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# A Study To Evaluate The Effectiveness Of A Planned Teaching Program On Breast Education And Positive Breast Habits In Terms Of Knowledge And Attitude Among 13 And 14-Year-Old School-Going Adolescent Girls In Selected Government Schools Of Daman

Krishna Chaudhari, Jerin Rajan
*(MSC. Student Department, Of Medical Surgical Nursing, Government College Of Nursing Daman Veer Narmad South Gujarat University, India)*
*(Vice Principal Of Government College Of Nursing / Daman Veer Narmad South Gujarat University, India)*

***Abstract***
***Background*** *Adolescence (10–19 years) is a vital stage, with breast development as an early milestone for girls. In rural areas, breast health is often neglected due to cultural taboos, poor education, and limited guidance, leading to misinformation and low self-care. Awareness of anatomy, normal changes, hygiene, and breast self-examination (BSE) is crucial for lifelong preventive habits. Studies show that culturally sensitive, school-based Planned Teaching Programs significantly improve knowledge, attitudes, and practices, empowering adolescent girls to adopt healthy behaviours.*
***Aim:*** *Planned Teaching Program in improving knowledge, attitudes, and breast care habits related to breast health among adolescent girls, thereby promoting early preventive habits and empowering them to make informed health decisions.*
***Methodology:*** *A quasi-experimental pretest-posttest control group design with probability-stratified cluster total enumeration sampling was used to assess the effectiveness of a Planned Teaching Program on breast health education and positive breast habits. The study included 324 adolescent girls, equally divided into experimental and control groups. The experimental group received a structured program, while the control group followed the regular curriculum. Pre- and post-test data on knowledge, attitudes, and breast care habits were collected using a structured questionnaire and analysed using descriptive and inferential statistics at a 0.05 significance level.*
***result****: The Planned Teaching Program significantly improved the experimental group's knowledge (10.63 ± 3.51 to 19.59 ± 3.50) and attitude (31.86 ± 5.09 to 39.59 ± 4.23) scores ($p < 0.001$), while the control group showed minimal change. A strong positive correlation was found between attitude and breast care practices pre-intervention, with no significant link between knowledge and either attitude.*
***Conclusion****: The Planned Teaching Program is effective in enhancing knowledge and attitudes toward breast health*

***Keywords:*** *Adolescence, Breast health, planned teaching*

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## I. Introduction

Adolescence (10–19 years) is a period of rapid physical and psychosocial change, with breast development marking a key milestone for girls; however, breast health remains poorly understood in many low-resource and culturally conservative settings due to sociocultural taboos, limited communication, and inadequate school health programs, leaving adolescent girls with misconceptions, fear, and poor hygiene practices. Breast health awareness, including normal development, hygiene, and early recognition of abnormalities, is essential for lifelong self-care, and although breast cancer is rare in adolescence, early awareness and practices such as breast self-examination (BSE) help build confidence, body positivity, and timely health-seeking behaviour. Studies consistently report low levels of breast health knowledge and BSE practice among Indian adolescents, especially in rural areas, despite evidence from global and Indian research demonstrating that structured, school-based teaching programs significantly improve knowledge and attitudes. Yet, such programs remain limited where they are most needed, highlighting the urgent importance of culturally appropriate educational interventions to empower adolescent girls and promote informed, proactive breast health behaviours.

## II. Material And Methods

This quasi-experimental, pre-test-post-test control group design was carried out on 13 and 14-year-old girl students studying 8th and 9th standards of Hindi medium selected government schools in Daman. Probability-stratified cluster total enumeration sampling was used to assess the effectiveness of a Planned Teaching Program on breast health education and positive breast habits. The study included 324 adolescent girls (13–14 years), equally divided into experimental and control groups. The experimental group received the structured program, while the control group followed the regular curriculum. Pre- and post-test data on knowledge, attitudes, and breast care habits were collected using a structured questionnaire and analysed using descriptive and inferential statistics at a 0.05 significance level.

