (N=70)

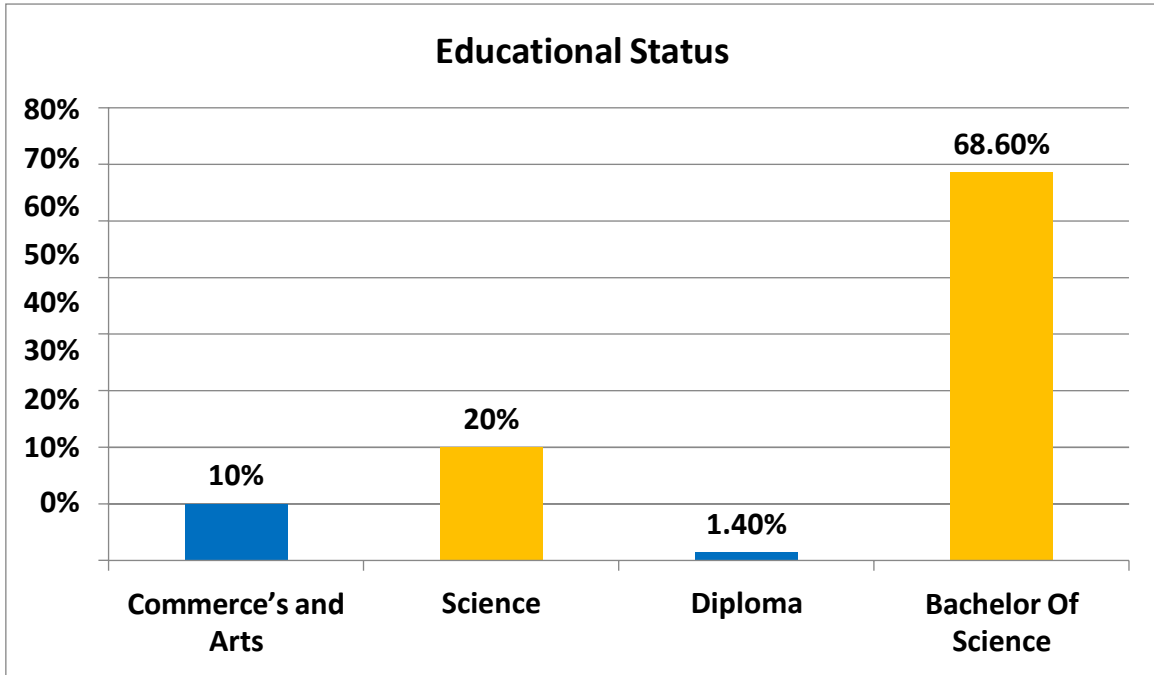
S.N.	Demographic Variable	Frequency	Percentage
1	Age in years:		
	< 20 years	36	51.4%
	20-24 years	33	47.1%
	25-29 years	1	1.4%
	>30 years	0	0%
2	Education Qualification Commerce's and Arts Science		
	Diploma	7	10%
	Bachelor Of Science	14	20%
		1	1.4%
		48	68.6%
3	Occupation		
	Student	70	100%
	Agriculture working women Employed women	0	0%
	Part time job	0	0%
		0	0%
4	Family monthly income		
	>5000 Rupees	6	8.6%
	5000- 10,000Rupees	16	22.9%
	10,000 – 20,000 Rupees	10	14.3%
	Above 20,000 Rupees	38	54.3%
5	Religion		
	Hindu Muslim Christian Others	67	95.7%
		1	1.4%
		1	1.4%
		1	1.4%

