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Effectiveness of structured teaching program on knowledge and practice regarding breast self-examination among college girls in a selected college of Bhilai, Chhattisgarh, India

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ABSTRACT

Background: Breast self-examination (BSE) is most sensitive and cost effective method to diagnose breast cancer at an early stage. The present study was aimed to assess the effectiveness of structured teaching program on the knowledge and practice regarding breast self-examination among college girls.

Methods: A quasi-experimental study was conducted among college girls in the selected college, Mahila Mahavidyalaya, Bhilai from January 2012 to February 2012. Data was collected using a structured knowledge questionnaire and observation checklist and analyzed using both descriptive and inferential statistics in terms of frequency, percentage, mean, standard deviation, student's t- test, 'r' value (Karl Pearson correlation of co-efficient) and chi square test.

Results: Among the 30 college girls with 15in experimental group and 15in control group, majority (60%) of girls belongs to the age group of 19-20 years. After intervention, the mean post-test knowledge and practice score of college girls were significantly increased in experimental group (p=0.00). The mean post-test knowledge and practice score of college girls in experimental group was significantly higher than the control group (p=0.00). Moderate correlation was found between post-test knowledge and post-test practice (r=0.47) in experimental group. The posttest knowledge and practice of experimental group were significantly associated with age and area of residence.

Conclusions: The present study demonstrated that the structured teaching program was effective in enhancing the knowledge and the practice of college girls regarding breast self-examination. So it is recommended that appropriate health education plan should be prepared for college girls to create awareness and motivate them to perform the BSE.

Keywords: Effectiveness, Structured teaching program, Breast self-examination, Knowledge, Practice, College girls

INTRODUCTION

Breast cancer is a major public health problem in both developed and developing countries and a leading cause of morbidity and mortality among women. Worldwide, over 1.15 million cases of breast cancer are diagnosed every year.1 Diagnosis at advanced stages of disease contributes to the high mortality rate among women due to breast cancer.² Breast cancer is a preventable cancer if detected early enough. The early detection of breast cancer, not only increases the chances of successful treatment but also improves chances of survival.

Globally, breast self-examination (BSE), clinical breast examination (CBE) and mammography is the recommended screening test for early detection of breast cancer.³ Clinical breast examination and mammography require hospital visit and specialized instrument/ technical expertise.^{1,4} Breast self-examination is an appropriate screening test for screening of breast cancer

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in developing countries where access to diagnostic and curative facilities may be a problem.^{5, 6}

Although breast self-examination is an ideal, simple, safe, effective and cost free, non-invasive intervention which is carried out by women themselves, the practice of BSE was low in different countries.^{7,8} The main barrier for not practicing BSE was lack of knowledge.^{9,10}

Breast self-examination is most sensitive and cost effective method and practicing BSE can reduce mortality by early detection of breast cancer. ^{11,12} Therefore it is important to educate the women and promote them to perform the BSE for early detection of breast cancer.

Keeping in view the above points, the present study was aimed to assess the knowledge and practice regarding BSE among college girls and to assess the effectiveness of Structured Teaching Program on the same.

METHODS

The present quasi-experimental study was conducted among college girls belonging to B.Sc. Final Year from Mahila Mahavidyalaya, Bhilai, during January 2012 -February 2012. Research design adopted for current study was true experimental with pretest and posttest control group design. The sample for the study, consisted of 30 college girls with 15 students in experimental group and 15 students in control group which were selected by purposive sampling method. Data was collected by using a structured knowledge questionnaire and observation checklist which was prepared by referring various research and non-research literature in the area related to breast cancer and BSE, and consultation with experts in related fields to ascertain the clarity and appropriateness of the items of the knowledge questionnaire and observation check list.

Data collection tools (structured knowledge questionnaire and observation check list) comprised of three sections

Part I: Consisted of 5 items on background data such as age, religion, residential area, monthly family income and mass media exposure.

Part II: Consisted of 30 knowledge items for assessing the knowledge of college girls regarding Breast Self-Examination, covering following content of areas: Anatomy and physiology of breast, definition of BSE, importance and guidelines, causes of breast cancer and area method and steps of BSE. All questions were multiple choice question type. Every correct answer carries a score of one mark and wrong answer scores zero.