**Inclusion Criteria**

- Adolescent girls age13–14 years study in 8th and 9th standard
- Enrolled in Hindi medium of selected government schools in Daman,
- Girls who have attended their menarche
- available during the data collection period
- Those who are willing to participate and provide informed consent and assent from the parent/guardian

**Exclusion Criteria**

- absent on the day of data collection
- Girls who are not attain the menarche & not studying in 8th and 9th standard
- who are not willing to participate and not provide informed consent, assent from the parent/guardian.
- who are not able to write, have cognitive impairment, or any communication issue that interferes with the understanding of the language used

**Procedure methodology**

All Permission was obtained from the ethics committee, the Assistant Director of Education, and the Principals of selected Government schools of Daman for conducting the study. The study used a probability-based stratified cluster sampling approach. Government schools in Daman were first stratified into small and large based on student enrolment. Two schools were randomly selected from the small stratum for the pilot (experimental and control) and two from the large stratum for the main study (experimental and control). Within each selected school (cluster), all eligible Hindi-medium female students aged 13–14 years meeting the inclusion and exclusion criteria were enrolled using total enumeration. The necessity of obtaining both assent and consent from their guardians was clearly emphasised. These students were systematically divided into five groups, each consisting of 32 to 33 participants. The pre-test questions were explained to the group to ensure clarity, which included Section I: Socio-demographic variables. Part 1: Demographic variable. Part 2: behavioural variable. Section II Modified Structured Knowledge Questionnaire. Section III Modified structure attitude Likert scale. Section IV: Self-Structure Breast Care Habits Checklist. The intervention was conducted over three days. On the first day, an ice-breaking session was held, which included an interactive game. On the second day, sessions focused on breast development and common breast-related issues. On the third day, the participants were taught breast self-examination and positive breast habits. after the intervention, the post-test was conducted.

**Statistical analysis**

Data was analysed using SPSS version. Descriptive statistics such as frequency, percentage, mean, median, range, and standard deviation were used to analyse the demographic characteristics and to assess the baseline knowledge and attitude levels of school-going adolescents. To evaluate the effectiveness of the planned teaching programme, inferential statistics were applied: a paired t-test measured the pre- and post-test differences in knowledge and attitude within each group, while an independent z-test compared post-test scores between the experimental and control groups. Karl Pearson's correlation coefficient was used to examine the relationships between knowledge, attitude, and breast care habits. Additionally, the Chi-square test assessed the association between pre-test knowledge and attitude with selected socio-demographic and behavioural variables

## III. Result

Table A.1: frequency and percentage distribution of socio-demographic variables such as Age in year, study in, religion, types of family, and family monthly income in the experimental and control groups.

| Sr. No | Socio-Demographic Variables | Experimental group n=162 | | Control group n=162 | | $\chi^2$ value (df) | P value |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1. | **Age in Years** | | | | | 2.426 (df= 1) | 0.101 (NS) |
| | 13 Year | 84 | 51.9 | 70 | 43.2 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 14 Year | 78 | 48.1 | 92 | 56.8 | | |
| **2.** | **Study in** | | | | | 2.088 (df =1) | 0.158 (NS) |
| | 8th std | 77 | 47.5 | 90 | 55.6 | | |
| | 9th std | 85 | 52.5 | 72 | 44.4 | | |
| **3.** | **Religion** | | | | | 0.853 (df=2) | 0.652 (NS) |
| | Hindu | 150 | 92.6 | 154 | 95.1 | | |
| | Muslim | 9 | 5.6 | 6 | 3.7 | | |
| | Christian | 3 | 1.9 | 2 | 1.2 | | |
| | Other | 0 | 0 | 0 | 0 | | |
| **4.** | **Type of family** | | | | | 0.385 (df=2) | 0.824 (NS) |
| | Nuclear | 114 | 70.4 | 117 | 72.2 | | |
| | Joint | 41 | 25.3 | 40 | 24.7 | | |
| | Extended | 7 | 4.3 | 5 | 3.1 | | |
| **5.** | **Family monthly income** | | | | | | |
| | 2,13,814 Rupees and above | 0 | 0 | 1 | .6 | 2.511 (df=5) | 0.77 (NS) |
| | 1,06,850-2,13,813 Rupees | 0 | 0 | 1 | 0 | | |
| | 80,110-1,06,849 Rupees | 2 | 1.2 | 3 | 1.9 | | |
| | 53,361-80,109 Rupees | 28 | 17.3 | 24 | 14.8 | | |
| | 31,978-53,360 Rupees | 131 | 80.9 | 132 | 14.8 | | |
| | 10,703-31,977 Rupees | 1 | .6 | 1 | 0.6 | | |

