



Effect of Teaching Back Model intervention on Premenopausal Women's Knowledge, Attitude and Barriers Regarding Cervical Cancer and its Screening

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ABSTRACT

Background: Premenopause is a significant stage in women's life. Cervical cancer may affect women of all racial and cultural backgrounds. **Aim of the study** to evaluate effect of Teaching Back Model intervention on premenopausal women's knowledge, attitude and barriers regarding cervical cancer and its screening. **Subjects and Methods:** At Minia University Hospital for Maternity and Children, a quasi-experimental design (pre-post study) was carried out, convenient sample of 235 premenopausal women who visited inpatient or outpatient clinic for any gynecological issues. Data were gathered using a standardized interviewing questionnaire; comprised series of inquiries about knowledge, attitudes, and barriers pertinent to cervical cancer and its screening. A helpful resource (guide book) was also given to the studied women. **Tools of data collection:** include Interviewing questionnaire, knowledge, and attitude and barriers assessment tool. **Results:** the mean age of premenopausal women was 44.12 ± 3.14 years. The study revealed a general increase in knowledge, attitude of the studied women about cervical cancer and reduction of barriers to participate in its screening post-program compared to pre-program; and there was positive relation between total knowledge and attitude scores in post-program all with highly statistically significant differences (p value ≤ 0.001). **Conclusion:** According to the study's findings, Teaching Back Model intervention considerably enhanced knowledge and attitudes of the majority of premenopausal women. **Recommendation:** The study can be repeated with a bigger sample size in various locations. In order to develop a tailored educational system and examine the programmers' long-term effects.

Keywords: Teaching Back, Premenopausal, Cervical Cancer, Knowledge, Attitude

Introduction

It is generally agreed that the years leading up to the onset of menopause, before menstruation finally stops, constitute premenopause. Premenopause may progress slowly, even over the course of years. Many women have premenopause beginning in their forties, and it may last for years (and in some cases, up to ten years). In the early stages of menopause, the ovaries generate less oestrogen, the female hormone responsible for most of the symptoms associated with menopause. Symptoms of fluctuating reproductive hormones, such as erratic menstruation, breakthrough bleeding, and more, are prevalent at this time. **(Liesdiyanata et al., 2021)**

The squamocolumnar junction is the site of genesis for cervical cancer, a malignant tumour that may affect either the outermost squamous cells or the interior glandular cells of the uterine cervix. Dysplasia is a premalignant lesion that may develop into squamous cervical intraepithelial neoplasia or in situ cancer. Most cases of cervical cancer are the result of a persistent HPV infection. Among female cancers, it has the fourth-highest mortality rate and is the fourth-most common kind. **(Cosgrove et al., 2018)**

It has been shown that HPV is one of the most common viruses spread by sexual contact in the cervix, and that cervical cancer cannot grow or occur without a preexisting infection with high-risk HPV. Genotypes HPV-18 and HPV-16 are responsible for 70% of cervical malignancies. This was shown to be the case. **(Drokow et al., 2020)**

One of the main causes of cervical cancer is the human papillomavirus (HPV). Other than a family history of cervical cancer, risk factors include having several sexual partners, engaging in sexual activity as an adult, not taking proper care of one's genitalia, being nulliparous or multiparous, being overweight, and using oral contraceptives for a long length of time. **(Ahmed et al., 2018)**

The hallmark indication is abnormal or heavy vaginal bleeding, particularly after sexual activity. Some women may present with an unpleasant vaginal discharge that is watery, mucoid, or purulent. Pain in the pelvis or lower back that radiates down the backs of the legs is a common complaint of patients with serious illnesses. Alterations in bowel and/or bladder function, such as pressure complaints, hematuria, or the passage of urine or stool down the vaginal canal, are indicators indicating advanced disease. **(Johnson et al. 2019)**

Many women avoid cervical cancer screenings for a variety of reasons, including a lack of knowledge about the illness and the advantages of screening, a fear of the test findings, a lack of convenient transportation options, and the lack of support from their husbands and families. **(Shrestha et al., 2022)**

Human papillomavirus (HPV) vaccination for cancer prevention could offer some protection against all HPV subtypes that may lead to cervical cancer. Since 2009, the World Health Organization (WHO) has recommended that all girls and young

women between the ages of 9 and 26 get the HPV vaccine before engaging in sexual activity. **(Ampofo et al., 2022)**

Cervical cancer screening plays a critical role in early detection, which in turn increases the number of available treatment options for patients and ultimately improves their chances of survival. The widespread use of current screening methods like the Papanicolaou (Pap) test and the Human Papillomavirus DNA test contribute significantly to the low rates of incidence and mortality in HICs. **(Ba et al., 2021)**

Because of their central position in the health care delivery system, maternity nurses were instrumental in the fight against cervical cancer. Women of all ages may benefit from a nurse's instruction in order to increase their awareness and positive outlook. It is possible that nurses will be able to put this information into practice, taking on more duty and accountability for women, which will ultimately benefit the health of women's reproductive systems and reduce the risk of cervical cancer-related illness and death. **(Said et al., 2018)**