6	Number of children in family		
	Zero	68	97.1%
	One	1	1.4%
	Two	1	1.4%
	More than Two	0	0%

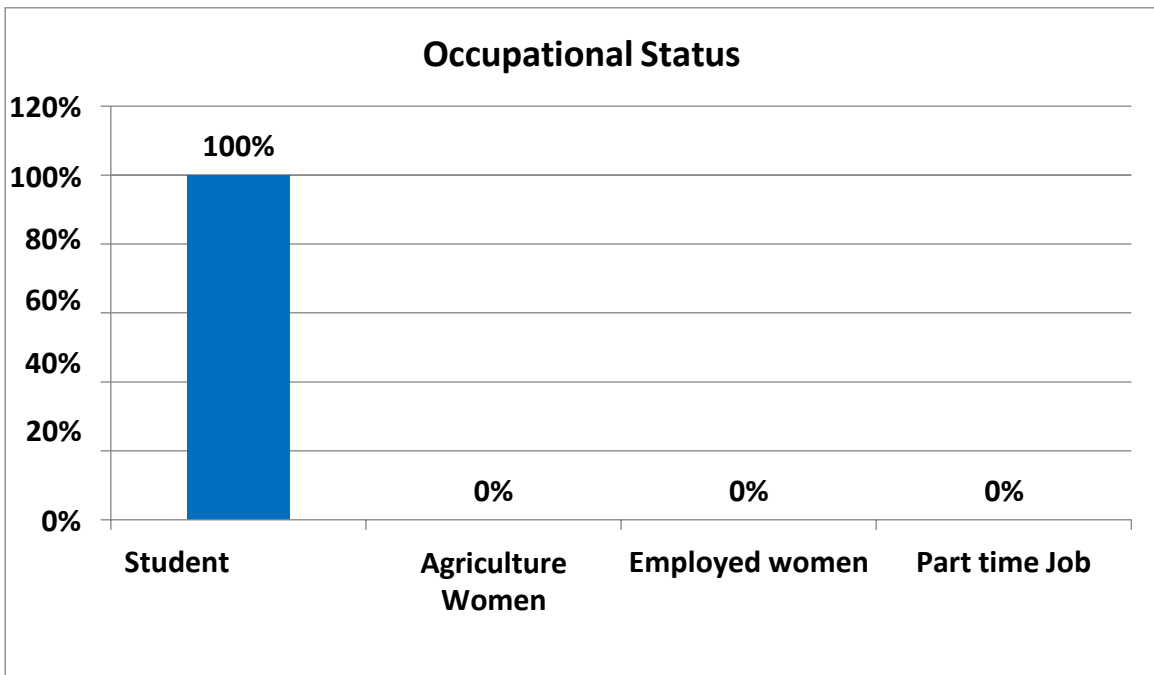
1. **Age in Years:** The age distribution of the young adult girls surveyed indicates that the majority fall within the age range of under 20 years (51.4%) and 20-24 years (47.1%), reflecting a youthful cohort. Few respondents are aged between 25-29 years (1.4%), and none are above 30 years old, suggesting a predominantly young sample.
2. **Education Qualification:** Regarding educational attainment, the surveyed group showcases a varied distribution, with the largest proportion holding a Bachelor of Science degree (68.6%). A significant minority have pursued studies in science (20%), while smaller percentages are engaged in Commerce’s and Arts (10%) or have completed a Diploma (1.4%).
3. **Occupation:** The occupation profile of the respondents reveals that all surveyed individuals identify as students (100%). None of the respondents are currently employed, engaged in agriculture work, or hold part-time jobs, indicating a student-centric population.
4. **Family Monthly Income (Rupees):** Family income distribution among the surveyed individuals indicates a diverse range. A relatively small percentage of families earn above 20,000 Rupees monthly (54.3%), while moderate proportions fall into the income brackets of 10,000–20,000 Rupees (14.3%) and 5000-10,000 Rupees (22.9%). A minority of families earn less than 5000 Rupees monthly (8.6%).
5. **Religion:** Religious affiliation among the surveyed group predominantly aligns with Hinduism (95.7%). A small minority of respondents identify as Muslim (1.4%), Christian (1.4%), or belong to other religious denominations (1.4%), reflecting a primarily Hindu population.
6. **Number of Children in Family:** Family size within the surveyed group indicates a predominant trend towards smaller households, with the vast majority having zero children (97.1%). Few respondents come from families with one child (1.4%) or two children (1.4%), while none report having more than two children, highlighting a prevalence of smaller family units among the surveyed individuals.



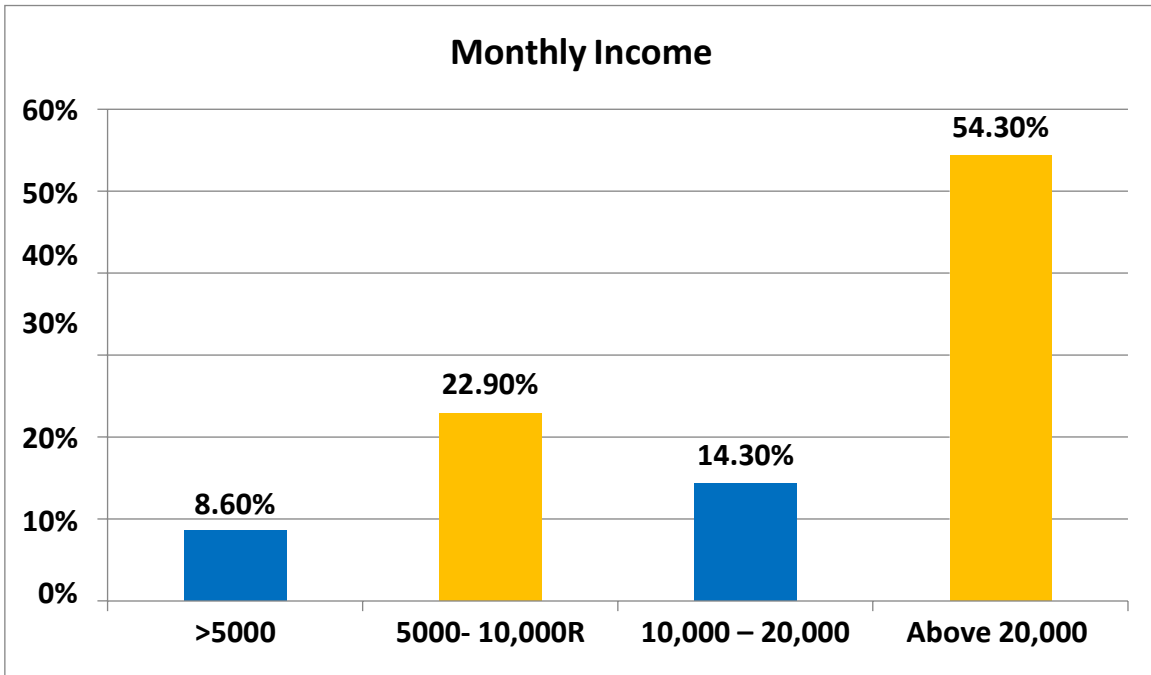
Graph 1: Distribution of College Girls according to Age in Year