The table depicts data related to **age** of samples shows that in the experimental group, majority 84 (51.9%) belonged to 13 years of age. In the control group, majority 92 (56.8%) belonged to 14 years of age. The data related to **study in** of samples shows that in the experimental group, majority 85 (52.5%) were in the 9th standard. In the control group, majority 90 (55.6%) were in the 8th standard. The data related to **religion** of samples shows that in the experimental group, majority 150 (92.6%) were Hindus. In the control group, majority 154 (95.1%) were Hindus. The data related to **type of family** of samples shows that in the experimental group, majority 114 (70.4%) belonged to nuclear families. In the control group, majority 117 (72.2%) belonged to nuclear families. The data related to **monthly family income** of samples shows that in the experimental group, majority 131 (80.9%) had income between ₹31,978–53,360. In the control group, majority 132 (81.5%) had income between ₹10,703–31,977.

Table. A.2 frequency and percentage distribution of socio demographic variables such as the education of mother, education of father, program session attended regarding breast health, family history of breast disease in experimental and control group

| **Sr. No** | **Socio-Demographic Variables** | **Experimental group n=162** | | **Control group n=162** | | **$\chi^2$ value** | **P value** |
|---|---|---|---|---|---|---|---|
| | | **F** | **%** | **F** | **%** | | |
| **6.** | **The education status of the mother** | | | | | 2.806 (df=6) | 0.83 (NS) |
| | Professional degree | 5 | 3.1 | 2 | 1.2 | | |
| | Intermediate/diploma | 3 | 1.9 | 3 | 1.9 | | |
| | Graduate | 6 | 3.7 | 8 | 4.9 | | |
| | High school | 50 | 30.9 | 43 | 26.5 | | |
| | Primary school | 24 | 14.8 | 23 | 14.2 | | |
| | Middle school | 39 | 24.1 | 41 | 25.3 | | |
| | No formal education | 35 | 21.6 | 42 | 25.9 | | |
| **7.** | **The education status of father** | | | | | 2.953 (df=6) | 0.81 (NS) |
| | Professional degree | 7 | 4.3 | 7 | 4.3 | | |
| | Intermediate/diploma | 4 | 2.5 | 4 | 2.5 | | |
| | Graduate | 3 | 1.9 | 5 | 3.1 | | |
| | High school | 55 | 34.0 | 43 | 26.5 | | |
| | Primary school | 32 | 19.8 | 31 | 19.1 | | |
| | Middle school | 36 | 22.2 | 41 | 25.3 | | |
| | No formal education | 25 | 15.4 | 31 | 19.1 | | |
| **8.** | **Program session attended regarding Breast Health.** | | | | | **(**df=1**)** | |
| | Yes | 0 | 0 | 0 | 0 | | |
| | None | 162 | 100.0 | 162 | 100.0 | | |
| **9.** | **Family history of breast disease** | | | | | 1.62 (df=1) | 0.20 (NS) |
| | Yes | 9 | 5.6 | 15 | 9.3 | | |
| | No | 153 | 94.4 | 147 | 90.7 | | |

The table depicts the data related to **mothers' education** of samples shows that in the experimental group, majority 50 (30.9%) of mothers had completed high school. In the control group, majority 43 (26.5%) of mothers had completed high school. The data related to **fathers' education** of samples shows that in the experimental group, majority 55 (34.0%) of fathers had completed high school. In the control group, majority 43 (26.5%) of fathers had completed high school. The data related to **previous attendance in breast health**

**program** of samples shows that in both experimental and control groups, none (100%) of the adolescent girls had attended any program related to breast health. The data related to **family history of breast disease** of samples shows that in the experimental group, majority 153 (94.4%) reported no family history of breast disease. In the control group, majority 147 (90.7%) reported no family history of breast disease.

