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Breast Self-Examination Practices: An Educational Program for Female Workers' at Beni-Suef University

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Abstract

Background: Breast self-examination (BSE) is a rather easy, affordable, easy-to-use, non-invasive early detection technique that is advised for women. A woman should begin this regimen in her 20s to learn what healthy breasts feel and look like.

Aim: The current study was conducted to evaluate the effect of an educational program on female workers' breast-examination practices at Beni-Suef University.

Subjects & Methods: Design: A purposive sample of 323 working women at Beni-Suef University was selected using the Chandrasekharan equation. ***Tools:*** Tool I: A Structured Interviewing Questionnaire Sheet; It was concerned with the personal data and reproductive profiles of the studied females. Tool II: sub-items of Breast Self-Examination Checklist. Tool III: Arabic booklet provides a comprehensive overview of sub-items and steps for breast self-examination.

Results: It revealed that 53.8% of the studied women married at 17-22 years old, age of menarche of 52.9% of the studied female workers were 10-12 years. Statistically significant improvements in female workers' total sub-items practice regarding breast self-examination during the posttest with $p \leq 0.05$ were found. Only 11.8% & 9.6% of females had adequate practice regarding BSE by consideration and make sure that there is asymmetry in the nipple, areola or breast during BSE, which improved to 87.6% and 86.7% after the intervention, respectively. Also, 8.4% of females who had adequate practice regarding BSE by tactile examination improved to 88.2% after the intervention.

Conclusion: Based on the findings of the present study, it can be concluded that the educational program has a positive effect on female workers' practice regarding preparation for breast self-examination as statistically significant improvement in female workers' total sub-items practice for breast self-examination were observed after program implementation.

Recommendations: Implement the same program for all female workers in the Beni-Suef governorate

Keywords: Practices, Breast Self-Examination, Educational Program

Introduction

Early detection of breast cancer through breast self-examination, mammography, clinical breast examinations (CBEs), and breast self-examinations are recognized techniques for detecting breast cancer. Breast self-examination (BSE) is a rather easy, affordable, easy-to-use, non-invasive early detection technique that is advised for women **[1-4]**. A woman should begin this regimen in her 20s to learn what healthy breasts feel and look like. This facilitates prompt reporting of breast changes to a healthcare provider and efficient self-application by women. As lumps in the breast are found when a woman records breast changes, identifying changes indicative of BSE in her may suggest breast cancer also serves a dual role **[5-8]**.

Preventive measures for breast cancer include maintaining a healthy body weight, eating a healthy diet, and engaging in regular physical activity. Limiting hormone therapy, early childbearing before the age of 30 years, Pregnancy and breastfeeding, Avoid tobacco and alcohol intake, limiting exposure to environmental toxins, Perform breast self-examination and undergo regular screening.

Nurses conduct these examinations in conjunction with the patient, asking them to point out any areas where they feel a bump. For clinical purposes, a complete report on any visible mass discovered on the breast during the examination is required, including information on the position, size, texture, and movement of each breast. The nurse also examines the patient's lower breast, clavicle medially, mid-sternum, axillary end of the breast tissue, and horizontally to the mid-axillary line **[7-10]**.

Aim of The Study

The current study was conducted to evaluate the effect of an educational program on female workers' breast-examination practices at Beni-Suef University.

Subject And Method

The study utilized a quasi-experimental research design to study 323 women aged 18-60 at Beni-Suef University, excluding cancer, chemotherapy, radiotherapy, and psychological disorders, using pre- and posttest interviews for data collection.

Tools of data collection:

Tool I: A Structured Interviewing Questionnaire Sheet

It was developed by the researcher based on the review of relevant literature. It aimed to gather information related to women and consisted of three parts as follows:

Part 1 women's personal and socio-demographic details, age of marriage, education, and family income.

Part 2 presented women's reproductive profiles as menstrual history, age of menarche, how many days of the monthly period, regularity of the menstrual cycle, contraceptive methods usage, any experienced complications while using contraceptives, and history of breastfeeding.

Tool II: Breast Self-Examination Checklist:

The Breast Self-Examination Observational Checklist is a practical tool for evaluating and tracking women's performance in breast self-examination, encompassing four sub-items for pre- and post-educational implementation. Steps were graded with zero and one, resulting in a total score of 35 degrees. Practical scores were categorized into two groups: ≥60% for satisfactory practice and <60% for unsatisfactory practice.

Tool III: Supportive material (Arabic booklet):

The text provides a comprehensive overview of sub-items for each step of breast self-examination.

Tools Validity and Reliability

Beni-Suef University's obstetrics and gynecological nursing department experts assessed the study tools' content validity and reliability using Cronbach's Alpha test, achieving a reliability coefficient of 0.976.

Ethical Consideration:

The study received ethical approval from Beni-Suef University's Research Ethics Committee and consent from all female participants, who were assured the information was private and could withdraw at any time.