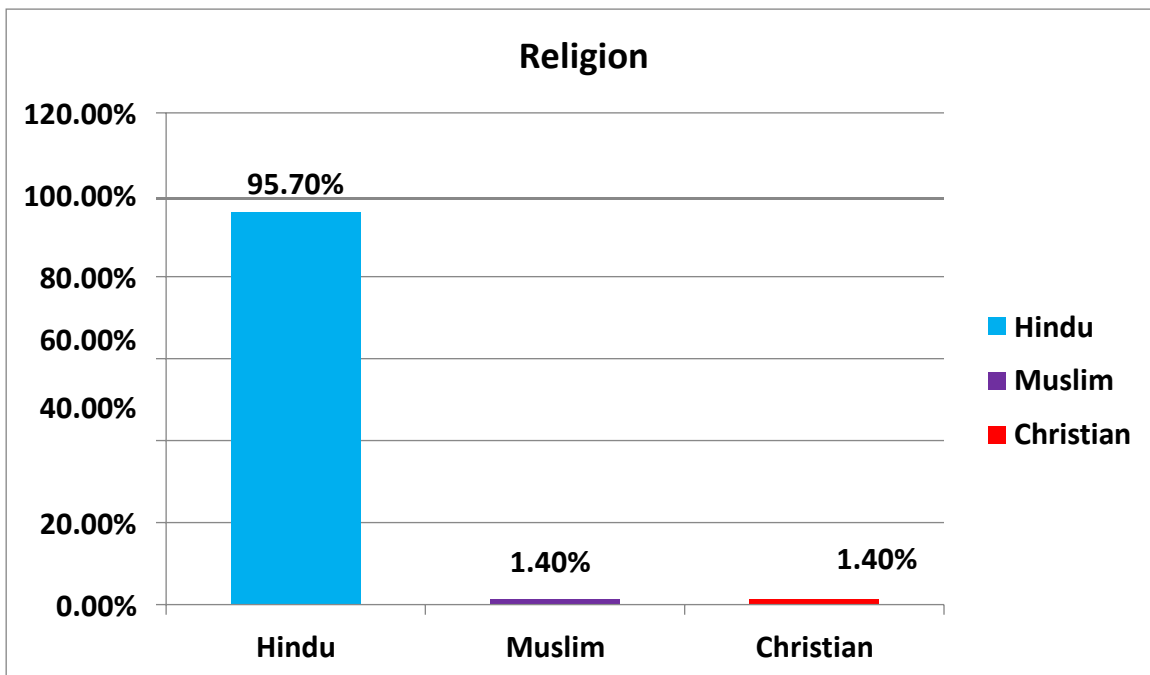
Graph 2: Distribution of College Girls according to Educational Status



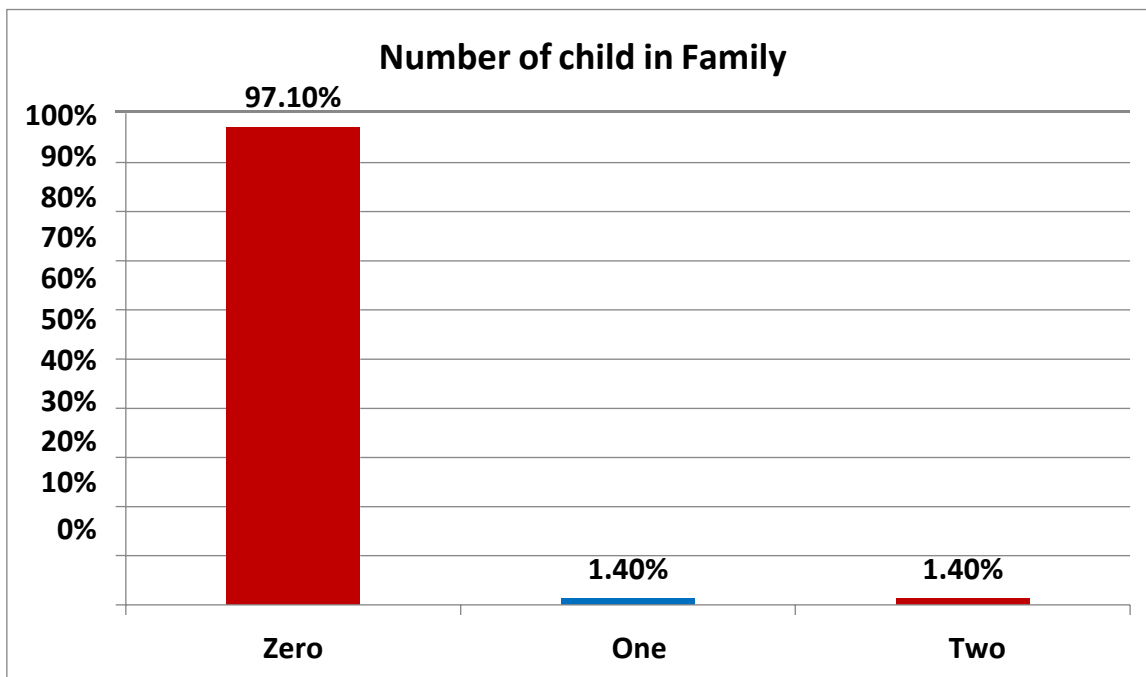
Graph 3: Distribution of College Girls according to Occupational Status