Table B.1: frequency and percentage distribution of behavioural variables such as how often do you take a bath in a day, what type of innerwear do you prefer for daily use, what are good hygiene practice for inner wear, how often do you clean your undergarments in experimental and control group

| Sr. No | Behavioural Variables | Experimental group n=162 | | Control group n=162 | | $\chi^2$ value | P value |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 1. | **How often do you take bathe in a day?** | | | | | 0.22 (df=2) | 0.89 (NS) |
| | 1 time | 103 | 63.6 | 99 | 61.1 | | |
| | 2 time | 55 | 34.0 | 59 | 36.4 | | |
| | 3 time | 4 | 2.5 | 4 | 2.5 | | |
| 2. | **What type of innerwear do you prefer for daily use?** | | | | | 0.168 (df= 6) | 0.99 (NS) |
| | Sports Bra | 117 | 72.2 | 120 | 74.1 | | |
| | Wire-free Bra | 36 | 22.2 | 33 | 20.4 | | |
| | Bralette Bra | 2 | 1.2 | 2 | 1.2 | | |
| | Push Up Bra | 0 | 0 | 0 | 0 | | |
| | Strapless Bra | 0 | 0 | 0 | 0 | | |
| | Full coverage | 1 | .6 | 1 | .6 | | |
| | Not started wearing a bra | 6 | 3.7 | 6 | 3.7 | | |
| 3. | **What are good hygiene practices for innerwear ( bra)?** | | | | | 0.513 (df=2) | 0.77 (NS) |
| | Washing innerwear after every use | 157 | 96.9 | 155 | 95.7 | | |
| | Wearing the same innerwear for several days | 3 | 1.9 | 5 | 3.1 | | |
| | Sharing innerwear with a sister | 2 | 1.2 | 2 | 1.2 | | |
| 4. | **How often do you clean your undergarments?** | | | | | 1.928 (df=3) | 0.58 (NS) |
| | ones in a day | 123 | 75.9 | 112 | 69.1 | | |
| | Twice in the day | 33 | 20.4 | 42 | 25.9 | | |
| | Once in 2 days | 5 | 3.1 | 7 | 4.3 | | |
| | Ones in week | 1 | 6 | 1 | .6 | | |

The table depicts The data related to **frequency of bathing** of samples shows that in the experimental group, majority 103 (63.6%) bathed once a day. In the control group, majority 99 (61.1%) bathed once a day.The data related to **type of innerwear preferred for daily use** of samples shows that in the experimental group, majority 117 (72.2%) preferred sports bras. In the control group, majority 120 (74.1%) preferred sports bras.The data related to **practice of washing innerwear** of samples shows that in the experimental group, majority 157 (96.9%) washed their innerwear after every use. In the control group, majority 155 (95.7%) washed their innerwear after every use.The data related to **frequency of cleaning undergarments** of samples shows that in the experimental group, majority 123 (75.9%) cleaned their undergarments once a day. In the control group, majority 112 (69.1%) cleaned their undergarments once a day.

Table B.2: frequency and percentage distribution of behavioural variables such as do you engage in physical activity, how frequently do you consume junk food , how oft you consume balance diet, in experimental and control group

| Sr. No | Behavioural variables | Experimental group n=162 | | Control group n=162 | | $\chi^2$ value | P value |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| 5. | **Do you engage in physical activity?** | | | | | 0.108 (df=4) | 0.99 (NS) |
| | Exercise and Yoga | 21 | 13.0 | 21 | 13.0 | | |
| | Play | 95 | 58.6 | 96 | 59.3 | | |
| | Dance | 35 | 21.6 | 33 | 20.4 | | |
| | Running | 11 | 6.8 | 12 | 7.4 | | |
| | Other | 0 | 0 | 0 | 0 | | |
| 6. | **How frequently do you consume junk food?** | | | | | 0.375 (df=5) | 0.98 (NS) |
| | Every day | 48 | 29.6 | 47 | 29.0 | | |
| | 3–4 times a week | 46 | 28.4 | 46 | 28.4 | | |
| | Once or twice a week | 39 | 24.1 | 43 | 26.5 | | |
| | Occasionally (once or twice a month) | 28 | 17.3 | 25 | 15.4 | | |
| | Every day ( multiple times) | 1 | 6 | 1 | .6 | | |
| | Never | 0 | 0 | 0 | 0 | | |
| 7. | **How often do you consume a balanced diet?** | | | | | 0.409 | 0.94 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Every day | 47 | 29.0 | 42 | 25.9 | (df=2) | (NS) |
| | Most days (4–5 times a week) | 8 | 4.9 | 8 | 4.9 | | |
| | Occasionally (1–3 times a week) | 12 | 7.4 | 12 | 7.4 | | |
| | I'm not sure what a balanced diet is | 95 | 58.6 | 100 | 61.7 | | |

