

Women with Cervical Cancer: Impact of an Educational Program their Knowledge

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Abstract

Background: Cervical cancer occurs when the cells of the cervix grow abnormally and invade other tissues and organs of the body.

Aim: study the impact of an educational program on knowledge of women with cervical cancer

Methods;

Design: A quasi-experimental design.

Setting: out-patient clinic in the oncology unit at Beni-Suef University Hospital.

Subjects: A purposive sample of 70 women.

Tools: A structured interviewing questionnaire sheet, a scoring system for women's knowledge about cervical cancer, and supportive educational booklet.

Results: The results of the study revealed improving in women's knowledge regarding cervical cancer post-program compared to pre-one.

Conclusion: The teaching program was very effective in women's knowledge improvement.

Recommendations: Women's counseling activities for women regarding cervical cancer need to be popularized and facilities and decision-making aids are made available to those who need them.

Keywords: cervical cancer, women's knowledge

1. Introduction

The cervix is composed of two main types of cells. The outer layer of the cervix is covered with cells called squamous cells. "Squamous cell carcinoma of the cervix" is the name for cancer that affects these types of cells. The cervix also includes glandular cells, which line the endocervical canal leads into the uterus. These cells also may become cancerous; when that occurs, it's called "adenocarcinoma of the cervix." Although it arises from different types of cells, squamous cell carcinoma and adenocarcinoma of the cervix are treated similarly in the early stages. [1-3]

Human papillomavirus (HPV) has been identified as an important factor in the development of pre-invasive and invasive cancers of the lower genital tract, of which cervical cancer is the most prevalent [4-5]. In a study carried out by Okunade, (2019) stated that cervical cancer is by far the most common HPV-related disease. About 99.7% of cervical cancer

cases are caused by persistent genital high-risk human papillomavirus (HPV) infection [6]. The virus usually infects the mucocutaneous epithelium then causes a disruption in normal cell-cycle control and the promotion of uncontrolled cell division leading to the accumulation of genetic damage. One way HPV spreads is through sexual activity, including vaginal, anal, and even oral sex. Different types of HPV cause warts on different parts of the body. Some cause common warts on the hands and feet; others tend to cause warts on the lips or tongue [7].

Certain types of HPV may cause warts on or around the female and male genital organs and in the anal area. These are called low-risk types of HPV because these types are seldom linked to cancer. Other types of HPV are called high-risk types because these types are strongly related to cancers, including cancer of the cervix, vulva, and vagina in women [8-9].

Receiving a cervical cancer diagnosis is an unpleasant experience, accompanied by distress, which impacts a person's personal and family

life. [4, 8 and 10] As a result of the diagnosis, patients experience socio-economic problems, marital issues, and psychological problems. Intense psychological distress is common not only upon receiving diagnosis, but also throughout treatment [9, 11-14].

Having a weakened immune system like (Human immunodeficiency virus; HIV) damages a woman's immune system and puts them at higher risk for HPV infections. The immune system is important in destroying cancer cells and slowing their growth and spread. In women with HIV, a cervical pre-cancer might develop into invasive cancer faster than it normally would. Another group of women at risk for cervical cancer are those taking drugs to suppress their immunity, such as those being treated for an autoimmune disease or those that have had an organ transplant [14-15].

Aldhafar et al., (2016) revealed that knowledge of the respondents about signs and symptoms of cervical cancer as following; vaginal bleeding between periods 50.6%, lower back pain 28.4%, pain during intercourse 25.8%, poly-menorrhagia 42.4%, Persistent unpleasant vaginal smell 30.4%, post-menopausal bleeding 55.2%, persistent pelvic pain 30%, vaginal bleeding during or after sex 21.8 %, fertility affect 58.6%, blood in the stool or urine 16.75%, unexplained weight loss 32.4%, and persistent diarrhea 8.2% [16].

A Pap test is used to diagnose cervical cancer. During a Pap test, the doctor gently scrapes the outside of the cervix and vagina, taking samples of cells for testing. Improved Pap test methods have made it easier for doctors to find cancerous cells. The liquid-based cytology test often referred to as thin-prep or sure-path, transfers a thin layer of cells onto a slide after removing blood or mucus from the sample. The sample is preserved, so other tests can be done at the same time, such as the HPV test. Computer screening, often called Auto Pap or Focal Point [18].

