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Raising Awareness of female Students with Disabilities Regarding Breast Self-Examination

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Abstract: **Background: Breast self-examination is a way a female can check breasts by feeling for lumps or other changes. Breast self-exams can help a female learn how breasts normally look and feel and notice when changes occur. The aim of the study: was to disseminate of breast self-examination among female students with disabilities. Research design: Quasi-experimental research design used to in the current study. Setting: the current study was conducted at the Intellectual School for disabled female in Fayoum, city, Egypt. Sample: A convenient sample consists of forty disabled female students. Tools: three main tools were used; tool 1: Interviewing questionnaire sheet, that included two parts, Part I: Socio demographic data, Part II: Knowledge assessment sheet, tool 2: Breast self-examination cheek list ,and tool 3: Satisfaction assessment sheet. Results: the result of the current study showed that there was a statistically significant difference between studied female students regarding total knowledge toward breast self-examination. Conclusion: The knowledge of female students with disabilities was improved after the study. Recommendation: Improve health facilities to examine disabled female students and treat them if there any breast problem according there disability.**

Keywords: **Awareness, Breast self-examination, Disabilities, Raising, Female students.**

1. INTRODUCTION

A breast self-exam is an early detection tool that uses a combination of physical and visual examinations of the breasts to check for signs and symptoms of breast cancer. The purpose of a breast self-exam is to become familiar with the way breasts normally look and feel. Knowing how breasts normally look and feel, also called breast self-awareness, will help identify any changes or abnormalities in breasts, such as a new lump or skin changes. Any changes in breasts discovered during a breast self-exam should be reported to healthcare provider right away ***(Hickey., 2022).***

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions). There are many types of disabilities, such as those that affect a person's; vision, movement, thinking, remembering, learning, communicating, hearing, mental health and social relationships. Although "people with disabilities" sometimes refers to a single population, this is actually a diverse group of people with a wide range of needs. Two people with the same type of disability can be affected in very different ways. Some disabilities may be hidden or not easy to see ***(Williamson et al., 2022).***

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Assessing a female's compliance of performing self–breast examinations should entail not only if she merely does the examination, but when is doing and how is doing. There is evidence-based practice that portrays the proper way to perform a self–breast examination. Females should be educated on the proper way to do a self–breast examination. The first steps should include the ideal time of month to perform the examination. This will allow females to know what is normal breast tissue and what is abnormal to aide in early detection of breast cancer. Utilizing the tools of self–breast examination, yearly mammograms and clinical breast examinations, together with consistency, are the best protection in detecting early breast cancers ***(Foster et al., 2023).***

SIGNIFICANCE OF THE STUDY:

According to WHO 2023,throughout the world there are more than 1,000 million people with disabilities, who constitute approximately 15% of the world's population (i.e., one in every 7 people is disabled). The prevalence of disability is higher in low-income countries than in high-income countries, and in 2024 the United Nations General Assembly noted that an estimated 80% of people with disabilities live in developing countries ***(WHO., 2023).***

It is estimated that the average prevalence rate among the female population aged 18 years and over being 19.2% compared to 12% for males, representing about 1 in 5 women. In Egypt, the Ministry of Health and Population announced that the inventory had reached 180,000 women suffering from disabilities as of the end of June 2024 ***(Mallory and Golshan., 2024).***

In 2024, 2.3 million women diagnosed with breast cancer and 670,000 deaths will be recorded worldwide. Breast cancer in Egypt is no more than in other countries of the world, and the incidence of breast cancer per year is 100 cases per 100,000 women, and Egypt is 50 cases per 100,000 women, which is half of the cases in America and Europe ***(Swartz., (2024).***

AIM OF THE STUDY:

The aim of this study is to disseminate of breast self-examination among female students with disabilities through the following objectives:-

1- Assess knowledge of female students with disabilities regarding breast self-examination and its purpose.

2- Provide educational sessions for the female students with disabilities regarding the methods of breast self-examination.

3-Evaluate the effect of the educational sessions.

RESEARCH HYPOTHESIS:

1- The knowledge of female students with disabilities will be improved after the educational sessions.

2- Female students with disabilities will be satisfied after the study.

2. SUBJECTS AND METHODS

The subject and methods for current study was portray under the four main items as follows:

I- Technical Items. II- Operational Items.