The table depicts The data related to **type of physical activity** of samples shows that in the experimental group, majority 95 (58.6%) engaged in play activities. In the control group, majority 96 (59.3%) engaged in play activities. The data related to **junk food consumption** of samples shows that in the experimental group, majority 48 (29.6%) consumed junk food every day. In the control group, majority 47 (29.0%) consumed junk food every day. The data related to **consumption of balanced** diet of samples shows that in the experimental group, majority 95 (58.6%) were not sure about what a balanced diet is. In the control group, majority 100 (61.7%) were not sure about what a balanced diet is.

Table B.3: frequency and percentage distribution of behavioural variables such as at what age did you have your first menstrual period (menarche) how often should you perform a self breast examination (SBE), Do you experience any of the following symptoms during your premenstrual period, in experimental and control group

| Sr. No | Behavioural variables | Experimental group n=162 | | Control group n=162 | | $\chi^2$ value | P value |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| **8.** | **At what age did you have your first menstrual period (menarche)?** | | | | | 0.214 (df =2) | 0.89 (NS) |
| | 10 years& below | 10 | 6.2 | 10 | 6.2 | | |
| | 11–12 years | 88 | 54.3 | 84 | 51.9 | | |
| | 13–14 years | 64 | 39.5 | 68 | 41.9 | | |
| **9.** | **How often should you perform a self-breast examination (SBE)?** | | | | | 0.489 (df =5) | 0.92 (NS) |
| | Once a week | 1 | .6 | 1 | .6 | | |
| | Once a month | 2 | 1.2 | 1 | .6 | | |
| | Every few months | 0 | 0 | 0 | 0 | | |
| | Once a year | 0 | 0 | 0 | 0 | | |
| | Only when I notice something unusual | 4 | 2.5 | 3 | 1.9 | | |
| | I don't perform self-breast examinations | 155 | 95.7 | 157 | 96.9 | | |
| 10. | **Do you experience any of the following symptoms during your premenstrual period? (You may select one or more options)** | | | | | 1.61 (df =2) | 0.80 (NS) |
| | Lower abdominal pain (cramps) | 93 | 53.75 | 90 | 52.94 | | |
| | Headache or dizziness | 13 | 7.51 | 9 | 5.29 | | |
| | Mood changes or irritability | 25 | 14.45 | 30 | 17.64 | | |
| | Breast tenderness | 15 | 8.68 | 12 | 7.05 | | |
| | None of the above | 27 | 15.61 | 29 | 17.08 | | |
| | Other | 0 | 0 | 0 | 0 | | |

The table depicts The data related to **age at menarche** of samples shows that in the experimental group, majority 88 (54.3%) attained menarche between 11–12 years. In the control group, majority 84 (51.9%) attained menarche between 11–12 years. The data related to performance of **self-breast examination (SBE)** of samples shows that in the experimental group, majority 155 (95.7%) did not perform SBE. In the control group, majority 157 (96.9%) did not perform SBE.The data related to **premenstrual symptoms** of samples shows that in the experimental group, majority 93 (53.75%) experienced lower abdominal pain or cramps. In the control group, majority 90 (52.9%) experienced lower abdominal pain or cramps.

Table.B.4: frequency and percentage distribution of behavioural variables such as are you satisfied with your body image, do you feel embraced in discussing related breast issues, if you have health related issues who would you like to discuss in experimental and control group

| Sr. No | Behavioural variables | Experimental group n=162 | | Control group n=162 | | $\chi^2$ value | P value |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | | |
| **11.** | **Are you satisfied with your body image?** | | | | | 0.101 (df=1) | 0.75 (NS) |
| | Yes | 138 | 85.2 | 140 | 86.4 | | |
| | No | 24 | 14.8 | 22 | 13.6 | | |
| **12.** | **Do you feel embraced in discussing related breast issues?** | | | | | 0.136 (df=1) | 0.71 (NS) |
| | Yes | 117 | 72.2 | 114 | 70.4 | | |
| | No | 45 | 27.8 | 48 | 29.6 | | |
| **13.** | **If you have health-related issues, who would you like to discuss ?** | | | | | 0.021 (df=4) | 0.98 (NS) |
| | Relative | 1 | .6 | 1 | .6 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Mother | 131 | 80.9 | 132 | 81.5 | | |
| | Peer group | 30 | 18.5 | 29 | 17.9 | | |
| | Teacher | 0 | 0 | 0 | 0 | | |
| | Sister | 0 | 0 | 0 | 0 | | |