Pilot study:

A pilot study on 10% of 32 women assessed tool applicability, efficiency, and clarity, identifying obstacles and making necessary modifications, excluding the pilot sample from the main study.

Fieldwork

- The study, spanning December 2023 to May 2024, involved assessment, planning, implementation, and evaluation of data collection tools, with expert panel reviews for validity, substance, knowledge, correctness, and relevance.
- The researcher interviewed women, analyzed their socio-demographic traits, and created an educational program. They also observed their performance using 35-point checklists, determining satisfaction based on a score of 60% or less.
- The researcher developed an educational program to enhance females' breast self-examination practices, which included practical sessions on understanding and demonstrating the steps.
- The program for working women, presenting it in various colleges' lecture halls, the program included 45-minute health education sessions utilizing various media such as artificial breast modules, laptops, and guidance booklets. The sessions included data shows, demonstrations, and re-demonstrations.
- A post-program implementation posttest for breast self-examination was conducted on female participants, using a practical checklist for evaluation and performance tracking.

Statistical Design:

The study utilized SPSS version 20 to analyze data on women's knowledge and preventive behaviors before and after program implementation, comparing results using p-values ≤0.05.

Results

Table (1) shows the percentage distribution of the studied female workers regarding their socio-demographic data. It reveals that more than half (53.8%) of them married at 17-22 years old, 45.8% had a university degree, and 84.2% had enough monthly income from their point of view.

Table 1: Percentage distribution of the studied female workers regarding to their socio-demographic data (n=323).

Items	No.	%
Age of marriage		
17-22 years	142	53.8
23-25 years	92	34.8
> 25 years	30	11.4
Educational level		
Intermediate education	97	30.0

University education	148	45.8
Above university	78	24.1
Monthly income of family		
Enough and increases	13	4.0
Enough	272	84.2
Not enough	38	11.8

Figure (1) shows the percentage distribution of the studied female workers regarding their reproductive profile and presents that the age of menarche of 52.9% of the studied female workers was 10-12 years, 51.4% had a monthly period that lasted for 5-7 days. Related to the history of using contraception, 71.8% of female workers had used contraception, and 63.8% of them had used vaginal IUDs.