Despite the apparent efficacy of utilizing a strategy like Teach Back to improve patients' education, learning evaluation, and condition knowledge as well as their mastery of self-management techniques for use at home **(Choi & Choi, 2021)**. The Teach Back model has not yet been used to these ends (2021). This approach is presented as a means by which patients may educate themselves to take better care of them, with the aim of improving the patient's level of comprehension and retention of training materials. Patients with poor reading skills may benefit from this approach since the trainer provides the content in a plain, jargon-free way and the trainee practises repeating it at the conclusion of training. **(Hong et al., 2020)**

Significance of the study

Cervical cancer is the fourth most common cancer among women worldwide, with an estimated 604,000 new cases and 342,000 dies in 2020. Close to 90% of these cases occur in low- and middle-income nations (countries with low or moderate per capita income) **(Mwantake et al., 2022)**. Cervical cancer is the second biggest cause of cancer-related mortality among Egyptian women, with an estimated 514 new cases reported year and 299 fatalities linked to the condition). **(El-Mazzally & El-Mazzally, 2022)**

In the United States, it is anticipated that 4 percent of women who have cervical cancer screenings for CIN-1 and 5 percent of women who receive screenings for CIN-2 may develop cervical intraepithelial neoplasia (CIN). Women between the ages of 25 and 35 are generally diagnosed with high-grade lesions, whereas those over the age of 40 are more likely to be diagnosed with invasive cancer, often 8 to 13 years following the diagnosis of a high-grade lesion. **(Tawfeek et al., 2020)**

While a recent research found that premenopausal women knew little about cervical cancer and had a negative outlook on screening, it stands to reason that if more Women were aware of the disease and its symptoms, screening rates would increase. Thorough familiarity with cervical cancer's description, risk factors, causes, screening, and therapy is essential for premenopausal women.

So the Aim of the study:

To evaluate effect of Teaching Back Model intervention on premenopausal women's knowledge, attitude and barriers regarding cervical cancer and its screening

Research hypotheses:

1- Premenopausal women who use instructions of teaching back model intervention will have improvement in their knowledge and attitude regarding cervical cancer and its screening.

2- There will be significant correlation between post-program knowledge and attitude scores of premenopausal women regarding cervical cancer and its screening.

Subjects and methods:

Research Design: Quasi- experimental design (pre-post study) was used.

Research Setting: The research was conducted at inpatient department and outpatient gynecology clinic at Minia university hospital for maternity and children.

Sample type

A Convenient sample was used in accordance with the following standards:

Inclusion criteria:

1. Age from 40 to 50 years
2. Free from medical and psychological disorder
3. Free from cervical cancer
4. Not receiving chemo or radio therapy
5. Otherwise is an exclusion criteria

Sample Size:

235 premenopausal women participated in the present investigation. Estimating the sample size needed a 95% confidence interval, a 5% error margin, and a flow rate of 1.04 women per minute (total number of premenopausal women who attended previous mentioned setting). The sample consisted of 235 females.

$$N = \frac{P \times (1-P) \times (Z \alpha/d)^2}{}$$

N=235 of premenopausal women

Description:

- **P** prevalence of cancer cervix.
- **Z** alpha power.
- **D** significance of the study.

Tools of data collection:

Three primary tools were employed to acquire data: It was made up of:

Tool I: Interviewing assessment tool.

The researcher created the interviewing questionnaire after reading pertinent literature. It contained (30) items. **It consisted of three main components:**

Part 1: concerned with women' socio - demographic characteristics: such as age, level of education, occupation, place of residence and marital status. Moreover, source of knowledge about cervical cancer and screening.

Part 2: Obstetrical and family history: such as age at first birth, gravidity, parity, number of abortions, breastfeeding and family history of cancer including cervical cancer.

Part 3: concerned with assessment of the investigated women's knowledge of cervical cancer and its screening. It was adopted by (Thapa et al., 2018) included (17) multiple choice questions about definition of cervical cancer, risk factors, signs & symptoms of disease, prevention of cervical cancer, diagnosis, methods of treatment, complications of disease, knowledge about cervical cancer screening procedure.

Scoring system:

The answer was evaluated using model answer prepared by the researcher, the women's answer related to knowledge were scored and calculated. A score of (1) was allocated for correct answer while a score of (0) was allocated for incorrect and don't know. The total knowledge score (17) was classified into two levels, adequate (total score > 50%); and inadequate (total score < 50%).

Tool II: Attitude assessment tool

It was adopted by (Riaz et al., 2019)

Premenopausal women's attitude on cervical cancer and associated screening were evaluated using a reconfigured Likert scale. The scale included 14 statements about cervical cancer and methods for early detection.

Scoring for attitude:

A 5-point Likert scale used to evaluate attitude strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, strongly agree = 5. The replies were summed and a total score was obtained and classified as:

- Positive attitude if total score $\geq 50\%$.

- Negative attitude if total score < 50

Tool III: Women's screening barrier for cervical cancer. It was adopted by (Thapa et al., 2018).

Assessment of women's screening barriers for cervical cancer include the following statements: Lack of awareness, Fear of vaginal examinations, absence of symptoms for cervical cancer, the Pap screening is too expensive, It is embarrassing to have a cervical cancer screening test,? Etc.... It consisted of 14 statements.