Part III: Consisted of 20 observation check list for assessing practice of college girls regarding Breast Self-Examination. It includes direction, procedure, steps.

Correct performance to each step of BSE had a score of one.

The different levels of knowledge were categorized as follows:

Excellent: If the score obtained was between 24 marks to 30 marks (80% to 100%)

Good: If the score obtained was between 18 marks to 23 marks (60% to 79%)

Average: If the score obtained was between 15 marks to 17 marks (50% to 59%)

Poor: If the score obtained was below15 marks (Below 50%)

The different levels of practice were categorized as follows:

Excellent: If the score obtained was between 16 marks to 20 marks (80% to 100%)

Good: If the score obtained was between 12 marks to 15 marks (60% to 79%)

Average: If the score obtained was between 10 marks to 11 marks (50% to 59%)

Poor: If the score obtained was below 10 marks (Below 50%)

Method of data collection: After obtaining permission from the principal Mahila Mahavidyalaya, Bhilai, data collection was done from January 2012 to February 2012. The purpose of study was explained to the subjects and their confidentiality assured. Written informed consent was obtained from all the participants prior to data collection. On day 1st pre-test was conducted in which knowledge and practice regarding Breast selfexamination were assessed by knowledge questionnaire and observation check list in both experimental group and control group. On day 2nd, after pre-test, structured teaching program was conducted amongst the college girls in the experimental group only, through lectures. audio visual aids (LCD, charts, and black board) and demonstration on manikin on BSE for duration of 60 minutes. A session of discussion was carried out at the end of structured teaching program to clarify doubts of all the participants. On day 15th post-test was conducted using same knowledge questionnaire and observation check list in both experimental group and control group to evaluate the effectiveness of structured teaching program.

Data analysis

Collected data was entered in the Microsoft excel sheet and analyzed by using both descriptive (frequency, percentage, mean and standard deviation) and inferential statistics (t- test, r value and $\chi 2$ test). Student's paired ttest is used to test the significant difference in knowledge and practice within the group. Student's independent ttest is used to test the significant difference in knowledge and practice between experimental and control group. Karl Pearson correlation of co-efficient (r value) is used to determine the co-relation between knowledge and practice of college girls regarding BSE in experimental and control group. The association between knowledge and practice with selected demographic variables determined by the chi-square test. P<0.05 was considered statistically significant.

RESULTS

Among the total of 30 college girls (divided into 15 experimental and 15 control groups), majority (60%) of girls belongs to the age group of 19-20 years. Majority of the girls (80%) were Hindu and 76.7% live in urban area. Regarding mass media exposure, majority of girls (76.7%) were exposed through the Television. In experimental group majority (40%) of girls belong to monthly family income group Rs 7001-10,000 and in control group majority(46.7%) of girls were in the income group >Rs 10,000 (Table 1).

Table 1: Distribution of college girls according to their socio-demographic characteristics.

Sample characteristics	Experimental group (N=15) Number (%)	Control group (N=15) Number (%)	Total (N=30) Number (%)
Age (in years)			
19-20	08 (53.3)	10 (66.7)	18 (60)
21-22	07 (46.7)	5 (33.3)	12 (40)
Religion			
Hindu	12 (80)	12 (80)	24 (80)
Muslim	00 (0.0)	01 (6.7)	01 (3.3)
Christian	01 (6.7)	02 (13.3)	03 (10)
Others	02 (13.3)	00 (0.0)	02 (6.7)
Monthly family income (in	Rupees)	-	
< 5000	01 (6.7)	01 (6.7)	02 (6.7)
5001-7000	03 (20)	03 (20)	06 (20)
7001-10000	06 (40)	04 (26.7)	10 (33.3)
>10000	05 (33.3)	07 (46.7)	12 (40)
Residential area			
Urban	11 (73.3)	12 (80)	23 (76.7)
Rural	04 (26.7)	03 (20)	07 (23.3)
Mass media exposure			
Television	12 (80)	13 (86.7)	25 (83.3)
News Paper	03 (20)	02 (13.3)	05 (16.7)

Table 2: Level of pre-test and post-test knowledge score regarding breast self-examination in experimental and control group.