III- Administrative Items. IV- Statistical Items.

I- Technical Items:

The technical items for present study includes research design, setting, subject and tools for data collection.

Research design:

A quasi-experimental design was used in the study (one group pre and post).

Setting:

The study was conducted at Intellectual School at Fayoum, City, Egypt.

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Setting Description: -

The school is located on Al-Hadig area, next to the upper bridge, Al-Nahda Preparatory School for Girls, and Al-Azhari Institute for Girls, opposite the railway. The school consists of three buildings that one building includes all educational levels, from Initialization period, Vocational preparation departments and Industrial education departments and manager's office, second building includes library, room of artistic works and the social worker's office and the third build includes the restaurant.

Type of the sample: A convenient sample was used in the current study

according to the following inclusion and exclusion criteria: -

o Inclusion criteria: Females more than 12 years old.

o Exclusion criteria: Females with mental retardation.

Sample size and technique: All available disabled female students in previous setting who their caregivers accepted to participate in the study. 40 female students, the study sample included four levels of education altahyia level, alhalqat aliabtidayiya level, aqsam alaedad almihnii level, and aqsam altilmidhat alsinaeia level; altahyia level included two years (5) girls, alhalqat aliabtidayiya level included six years (10) girls, aqsam alaedad almihnii level included three years (10) girls and aqsam altilmidhat alsinaeia level included three years (15) girls.

Tools for data collection:

Three tools used to collect the data.

Tool I: - Interviewing questionnaire sheet (Appendix II).

It consisted of three parts:-

Part1: Personal characteristics for female students: developed by the researcher this part consisted of characteristics of the participants as age, educational level, address and telephone number. **Question from (1-6).**

Designed by the researcher written in Arabic language in the form of multiple-choice questions.

Part2: This part concerned with knowledge of female students regarding breast self-examination such as definition, importance, time and methods (pre and post). **Question from (7-25).**

Designed by the researcher written in Arabic language in the form of multiple-choice questions ***(Klimberg VS, et al., 2024).***

Scoring system for knowledge:-

The questionnaire contained items related to the female students with disabilities knowledge assessment (19) items. Each item had three points (0 – 2) (0) for the wrong answer and don't know, (1) for the incomplete correct answer, and (2) for a correct and complete answer.

o The total score of knowledge breast self-examination (19) items (Q7-25),

was evaluated by giving a score from (0-38). Classified as the following:

➢ Unsatisfactory: - ≤ 50% (0 - 19 points)

➢ Satisfactory: - > 50 % (20 - 38 points)

Tool II: Breast self-examination cheek list:-

It concerned with breast self-examination methods (pre and post). That consists of thirteen steps; front of the mirror consists of three steps, in the bathroom consists of three steps and the lying position consists of seven steps ***(National Breast Cancer Foundation., 2023)***.

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Scoring system for breast self-examination checklist:-

The questionnaire contained items related to the female students with disabilities checklist application (13) items. Each item had two points (0 – 1), (0) for not done and (1) for done.

The total score of breast self-examination checklist (13) items (Q1-13),

was evaluated by giving a score from (0-13). Classified as the following:

➢Not done: - ≤ 50% (0 - 6 points)

➢ Done: - > 50 % (7 - 13 points)

Tool III: Satisfaction assessment sheet:-

This is tool was used to assess disabled female student's satisfaction regarding the study. That is consists of twelve questions such as (Is the study suitable?, Is the study helped understanding breast self-examination? and Is the scientific material was good?).

Scoring system for satisfaction:-

The questionnaire contained items related to the female students with disabilities satisfaction assessment (12) items. Each item had three points (0 – 2) (0) unsatisfied, (1) for to some extent and (2) for satisfied.

The total score of knowledge breast self-examination (12) items (Q1-12),

was evaluated by giving a score from (0-24). Classified as the following:

➢ Unsatisfied: - ≤ 50% (0 - 12 points)

➢ Satisfied: - > 50 % (13 - 24 points)

Tool validity:

The study tools were tested for validity by a jury of three experts as in maternal and newborn health nursing – Faculty of Nursing- Helwan University to evaluate the items as well as the entire tool as being relevant and appropriate to test what wanted to measure. The experts were asked to evaluate the items on the study tools about relevance and appropriateness in terms of the construct and if the items adequately measure all dimensions of the construct. No modifications were needed.