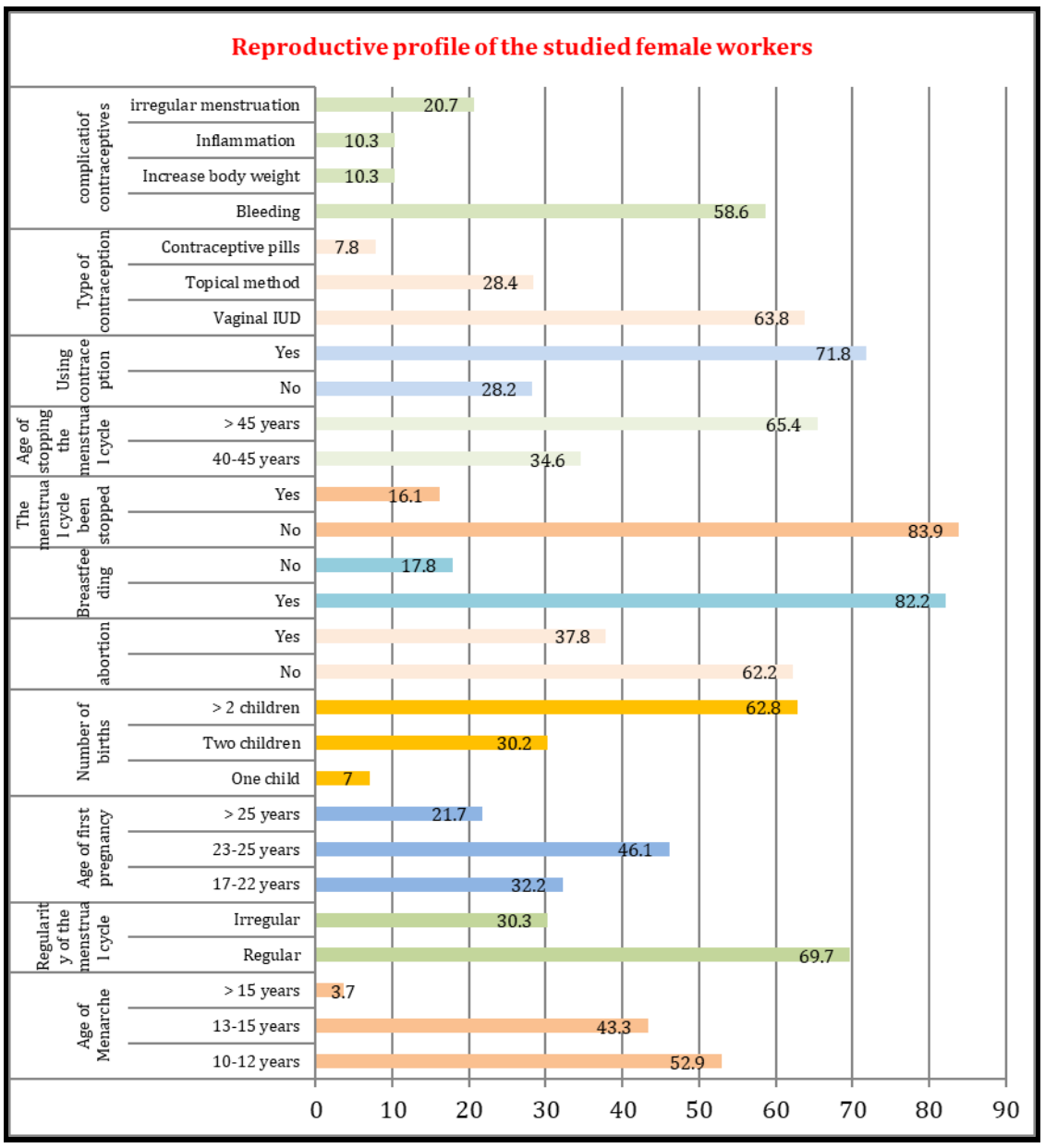

Figure 1: Reproductive profile of the studied female workers

Table (2) presents that there was a highly statistically significant improvement in female workers' sub-items practice regarding preparation for breast self-examination during the posttest with $p \leq 0.01$ in all items compared to the pretest, as noticed that nearly one third and more (30.7%, 37.8%, 34.7%, 30.3% & 37.2%) of females had inadequate practice regarding preparation BSE, which improved to the majority (85.8%, 84.2%, 85.1%, 84.2% & 83.6%) of them having adequate practice after the intervention, respectively.

Table 2: Percentage distribution of the studied female workers' practices regarding breast self-examination preparation (n=323).

Breast self-examination preparation	**Pretest**				**Posttest**				**X2 (p value)**
	Done		**Not done**		**Done**		**Not done**		
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Wash hands thoroughly, dry them and, if necessary, wear gloves during examination	112	34.7	211	65.3	275	85.1	48	14.9	4.389 (0.036*)
Take off your clothes from waist to top of breast area	122	37.8	201	62.2	272	84.2	51	15.8	10.194 (0.001**)

Do examination in a closed room with a large mirror and a pillow	99	30.7	224	69.3	277	85.8	46	14.2	5.521 (0.019*)
Breast self-examination can be done while bathing	100	31.0	223	69.0	266	82.4	57	17.6	4.262 (0.029*)

* Statistically significant at p≤0.05 ** Highly statistical significant at p≤0.01

Figure (2) presents that there was a statistically significant improvement in female workers' total sub-items practice regarding preparation for breast self-examination during the posttest with p≤0.05 compared to the pretest, as noticed only 23.8% of females had adequate practice regarding preparation BSE, which improved to 76.2% after the intervention, respectively.