		Experimental gro	oup	Control group	
Level of knowledge	Score	Pre- test	Post-test	Pre-test	Post-test
		knowledge (%)	knowledge (%)	knowledge (%)	knowledge (%)
Poor (<50%)	0-14	8 (53.3)	0 (0.0)	10 (66.7)	8 (53.3)
Average (50-59%)	15-17	7 (46.7)	0 (0.0)	5 (33.3)	7 (46.7)
Good (60-79%)	18-23	0 (0.0)	4 (26.7)	0 (0.0)	0 (0.0)
Excellent (80-100%)	24-30	0 (0.0)	11 (73.3)	0 (0.0)	0 (0.0)

Regarding the level of knowledge, in the experimental group, majority 8 (53.3%) of girls had poor knowledge, 7 (46.7%) had average knowledge and none of them had good and excellent knowledge in pre-test. In the post test, majority 11 (73.3%) of girls had excellent knowledge, 4 (26.7%) had good knowledge and none of them had poor and average knowledge in post-test. In control group, majority 10 (66.7%) of girls had poor knowledge, 5 (33.3%) had average knowledge. In the post test, majority 8 (53.3%) of girls had poor knowledge and 7(47.7%) had

average knowledge. None of girls had good and excellent knowledge in the pre and post test period (Table 2).

Area wise pre- test and post-test knowledge assessment regarding breast self-examination in college girls (in experimental and control group) were focused on five components: anatomy and physiology of breast, definition of breast self-examination, importance and guidelines of breast self-examination, causes of breast cancer and area method and steps of breast self-examination.

Table 3: Area wise pre-test and post-test knowledge score regarding BSE in experimental and control group.

		Experimental group			Control group				
Study variable	No. of	Pre-test knowledge score		Post-test knowledge score		Pre-test knowledge score		Post-test knowledge score	
	questions	Mean score	%	Mean score	%	Mean score	%	Mean score	%
Anatomy and physiology of breast	4	2.00	50.0	3.60	90.0	1.47	36.7	1.53	38.3
Definition of BSE	1	0.78	78	0.87	87.0	0.73	73.0	0.84	84.0
Importance and guidelines of BSE	5	2.33	46.6	4.33	86.6	1.73	34.6	2.13	42.6
Causes of breast cancer	5	1.93	38.6	4.60	92.0	1.99	39.8	2.08	41.6
Area method and steps of BSE	15	6.69	44.6	12.53	83.5	7.21	48.1	7.48	49.8

Table 4: Level of pre-test and post-test practice score regarding BSE in experimental and control group.

Lough of museties Casus		Experimental gro	up	Control group		
Level of practice	Score	Pre-test practice	Post-test practice	Pre-test practice	Post-test practice	
Poor (<50%)	0-9	14 (93.3)	0 (0.0)	14 (93.3)	14 (93.3)	
Average (50-59%)	10-11	1 (6.7)	0 (0.0)	1 (6.7)	1 (6.7)	
Good (60-79%)	12-15	0 (0.0)	7 (46.7)	0 (0.0)	0 (0.0)	
Excellent (80-100%)	16-20	0 (0.0)	8 (53.3)	0 (0.0)	0 (0.0)	

Table 5: Comparison of pre-test and post-test knowledge score regarding BSE in experimental and control group.

Knowledge	Pretest knowledge Mean±SD	Post-test knowledge Mean±SD	Student's paired t- test
Experimental group	13.73±2.93	25.93±3.93	df=28, t=22.74 p=0.001 significant
Control group	13.13±2.29	14.06±2.31	df=28, t=1.59, p=0.12 Not significant
Student's independent t- Test	df=14,t=0.62 P=0.53 Not significant	df=14, t=10.06 P=0.001 significant	

The pre-test knowledge score of college girls in experimental group was better for definition of breast self-examination (78%) but it was poor for anatomy and physiology of breast (50%), the importance and guidelines of BSE (46.6%), causes of breast cancer (38.6%) about area method and steps of breast self-examination (44.6%). After intervention, the post-test knowledge score of experimental group was increased to 90% for anatomy and physiology of breast, 87% for definition of breast self-examination, 86.6% for the importance and guidelines of BSE, 92% for causes of breast cancer and 83.5% about area method and steps of breast self-examination.