Validity: The Jury committee consisted of 5 professionals from the community health & obstetrics and gynecological department nursing professors (Minia University) who examined the tool for clarity, relevance, comprehensiveness, comprehension, application, and considered the purpose of this research.

Reliability: Cronbach's alpha revealed that the test's questions about knowledge were 0.87 reliable, its questions about attitude were 0.91 reliable, and its questions on reported obstacles were 0.83 reliable. The Pearson correlation coefficient was used to compare variables and hence measure the instruments' dependability.

Pilot Study:

10% (24) of the sample was comprised of females, and a pilot study was performed to evaluate instruments efficiency, objectivity, and readability. The application process also requires a time estimate. Women who took part in pilot study were left out of the research, although all

necessary and important adjustments were made in response to the findings.

Ethical consideration:

Both the pilot research and the subsequent full study were authorized and approved in writing by the dean of the nursing department and head of Minia university hospital for maternity and children. After being briefed orally about the study's background and goals, premenopausal women who were recruited to take part in it provided their verbal agreement to take part. At any point, any participant might decide to stop taking part in the research or withdraw their consent. There was no threat to your physical well-being. All information provided by participants was treated confidentially, as promised.

Study Procedure:

These were the stages through which the educational program based on teaching back model intervention was implemented:

Preparatory phase:

It involved reading up on local and international literature that was significant to several facets of the study subject. This aided researcher in understanding the scope of the issues and directed them in the preparation of the necessary data gathering methods. The validity of the tools was then graded by the researcher using an expert jury to verify its substance, knowledge, accuracy, and applicability.

Implementation phase:

Following formal approval from the study ethics committee of college of Nursing and hospital director, premenopausal women from the inpatient department and the outpatient clinics at Minia university hospital for maternity and children were questioned. For a period of six months, from the end of April 2021 to the end of October 2021. The researcher introduced herself to each woman before the interview and went over goals, length and procedures of the investigation, then before starting the interviews with the chosen women; they secured their verbal approval for participation. Additionally, women received a follow-up and a schedule of educational meeting dates as well as phone numbers of the studied women in case they had any questions and in case of missed session, it will be sent through social media. The researcher next requested that the women who had participated in the trial complete questionnaires. Premenopausal women's knowledge, attitudes were evaluated as baseline data with the intention of increasing it and reduction of barriers to cervical cancer screening. Time required to complete the questionnaire was about average (20-30 minutes). Each week, 15 to 20 women were questioned (7-9 per day).

The researcher spent two days a week in the previously described location during the morning and evening shifts (Saturday and Wednesday from 9Am to 1 Pm). The teaching program was applied over the course of six sessions: two sessions for knowledge (each lasting 20 to 30 minutes), two sessions for attitude (each lasting two hours), and two sessions for barriers (each lasting two hours). Two sessions per day

were allotted to cover the theoretical educational intervention, which were then implemented in accordance with the workplace's specific requirements. Premenopausal women were separated into small groups during this stage; each subgroup has seven to nine women. At the start of the first session, a brief introduction to the program and its goals was given. Each session's introduction included background information on the session before. These meeting took place in the reception area of the outpatient gynecology clinics and inpatient department at Minia University Hospital for Maternity and Children. Every session concluded with the researcher formulating a conclusion and providing the woman an opportunity to ask questions.

The Supportive material (handout Arabic booklet- guideline):

It was created and used by the researcher as a handout (booklet) with straightforward Arabic language and colorful illustrations to improve premenopausal women's knowledge of cervical cancer and its screening, which had a positive impact on their outlook on life and helped them overcome any barriers. It had two parts, the first of which was devoted to giving ladies the crucial details concerning (anatomy of female reproductive system). Whereas the second portion was focused with things like: definition, symptoms, complications, risk factors, diagnosis, therapy, the purpose of Pap smear and when women should begin receiving pap smears were discussed, along with the sorts of therapy and prevention strategies for cervical cancer. The

teaching back program's material was chosen based on the studied women's educational levels, their requirements, the best teaching strategies, and the right medium. Lecture, debate, demonstration, usage of media like a booklet and role-playing games were all used as teaching techniques. At the conclusion of the instructional programme, the researcher distributed the booklet to the women under study.

Outcome follow-up and evaluation phase:

The investigator used tools I, II, and III for the first evaluation (pretest), which was completed prior to the implementation of the teaching back guideline, to gauge the knowledge, attitude, and obstacles of the investigated women.

- A second assessment (posttest) was conducted six months following the publication of the intervention to evaluate effectiveness of teaching-back program on women's knowledge, attitudes, and screening-related obstacles.

Statistical Design

In order to assess the study hypothesis, the obtained data was tabulated computerized, statistically analyzed, and summarized using descriptive statistical tests utilizing SPSS version (IBM 28) and excel for figures. For qualitative and quantitative variables, respectively, means and standard deviations employed descriptive statistics to depict the data. P 0.05 was regarded to be significant, while P values of lower or equivalent to 0.01 were recognized as extremely noteworthy. The relationship between the examined women's knowledge/attitude and their chosen socio-demographic factors was discovered using the Fisher exact test and the chi test.