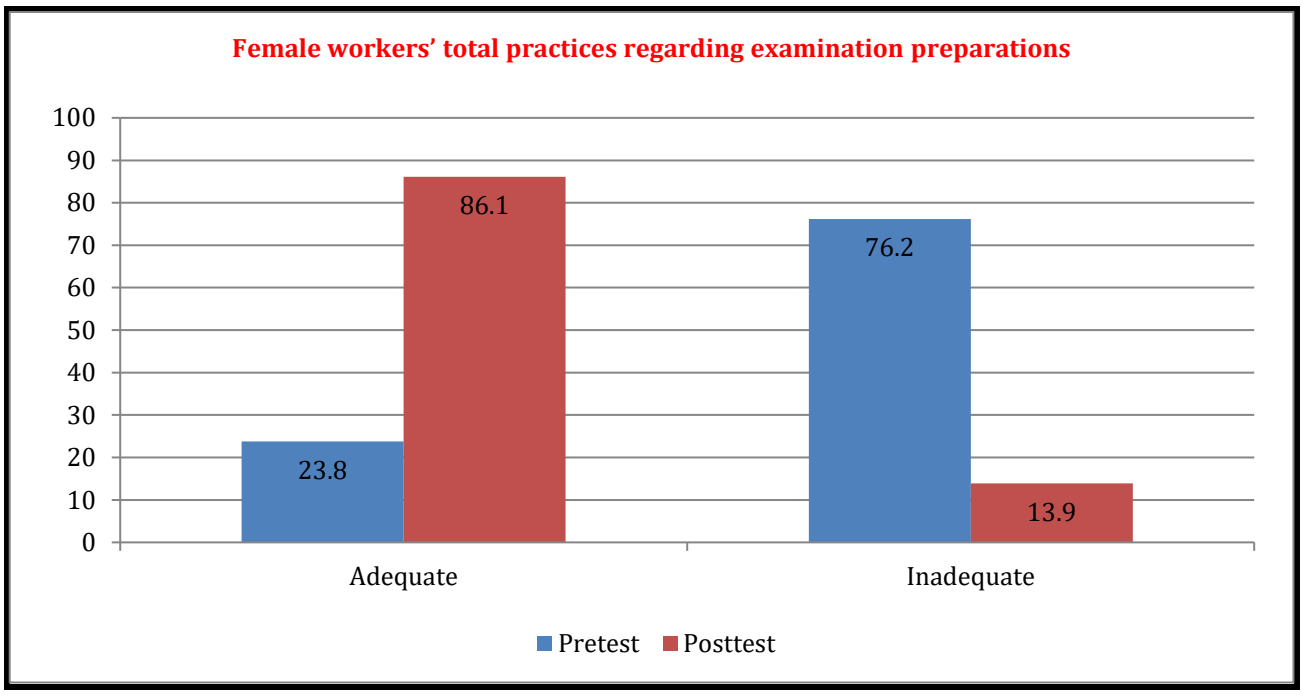

Figure 2: Female workers' total practices regarding examination preparations (n= 323, X^2 =5.629, p value = 0.018*)

Table (3) & Figure (3) present that there was a highly statistically significant improvement in female workers' sub-items and total practices regarding examination by consideration during the posttest with p≤0.01 in all items compared to the pretest. As noticed, only 11.8% of females had adequate practice regarding BSE by consideration, which improved to 87.6% after the intervention, respectively.

Table 3: Percentage distribution of the studied female workers' practices regarding examination by consideration for breast self-examination (n=323).

Examination by consideration	**Pretest**				**Posttest**				**X2 (p value)**
	Done		**Not done**		**Done**		**Not done**		
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Stand in front of the mirror and put your arms on the sides of the body	89	27.6	234	72.4	253	78.3	70	21.7	7.882 (0.005**)
Put your arms on the waist area	65	20.1	258	79.9	259	80.2	64	19.8	4.119 (0.042*)
Raise your arms up and place both palms behind your head	63	19.5	260	80.5	262	81.1	61	18.9	5.977 (0.014*)
Put your hands behind your back and bend your body forward	73	22.6	250	77.4	255	78.9	68	21.1	4.529 (0.033*)
Look at the breasts in each of these previous positions to notice any differences between them	94	29.1	229	70.9	266	82.4	57	17.6	6.549 (0.010**)
Observe shape, size and symmetry of breasts, in case there is a slight difference, this is normal	101	31.3	222	68.7	264	81.7	59	18.3	6.104 (0.013*)
Notice any changes in the breast such as bumps, pits, protrusions in the breast skin or sores	111	34.4	212	65.6	260	80.5	63	19.5	3.866 (0.049*)

Notice any signs of inflammation as redness of the breast, hotness of breast skin or swelling	115	35.6	208	64.4	268	83.0	55	17.0	5.494 (0.019*)
Examine the nipple and Areola in terms of the location, shape and size of the nipple	119	36.8	204	63.2	259	80.2	64	19.8	7.684 (0.006**)
Notice any abnormal discharge from the nipple (bloody discharge)	105	32.5	218	67.5	265	82.0	58	18.0	5.824 (0.010**)
Squeeze the nipple to make sure the nature of these secretions	94	29.1	229	70.9	254	78.6	69	21.4	6.776 (0.009**)
Look at the arms to notice swelling or muscle weakness	57	17.6	266	82.4	238	73.7	85	26.3	7.031 (0.008**)

* Statistically significant at p≤0.05 ** Highly statistical significant at p≤0.01