In control group, the pre-test knowledge score was better for definition of breast self-examination (73%) but it was poor for anatomy and physiology of breast (36.7%), for the importance and guidelines of BSE (34.6%), for causes of breast cancer (39.8%) and about area method and steps of breast self-examination (48.1%). In the post-test, knowledge score of control group was 38.3% for

anatomy and physiology of breast, 84% for definition of breast self-examination, 42.6% for the importance and guidelines of BSE, 41.6% for causes of breast cancer and 49.8% about area method and steps of breast self-examination (Table 3).

Regarding the level of pre-test practice, the present study revealed that 14 (93.3%) of girls had poor practice, 1 (6.7%) had average practice and none of them had good and excellent practice in both the experimental and control group. In the post-test, practice score of girls in experiment group had increased none had a poor or average score, 8 (53.3%) had excellent and 7 (46.7%) had good practice score. Whereas in control group, in the post test, 14 (93.3%) of girls had poor and 1(6.7%) had average practice score (Table 4).

The mean pre-test knowledge score in experimental group and in control group was 13.73±2.93 and 13.13±2.29 respectively and this mean difference was statistically not significant (t=0.62, p=0.53).

Table 6: Comparison of pre-test and post-test practice score regarding breast self-examination in experimental and control group (N=30).

Practice	Pre-test practice Mean±SD	Post-test practice Mean±SD	Student's paired t – Test
Experimental group	6.27±1.58	16.00±1.31	df=28, t=20.16, p=0.001 significant
Control group	6.00±1.60	6.40±1.76	df=28, t=1.63, p=0.11 Not significant
Student's independent t-test	df=14, t=0.45 p=0.65 Not significant	df=14, t=16.92; p=0.001 significant	

Table 7: Correlation between knowledge and practice of college girls regarding BSE (experiment group) (N=30).

	Correlation between	Mean score Mean±SD	Karl Pearson correlation coefficient
Pre-test	Knowledge versus practice score	13.73±2.93 versus 6.27±1.58	r=0.17, p=0.23
Post-test	Knowledge versus practice score	25.93±3.93 versus 16.00±1.31	r=0.47, p=0.001

Table 8: Association between post-test knowledge and demographic variables in experimental group (N=30).

D	Level of po	ost-test knowledge so			
Demographic variables	Good (N)	Percentage (%)	Excellent (N)	Percentage (%)	Significance
Age (in years)					
19-20	4	50.0	4	50.0	$df=1, \chi 2=4.77, p=0.03$
21-22	0	0.0	7	100.0	Significant
Religion					
Hindu	4	33.3	8	66.7	16.2. 2.1.26 0.51
Muslim	0	0.0	1	100.0	df=2, χ 2=1.36, p=0.51 Not significant
Others	0	0.0	2	100.0	- Not significant
Monthly family incom	ne (in rupees	s)			
< 5000	0	0.0	1	100.0	
5001-7000	1	33.3	2	66.7	df=3, χ2=1.63, p=0.11
7001-10000	3	50.0	3	50.0	Not significant
>10000	0	0.0	5	100.0	
Residential area					
Urban	1	9.1	10	91.9	$df=1, \chi 2=6.52, p=0.01$
Rural	3	75.0	1	25.0	Significant
Mass media exposure					
TV	4	33.3	8	66.7	df=1, χ2=1.35, p=0.24
News Paper	0	0.0	3	100.0	Not significant

The mean post-test knowledge score (25.93 ± 3.93) in experimental group was higher than the mean post-test knowledge score of control group (14.06 ± 2.31) and this difference was statistically significant (t=10.06, P=0.001). The mean post-test knowledge score (25.93 ± 3.93) was higher than the mean pre-test knowledge score (13.73 ± 2.93) in experimental group and this difference was statistically significant (t=22.74 P=0.001). This finding shows that the structured teaching program on breast self-examination was very effective for increasing the knowledge of college girls.