For most types of cancer, the biopsy is the only sure way to know whether an area of the body has cancer. In a biopsy, small samples of tissues are taken for testing in a laboratory. If the biopsy is not possible, the physician may suggest other tests that will help make a diagnosis [1, 4]. Not all tests will be used for every person. Some or all of these tests may be helpful to plan the treatment regimen. The doctor may consider these factors when choosing a diagnostic test: the type of cancer suspected, signs and symptoms, age and medical condition, and the results of earlier medical tests. In addition to a physical examination, a pelvic examination also may be done [4, 8 and 19].

Biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. A pathologist then analyzes the sample; if the lesion is small, the doctor may remove all of it during the biopsy. There are several types of biopsies; one common method uses an instrument to pinch off small pieces of cervical tissue [20].

There are different types of treatment options for patients with cervical cancer. Five types of standard treatment are used: surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy. New types of treatment are being tested in clinical trials. Treatment for cervical cancer may cause side effects. Patients may want to think about taking part in a clinical trial. Patients can enter clinical trials before, during, or after starting their cancer treatment [9, 14].

2. Significance of the study

The main goal of a nurse as a researcher is to increase successful patient outcomes. Nurses combine their scientific knowledge and the results of their research to provide optimal healthcare [21-23]. Nurses should understand and implement the latest research. Scientific knowledge that researches yield cervical cancer is beneficial. The combination of nursing practice and research can elevate the delivery of care. When nurses meet

a new patient, they should assess the patient's situation, analyze related research, and apply the evidence and evaluate the outcome [24]. Nurses as an educator are responsible for ensuring that patients are able to understand their health, illnesses, medications, and treatments to best of their ability. This is of the essence when patients are discharged from the hospital and will need to take control of their own treatments. The nurse should take the time to explain to the patient and their family or caregiver what to do and what to expect when they leave the hospital. They should also make sure that the patient feels supported and knows where to seek additional information [25-28].

The nurse also guides the cervical cancer survivor to regain self-confidence and adapt to physical and psychological changes to optimize survivor autonomy [4, 9 and 29]. Survivors of cervical cancers and their spouses need help from health care personnel, especially nurses, to overcome their problems [1, 30]. Other studies have provided scientific evidence that intervention in counseling education may improve complaints, reducing anxiety and depression, which finally may lead to increased quality of life in women following treatment of cervical cancer [17, 31].

3. Aim of the study

The aimed to evaluate the impact of an educational program on women's cervical cancer knowledge.

4. Hypothesis

Women with cervical cancer that attended the conducted program will experience improvement in their knowledge regarding cervical cancer.

5. Subjects and methods

5.1. Research Design

The study followed a quasi-experimental (pre-post) test study design.

5.2. Setting

The study was conducted in out-patient clinics in the oncology unit at Beni-Suef university hospital.

5.3. Subjects:

- 5.3.1. *Type:* a purposive sample of women who met the criteria for inclusion in this study.
- 5.3.2. *Size:* 70 women who fulfilled the inclusion criteria were selected. Steven and Thompson's equation was used to calculate the sample size from the next formula;

$$n = \frac{Np(1 - P)}{(N - 1) \left(\frac{d^2}{z^2}\right) + P(1 - P)}$$

N= Population (140)

Z= confidence level 95% (1.96)

P= probability (10%)

d= margin of error (0.05)

5.3.3. Inclusion criteria

- All married women that were diagnosed with cervical cancer
- Undergoing different types of treatment
- With any cervical cancer degree of all ages was recruited.

5.3.4. Exclusion criteria

- Gynecological tumors, e.g. vaginal, breast, and uterine cancer were excluded.

5.4. Tools of Data Collection

To attain the aim of this study, three tools were used for data collection;

5.4.1. **Tool I: Structured interviewing questionnaire** sheet was developed by the researchers in the Arabic language based on a review of recent literature. It was consisting of two parts:

1. **Part 1:** Socio-demographic characteristics of women as age, level of education, occupation, and residence.
2. **Part 2:** Medical & surgical history: how cervical cancer was detected, stage of cervical cancer, type of treatment regimen, types of surgery performed.