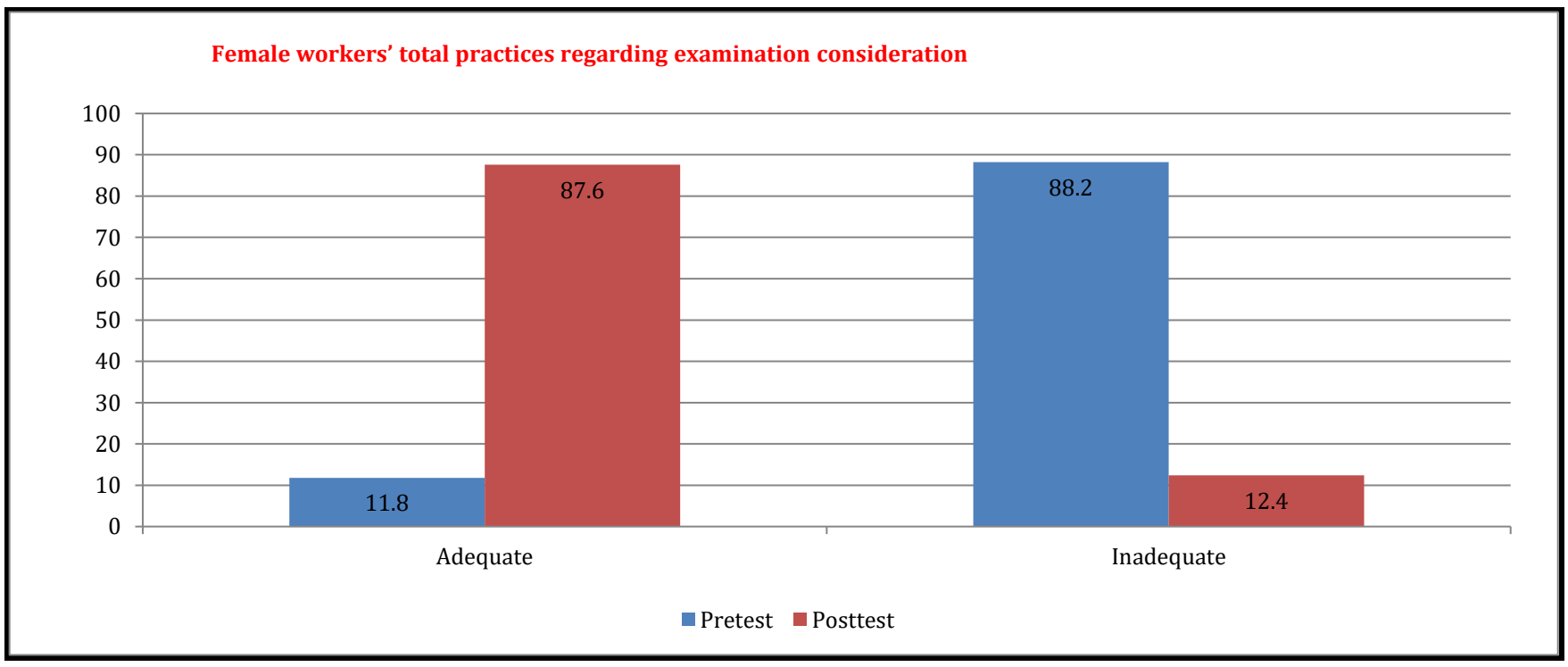

Figure 3: Female workers' total practices regarding examination consideration (n= 323, X^2 = 6.712, p value = 0.010**)

Table (4) & Figure (4) present that there was a highly statistically significant improvement in female workers' sub-items and total practices regarding make sure that there is an asymmetry in the nipple, areola or breast during the posttest with p≤0.01 in all items compared to the pretest. As noticed only 9.6% of females had adequate practice regarding make sure that there is an asymmetry in the nipple, areola or breast during BSE, which improved to 86.7% after the intervention, respectively

Table 4: Percentage distribution of the studied female workers' practices regarding make sure that there is asymmetry in the nipple, areola or breast during breast self-examination (n=323).

Make sure that there is asymmetry in the nipple, areola or breast	**Pretest**				**Posttest**				**X^2 (p value)**
	Done		**Not done**		**Done**		**Not done**		
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Putting hands on the thigh	47	14.6	276	85.4	263	81.4	60	18.6	5.929 (0.015*)
Hands are firmly pressed to the waist	52	16.1	271	83.9	265	82.0	58	18.0	5.527 (0.019*)
The arms are raised upwards and both palms are placed behind head	61	18.9	262	81.1	258	79.9	65	20.1	8.056 (0.004**)
The lady leans (bends) forward	62	19.2	261	80.8	260	80.5	63	19.5	6.429 (0.011*)
Finally, lie down on a table or bed, put a pillow under the chest	95	29.4	228	70.6	263	81.4	60	18.6	4.694 (0.039*)

* Statistically significant at p≤0.05 ** Highly statistical significant at p≤0.01