Results

Table (1): Percentage distribution of the studied women regarding their socio-demographic characteristics (no. = 235)

Socio-demographic characteristics	No.	%
Age / years		
40 - <45	140	59.6
45 - ≤50	95	40.4
Mean ± SD	44.12 ± 3.14	
Residence		
Urban	63	26.8
Rural	172	73.2
Marital status		
Married	231	98.3
Widow	4	1.7
Educational level		
Illiterate	34	14.5
Secondary level	171	72.7
University	27	11.5
Postgraduate	3	1.3
Occupation		
Housewives	177	75.3
Working women	58	24.7

Table (1): demonstrates that 59.6% of the studied women aged between 40 - <45years with mean age 44.12 ± 3.14 years. (73.2%, 72.7%, & 75.3%) of them lived in a rural area, had secondary educational level and were housewives' women respectively and vast majority of them (98.3%) were married.

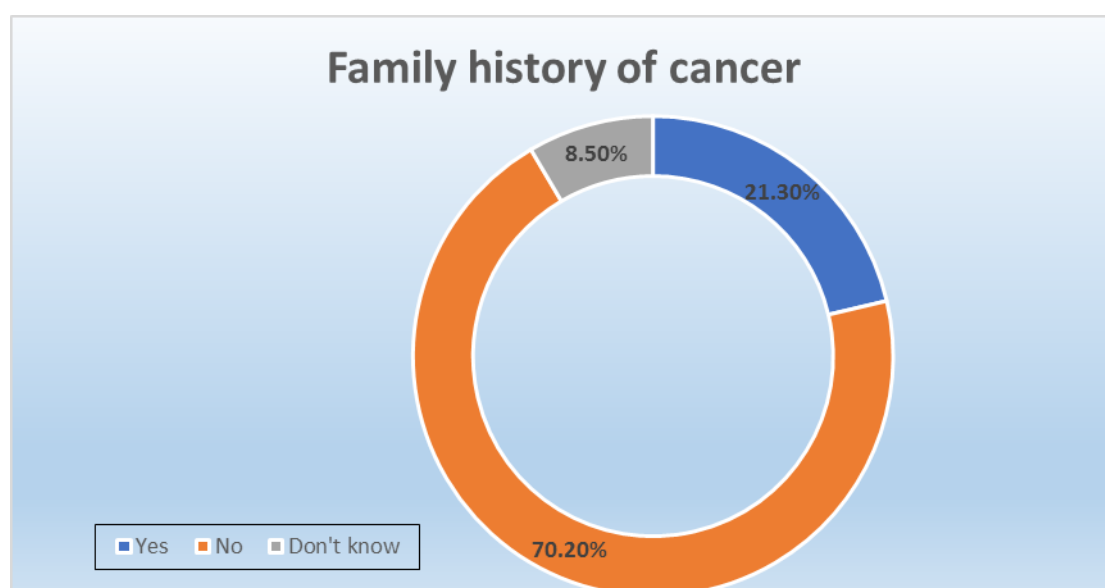


Figure (1): Percentage distribution of the studied women regarding their family history of cancer (no. = 235)

Figure (1): shows that more than one-fifth (21.3%) of the studied women had a previous family history of cancer, while 70.2% of them hadn't.

Table (2): Percentage distribution of the studied women regarding their obstetrical history (no. = 235).

Obstetrical history	No.	%
Gravidity		
Primigravida	9	3.8
Multigravida	226	96.2
Parity		
Primipara	9	3.8
Multipara	226	96.2
Number of abortion		
None	188	80.0
One	33	14.0
Two	12	5.1
Three and above	2	0.9
Age at first birth		
15 - < 20	41	17.4
20- < 30	192	81.7
30 – 40	2	0.9
Previous breastfeeding		
Yes	225	95.7
No	10	4.3

Table (2): shows that most (96.2%) of the studied women was multigravida and breastfeeding and the majority (96.2%, 80.0%, & 81.7%, respectively) had multipara, no previous abortion, and their age at first birth ranged between 20- 30 years.