5.4.2. **Tool II: Scoring system for women's knowledge about cervical cancer.**

- This part was designed to assess women's knowledge about cervical cancer such as (definition, causes, signs, symptoms, risk factors, methods of prevention, diagnosis, treatment) of cervical cancer.
- This part consists of seven questions in the form of multiple-choice questions. Responses were scored zero for "incorrect" answers and one for "correct" answers. Scores were summed up and converted to percent.

5.4.3. **Tool III: Supportive material:** Educational booklet was designed by the researcher based on a review of literature containing data regarding the following;

- Cervical cancer causes, degrees, treatment, and management of treatment side effects e.g (nausea, vomiting, diarrhea, dyspnea, gingivitis) various physical, psychological, sexual, and reproductive problems.
- Physical activity including walking for at least 30 minutes/day. Also, performing body range of motion exercise, relaxation techniques including breathing exercise, distraction, and recreation.
- Diet therapy (high fiber diet, low-fat diet, high vegetables/fruits diet).

5.5. Validity and Reliability:

Content validity of the questionnaire was ensured through three experts in maternity, obstetrics, and gynecological nursing. Modification to the tools was made according to experts' judgment on the clarity of sentences, appropriateness of the content, the sequence of items, and accuracy of scoring and recording of items. Cronbâch alpha and Spearman-Brown coefficients were calculated to assess the reliability of the developed tools through their internal consistency.

5.6. Administrative & Ethical Considerations:

Before conducting the study, official permission was obtained from the director of Beni-Suef University Hospitals. Consent was obtained from each woman recruited in the study. Participants' were told that all their data were highly confidential.

Informed oral consent was obtained from women after explaining the purposes of the study, no harmful methodology was used, each woman had the right to withdraw from the study at any time, confidentiality was maintained and human rights were used.

5.7. Field work:

5.7.1. Preparatory phase:

It was included reviewing local and international related literature and theoretical knowledge about various aspects of the study problem. This helped the researchers to be acquainted with the magnitude of the problems, and guided the researchers to prepare the required data collection tools. Then the researchers tested the validity of the tool through a jury of expertise to test the content, knowledge, accuracy & relevance of questions for tools.

5.7.2. Pilot study:

A pilot study was conducted on 10% (7women) to evaluate the applicability, efficiency, clarity of tools, assessment of the feasibility of fieldwork, and identification of suitable place for interviewing women, besides to detect any possible obstacles that might face the researcher and interfere with data collection. Necessary modifications were done based on the pilot study findings such as (omission of some questions from the tool) in order to strengthen their contents or for more simplicity and clarity. The pilot sample was excluded from the main study sample.

5.7.3. Data collection phase

- The data was collected through a period of six months from the beginning of August 2019 till the end of January 2020.
- The researcher was attended at the previously mentioned setting till the pre-mentioned sample sizes collected. The researcher introduced herself to women and explains the aim of the study prior to data collection. The sample was collected 2-days per week from 9 am to 2 pm. The approval of women was obtained orally before data collection.
- The researcher filled the interviewing questionnaire from the women. The filling questionnaire ranged from 15 to 20 minutes for the women. The sexual nursing counseling was given by the researcher at the outpatient unit in three meeting sessions.

5.7.4. Program Sessions

The program, designed by the researchers, included 3 sessions; 40 minutes each, on one day. The 1st session included information about cervical cancer causes, degrees, treatment, and management of treatment side effects e.g (nausea, vomiting, diarrhea, dyspnea, gingivitis) various physical, psychological, sexual, and reproductive problems. Moreover, it discusses the pivotal role of screening in detecting early cases, age of screening, times of screening, and its accuracy. This session, also, covered cancer preventive measures and discussed the possible treatment procedures based on the type and grade of cancer (surgical, chemotherapy, radiotherapy). The 2nd session discussed the physical activity including walking for at least 30 minutes/day; Also, performing body range of motion exercise, relaxation techniques including breathing exercise, distraction, and recreation. The 3rd session discussed diet therapy (high fiber diet, low-fat diet, high vegetables/fruits diet).