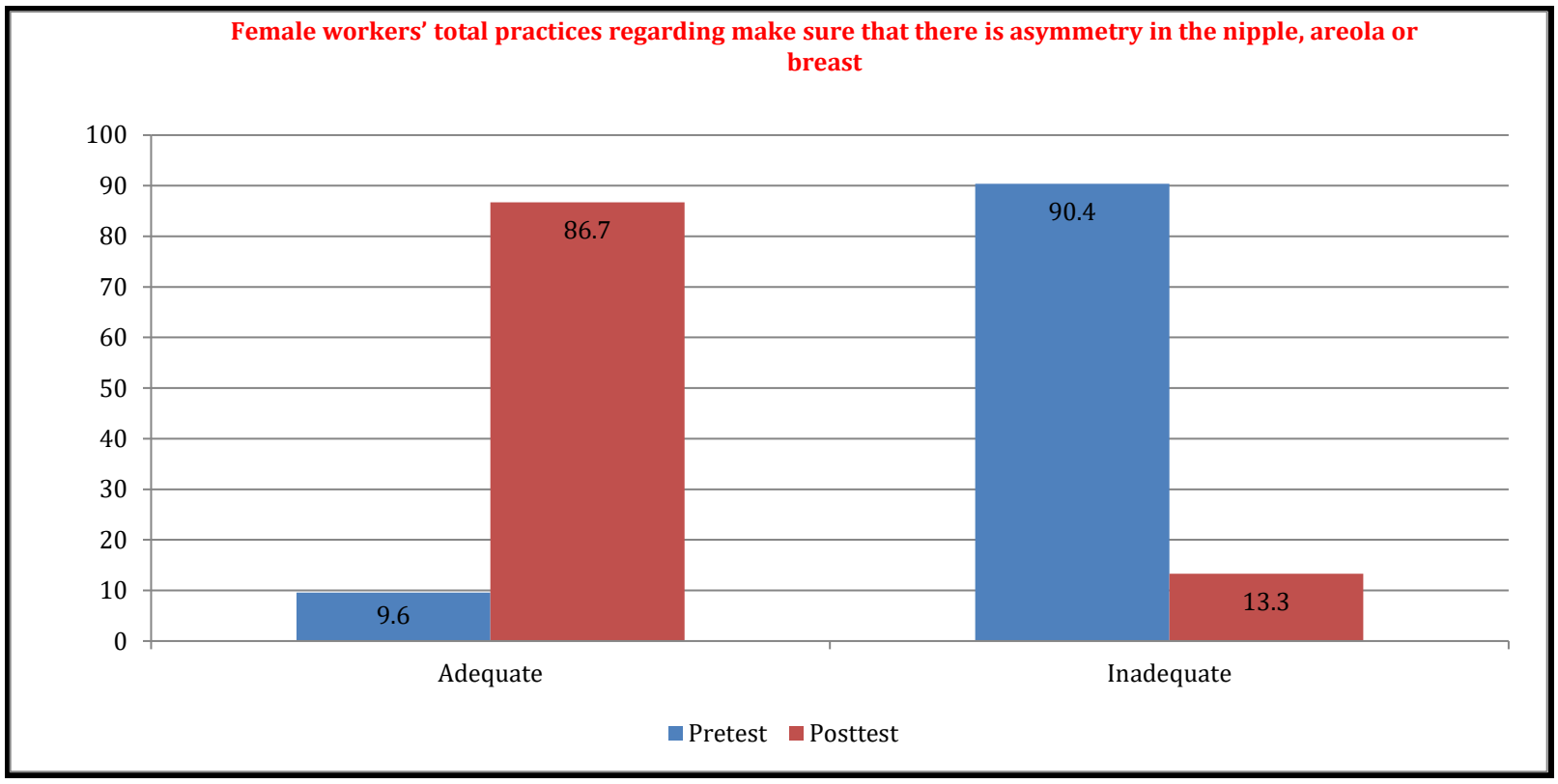

Figure 4: Female workers' total practices regarding make sure that there is asymmetry in the nipple, areola or breast (n = 323, X^2 =9.541, p value 0.002**)

Table (5) & Figure (5) present that there was a highly statistically significant improvement in female workers' sub-items and total practice regarding BSE by tactile examination (palpation) during the posttest with $p \leq 0.01$ in all items compared to the pretest. As noticed, only 8.4% of females had adequate practice regarding BSE by tactile examination (palpation), which improved to 88.2% after the intervention, respectively.

Table 5: Percentage distribution of the studied female workers' practices regarding tactile examination (palpation) (n=323).

Tactile examination (palpation)	Pretest				Posttest				X2 (p value)
	Done		Not done		Done		Not done		
	No.	%	No.	%	No.	%	No.	%	
Lie on your back on the bed with a pillow under your breast	100	31.0	223	69.0	267	82.7	56	17.3	5.107 (0.024*)
Tactile examination performed in same conditions that were used for the examination by considering	120	37.2	203	62.8	270	83.6	53	16.4	8.050 (0.005**)
When examining right breast, put right hand under head and examine with left hand and vice versa	73	22.6	250	77.4	255	78.9	68	21.1	4.013 (0.045*)
During tactile examination, use the palm of fingers first and then use tip of the fingers	116	35.9	207	64.1	248	76.8	75	23.2	7.591 (0.006**)
During the examination, use circular, longitudinal or wave movements of the fingers	111	34.4	212	65.6	249	77.1	74	22.9	5.980 (0.014*)
Divide breast into 4 parts and examine each quarter separately, then examine the area under armpit	93	28.8	230	71.2	250	77.4	73	22.6	5.573 (0.018*)
Feel the breast for the presence of any abnormal lump	113	35.0	210	65.0	262	81.1	61	18.9	5.389 (0.020*)
In the case of a block, determine shape, size and texture of the mass	101	31.3	222	68.7	253	78.3	70	21.7	8.150 (0.004**)
During examination, use different levels of pressure (light/medium/ deep) to reach entire breast tissue	87	26.9	236	73.1	242	74.9	81	25.1	5.632 (0.018*)
Check areola for any discharge from the nipple	98	30.3	225	69.7	272	84.2	51	15.8	9.379 (0.002**)
Do examination of underarm area to notice swelling of lymph nodes in this area	118	36.5	205	63.5	251	77.7	72	22.3	4.670 (0.031*)