Tool reliability:-

Reliability of the tools was tested to determine the extent to which the questionnaire items related to each other. Cronbach's Alpha in this study found to be 0.753 for knowledge, 0.789 for breast self-examination checklist and 0.877 for satisfaction.

Items	Cronbach's Alpha	P -value
Tool I part II: student's knowledge regarding breast self-examination.	0.753	0.001*
Tool II: Breast self-examination cheek list.	0.789	0.001*
Tool III: Satisfaction assessment sheet.	0.877	0.001*

Ethical consideration:

An official permission to conduct the proposed study obtained from the Scientific Research Ethics Committee Faculty of Nursing Helwan University. Participation in the study is voluntary and subjects given complete full information to female student's caregivers due to their abilities about the study and their role before signing the consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs will be respected.

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II- Operational items:-

Preparatory phase:

It included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Pilot study

A pilot study was conducted on 10% of the study sample, which were four students of the study sample from all stages. The pilot study aimed to determine the clarity, feasibility, and applicability of the study tools as well as the estimation of time needed for completing the questionnaires and to test the clarity of questions. The participants of the pilot study were included in to study sample because there is no modification was done.

Filed work:-

The fieldwork carried out over three months started at the beginning of February 2024 after obtaining all official permissions, completed in January 2024. The study sample included four levels of education altahyia level, alhalqat aliabtidayiya level, aqsam alaedad almihnii level, and aqsam altilmidhat alsinaeia level; altahyia level included two years (5) girls, alhalqat aliabtidayiya level included six years (10) girls, aqsam alaedad almihnii level included three years (10) girls and aqsam altilmidhat alsinaeia level included threeyears (15) girls. The study was implemented through three phases; preparatory phase, planning phase, implementation phase and evaluation phase.

- Preparatory phase:-

- This phase taken about month for 8 visits, the researcher met the school's manager and staff to explain the educational content and methods used with female students.
- The researcher met the female student's caregivers to maintain oral approval to allow their females participate in the study and this due to their disabilities.
- Then the researcher attended two days weekly from 9 am to 1 pm and met female students to test learning skills.
- The researcher attended the daily lessons and daily activities with the female students to gain their trust.
- Data was collected from the students during free time in school day in the social worker's room, library, garden or any other suitable place.
- The researcher fill the questionnaire to gain the female student's information about the breast cancer and breast self-examination.
- Each questionnaire taken about 45 to 60 minutes, the researcher was met about 5 girls each visit.
- Sometimes, the researcher needed to meet female student's caregiver help in answering questionnaire questions because the caregiver can explain the question for them by their ways of communication.

- Planning phase:

- The researcher contacted with the manager and teachers to detect the education methods to those female students.
- The researcher detected with the manager the days that attended to the school.
- The researcher prepared materials used with female students that helping in explaining the information.

- Implementation phase:-

- This phase taken one month, the Researcher visited the study setting twice /week from 9:00 Am to 1 pm. At the first visit, met the female students to explain the aim of the study after known each other. The study sample was divided into three groups, first group included altahyia level and alhalqat aliabtidayiya level (15 female students), the second group included aqsam alaedad almihnii level (10 female students), while the third group included aqsam altilmidhat alsinaeia level (15 female students).
- The study was implemented through lectures; each lecture took about 45-60 minutes. The lectures were repeated for each group on the same day.

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- At the beginning of each lecture, the female students were oriented with the goal, objective, and content of the lecture.
- Each group was informed about the time of the next lecture at the end of the lecture.
- The subsequent lecture, started with feedback about the previous lecture and the objectives of the new lecture, using a booklet.
- At the end of each lecture; the female student's questions were discussed to correct any misunderstanding.
- The researcher needed to use group discussions with female student's caregivers to discuss their information about breast cancer and breast self-examination to provide them with all knowledge needed in order to help the female students to have the same knowledge from the researcher and the caregiver.

-Evaluation phase:-

The purpose of the study evaluation is to measure the effectiveness concerning the objectives. This was done through a posttest for knowledge immediately. The researcher let the female students with disabilities to perform breast self-examination individually and measured again after an week to ensure from achieving the objectives of the study.