The mean post-test knowledge score (14.06±2.31) was higher than mean pre-test knowledge score of control group (13.13±2.29) in control group and this difference was statistically not significant (t=1.59, p=0.12) (Table 5).

The mean pre-test practice score of experimental group (6.27 ± 1.58) was higher as compare to control group (6.00 ± 1.60) but the difference was statistically not significant (t=0.45, p=0.65).

The mean post-test practice score (16.00 ± 1.31) of experimental group was higher than mean post-test practice score of control group (6.40 ± 1.76) and this difference was statistically significant (t=16.92, p=0.001). The mean post-test practice score (16.00 ± 1.31) was higher than the mean pre-test practice score (6.27 ± 1.58) in experimental group, and this difference was statistically significant (t=20.16, p=0.001). This finding shows that the structured teaching program on breast self-examination was very effective in increasing the practice of college girls.

The mean post-test knowledge score (6.40 ± 1.76) was higher than mean pre-test knowledge score (6.00 ± 1.60) in control group but this difference was statistically not significant (t=1.63, p=0.11) (Table 6).

Data presented in Table 7 shows that there was no correlation found between pre-test knowledge score and practice score (r=0.17, p=0.23) and moderate correlation was found between post-test knowledge score and

practice score (r=0.47, p=0.001) of college girls regarding breast self-examination, in experimental group.

In control group, no correlation was found between pretest knowledge and practice score (r=0.14, P=0.32), and post-test knowledge and practice score(r=0.18, P=0.45) of college girls regarding breast self-examination (data not shown).

Findings related to association between the post-test knowledge and practice with demographic variables Table 8 showed significant association between post-test knowledge of experimental group with age (χ 2=4.77, P=0.03) and area of residence (χ 2=6.52, P=0.01) (Table 8).

The post-test practice score in experimental group was also significantly associated with age (χ 2=5.53, P=0.01) and area of residence of college girls (χ 2=6.23, P=0.01) (Table 9).

Table 9: Association between post-test practice and demographic variables in experimental group (N=30).

	Level of p	ost-test practice sco	Significance		
Demographic variable	Good			Excellent	
	Number	Percentage (%)	Number	Percentage (%)	
Age (in years)					
19-20	6	75.0	2	25.0	df=1, χ2=5.53, p=0.01
21-22	1	14.2	6	88.8	Significant
Religion					
Hindu	6	50.0	6	50.0	16.2 . 2 0.02 0.62
Muslim	0	0.0	1	100.0	df=2, χ2=0.93, p=0.63
Others	1	50.0	1	50.0	Not significant
Monthly family income (i	n rupees)				
< 5000	1	100.0	0	0.0	
5001-7000	1	33.3	2	66.7	df=3, χ2=0.60, p=0.43
7001-10000	2	33.3	4	66.7	Not significant
>10000	3	60.0	2	40.0	
Residential area					-
Urban	3	27.2	8	72.8	df=1, χ2=6.23, p=0.01
Rural	4	100.0	0	0.0	Significant
Mass media exposure					
TV	4	41.7	7	58.3	df=1, χ2=2.14, p=0.54
News paper	0	66.7	1	33.3	Not significant

In control group, no significant association was found between post-test knowledge with selected demographic variables such as age (χ 2=0.13, p=0.71), religion (χ 2=0.93, p=0.62), mass media exposure (χ 2=2.63, p=0.10), residential area (χ 2=2.02, p=0.15) and monthly income (χ 2=2.63, p=0.53). The post-test practice score in control group was also not associated with selected demographic variables such as age (χ 2=2.13, p=0.14), religion (χ 2=0.94, p=0.62), mass media exposure (χ 2=1.24, p=0.26), residential area (χ 2=0.26, p=0.60) and monthly income (χ 2=1.22, p=0.74) (data not shown).