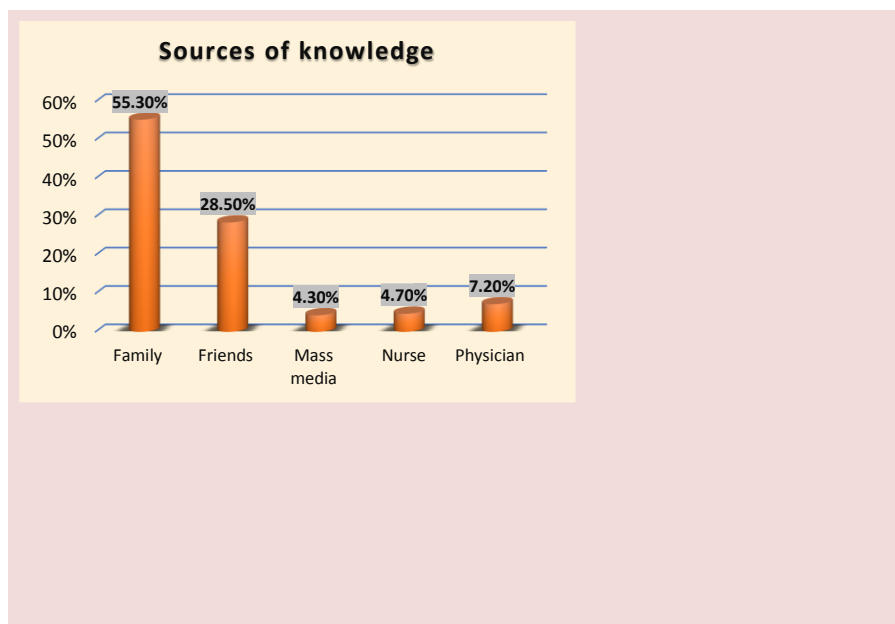
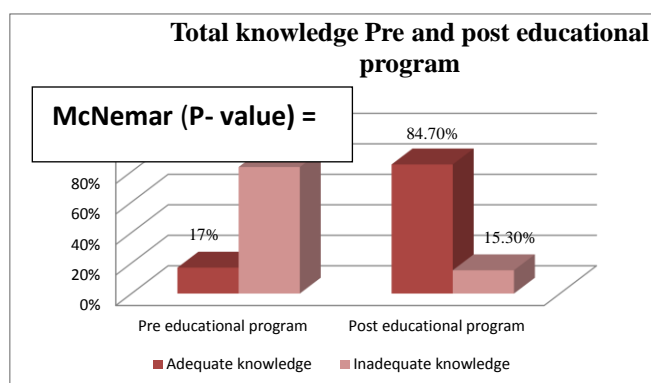
**Figure (2): Percentage distribution of the studied women regarding their source of knowledge about cervical cancer and its screening (no. = 235)**

Figure (2): illustrates that 55.3% of the studied women their source of knowledge about cervical cancer was from their family and 4.3% was from mass media.

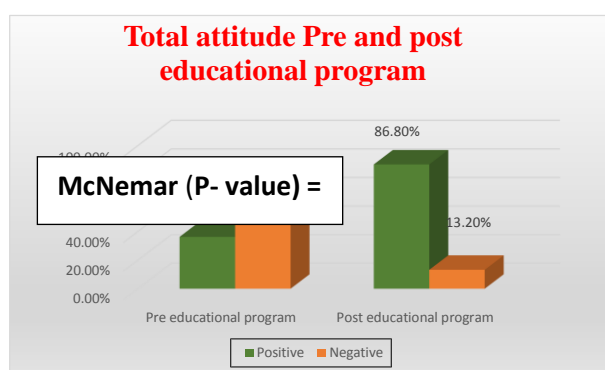


McNemar was used for compare between percentage of two groups (pre & post program)

** : highly significant difference in between departments (p value ≤ 0.001)

Figure (3): Percentage distribution of the studied women regarding their total knowledge levels towards cervical cancer screening pre and post-program implementation (no. = 235)

Figure (3): illustrates that 17% of the studied women had adequate knowledge levels toward cervical cancer screening pre-program while post-program increased to 84.7% with highly statistically significance differences (p value ≤ 0.001).



McNemar was used for compare between percentage of two groups (pre & post program implementation)

** : highly significant difference in between departments (p value ≤ 0.001)

Figure (4): Percentage distribution of the studied women regarding their total attitude levels towards cervical cancer screening pre and post program implementation (no. = 235)

Figure (4): illustrates that more than one third (36.2%) of the studied women had a positive attitude toward cervical cancer screening pre-program improved to 86.8% post-program with highly statistically significance differences (p value ≤ 0.001).

Table (3): Percentage distribution of the studied women regarding to their barriers to participate in cervical cancer screening pre and post program implementation (no. = 235)

Barriers	Pre						Post						McNemar (df) (P- value)
	Yes		No		Do not know		Yes		No		Do not know		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Lack of awareness	212	90.2	13	5.5	10	4.3	3	1.3	232	98.7	0	0	3.947 (< 0.001**)
It is embarrassing to have a cervical cancer screening test	212	90.2	20	8.5	3	1.3	3	1.3	232	98.7	0	0	14.356 (< 0.001**)
Carelessness	17	7.3	197	83.8	21	8.9	0	0	235	100	0	0	.649(0.516NS)
Fear of vaginal examinations	229	97.5	5	2.1	1	0.4	1	.4	234	99.6	0	0	14.145(<0.001**)
Fear of result	228	97.0	6	2.6	1	0.4	1	.4	234	99.6	0	0	2.111(0.035*)
Physical disability	8	3.4	174	74.0	53	22.6	1	.4	234	99.6	0	0	13.85(< 0.001**)
Pap smear test is too expensive	26	11.1	1	0.4	208	88.5	3	1.3	232	98.7	0	0	14.356 (< 0.001**)
Absence of symptoms for cervical cancer	224	95.3	8	3.4	3	1.3	2	.9	233	99.1	0	0	2.652 (.008**)
Lack of family support	18	7.7	198	84.2	19	8.1	1	.4	234	99.6	0	0	14.145(<0.001**)
Difficult access to hospital	14	6.0	189	80.4	32	13.6	3	1.3	232	98.7	0	0	13.88(<0.001**)
Not recommended by health professional	182	77.4	14	6.0	39	16.6	3	1.3	232	98.7	0	0	6.859 (<0.001**)
My culture/religion do not allow me to be screened	11	4.7	198	84.2	26	11.1	10	4.3	225	95.7	0	0	3.571 (<0.001**)
I do not know where the test is done	226	96.2	6	2.5	3	1.3	1	.4	234	99.6	0	0	14.145(<0.001**)
Cervical cancer screening is so painful	146	62.1	14	6.0	75	31.9	0	0	235	100	0	0	4.776 (<0.001**)