III-Administrative Item:

A written approval letter was obtained from the dean of the faculty of Nursing - Helwan University to the Center Agency for Public Mobilization and Statistics; and then from the Education Directorate- in Cairo to Fayoum Educational Administration, the approval letter included the aim of the study and the tools to obtain the permission and cooperation. The researcher then met the director of the school and explained the purpose and the method of the data collection of the study.

Statistical Analysis: -

Data was entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 22. Graphics were done using the Excel program. Quantitative data were presented by mean (X) and standard deviation (SD). Qualitative data were presented in the form of frequency distribution tables, numbers, and percentages. Data was analyzed by chi-square ($\chi 2$) test. However, if an expected value of any cell in the table was less than 5, the Fisher Exact test was used (if the table was 4 cells), or the Likelihood Ratio (LR) test (if the table was more than 4 cells). The level of significance was set as a P value < 0.05 for all significant test.

3. RESULTS

Table (1): Distribution of the female student's personal data (n=40):-

Items	Studied Students (n = 40)	
	N	%
Age: Range	13-24	
Mean ± SD	18.32±3.033	
Age (years):		
• 12-18 yrs.	23	57.5
• 19-24 yrs.	17	42.5
The place of residence according to the school:		
• Close to the school	4	10
• Far from the school	36	90
Going to school with:		
• Father	5	12.5
• Mother	29	72.5
• Other family member	6	15
Going to school by:		
• Walking	5	12.5
• Family Car	4	10
• Car of the school	31	77.5

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There is a landline phone: No Yes	38 2	95 5
There is a mobile phone with What's App specific to the family: No Yes	35 5	87.5 12.5
Family history of breast cancer: • No	40	100
Sources of information about breast cancer: • Mother • School • Television • Social Media	8 7 20 5	20 17.5 50 12.5
Sources of information about breast self-examination: • Mother • School • Television • Social Media	9 6 20 5	22.5 15 50 12.5

Table (1) Shows that, Mean±SD regarding age of the studied female students 18.32±3.033, majority of the studied students living far from the school. About three quarters of the studied students (72.5%) going to school with their mothers, (77.5%) of them going to school by car of the school. The most of the studied female students (95%) don't have landline phone. The majority of the studied female students (87.5%) don't have a mobile phone with What's App specific to the family. All of the studied students (100%) don't have family history for breast cancer. Half of them (50%) getting information about breast cancer and breast self-exam from television.

Table (2): Distribution of students' knowledge regarding breast self-examination within pre and posttest (n=40) :-

Items	Studied Students (n=40)				*X2*	P-Value
	Pre test		Post test			
	N	%	N	%		
Function of the breast. Incorrect answer Correct answer	38 2	95 5	2 38	5 95	64.8	0.000*
Meaning of breast cancer. Incorrect answer Correct answer	33 7	82.5 17.5	2 38	5 95	48.813	0.000*
Causes of breast cancer. Incorrect answer Correct answer	35 5	87.5 12.5	4 36	10 90	48.08	0.000*
Symptoms of breast cancer. Incorrect answer Correct answer	33 7	82.5 17.5	5 35	12.5 87.5	39.29	0.000*
The direct action taken by a girl suffering from these symptoms. Incorrect answer Correct answer	30 10	75 25	1 39	2.5 97.5	44.29	0.000*
Tests required to diagnose breast cancer. Incorrect answer Correct answer	31 9	77.5 22.5	5 35	12.5 87.5	34.14	0.000*