Graph 4: Distribution of College Girls according to Monthly Income



Graph 5: Distribution of College Girls according to Religion status

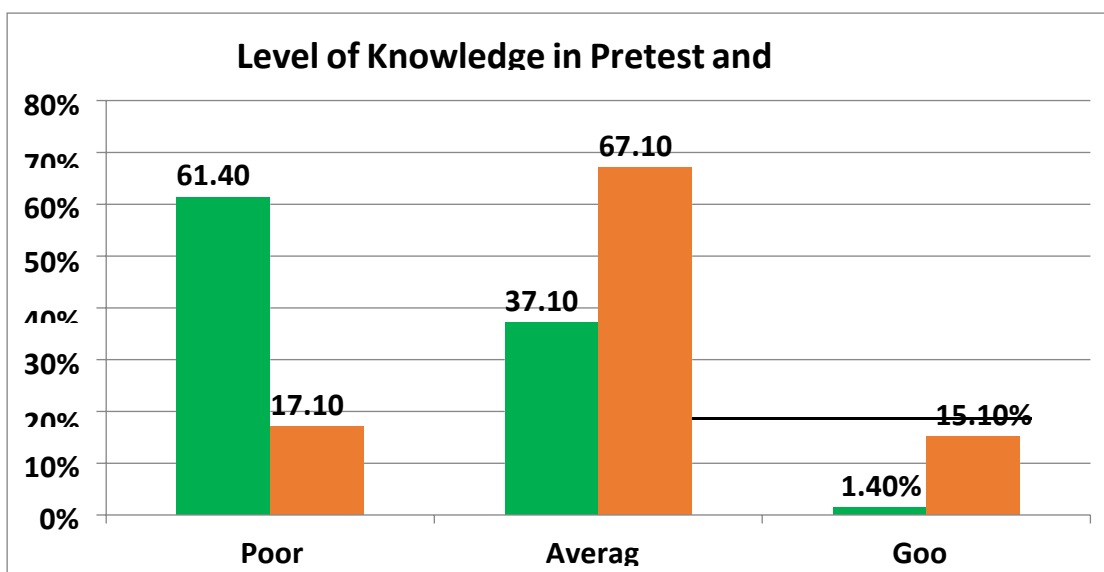


Graph 6: Distribution of College Girls according to number of child in Family

Table 2: Pre-test and Post test Knowledge Scores of Young Adult Girls Before and After the planned teaching programme (N=70)

Level of Knowledge	Pretest		Post test	
	Frequency	Percent	Frequency	Percent
Poor	43	61.4%	12	17.1 %
Average	26	37.1%	47	67.1%
Good	1	1.4%	11	15.1%

In the pretest, 43 participants scored as Poor, constituting 61.4% of the sample, while 26 participants scored as Average, representing 37.1%. Only 1 participant scored as Good, accounting for 1.4% of the sample. After the planned teaching programme, there was a noticeable improvement in knowledge scores, with 12 participants scoring as Poor (17.1%), 47 participants scoring as Average (67.1%), and 11 participants scoring as Good (15.1%). These results indicate a shift towards higher knowledge levels post-intervention, demonstrating the effectiveness of the planned teaching programme in enhancing knowledge regarding breast self-examination among young adult girls in the selected colleges of Anand district.



Graph 7: Distribution of College Girls according to Level of Knowledge in Pretest and Post t-test

Table 3 Assessment of Mean, Range, SD and Mean Percentage of Knowledge in pretest and post-test (N=70)

Level of Knowledge	Range	Minimum	Maximum	Mean	Std. Deviation	Mean %
Pretest	14	7	21	13.38	3.43	45%
Post-test	13	11	24	17.37	2.99	58%

Table 3 displays the assessment of mean, range, standard deviation, and mean percentage of knowledge in the pretest and post-test phases, based on a sample size of N=70 participants. The levels of knowledge are evaluated in terms of their range, minimum and maximum scores, mean score, standard deviation, and mean percentage.

For the pretest phase, the range of knowledge scores spans from 7 to 21, with a minimum score of 7 and a maximum score of 21. The mean knowledge score is calculated as 13.38, with a standard deviation of 3.43. In terms of mean percentage, the pretest knowledge level averages at 45%.