McNemar was used for compare between percentage of two groups (before & after program implementation)

** : highly significant difference in between departments (p value ≤ 0.001)

Table (3): presents that most of the studied women's barriers to participation in cervical cancer screening in Pre-program were fear of vaginal examinations, fear of the result, do not know where the test was done, absence of symptoms for cervical cancer, lack of awareness, and embarrassing to have a cervical cancer screening test (97.4%, 97.0%, 96.2%, 95.3%, and 90.2% respectively) while post-program decreased to (.4%, .4%, .4%, .9%, 1.3%, and 90.2% respectively) with highly statistically significance differences (p value ≤ 0.001).

Table (4): Relations between the studied women socio-demographic characteristics and with their total knowledge about cervical cancer and its screening pre and post program implementation (no. = 235)

Socio-demographic characteristics	No.	Knowledge level							
		Inadequate (n = 195)		Adequate (n = 40)		Inadequate (n = 36)		Adequate (n = 199)	
		No.	%	No.	%	No.	%	No.	%
Age / years									
40 - <45	140	114	81.4	26	18.6	24	17.1	116	82.9
45 - \leq 50	95	81	85.3	14	14.7	12	12.6	83	87.4
Fisher / X^2 (P Value)		0.800 (0.670NS)				1.212 (0.546NS)			
Residence									
Urban	63	46	73.0	17	27.0	7	11.1	56	88.9
Rural	172	149	86.6	23	13.4	29	16.9	143	83.1
Fisher / X^2 (P Value)		6.049 (0.014)*				1.175 (0.314NS)			
Marital status									
Married	231	191	82.7	40	17.3	36	15.6	195	84.4
Widow	4	4	100.0	0	0.0	0	0.0	4	100.0
Fisher / X^2 (P Value)		0.835 (0.361NS)				0.667 (1.000NS)			
Educational level									
Illiterate	34	34	100.0	0	0.0	9	26.5	25	73.5
Secondary level	171	151	88.3	20	11.7	18	10.5	153	89.5
University	27	8	29.6	19	70.4	9	33.3	18	66.7
Postgraduate	3	2	66.7	1	33.3	0	0.0	3	100.0
Fisher / X^2 (P Value)		51.729 (0.001)**				12.713 (0.007*)			
Occupation									
Housewives	177	159	89.8	18	10.2	21	11.9	156	88.1
Working women	58	36	62.1	22	37.9	15	25.9	43	74.1
Fisher / X^2 (P Value)		23.838 (0.001)**				6.519 (0.013*)			

Table (4): show that there was statistically significance relation between women socio-demographic characteristics with their total knowledge about cervical cancer and its screening pre and post program implementation ranged as ($p = .01$ & $.001$) in all items except age, marital status and residence post program implementation only ($p = 1.00$)

Table (5): Relation between the studied women socio-demographic characteristics with their total attitude towards cervical cancer and its screening pre and post program implementation (no. = 235)

Socio-demographic characteristics	No.	Attitude level							
		Negative (no. = 150)		Positive (no. = 85)		Negative (no. = 31)		Positive (no. = 204)	
		No.	No.	No.	No.	No.	%	No.	%
Age / years									
40 - <45	140	67	47.9	73	52.1	21	15	119	85
45 - ≤50	95	62	65.3	33	34.7	10	10.5	85	89.5
Fisher / X ² (P Value)		11.053 (0.004**)				2.596 (0.286NS)			
Residence									
Urban	63	34	54	29	46	6	9.5	57	90.5
Rural	172	116	67.4	56	32.6	25	6.4	147	93.6
Fisher / X ² (P Value)		3.626 (0.066NS)				1.011(0.388NS)			
Marital status									
Married	231	147	63.6	84	36.4	31	13.4	200	86.6
Widow	4	3	75	1	25	0	0.0	4	100.0
Fisher / X ² (P Value)		2.891 (0.231NS)				.716 (1.000NS)			
Educational level									
Illiterate	34	22	64.7	12	35.3	8	23.5	26	76.5
Secondary level	171	111	64.9	60	35.1	14	8.2	157	91.8
University	27	17	63	10	37	9	33.3	18	66.7
Postgraduate	3	0	0	3	100	0	0.0	3	100.0
Fisher / X ² (P Value)		5.260 (0.2179NS)				15.419 (0.002**)			
Occupation									
Housewives	177	113	63.8	64	36.2	16	9	161	91
Working women	58	37	63.8	21	36.2	15	25.9	43	74.1
Fisher / X ² (P Value)		.002 (1.000NS)				10.796 (0.002**)			

Table (5): shows that there was not statistically significance relation between women socio-demographic characteristics with their attitude towards cervical cancer and its screening in preprogram implementation in all items except age with (p=.004), while after program implementation there is not statistically significance relation between women socio-demographic characteristics with their attitude in all items except educational level and occupation with (p=.002).