Researchers adopted a problem-solving approach in the awareness sessions. This approach allowed patients to participate and discuss their concerns. During the awareness sessions, presentations, short films, and group discussions were held. At the end of each session, the investigators summarized the important points of this session and the participants were encouraged to ask and show their personal experience. Booklets, brochures, and leaflets, supported by illustrated figures, were distributed as take-home-notes. Patients who missed 1 or more sessions during the program were given wrap-ups of what they have missed.

Phase	Elements	Objectives	Method
Opening Ceremony		<ul style="list-style-type: none"> ▪ Welcome and Presentation program objectives. ▪ Enumerate the participants' expectations. ▪ Distribution of pre-test. 	<ul style="list-style-type: none"> ▪ Discussion. ▪ Distribution of booklet
<i>Session (1)</i>	Information about cervical cancer	<ul style="list-style-type: none"> ▪ Define cervical cancer ▪ List risk factors associated with cervical cancer ▪ Mention familial risk factors ▪ Mention cancer cervix causes ▪ List degrees of cancer cervix ▪ Discuss type of treatment for cancer cervix ▪ Describe management of treatment side effects ▪ Discuss the pivotal role of screening in detecting early cases, age of screening, times of screening, and its accuracy. ▪ Discuss cancer's preventive measures and discussed the possible treatment procedures based on the type and grade of cancer (surgical, chemotherapy, radiotherapy) 	<ul style="list-style-type: none"> ▪ Power point
<i>Session (2)</i>	knowledge regarding physical activity	<ul style="list-style-type: none"> ▪ Perform walking for at least 30 minutes/day ▪ performing body range of motion exercise ▪ Demonstrate relaxation techniques ▪ Demonstrate breathing exercise ▪ Demonstrate distraction and recreation 	<ul style="list-style-type: none"> ▪ Power point ▪ Demonstration ▪ Video
<i>Session (3)</i>	Knowledge regarding diet therapy	<ul style="list-style-type: none"> ▪ Discussed diet therapy ▪ Mention high fiber diet, low-fat diet, and high vegetables/fruits diet. 	<ul style="list-style-type: none"> ▪ Power point ▪ Video ▪ Demonstration
Closing		<ul style="list-style-type: none"> ▪ Distribution of Post-test. 	Thanks to participants.

Table 1. Overview of the elements in the program about women’s knowledge regarding cancer cervix

5.8. Statistical analysis

The collected data was revised, coded, tabulated, and introduced to a PC using a statistical package for social sciences (IBM SPSS 25.0). Statistical significance was considered at a p-value <0.05. Data were presented and suitable analysis was done according to the type of data obtained for each parameter

- Mean±SD, and range for parametric numerical data.
- Frequency (N), and percentage (%) of non-numerical data.
- Student t-test
- Chi square (x²)

6. Results

Table (2) reveals that the mean age of the studied women was 49.4±9.38 years old, the mean age of menarche 12.4 ± 2.45 years old. The mean marriage age of women was 19.1±4.23 years old.

Table (3) shows that more than one-third of women were in the 1st degree when diagnosed with cervical cancer, more than one-third of women had received radiotherapy, chemotherapy, and surgical operation.

Table (4) indicates that there was a high statistical significant improvement in the women's knowledge about all studied items of cervical cancer (Definition of cervical cancer, Causes of cervical cancer, Manifestations of cervical cancer, Predisposing factors of cervical cancer, prevention of cervical cancer, Diagnosis of cervical cancer, and Management of cervical cancer) of cervical cancer after application of educational program (p<0.001).

Figure (1) shows that only (4.3%) of women had satisfactory knowledge during pre-program and approximately all of them (95.7%) had satisfactory knowledge at post-program, there was an improvement in the women's total knowledge regarding cervical cancer.

Demographic characteristics	No	%
1. Age		
▪ Mean ± SD	49.4 ± 9.38	
2. Marriage age		
▪ Mean ± SD	19.1 ± 4.23	
3. Menarche age		
▪ Mean ± SD	12.4 ± 2.45	
4. Educational level of women		
▪ Illiterate	2	2.9
▪ Basic education	24	34.3
▪ Secondary education	34	48.6
▪ Above secondary education	10	14.3

5. Job		
▪ Working	25	35.7
▪ Not working	45	64.3
6. Residence		
▪ Rural	33	47.2
▪ Urban	37	52.8

Table 2: Distribution of personal characteristics of the study subjects (n=70).