In the post-test phase, the range of knowledge scores extends from 11 to 24, with a minimum score of 11 and a maximum score of 24. The mean knowledge score notably increases to 17.37, accompanied by a standard deviation of 2.99. Consequently, the mean percentage of knowledge in the post-test phase rises to 58%, indicating a significant improvement in knowledge levels following the intervention.

Graph 8: Distribution of College Girls according to Level of Knowledge in Pretest and Post test mean%.

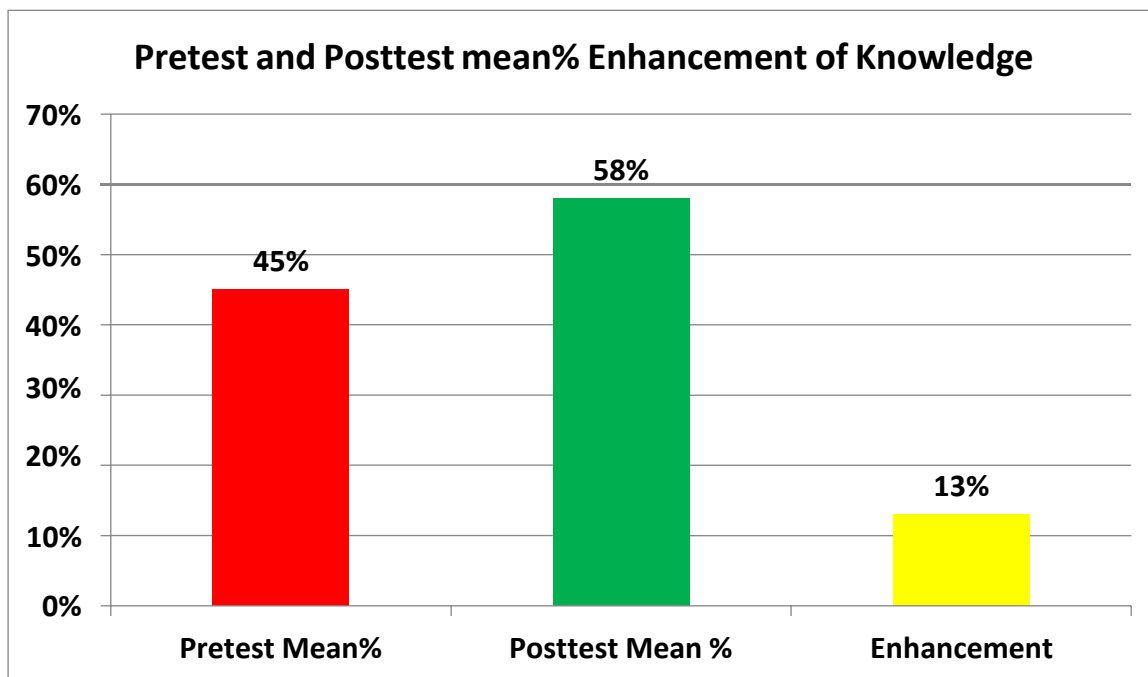


Table 4 Comparison (Paired-t Test) of Pre-test and Post test Knowledge Scores among Young Adult Girls in Selected Colleges of Anand District (N=70)

Level of Knowledge	Mean Score	Enhancement After Intervention		Paired t test	P-value
		Mean	SD		
Pretest	13.38			7.69** S df= 69	P<0.05 Sig.= 0.00 S
Post test	17.37	3.98	4.33		

Note: *- denotes significant at 0.05 level at (i.e. P<0.05)

Table 4 presents the results of a paired t-test, comparing the pre-test and posttest knowledge scores among young adult girls in selected colleges of Anand District, with a sample size of N=70. The table includes information on the mean scores and standard deviations for the pretest and post-test phases, as well as the enhancement observed after the intervention.

For the pretest the mean knowledge score is reported as 13.38, with a standard deviation of

3.98. After the intervention, the mean knowledge score notably increases to 17.37. The enhancement after the intervention is calculated as 4.33, indicating a substantial improvement in knowledge levels.

The paired t-test statistic (t) is calculated as 7.69, with a corresponding p-value of 0.00. The degrees of freedom (df) are reported as 69. The p-value being less than 0.05 signifies that the difference in knowledge scores between the pretest and post-test phases is statistically significant.

The results highlight a significant enhancement in knowledge regarding breast self-examination among young adult girls following the planned teaching program in selected colleges of Anand District.

That hence there exists significance effectiveness on level of knowledge before and after administration of planned teaching program.