The table depicts The data related to body image satisfaction of samples shows that in the experimental group, majority 138 (85.2%) were satisfied with their body image. In the control group, majority 140 (86.4%) were satisfied with their body The data related to **embarrassment in discussing breast-related issues** of samples shows that in the experimental group, majority 117 (72.2%) felt embarrassed. In the control group, majority 114 (70.4%) felt embarrassed. The data related to **preferred confidant for health issues** of samples shows that in the experimental group, majority 131 (80.9%) preferred to discuss with their mother. In the control group, majority 132 (81.5%) preferred to discuss with their mother.

Table A. Frequency and percentage distribution of level of breast care habits score of 13-14 years old adolescent girls in experimental and control groups

| **Breast habits** | **Experimental group n=162** | | **Control group n=162** | |
|---|---|---|---|---|
| | **(f)** | **(%)** | **(f)** | **(%)** |
| **Poor breast care habits** | 43 | 26.5 | 39 | 24.1 |
| **Fair breast care habits** | 108 | 66.7 | 113 | 69.8 |
| **Good breast care habits** | 11 | 6.8 | 10 | 6.2 |
| **Total** | **162** | **100%** | **162** | **100%** |
| | | | | |
| **Mean** | **5.54** | | **5.35** | |
| **Sd** | **1.44** | | **1.34** | |
| **SE** | **0.11** | | **0.79** | |

Table A depicts that among 324 samples, 162 samples In the experimental group. **43 (26.5%)** had poor breast care habits, **108 (66.7%)** had fair breast care habits, and **11 (6.8%)** had good habits. Among 162 In the control group, **39 (24.1%)** had poor habits, **113 (69.8%)** had fair breast care habits, and **10 (6.2%)** had good habits. The mean breast care habit score in the experimental group was **5.54 ± 1.44** with a standard error of 0.11, whereas in the control group, the mean score was **5.35 ± 1.34** with a standard error of 0.79.

Table B. Frequency and percentage distribution of level of knowledge score of 13-14 years old adolescent girls in the experimental and control group

| **Knowledge level** | **Experimental group n=162** | | | | **Control group n=162** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Pre test** | | **Post test** | | **Pre test** | | **Post test** | |
| | **(f)** | **(%)** | **(f)** | **(%)** | **(f)** | **(%)** | **(f)** | **(%)** |
| **Poor** | 136 | 84.0 | 12 | 7.4 | 153 | 94.4 | 153 | 94.4 |
| **Average** | 26 | 16.0 | 106 | 65.4 | 9 | 5.6 | 9 | 5.6 |
| **Good** | 0 | 0 | 44 | 27.2 | 0 | 0 | 0 | 0 |
| **Total** | **162** | **100%** | **162** | **100%** | **162** | **100%** | **162** | **100%** |

**Table B** depicts the pre-test and post-test level of knowledge score of 13-14 years old adolescent girls in the experimental and control group**.** Among 324 samples, 162 samples in the Experimental Group the **pretest,** 136 (84.0%) participants had poor knowledge, while 26 (16.0%) participants had average knowledge, and 0 (0%) participants had good knowledge. After the intervention, in the **post-test** only 12 (7.4%) participants remained in the poor knowledge category, 106(65.4%) participants achieved an average level, and 44 (27.2%) participants attained good knowledge.162 sample in Control Group the **pretest**, 153 (94.4%) participants had poor knowledge, while 9 (5.6%) participants had average knowledge, and 0 (0%) participants had good knowledge. The **post-test** results showed change, with 153 (94.4%) participants still having poor knowledge and 9 (5.6%) participants having average knowledge, while 0 (0%) participants attained good knowledge.