Medical surgical history		No	%
1. Degree of disease when detected			
▪ Zero degree	16	22.9	
▪ 1 st degree	25	35.7	
▪ 2 nd degree	22	31.4	
▪ 3 rd degree	4	5.7	
▪ 4 th degree	3	4.3	
2. Type of disease intervention			
▪ Radiotherapy	4	5.7	
▪ Surgical	9	12.9	
▪ Chemotherapy and surgical	14	20	
▪ Radiotherapy and surgical	17	24.3	
▪ Radiotherapy, Chemotherapy and surgical	26	37.1	
3. Surgery type			
▪ Local tumor surgery	6	8.6	
▪ Partial hysterectomy	7	10	
▪ Total hysterectomy	57	81.4	

Table 3: Distribution of the study subjects according to their medical-surgical history (n=70).

Items	Intervention phases				X ²	P-value
	Pre		Post			
	N	%	N	%		
1. Definition of cervical cancer	16	22.9	70	100	11.43	0.000**
2. Causes of cervical cancer	7	10	66	94.3	17.44	0.000**
3. Manifestations of cervical cancer	50	71.4	70	100	5.25	0.000**
4. Predisposing factors of cervical cancer	14	20	55	78.6	9.87	0.000**
5. Prevention of cervical cancer	2	2.9	47	67.1	11.14	0.000**
6. Diagnosis of cervical cancer	8	11.4	57	81.4	12.68	0.000**
7. Management of cervical cancer	50	71.4	67	95.7	4.37	0.000**

(**) highly statistically significant at P<0.001

Table 4: Percentage distribution of women’s knowledge regarding cervical cancer (n = 70).

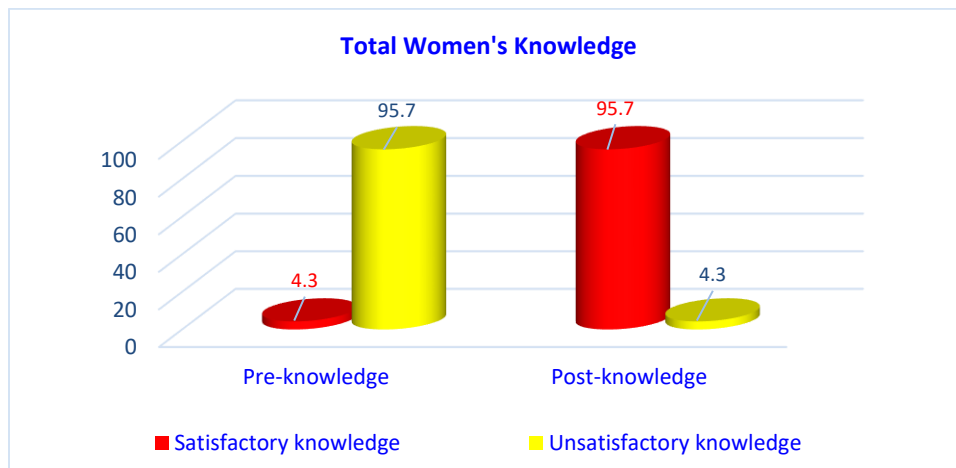


Figure 1: Percentage distribution of women’s total knowledge regarding cervical cancer

7. Discussion

Cervical cancer occurs when the cells of the cervix grow abnormally and invade other tissues and organs of the body. Cervical cancer affects all aspects of a patient's life [1-2].

As regard to age as of the studied sample as a part of demographic characteristics of the study subjects, the present study indicated that slightly more than half of the study sample their age more than 50 years old. Similarly, to current study findings for Zhou et al., (2017) that study "Patterns and predictors of healthcare-seeking for sexual problems among cervical cancer survivors: An exploratory study in China", found that slightly less than half of women their age ranged from 46-55 years old [32].