DISCUSSION

Breast self-examination (BSE) is most sensitive and cost effective method for early detection of breast cancer and practicing BSE can reduce mortality. Various studies reported a wide knowledge application gap with regards to BSE and the practice of BSE remaining low, varying from 0 to 52%. Therefore it is important to educate the women to promote screening for early detection and seek medical advice immediately.

The present study was aimed to assess the effectiveness of Structured Teaching Program on the knowledge and practice regarding breast self-examination among college girls. It was carried out using a quasi- experimental design which was considered appropriate for the current study. In this regard, Harris et al. stated that quasiexperimental designs are commonly employed in the evaluation of the effectiveness of educational programs when random assignment is not possible or practical.¹⁵

Most of the present study girls (60%) belong to the age group of 19-20 years. This is considered appropriate age as these young girls should be more aware about breast cancer and BSE before they reach the age of common occurrence of the disease. The American Cancer Society recommends monthly BSE for all the women who are 20 years or older. 16 However Breast Cancer Care states that women should start being breast aware from the age of 18 years.17

Regarding mass media exposure, majority of girls (76.7%) in the current study were exposed through the Television, which shows that the main source of information regarding BSE was television among these study population. So this finding indicates the media especially television can be used to sensitize these college girls on the importance of Breast self-examination. Other studies also reported that the main source of information regarding Breast self-examination was television. 18-20

Regarding the level of knowledge, the present study revealed that the level of pre-test knowledge of college girls was low in both experimental and control group. The post-test knowledge score of experimental group was higher than the post-test knowledge score of control group. Similar finding reported in study conducted by Meenakshi et al among college students found that in the experimental group 85% had inadequate knowledge (<50%) and 15% of them had moderate knowledge (50%-75%) in pre-test. In post-test 25.7% of them had moderate knowledge (50%-75%) and 72.5% of students had adequate knowledge (>75%) and none of them had inadequate knowledge (<50%) in post-test. In control group 90% had inadequate knowledge (<50%) and 10% of them had moderate knowledge (50%-75%) in pre-test. In post-test 80% of students had inadequate knowledge (<50%), 20% had moderate knowledge (50%-75%) and none of them had adequate knowledge (>75%) in pre and post-test period.²¹ A study by Moustafa et al also reported that after implementation of the intervention, there were significant improvements in the knowledge among the students. Overall, only one student (0.6%) had satisfactory knowledge at the pre-test compared to 93.9% at the post-test.²²

Present study showed low level of knowledge in almost all area, in both experimental and control group. In posttest, college girls in the experimental group (who received structured teaching program) had higher posttest knowledge score in different areas regarding breast self-examination than those in control group. In agreement with these finding a study by Swati et al reported a significant increase in the mean post-test awareness in the area of concept, sign and symptoms and steps of BSE in the experimental group compared to the comparison group.²³

The present study finding indicated that there was increase in practice after the structured teaching program in experimental group. The post-test practice score of experimental group was higher than the post-test practice score of control group. This finding was almost similar to study conducted Swati et al which concluded that the educational program was highly effective in increasing the ability of women in performing breast selfexamination in experimental group.²³ A study by Mustafa et al also demonstrated that only very few students were correctly performing the steps of the procedures before the intervention. After implementation of intervention, there were significant improvements in students' performance of BSE.22

Thus, present study finding indicated that the college girls in the experimental group (who received structured teaching program) had gained higher post-test knowledge and practice score than those in control group. This finding could be explained by the content and practical part of program which covered unmet needs and knowledge gap among students. In agreement with these finding a study by Swati et al reported that education program was effective in enhancing the awareness and ability of women, in experimental group. The mean posttest awareness and ability score of women in experimental group was higher than the comparison group.²³