Table (6): Correlation between the studied women's knowledge and attitude towards cervical cancer and its' screening pre and post program implementation (no. = 235)

	Pre				Post			
	Knowledge		Attitude		Knowledge		Attitude	
	r	p-value	r	p-value	r	p-value	R	p-value
Knowledge			.602	(<0.001**)			.917	(<0.001**)
Attitude	.602	(<0.001**)			.917	(<0.001**)		

Table (6): shows that there was fair positive correlation between knowledge and attitude of the studied sample pre-program implementation (r= 0.602, P value < 0.001), while there was a strong positive correlation between knowledge and attitude of the studied sample post-program implementation (r= 0.917, P value < 0.001).

Discussion

For women, cervical cancer is the main factor that causes mortality and disability from gynecologic malignancies (CC). Cervical cancer (CC) ranks as the fourth most common cancer among females worldwide. The incidence of cancer increased to 570,000 new cases in 2018, with 75,000 deaths attributable to the disease. More over 311,000 people die annually from CC, most of them in the world's least developed regions (85%). This was reported by many researchers. (Ghalavandi et al., 2021)

In terms of the socio-demographic features of the women examined Table (1), found that more than half of the women studied were in their forties, with a mean age of 44.12 3.14 years, and that most of them live in rural regions, have a secondary education, work outside the home as housewives, and are married.

This conclusion is compatible with (Romli et al., 2020) discovered that overwhelming of women had completed secondary school and were between the ages of 35 and 49, with a mean age of 41 years (SD 10.03) and 44 years (SD 10.46). That most were married, stayed at home, and lived in rural regions was confirmed by the fact that these demographics were found in (Ruddies et al., 2020). In this sample, 35.5% were under the age of 18, while 5.6% were beyond the age of 65. As was also found (Sumarmi et al., 2021) midding age of women was 42.3% (SD = 8.4%; 30-74 years). More than half of those who responded were

jobless besides the vast majority of ladies were already married.

Although (El Sayed et al., 2022) indicated that the typical age of participants was 24.08 years, larger proportions of participants were beyond the age of 20. The vast majority (over 80%) of the participants was college educated and resided in urban regions, and half of women were between the ages of 21 and 34, as well as the overall majority of respondents, held bachelor's degrees or above (Alqeid & Sulaiman, 2021).

Women in the study were asked about any cancer in their families. More over a third of the women in the research (as seen in Figure 1) did not have a history of cancer in their family. Those results were congruent with those of (Boka & Nigatu (2019) who found that almost one-third of subjects had a family background of cervical cancer. However, contrary to the findings of (Zagloul et al., 2020), who found that less than five percent of tested women, cervical cancer ran in family.

In terms of the women who were the subjects of the study's obstetric history According to Table 2, the great majority of the women in the study were multiparous, nursing, and most of them were multipara without having previously had an abortion. The women's ages during their first delivery varied from twenty to thirty years.

According to (Zagloul et al., 2020) just five percent of them experienced more than three abortions, whereas more than two thirds of them underwent 1-3 deliveries. The majority of the

mothers in the study nursed their infants, with the mean age of the women at their first delivery being 22.06 ± 2.91 years. On the other hand, (Boka & Nigatu, 2019) noted that fewer than half of respondents were multipara, lower than two percent of them had a history of abortion, and half of respondents were younger than twenty when they gave birth to their first child.

In terms of subject source of knowledge about cervical cancer and screening Figure (2), showed that more than half of the investigated women got their information about cervical cancer from their family, while four percent got it from the media. These findings agreed with the findings of (Chaka et al., 2018) who claimed that family or friends were the major sources of knowledge among ladies. This finding was verified by (Osei et al., 2021) who acknowledged resources of information for the study regarding cervical cancer screening and immunization were friends and family. Furthermore, (Cudjoe et al., 2021) reported that women's friends and family were their primary sources of health information.

Otherwise, the current study contradicts (Nigussie et al., 2019) who stated that radio and television were the primary sources of information on cervical cancer and screening. In addition, (Santos et al., 2020) found that television/radio was the primary source of information. Furthermore, (Donatus et al., 2019) indicated that they first learned about cervical cancer via HCW, then from the media.

Regarding to total knowledge levels of the studied women towards cervical cancer screening pre and post-program implementation Figure (3), illustrated that more than one quarter of studied women had adequate knowledge levels toward cervical cancer screening pre-program while post-program increased to more than two third with highly statistically significance differences (p value ≤ 0.001) This increasing is due to the specifically planned educational programme for women. It was required to evaluate women's baseline knowledge and attitude in accordance with the educational programme about cervical cancer intended to increase women's knowledge and attitude.

These results were consistent with those of (Hassan, 2021), who found that almost two-thirds of women had inadequate knowledge prior to the training. But there was a very statistically substantial advancement in female's awareness of cervical cancer, and nearly all of them got enough information at the time of the post-program (p 0.001).