Table C: Frequency and percentage distribution of level of attitude score of 13-14 years old adolescent girls in experimental and control group

| **Attitude level** | **Experimental group n=162** | | | | **Control group n=162** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Pre test** | | **Post test** | | **Pre test** | | **Post test** | |
| | **(f)** | **(%)** | **(f)** | **(%)** | **(f)** | **(%)** | **(f)** | **(%)** |
| **Unfavorable** | 48 | 29.6 | 5 | 3.1 | 51 | 31.5 | 44 | 27.2 |
| **Neutral** | 110 | 67.9 | 77 | 47.5 | 111 | 68.5 | 116 | 71.6 |
| **Favorable** | 4 | 2.5 | 80 | 49.4 | 0 | 0 | 2 | 1.2 |
| **Total** | **162** | **100%** | **162** | **100%** | **162** | **100%** | **162** | **100%** |

**Table C** depicts that among 324 samples, 162 samples Experimental Group the **pretest**, 48 (29.6%) participants had an unfavourable attitude, 110 (67.9%) participants had a neutral attitude, and only 4 (2.5%) participants showed a favourable attitude. After the intervention, the **post-test** number of participants with an unfavourable attitude decreased significantly to 5 (3.1%), while 77 (47.5%) participants remained neutral, and 80 (49.4%) participants developed a favourable attitude.162 samples in the Control group the **pretest**, 51 (31.5%) participants in the control group had an unfavourable attitude, 111 (68.5%) participants had a neutral attitude, and none (0%) had a favourable attitude. In the **post-test**, there was minimal change, with 44 (27.2%) participants showing an unfavourable attitude, 116 (71.6%) participants remaining neutral, and only 2 (1.2%) participants showing a favourable attitude.

Table A: Effectiveness of planned teaching program on level of knowledge score regarding breast education and positive breast habits among 13-14 years old adolescent girls in the experimental and control group through mean, SD, Mean% dependent z-test

| Knowledge | | Max score | Mean | SD | Mean % | Mean difference | Z value | P Value |
|---|---|---|---|---|---|---|---|---|
| Experimental group | Pre test | 30 | 10.63 | 3.51 | 35.43 | 8.96 (29.87%) | 2.465 | 0.014 |
| | Post test | | 19.59 | 3.50 | 35.3 | | | |
| Control group | Pre test | 30 | 9.51 | 3.27 | 31.7 | 0.12 (0.4%) | 10.803 | <0.001 |
| | Post test | | 9.63 | 3.10 | 32.1 | | | |

**Table A** depicts In the experimental group, the pre-test mean knowledge score was 10.63, with a standard deviation of 3.51 and a mean % of 35.43, whereas post mean score was 19.59, with a standard deviation of 3.50 and a mean % of 35.3. The effectiveness of the mean difference was 8.96 (29.87%), which shows that there was an increase in the level of knowledge between the pre-test and post-test level in the experimental group

In the control group, the pre-test mean knowledge score was 9.51 with standard deviation which slightly increased to with standard deviation 3.27 and mean % of 31.7, whereas post mean 9.63 with standard deviation 3.10 and mean% of 32.1 the effectiveness of mean difference 0.12(0.4%) which shows that there was very small mean increase level of knowledge between pre-test post-test level in the control group.

Table B Effectiveness of planned teaching program on level of attitude score regarding breast education and positive breast habits among 13-14 years adolescent girls in the experimental group and control group

| Attitude | | Max score | Mean | SD | Mean % | Mean difference | Z value | P Value |
|---|---|---|---|---|---|---|---|---|
| Experimental group | Pre test | 50 | 31.86 | 5.09 | 63.72 | 7.73 (15%) | 10.981 | <0.001 |
| | Post test | | 39.59 | 4.23 | 79.18 | | | |
| Control group | Pre test | 50 | 31.45 | 4.37 | 62.9 | 0.34 (3.4%) | 3.960 | <0.001 |
| | Post test | | 32.03 | 3.97 | 64.06 | | | |

**Table B** depicts that in the experimental group, the pre-test mean attitude score was 31.86, with standard deviation of 5.09 and mean % of 63.72 whereas post mean 39.59 with standard deviation 4.23 and mean% of 79.18, the effective mean difference was 0.34 shows that there was increase in level of attitude between the pre-test and post-test level in the experimental group

In the control group, the pre-test mean attitude score was 31.45 with standard deviation 4.37 and mean% of 62.9, whereas post-test mean 32.03 with standard deviation 3.97 and mean % of 64.06, the effectiveness of mean difference was 0.34(3.4%) which shows there was increase in the level of attitude between the pre-test and post-test level in the control group.