Table 5 Association between Knowledge Scores Regarding Breast Self-Examination and selected demographic variables of the college Girls (n=70)

Demographic Variable	F	%	Level of Knowledge			χ^2	df	P Value
			Average	Good	Poor			
Age in years:								
< 20 years	36	51.4%	13	1	22	1.618	4	0.806
20-24 years	33	47.1%	13	0	20			NS
25-29 year	1	1.4%	0	0	1			
Education Qualification								
Commerce's and Arts Science	7	10%	1	0	6	3.045	6	0.803
Diploma	14	20%	6	0	8			NS
Bachelor Of Science	1	1.4%	0	0	1			
	48	68.6%	19	1	28			
Occupation								
Student	70	100%	26	1	43	No statistics are computed because Occupation is a constant		
Agriculture working women	0	0%	0	0	0			
Employed women	0	0%	0	0	0			
Part time job	0	0%	0	0	0			
Family monthly income								
>5000 Rupees	6	8.6%	2	0	4	4.167	6	0.654
5000- 10,000Rupees	16	22.9%	4	0	12			NS
10,000 – 20,000 Rupees	10	14.3%	6	0	4			
Above 20,000 Rupees	38	54.3%	14	1	23			
Religion								
Hindu Muslim Christian	67	95.7%	25	1	41	2.95	6	0.815
Others	1	1.4%	1	0	0			NS
	1	1.4%	0	0	1			
	1	1.4%	0	0	1			
Number of children in family								
Zero One Two	68	97.1%	26	1	41	1.293	4	0.863
	1	1.4%	0	0	1			NS
	1	1.4%	0	0	1			

DISCUSSION: -

The study aims to assess the effectiveness of a planned teaching program on knowledge regarding breast self-examination among young adult girls in selected colleges of Anand district. Additionally, it seeks to determine any significant association between the level of knowledge regarding breast self-examination and demographic variables among these girls.

The findings of the study reveal several important insights into the demographic profile and knowledge levels of young adult girls regarding breast self-examination in the Anand district. Firstly, the demographic analysis indicates a predominantly youthful cohort, with the majority of respondents falling under the age of 20 or between 20-24 years old. This suggests that the target population for breast self-examination education programs in this region primarily consists of young adult females.

Education qualification analysis showcases a diverse educational background among the surveyed group, with a significant proportion holding Bachelor of Science degrees. This indicates a relatively high level of educational attainment among the participants, which can be advantageous for understanding and retaining health-related information provided during the teaching program.

The occupation profile reveals that all surveyed individuals identify as students, highlighting the importance of targeting educational institutions for health education initiatives. Moreover, the family income distribution indicates a diverse range of socioeconomic backgrounds among the respondents, with a notable percentage of families earning above 20,000 Rupees monthly. This underscores the need for health education programs to be accessible and inclusive across different income levels.

In terms of religious affiliation, Hinduism emerges as the predominant religion among the surveyed group, followed by small minorities of Muslim, Christian, and other religious affiliations. This diversity underscores the importance of culturally sensitive approaches in health education interventions.

Furthermore, family size tends towards smaller households, with the vast majority having zero children. This demographic characteristic may influence the availability of time and resources for health-related activities, emphasizing the need for flexible and convenient educational programs.

The effectiveness of the planned teaching program is demonstrated through the pre-test and posttest comparison of knowledge scores. The results show a significant improvement in knowledge levels following the intervention, with a notable increase observed across all knowledge levels (Poor, Average, Good). This finding suggests that the planned teaching program successfully enhanced participants' knowledge regarding breast self-examination.

Additionally, the assessment of mean knowledge scores in the pretest and posttest phases further validates the effectiveness of the teaching program. The significant increase in mean knowledge scores post-intervention indicates a substantial improvement in participants' understanding of breast self-examination techniques and practices.

However, despite the significant improvement in knowledge levels, the study did not find any significant association between knowledge scores and demographic variables among the participants. This suggests that factors such as age, education qualification, occupation, family income, religion, and number of children in the family may not influence knowledge acquisition regarding breast self-examination among young adult girls in the Anand district.

Study Limitation: Limitation of the study is its reliance on a relatively small sample size of 70 participants, potentially limiting the generalizability of the findings to the broader population of young adult girls in Anand district. The use of convenience sampling methods may introduce selection bias, as the sample may not accurately represent the diverse demographics and characteristics of the target population. Additionally, the absence of a control group and short-term follow-up post-intervention restricts the ability to attribute changes in knowledge scores solely to the planned teaching program and assess long-term behavior change. Furthermore, the study's focus on self-reported data for demographic information and knowledge assessment may introduce response biases and limit the reliability and validity of the findings.

CONCLUSION

This study contributes valuable insights into the effectiveness of a planned teaching program on breast self-examination (BSE) knowledge among young adult girls in Anand district. The findings suggest that the teaching program significantly enhanced participants' understanding of BSE techniques and practices, as evidenced by the substantial improvement in knowledge scores post-intervention. Despite certain limitations, including a small sample size and reliance on self-reported data, the study highlights the importance of targeted health education interventions in promoting breast health awareness among young women. The demographic analysis provides valuable context for interpreting the study findings, emphasizing the need for culturally sensitive approaches to health education in diverse populations. While further research is warranted to address the study's limitations and assess long-term behavior change, the findings underscore the importance of ongoing efforts to promote breast health education and encourage regular self-examination practices among young women in Anand district and similar settings. Ultimately, by empowering young women with knowledge and skills for early detection and prevention, such interventions have the potential to contribute to improved breast health outcomes and overall well-being in the community.

SUMMARY

Breast cancer is the cancer that starts in the cells of the breast commonly in inner lining of milk ducts and lobules. Breast Cancer is the most common detected cancer among women in the large mainstream (140 of 184) of countries worldwide. More than 2 million new breast cancer cases with a mortality rate 626.7 per 100,000 were recorded during the year 2018.