Similar to (Ebu et al., 2019) who mentioned that the education programs interference was believed to have influenced comprehension of cervical cancer detection since the experimental subject had greater grades just following interference. Also (Ahmed et al. 2022) found that there was a statistically significant difference between the study group's pre-test results and their post-test results (p 0.001). They justified their finding may have a rational explanation, such as the fact that the participants in the study were given at the

teaching sessions, in-depth information on screening.

Regarding to total attitude levels towards cervical cancer screening pre and post program implementation Figure (4), in the current study, it was shown that greater than one third of the women who were studied had a positive attitude toward screening for cervical cancer prior to the programme. After the programme, that number increased to more than two thirds, and the variations in between two groups were highly statistically significant (p value 0.001).

This discovery was in tune with **(Said et al., 2018)** who noted a statistically significant difference between the attitudes of women toward cervical cancer before and after intervention, with zero percent of the women expressing positive attitudes before intervention compared to one third of them after intervention. Additionally, **(Ramjan et al., 2022)** found a substantial difference in the attitudes of the examined women about cervical cancer before and after intervention, which corroborated this finding.

The findings of this study conflict with those of **(Le & Holt, 2018)** who claimed that views toward cervical cancer and the Pap test, as well as interpreted behavioral intention getting a Pap test, showed no significant variations.

As regard to barriers to participation in cervical cancer screening pre and post program implementation Table (3), the research work found that bulk of women of who were studied had difficulties participating in cervical cancer

screening in Pre-program. These obstacles included a dread of vaginal examinations, a fear of the consequence, not knowing where the test takes place and an absence of symptomatology for cervical cancer, unawareness, and the fact that it was disappointing to have a cervical cancer screening test. These barriers reduced post-program with extremely significant differences (p value 0.001)

This finding had been encouraged by **(Fang et al., 2019)** who reported that the intervention group's women reported less perceived screening-related obstacles. Women's beliefs that getting a Pap test is unnecessary if they feel OK, would take too much time, or will cost too much money significantly decreased from pre- to post-program. Similar results were seen in a research by **(Wong et al. 2019)** who reported that perceived obstacles to cervical screening decreased right away following the three-month intervention.

Regarding to Relations between women socio-demographic characteristics with their total knowledge about cervical cancer and its screening pre and post program implementation Table (4), After controlling for age, marital status, and place of residence, the research found a statistically significant relationship between women's socio-demographic factors and their overall knowledge of cervical cancer and its screening before and after programme implementation (p=.01 &.001). This research was bolstered by findings from **(Said et al., 2018)** that found no correlation between the

education level and employment status of the women in the sample and their level of knowledge.

The outcomes of the existing research agreed with those of (El-kest et al., 2021), who found that among the investigated women before and three months after the programme, there was a significant positive link between educational attainment, family monthly income, and overall knowledge score ($p < 0.05$).

Regarding to Relations between women socio-demographic characteristics with their total attitude towards cervical cancer and its screening pre and post program implementation Table (5), in this research, the researcher found no statistically significant associations between women's socio-demographics and their attitudes on cervical cancer and its screening in pre-program implementation period, with the exception of age ($p = 0.004$), while after program implementation there is not statistically significance relation between women socio-demographic characteristics with their attitude in all items except educational level and occupation with ($p = 0.002$).

Although (Bante et al., 2019) found that maternal age was a highly reliable predictor of pre-cervical cancer screening uptake, the findings of the present research were ambiguous. Among mothers, those between the ages of 15 and 24 had an adjusted odds ratio (AOR) of 3.21 (95% CI: 1.40-7.39) for being tested compared to those between the ages of 35 and 49.

Regarding to Correlation between the studied women's knowledge and attitude towards cervical cancer and its' screening pre and post program implementation Table (6), Knowledge and attitude of researched sample were shown to have a decent positive association before to programme implementation ($r = 0.602$, $P < 0.001$), and a high positive correlation after programme implementation ($r = 0.917$, $P < 0.001$), according to the current study.

The current study's results are supported by (Zagloul et al., 2020) which found a favorable and statistically significant correlation between test takers' cumulative knowledge and their long-term attitudes across all time periods. In addition, the authors of the present research, (Niyonsenga et al., 2021) established a strong link between cancer screening service quality and (improved survival rates, adoption and educational qualification, marriage status, and high level of expertise) ($P = 0.000$).

From the researcher's point of view healthy behaviours can be promoted by raising women's knowledge of their health and the factors impacting it. Increased health knowledge is important because it motivates people to act in ways that are better for their overall health, even if knowledge is not the only element that affects how well a person performs in terms of her health.

Conclusion

The majority of premenopausal women's knowledge and attitudes were significantly improved by the Teaching Back Model intervention, according to the study's findings.

Recommendations

1. Regular and extensive awareness campaigns regarding the negative effects of cervical cancer, which may be avoided with access to screening and HPV vaccination, should be conducted for all Egyptian women of all ages.
2. Plan national communication campaigns and social activities to increase public knowledge of cervical cancer, its risk factors, screening procedures, and preventative options.

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