Table A Correlation between level of knowledge and attitude regarding breast education and positive breast habits among 13-14 years old adolescent girls in the experimental and control group

| | Group | Pre test | | Post test | |
|---|---|---|---|---|---|
| | | "r" value | "p" value | "r" value | "p" value |
| **Correlation between knowledge and attitude** | **Experimental** | 0.047 | 0.554 (NS) | -0.030 | 0.891 |
| | **Control** | -0.024 | 0.764 (NS) | -0.011 | 0.614 |

**Table A** depicts that across both experimental and control groups, the correlation between knowledge and attitude remained negligible in both pre-test & post-test assessments, with no statistically significant association

Table B: Correlation between level of attitude and Breast care habits regarding breast education and positive breast habits among adolescent girls in the experimental and control group

| | Group | "r" value | "p" value |
|---|---|---|---|
| **Correlation between pre-test attitude and Breast care habits** | **Experimental** | 0.663 | <0.001 |
| | **Control** | 0.498 | <0.001 |

**Table B** depicts that in the experimental group, the pre-test showed a strong positive correlation observed between pre-test attitude and breast care habits ($r = 0.663$, $p < 0.001$), which was statistically significant. In the control group, a moderate positive correlation was found ($r = 0.498$, $p < 0.001$), also statistically significant.

Table C Correlation between level of knowledge and Breast care habits regarding breast education and positive breast habits among adolescent girls in the experimental and control group

| | Group | "r" value | "p" value |
|---|---|---|---|
| **Correlation between pre-test knowledge and Breast care habits** | **Experimental** | 0.026 | 0.653 |
| | **Control** | 0.025 | 0.741 |

**Table C** depicts that, the level of knowledge were not associate with breast care habits in both experimental and control groups before the intervention

**Association between pre-test level of knowledge scores with selected demographic variables among 13-14 years old adolescent girls in the experimental and control group**

In this study association between knowledge and selected demographic variables among 13-14-year-old adolescent girls in the experimental and control groups, none of the demographic had a significant association with knowledge scores, as the obtained chi-square values were less than the table values at the 0.05 level of significance.

**Association between pre-test level of attitude scores with selected demographic variables among 13-14 years old adolescent girls in experimental and control group**

In this study there is significant association between age and how often you should perform a self-breast examination pre test level of expectancy score variables among 13-14 years old adolescent girls in experimental and control group as the obtained chi-square values were more than the table values.

**Association between breast care habits scores with elected demographic variables among 13-14 years old adolescent girls in experimental and control group**

In this study, there is a significant association between how often you should perform a self-breast examination pre-test level of expectancy score variables, among 13-14 years old adolescent girls in experimental and control group as the obtained chi-square values were more than the table values.

## IV. Discussion

The findings of this study demonstrate that the planned teaching program significantly improved the knowledge and attitude of 13–14-year-old adolescent girls regarding breast health, as evidenced by the substantial increase in post-test scores in the experimental group compared with the control group. These results support existing evidence that structured and age-appropriate health education programs play an essential role in enhancing adolescents' understanding of breast development, breast-related issues, and positive breast care habits. Educational interventions are particularly valuable in promoting informed attitudes and fostering healthier behaviours among young girls

## V. Conclusion

The study findings indicate that the planned teaching program significantly enhanced breast health knowledge, attitudes, and positive breast care practices among 13- and 14-year-old school-going girls in Daman. Baseline assessments showed average awareness in both groups, while post-intervention results demonstrated a marked improvement in the experimental group compared with the control group. A significant positive correlation between attitude and breast care habits further supports the effectiveness of the intervention. Overall, the study concludes that a structured, culturally appropriate teaching program is an effective strategy for improving breast health awareness and promoting preventive behaviours among adolescent girls.

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