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Meaning breast self-examination.						
Incorrect answer	32	80	8	20	28.8	0.000*
Correct answer	8	20	32	80		
Doing of breast self-examination.						
Not done	32	80	7	17.5	31.27	0.000*
Done	8	20	33	82.5		
The importance of breast self-examination.						
Incorrect answer	33	82.5	5	12.5	39.29	0.000*
Correct answer	7	17.5	35	87.5		
Advantages of breast examination.						
Incorrect answer	34	85	4	10	45.11	0.000*
Correct answer	6	15	36	90		
The appropriate age for breast examination.						
Incorrect answer	36	90	4	10	51.2	0.000*
Correct answer	4	10	36	90		
The appropriate time to perform breast self-examination.						
Incorrect answer	36	90	6	15	45.11	0.000*
Correct answer	4	10	34	85		
The appropriate time to perform a breast examination during the month.						
Incorrect answer	34	15	8	20	33.88	0.000*
Correct answer	6	85	32	80		
The methods used in breast self-examination.						
Incorrect answer	34	15	7	17.5	36.47	0.000*
Correct answer	6	85	33	82.5		
Breast self-examination helps in detecting disorders.						
Incorrect answer	36	90	5	12.5	48.08	0.000*
Correct answer	4	10	35	87.5		
Effect of breast self-examination helps in preventing breast cancer.						
Incorrect answer	34	15	5	12.5	42.07	0.000*
Correct answer	6	85	35	87.5		

**: Significant at P ≤ 0.05- x2 = chi-square test*

Table (2): Indicates that, there is a highly statistically significant difference between pre and posttest for the studied students regarding knowledge of breast self-examination (p- value= 0.000*) for all knowledge items.

Table (3): Distribution of the total level of students' knowledge regarding breast self-examination (n=40) :-

Items	Total Knowledge				*X2*	*P-Value*
	Pretest		Posttest			
	No	%	No	%		
Unsatisfactory	39	97.5	11	27.5		
Satisfactory	1	2.5	29	72.5	41.813	0.000*

**: Significant at P ≤ 0.05- x2 = chi-square test*

Table (3) reveals that, only (2.5%) of the studied students have a satisfactory level of total knowledge in pretest scores, while (72.5%) have satisfactory level of knowledge in posttest scores. (97.5%) of the studied students have unsatisfactory level of total knowledge in pretest scores, while (27.5%) have unsatisfactory level of knowledge in posttest scores.

Also, there is a highly statistically significant difference regarding total knowledge with p-value = 0.000.

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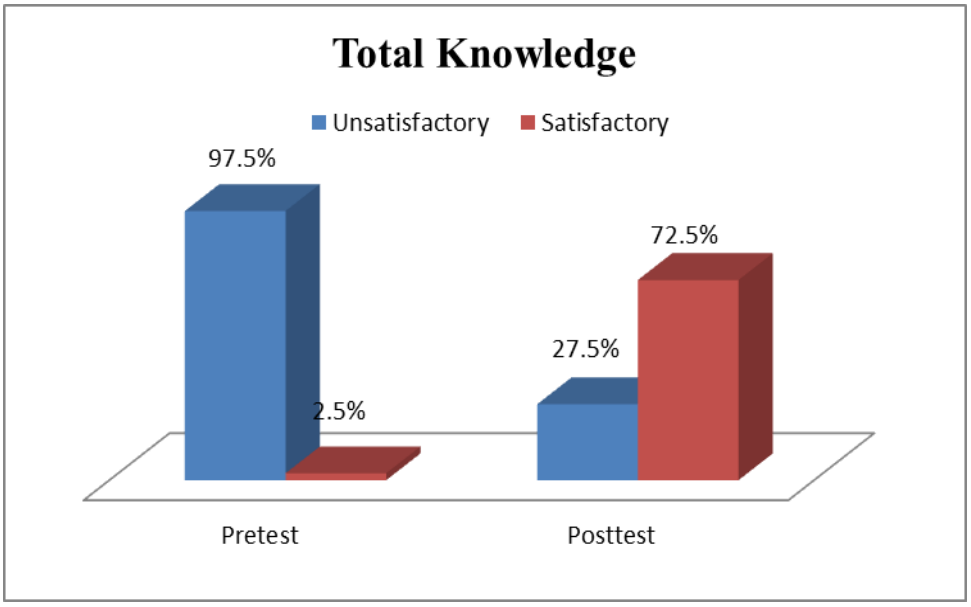

Figure (1): Bar graph representing total knowledge of breast self-examination:

Figure (1) Reveals that, only (2.5%) of the studied students have a satisfactory level of total knowledge in pretest scores, while (72.5%) have satisfactory level of knowledge in posttest scores. (97.5%) of the studied students have unsatisfactory level of total knowledge in pretest scores, while (27.5%) have unsatisfactory level of knowledge in posttest scores.