Regarding treatment type; the current study showed that slightly more than one-third of women had received radiotherapy, chemotherapy, surgical operation, approximately all of them had a hysterectomy. Less than half of the sample experienced diarrhea, hair loss, tiredness, and anemia as complications of cancer treatment. This finding is supported by Ahmed & Hassan (2016) illustrates that slightly more than one-third of the studied sample was treated with surgery combined with chemotherapy and radiotherapy. The majority of the studied sample was having a hysterectomy [33]. In agreement, to current study findings of Zhou et al., (2017) that conduct in China revealed that the majority of patients in their study were having received combined treatment. This may be related to increasing cervical cancer degree the need to use combination therapy increases [32].

Concerning women's knowledge about cervical cancer (definition, causes, manifestations, predisposing factors, prevention, diagnosis, management) the current study revealed that approximately two-thirds of women had unsatisfactory knowledge at pre-program. However, there was a high statistical significant improvement in the women's knowledge about cervical cancer in which approximately the majority of women had satisfactory knowledge at post-program ($p < 0.001$). This may be due to continuous education and encouragement among the studied women by using the protocol of nursing intervention.

In the same line Getahun et al., (2013) that study "Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia" revealed that knowledge about cervical cancer was poor though the majority of the women. Specifically, the knowledge of women on risk factors, signs, and symptoms was poor. Education about the disease must include information on risk factors, sign and symptoms of cervical cancer. This may be due to decrease high level of education among their studied women [34].

Also et al., (2016) that studied "Knowledge about Cervical Cancer and Associated Factors among 15-49 Year Old Women in Dessie Town, Northeast Ethiopia" revealed that using the sum of all knowledge items (definition, risk factors, symptoms, preventive measures) determined that more than half of the participants had sufficient knowledge about cervical cancer at post-program [35]. This may be due to the continuous education, and motivation of women by the researcher through using the educational intervention package.

The results of the current study declare the women's total knowledge regarding cervical cancer; the pre-test of the present study revealed that most of the women had unsatisfactory knowledge about it. This lack of knowledge may be attributed to that around three-quarters (70.0%) of the studied women had low levels of education and two-thirds were housewives. After the implementation of the educational program, the results indicated that there is a significant increase in women's knowledge. Moreover, the progression of a satisfactory score of women's grading and regression of unsatisfactory women's grading, after the

implementation of the program compared to before, were observed associated with statistical differences.

This improvement could be attributed to that all women of the sample were committed to the program [36-37]. This may, also, be attributed to positive reinforcement or the long-term retention of knowledge, as well as wide verities of used educational used methods [38-42]. As well as the distributed Arabic booklets, also, played a crucial role in attaining and retain knowledge. The educational booklet which designed by the researchers based on a review of literature containing data regarding the following; (a) Cervical cancer causes, degrees, treatment, and management of treatment side effects e.g (nausea, vomiting, diarrhea, dyspnea, gingivitis) various physical, psychological, sexual, and reproductive problems. (b) Physical activity including walking for at least 30 minutes/day. Also, performing body range of motion exercise, relaxation techniques including breathing exercise, distraction, and recreation. (c) Diet therapy (high fiber diet, low-fat diet, high vegetables/fruits diet) [43-49]. Booklets are best used when they are brief, written in plain language, full of good pictures, and when they are used to back-up other forms of education. This is, in accordance, with Edgar Dale's or the NTL's Pyramid of Learning as cited by Masters as the pyramid illustrated that individuals can retain 10.0% of what they read and 20.0% of what he sees and hear (audiovisual). The same author added that ones can retain 50.0% of what he learned by a discussion [50-58].

8. Conclusions

Based on the finding of the present study, it can be concluded that: The findings of this study supported the research hypotheses that, there was high statistical significant difference in the women's total score of knowledge about cervical cancer, at pre/post-program.

9. Recommendations

In the light of the findings of the study, the following are suggested:

1. Disseminate the educational booklet at health centers, gynecology, and oncology outpatients
2. Women's counseling activities for women regarding cervical cancer need to be popularized and facilities and decision-making aids made available to those who need them.
3. Replication of this study on a large representative probability sample is highly recommended to achieve more generalization of the results for further research.

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