Also check supraclavicular area for any differences	96	29.7	227	70.3	235	72.8	88	27.2	6.417 (0.011*)
After completing examination, get dressed and write down anything abnormal	110	34.1	213	65.9	272	84.2	51	15.8	7.882 (0.005**)
See a doctor if anything abnormal is detected	104	32.2	219	67.8	269	83.3	54	16.7	8.524 (0.004**)

* Statistically significant at p≤0.05 ** Highly statistical significant at p≤0.01

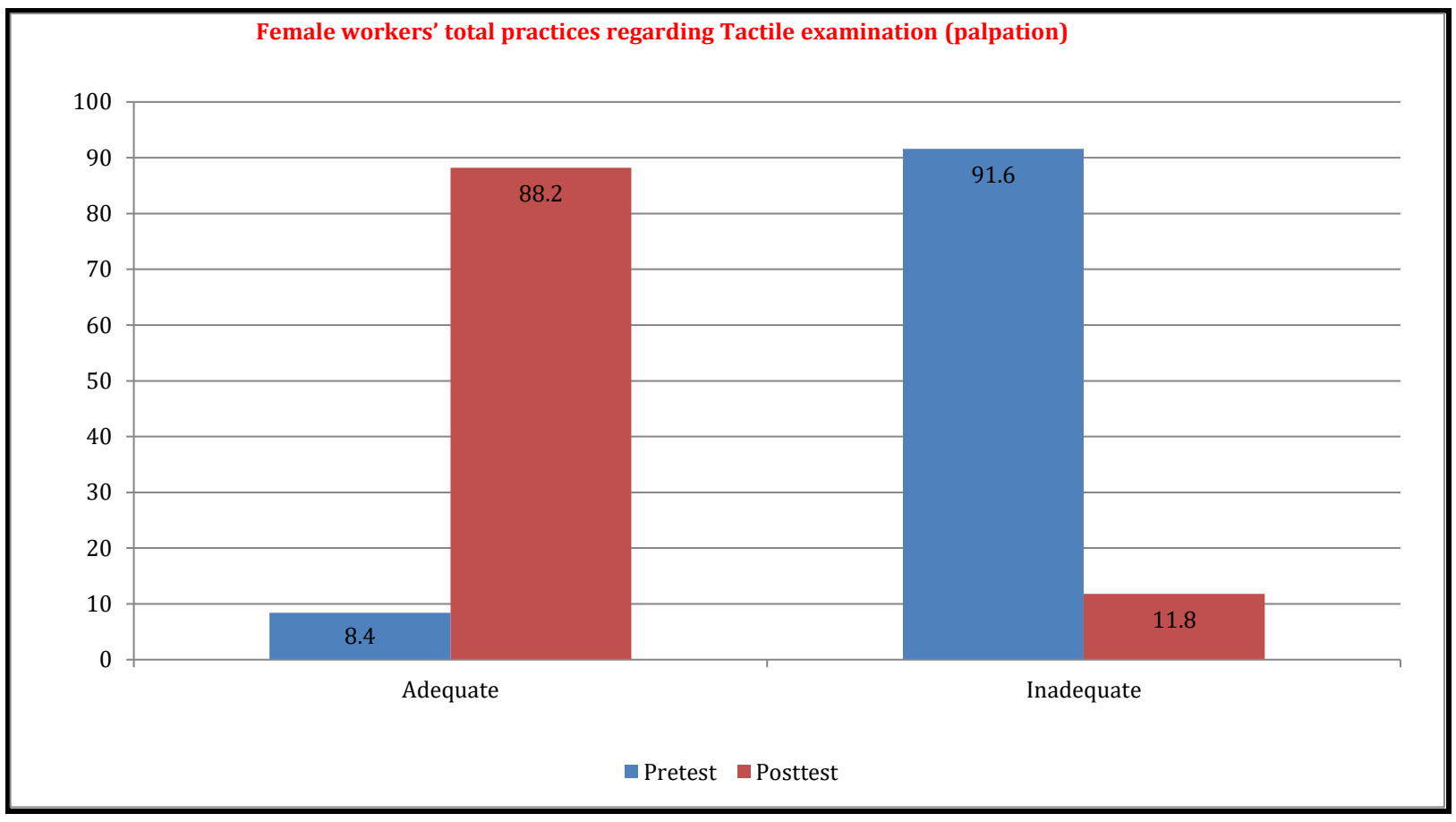

Figure 5: Female workers' total practices regarding tactile examination (palpation) (n = 323, X^2 = 8.326, p value = 0.004**)

Discussion

Breast Self-Examination (BSE) is a crucial preventive measure that aids in the early identification of abnormalities like lumps or changes in breast tissue, leading to quicker treatment and better prognosis in women who perform it correctly **[11-16]**. The aim of the study was to evaluate the effect of an educational program on female workers' breast-examination practices at Beni-Suef University.