Table (4): Distribution of students' satisfaction after the study (n=40):-

Items	Studied Students (n=40)					
	Disagree		To some extent		agree	
	N	%	N	%	N	%
The study was appropriate for age.	6	15	5	12.5	29	72.5
The study helped understand breast self-examination.	5	12.5	7	17.5	28	70
The study added new information about how to perform breast self-examination.	1	2.5	0	0	39	97.5
The study helped implement breast self-examination.	1	2.5	2	5	37	92.5
The study answered all the questions had in mind about breast self-examination.	5	12.5	4	10	31	77.5
Studying encouraged to learn and think instead of accepting facts.	1	2.5	6	15	33	82.5
The Study added new knowledge and skills	1	2.5	10	25	29	72.5
You felt better after applying what learned from the study.	1	2.5	4	10	35	87.5
It is better to perform breast self-examination on my own.	3	7.5	6	15	31	77.5
Conduct breast self-examination with the help of others.	3	7.5	6	15	31	77.5
The scientific material is good.	3	7.5	4	10	33	82.5
The explanation style is good.	2	5	4	10	34	85

Table (4): Indicates that, majority of the studied students (97.5%) agree about the statement of "The study added new information about how to perform a breast self-examination", and about two thirds of them (70%) agree about the statement of "The study helped you understand breast self-examination".

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Table (5): Relation between personal data of students and total students' knowledge:-

Items	Students' Knowledge				*X2*	*P*-value
	Unsatisfactory (n=39)		Satisfactory (n=1)			
	No	%	No	%		
Age Category:						
• 12-18 yrs	22	56.4	1	100	0.758	0.384
• 19-24 yrs	17	63.6	0	0		
The place of residence according to the school:						
• Close to the school	3	7.7	1	100	9.231	0.102
• Far from the school	36	92.3	0	0		
Going to school with:						
• Father	5	12.8	0	0	5.812	0.055
• Mother	29	74.4	0	0		
• Other family member	5	12.8	1	100		
Going to school by:						
• Walking	4	10.3	1	100	7.179	0.128
• Family Car	4	10.3	0	0		
• Car of the school	31	79.5	0	0		
Sources of information about breast cancer:						
• Mother	8	20.5	0	0	0.615	0.735
• School	7	17.9	0	0		
• Television	19	48.8	1	100		
• Social media	5	12.8	0	0		
Sources of information about breast self-examination:						
• Mother	9	23.1	0	0	0.440	0.803
• School	3	7.7	0	0		
• Television	19	48.8	1	100		
• Social media	8	20.5	0	0		

**: Significant at P ≤ 0.05- x2 = chi-square test*

Table (5) shows that, there is no a statistically significant difference between total student's knowledge and age, the place of residence according to the school, going to school, way of going to school, sources of information about breast cancer & sources of information about breast self-examination (p-value = 0.384, 0.102, 0.055, 0.128, 0.735, and 0.803 respectively).

Table (6): Correlation between students' knowledge and personal data of the studied students:-

Variable	Total students' knowledge	
	R	P-Value
Age	-0.317	0.04*
The place of residence according to the school	-0.074	0.651
Going to school	0.293	0.067
Way of going to school	-0.024	0.882
Sources of information about breast cancer	-0.018	0.910
Sources of information about breast self-examination	0.017	0.918

**: Significant at P ≤ 0.05- r = correlation coefficient*

Table (6) shows that, there is highly statistically significant correlation between total students' knowledge and age (P-value = 0.04*), while there is no statistically significant correlation between total students' knowledge and place of

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residence, going to school, way of going to school, sources of information about breast cancer & sources of information about breast self-examination (P-value = 0.651, 0,067, 0,882, 0.910, and 0.918).

4. DISCUSSION

The present study aimed to disseminate of breast self-examination among female students with disabilities. The findings of the current study showed that, Mean±SD regarding age of the studied students 18.32±3.033, majority of the studied students living far from the school. About three quarters of the studied students (going to school by their mothers, around three quarter of them going to school by car of the school. All of the studied students don't have family history for breast cancer. Half of them getting information about breast cancer and breast self-exam from television. This is may be because that the majority of them were like watching television and most information acquired from the television program.