Regarding the effectiveness of structured teaching program, the present study showed a significant improvement of knowledge and practice score of the college girls in experimental group. The post-test knowledge score (25.93±3.93) was significantly higher than pre-test knowledge score (13.73±2.93) experimental group (t=22.74, P=0.001). The post-test knowledge score (25.93±3.93) in experimental group was significantly higher than post-test knowledge score (14.06 ± 2.31) in control group (t=10.06, p=0.001). These findings indicated that Structured Teaching Program on Breast Self-Examination was very effective in increasing the knowledge of college girls. Similar findings were reported by Swati et al where the mean post-test awareness score of women in experimental group was significantly higher than the comparison group (p=0.00). The mean post-test awareness score was significantly higher than the mean pre-test awareness score of experimental group (p=0.00).²³ A study conducted by Meenakshi et al among college students alsodemonstrated that post-test knowledge score of experimental group was significantly higher than control group ($p \le 0.001$).²¹

The results of present study revealed that the difference between mean pre-test knowledge score (13.73±2.93) in experimental group and in control group (13.13±2.29) was statistically not significant (t=0.62, p=0.53). The difference between mean post-test knowledge score (14.06±2.31) and mean pre-test knowledge score (13.13±2.29) of control group was statistically not significant (t=1.59 p=0.12). This study finding is supported by a study conducted by Swati et al which found that the mean pre-test awareness scores were found to be non-significant between experimental and comparison group (p>0.05). The mean difference between pre-test score and post-test score in comparison group was found not significant (p=0.392).²³

The result of present study showed that the post-test practice mean score (16±1.31) was significantly higher than pre-test practice mean score (6.27±1.58) in experimental group (t=20.16 p=0.001). The mean post-test practice score (16±1.31) in experimental group was significantly higher than post-test practice score (6.40 ± 1.76) of control group (t=16.92, p=0.001). This finding indicates that the Structured Teaching Program was highly effective in increasing the practice of college girls. Similar findings was reported in a study conducted by Swati et al which found that the mean post-test ability score of experimental group was significantly higher than the mean pre-test ability score of comparison group (p=0.00) which shows that the education program was highly effective in increasing the ability of women in performing breast self- examination.²³ Similarly, a study conducted by Gur et al among women Living in a District Istanbul reported that after the educational intervention, there was significant increase in awareness regarding breast cancer (z=-15.807; p<0.001) as well as in the performance of breast self-examination 321/342 (93%).²⁴ The effectiveness of the educational program in improving the practice of BSE is in agreement with a number of studies from several countries. 22,25,26

The present study revealed moderate positive correlation (r=0.47, p=0.001) between post-test knowledge score and practice score of college girls regarding breast self-examination in experimental group. This finding indicates that gain in knowledge on BSE after structured teaching program result in increase in practice of girls in experiment group. This finding was inconsistent with study conducted by Swati et al among rural women of Haryana which found that there was no significant positive correlation between mean post-test awareness and ability score toward BSE (r=0.166 and p=0.307).²³

Findings related to association between the post-test knowledge and practice with demographic variables in experimental group in current study, significant association was found between post-test knowledge with age (χ 2=4.77, p=0.03) and area of residence (χ 2=6.52, p=0.01) and post-test practice score with age (χ 2=5.53, p=0.01) and area of residence of college girls (χ 2=6.23, p=0.01). So the elders and urban girls scored more

excellent knowledge and practice than others in experimental group. In control group, no significant association found between selected demographic variables such as age, religion, mass media exposure, residential area and monthly income with post-test knowledge and practice of girls. This study finding is supported Meenakshi et al which found that age and year of study was found to be associated with post-test knowledge of college students in experimental group but in control group, all the variables are not significant. ²¹A study conducted by Swati et al found no significant association between selected demographic variable and post-test awareness and ability score in both experimental and comparison group. ²³

The limitation of the present study, the size of sample was only 30 subjects with 15 students in experimental group and 15 students in control group, selected by purposive sampling method due to resource constraints. Hence it is difficult to make broad generalization. The structured knowledge and observation check list was developed as no standardized tools were available.

In conclusion, the present study findings demonstrated that the structured teaching program was very effective in enhancing the knowledge as well as the practice of college girls regarding BSE. So appropriate health education plan should be prepared to improve the knowledge and practice of college girls regarding Breast Self-Examination to diagnose breast cancer at early stage.

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