Concerning breast self-examination practices by studied female workers, the current study presented that there was an improvement in female workers' practice regarding BSE during posttest in all items (Examination preparations, Examination by consideration, Make sure that there is an asymmetry in the nipple, areola, or breast, and Tactile examination or palpation), compared to pretest. Moreover, regarding the studied female workers' total practices level for each item pre and post-program implementation, the current study demonstrates that there was a marked improvement in the total practice after the implementation of the program, as the minority of the females had adequate practice with pre-implementation of the program while the majority had adequate practice with post implementation.

Firstly; regarding the studied female workers' practices regarding breast self-examination preparation, the results revealed a statistically significant improvement for all sub-items of breast self-examination preparation during posttest compared to pretest. Moreover, female workers' total practices regarding examination preparations were statistically improved after program implementation. As noticed that majority of females had inadequate practice regarding examination preparation in pretest while after intervention the majority of them had adequate practice, respectively. This finding agreed with **Ibitoye et al. (2021)**, who investigated "the impact of education on knowledge, attitude, and practice of breast self-examination among adolescent girls" and proved that more than one-third of the studied women had satisfactory practice regarding BSE pretest, which increased to more than three-quarters posttest after the implementation of the health educational program **[17]**.

Secondly; regarding the studied female workers' practices regarding breast self-examination by consideration, the results revealed a statistically significant improvement for all sub-items of breast by consideration during posttest compared to pretest. Moreover, female workers' total practices regarding examination by consideration preparations were statistically improved after program implementation. As noticed that majority of females had inadequate practice regarding examination by consideration in pretest while after intervention the majority of them had adequate practice, respectively.

Also, this finding was supported by **Ram (2020)**, who showed that there was a highly significant improvement in the practice of all steps of BSE after the educational program. From the researcher's point of view, this finding may be related to the impact of the educational program on the improvement of females' knowledge and practices regarding BSE and increasing awareness of women about the importance of BSE in the early detection and prevention of BC **[18]**.

Thirdly; regarding the studied female workers' practices regarding make sure that there is an asymmetry in the nipple, areola, or breast; the results revealed a statistically significant improvement for all sub-items of make sure that there is an asymmetry in the nipple, areola, or breast during posttest compared to pretest. Moreover, female workers' total makes sure that there is an asymmetry in the nipple, areola, or breast preparations were statistically improved after program implementation. As noticed the majority of females had inadequate practice regarding make sure that there is an asymmetry in the nipple, areola, or breast in the pretest while after the intervention the majority of them had adequate practice, respectively. Also, this finding is similar to **Eittah et al. (2014), who** studied the "effect of health education on raising female students' awareness' regarding breast cancer in Saudi Arabia" and stated that there was marked improvement in post-student practice regarding BSE practice **[19]**.

Fourthly; regarding the studied female workers' practices regarding tactile examination or palpation, the results revealed a statistically significant improvement for all sub-items of tactile examination or palpation during posttest compared to pretest. Moreover, female workers' total tactile examination or palpation preparations were statistically improved after program implementation. As noticed that majority of females had inadequate practice regarding tactile examination or palpation in pretest while after intervention the majority of them had adequate practice, respectively. This result was consistent with several researches that examined the "effect of health education on female teachers' knowledge and practices regarding early breast cancer detection and screening. They showed that, at from six weeks and three months after the intervention, the intervention group exceeded the control group in knowledge items pertaining to BC detection, screening tools, and prevention in a statistically significant manner **[20-23]**.

From the researcher's point of view, this finding is due to increased knowledge and awareness of females about breast cancer and the importance of breast self-examination, which is available, applicable, and performed monthly at home without any effort or equipment as a method of lifestyle modifications for the prevention of breast cancer.

Conclusion

Based on the findings of the present study, it can be concluded that the educational program has a positive effect on female workers' practice regarding preparation for breast self-examination as statistically significant improvement in female workers' total sub-items practice for breast self-examination were observed after program implementation.

Recommendations

- Implement the same program for all female workers in Beni-Suef governorate
- Study relationship between women's reproductive profile and effectiveness of breast self-examination program.

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