Breast cancer is the highest public detected cancer among female population in the majority of countries worldwide. Breast self-examination (BSE) is a useful screening tool to empower women and raise awareness about their breast tissues and help detect any breast abnormalities when they occur. This study aimed to assess the level of female university students' knowledge and practice of BSE A self-administered.

Tests and procedures used to diagnose breast cancer include :1-Breast exam, doctor will check both of breasts and lymph nodes in armpit, feeling for any lumps or other abnormalities. 2- Mammogram, A mammogram is an X-ray of the breast. Mammograms are commonly used to screen for breast cancer. If an abnormality is detected on a screening mammogram, then doctor may recommend a diagnostic mammogram to further evaluate that abnormality. 3-Breast ultrasound, Ultrasound uses sound waves to produce images of structures deep within the body. Ultrasound may be used to determine whether

a new breast lump is a solid mass. 4:-A biopsy is the only definitive way to make a diagnosis of breast cancer. During a biopsy, doctor uses a specialized needle device guided by X-ray or another imaging test to extract a core of tissue from the suspicious area. All over tests to aware and early detection of breast cancer among young adult girls and BSE help to detect and identify the any type of breast cancer.

REFERENCES

1. Syeed N. A Study of Awareness about Breast Cancer and Practice of Breast Self-Examination among Female Respondents in Dhaka (Doctoral dissertation, East West University)
2. "Cancer" at American cancer association <https://www.cancer.gov/about-cancer/understanding/what-is-cancer>
3. Malti Lodhi Midwifery and Gynecological nursing 1st edition Lucknow ,India; Thakur publication ; 2022.p 670-674
4. <https://www.cancer.net/cancer-types/breast-cancer/introduction>
5. <https://www.who.int/news/item/03-02-2023-who-launches-new-roadmap-on-breast-cancer>
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8478535/>
7. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7542407/>
8. Simsek-Cetinkaya S, Cakir SK. Evaluation of the effectiveness of artificial intelligence assisted interactive screen-based simulation in breast self-examination: An innovative approach in nursing students. *Nurse Education Today*. 2023 Aug 1;127:105857.
9. Harvey BJ, Miller AB, Baines CJ, Corey PN. Effect of breast self-examination techniques on the risk of death from breast cancer. *Cmaj*. 1997 Nov 1;157(9):1205-12.
10. Polit and Hungler P. nursing research principles and methods , 6th ed. Philadelphia Lippincott Co,1999 p.69-7, 37-43, 68-78
11. Gangane N, Ng N, Sebastian MS. Women's knowledge, attitudes, and practices about breast cancer in a rural district of Central India. *Asian Pacific Journal of Cancer Prevention*. 2015;16(16):6863-70.
12. Suleiman AK. Awareness and attitudes regarding breast cancer and breast self- examination among female Jordanian students. *J Basic Clin Pharm*. 2014 Jun;5(3):74- 8. doi: 10.4103/0976-0105.139730. PMID: 25278670; PMCID: PMC4160723.
13. . Sarker R, Islam MS, Moonajilin MS, Rahman M, Gesesew HA, Ward PR. Effectiveness of educational intervention on breast cancer knowledge and breast self- examination among female university students in Bangladesh: a pre-post quasi- experimental study. *BMC cancer*. 2022 Feb 22;22(1):199.
14. Dr. Hari Mohan Singh, Chingshubam Jibanlata Devi, Hemangi Chaudhari and Group A <https://www.nursingpractice.net/article/view/66/3-1-17>
15. .Rachna senior nursing tutor hariyana 2021 <https://medicopublication.com/index.php/ijone/issue/view/86>
16. Jabeen ZI, Khan S, Jafri F, Khan AH, Khan M, Shah N. Knowledge and Practice of Breast Self-Examination (BSE) Among Urban Women of a Low-Resource Country. *ANNALS OF ABBASI SHAHEED HOSPITAL AND KARACHI MEDICAL & DENTAL COLLEGE*. 2023 May 30;28(2):96-103.
17. Prathyusha TV, Vallepalli C, Nagaraj K. A CROSS SECTIONAL STUDY ON KNOWLEDGE OF BREAST SELF-EXAMINATION AMONG RURAL WOMEN OF CHITTOOR DISTRICT, ANDHRA PRADESH, INDIA. *Int J Acad Med Pharm*. 2023;5(1):204-8.
18. Paruchuri S, Sim S, Pandian Balasubramanian G, Aaseer Thamby S, Yen Ping N. Knowledge assessment on breast cancer and breast self-examination practice among female university students in Kedah, Malaysia. *Systematic Reviews in Pharmacy*. 2021;12(3):800-8.
19. Reddy SB, Acharya JP. Cross-Sectional study on knowledge about breast cancer and breast self examination among female undergraduate students in Telangana. India. *J Med Res*. 2020;6(6):291-4.
20. Heena H, Durrani S, Riaz M, AlFayyad I, Tabasim R, Parvez G, Abu-Shaheen A. Knowledge, attitudes, and practices related to breast cancer screening among female health care professionals: a cross sectional study. *BMC women's health*. 2019 Dec;19:1- 1.
21. Bapat RS, Bhattad R, Dhabadgav R. Awareness, Knowledge and Practice of Self-Breast Examination in Young Women. *Indian Journal of Gynecologic Oncology*. 2023 Mar;21(1):4.
22. ausar U, Ahmad A, Noor MS, Sohail A. Women s' perception on role of breast self- examination in early breast cancer detection. *Journal of University Medical & Dental College*. 2023 Sep 1;14(3):687-91.)
23. Gupta J, Devi S, Rajamani S. Effectiveness of Structural Teaching Programme on Knowledge and Practice Regarding Breast Self-Examination among Female Students– A Quasi Experimental Study. *South Asian Res J Nurs Health Care*. 2023;5(4):56-60.