This study in the same line with ***Sabahat et al., (2020)*** who studied "Breast Health: Knowledge, "Attitude and Practice of Breast Self-Examination among Female Undergraduate Students of Kashmir Valley" that conducted in India and reported that majority of respondents reported that they do not have any family members/relatives with history of breast self-examination.

According to this results by ***Abd-Elaziz et al., (2021)*** who studied "Effect of Breast Self -Examination Programme on Women's Awareness for Early Detection of Breast Cancer" that conducted in Minia, Egypt and reported that third of the studied sample their source of knowledge was television. And this is consistent with the results of ***Akel et al., (2019)*** who estimated "The knowledge and practice of Jordanian women toward breast cancer and BSE" that conducted in Jordan and found that almost two thirds of the sample population had heard/read about BSE. Similar results were found by ***(Gwarzo et al., (2020)*** who estimated "The knowledge and practice of BSE among studied women students" that conducted in Nigeria and found that the majority of respondents had heard about BSE.

Regarding distribution of students' knowledge regarding breast self-examination within pretest, the present study indicated that, majority of the studied students have incorrect answer about function of the breast, definition of BSE, appropriate age for BSE, the appropriate time to perform breast self-examination, role of breast self-examination in detecting disorders, and effect of breast self-examination on preventing of breast cancer. About one quarter of the studied students, nearly one quarter have correct answer about tests required to diagnose breast cancer. The major reasons for not practicing BSE were: not knowing how to perform BSE and considered that BSE was not beneficial (among others. This finding is to highlight the absence of the healthcare provider role as an educator and the deficiency in health teaching programs that raise community awareness and a need for urgent corrective actions.

The results are identical with ***Meron et al., (2021)*** "Breast Self-Examination Practice and Associated Factors among Women Attending Family Planning Service " in Modjo Public Health Facilities Southwest Ethiopia Breast Cancer and reported that more than half of the study participants scored below half to knowledge questions about BSE and were considered as less knowledgeable. This is in agreement with ***Rashed et al., (2021)*** who studied **"**Breast Self-Examination Training Program of Primary Health Centers Working Women" that conducted in Egypt, An Intervention Study" and reported women had poor level of knowledge about BSE before receiving the training program that improved to 100% after the program.

Concerning distribution of students' knowledge regarding breast self-examination within posttest, the present study showed that, majority of the studied students have correct answer about the direct action taken by a girl suffering from these symptoms, most of them have correct answer about the function of the breast, and meaning of breast cancer. One fifth of the studied students have incorrect answer about the meaning breast self-examination, and the appropriate time to perform a breast examination during the month. This is may be due to clarity and simple language of the session, the proper method of teaching and educational materials used as well as the student's readiness to promote and maintain a healthy lifestyle and to know about the disease.

This finding in the same line with ***Rashed et al., (2021)*** who reported that there was an improvement of the women' knowledge in all items from pretest and follow up. These improvements were statistically significant. Also, ***Moussa & Shalaby., (2019)*** conducted a study to "Assess the effect of breast self-examination education program on knowledge, attitude and practice of nursing students" that conducted in Egypt and reported that the nursing student's knowledge

improved in all items about breast cancer after the implementation of the educational program and were statistically significant.

From the researcher point of view the low level of knowledge of female students with disabilities regarding breast self-examination due to not exposure to this topic before this and they don't have ability to search about these topics due to their disabilities.

5. CONCLUSION

Based on the results of the current study, can be concluded that the knowledge of female students with disabilities were improved after the study, moreover the female students with disabilities were satisfied with the study. The results of the current study supported the research hypothesis and achievement of the current study aim.

6. RECOMMENDATION

In light of the present study findings, the following were recommended:

- Improve health facilities to examine disabled female students and treat them if there any breast problem according there disability.
- Provide annual lectures and group discussions for disabled female students peers regarding breast cancer and breast self-examination.

Further recommendations:

- Develop educational guidelines through different mass media such as YouTube channels.
- Create a comprehensive education booklet regarding breast cancer and breast self-examination.
- Persuade the Intellectual schools to conduct annual seminars regarding breast cancer and breast self-examination.
- Provide the intellectual schools nurses with sufficient, adequate, and accurate resources of knowledge on simple text and images about breast cancer and breast self-examination.

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