24. Alshafie M, Soqia J, Alhomsy D, Alameer MB, Yakoub-Agha L, Saifo M. Knowledge and practice of breast self-examination among breast cancer patients in Damascus, Syria. *BMC Women's Health*. 2024 Jan 28;24(1):73
25. Yonas Biratu Terfa, Ebissa Bayana Kebede, Adugna Olani Akuma. Breast self-examination practice among women in Jimma, Southwest Ethiopia: A community-based cross-sectional study
26. Olufemi OO, Omowumni SR, Ajoke OA, Olufemi AE. Knowledge and Awareness of Breast Cancer and Screening Methods among Female Undergraduate Students in a Semi-Urban College Of Culture and Humanities, Nigeria. *International Journal of Caring Sciences*. 2017 Jan 1;10(1).
27. Sideeq K, Ayoub T, Khan SS. Breast self-examination: assessing its knowledge attitude and practice among ethnic Kashmiri females. *Int J Community Med Public Health*. 2017 Aug 23;4(9):3288-92.
28. Mitra I, Mishra GA, Dikshit RP, Gupta S, Kulkarni VY, Shaikh HK, Shastri SS, Hawaldar R, Gupta S, Pramesh CS, Badwe RA. Effect of screening by clinical breast examination on breast cancer incidence and mortality after 20 years: prospective, cluster randomised controlled trial in Mumbai. *bmj*. 2021 Feb 24;372.
29. Azhar Y, Hanafi RV, Lestari BW, Halim FS. Breast Self-Examination Practice and Its Determinants among Women in Indonesia: A Systematic Review, Meta-Analysis, and Meta-Regression. *Diagnostics*. 2023 Aug 2;13(15):2577.
30. Fondjo LA, Owusu-Afriyie O, Sakyi SA, Wiafe AA, Amankwaa B, Acheampong E, Ephraim RK, Owiredu WK. Comparative assessment of knowledge, attitudes, and practice of breast self-examination among female secondary and tertiary school students in Ghana. *International journal of breast cancer*. 2018 Jul 30;2018.
31. Sadoh AE, Osime C, Nwaneri DU, Ogboghodo BC, Eregie CO, Oviawe O. Improving knowledge about breast cancer and breast self examination in female Nigerian adolescents using peer education: a pre-post interventional study. *BMC women's health*. 2021 Dec;21:1-9.
32. Akram M, Iqbal M, Daniyal M, Khan AU. Awareness and current knowledge of breast cancer. *Biological research*. 2017 Dec;50:1-23.
33. Dadzi R, Adam A. Assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana. *PLoS One*. 2019 Dec 30;14(12):e0226925
34. Varghese D, Nayak M. Awareness and impact of education on breast self examination among college going girls. *Indian journal of palliative care*. 2011 May;17(2):150.
35. John J. A Study to Assess the Effectiveness of Planned Demonstration Programme on Self Breast Examination on Prevention and Early Detection of Breast Cancer Among Women of a Selected Rural Area of Mysuru (Doctoral dissertation, Rajiv Gandhi University of Health Sciences (India)).
36. Youssif E, Ibrahim Ahmed H, Abo Bakr Abd-Ellatef M. Awareness of Nursing Students Regarding to Breast Cancer at New-valley Government. *Egyptian Journal of Health Care*. 2023 Mar 1;14(1):353-65.
37. Godfrey K, Agatha T, Nankumbi J. Breast cancer knowledge and breast self-examination practices among female university students in Kampala, Uganda: a descriptive study. *Oman Medical Journal*. 2016 Mar;31(2):129.
38. Mainaz M, Guthigar M, Naik P. Effectiveness of a Health Educational Program in Enhancing Breast Cancer Knowledge Among Women in Rural Karnataka, South India. *Cureus*. 2024 Mar 14;16(3).
39. Mohammed LA, Idris B, Bolis SM, Musa HH. Knowledge, attitudes and practices related to breast cancer self-examination among medical students at the University of Khartoum, Sudan. *Southern African Journal of Public Health*. 2023 Jun 20:45-51\
40. Abo Al-Shiekh SS, Ibrahim MA, Alajerami YS. Breast cancer knowledge and practice of breast self-examination among female university students, Gaza. *The Scientific World Journal*. 2021 Apr 27;2021