# Knowledge and Beliefs of Women about Cervical Cancer Prevention in Port Said City

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## ABSTRACT

**Background:** Cervical cancer is the leading cause of death worldwide, especially in developing countries. Cervical cancer is a highly preventable and curable cancer compared with other types of cancer, if detected at an early stage. **Aim**: assess the knowledge and beliefs of women about cervical cancer prevention in Port Said City. **Subjects and Method:** A descriptive research design was utilized in this study at five gynecological and family planning clinics in primary health care centers within the city of Port Said. A multi- stage cluster sampling technique was used for 110 women. Two tools were used to gather the required data consisted of; Tool (I) women's knowledge structured interview questionnaire about cervical cancer, Tool (II) Health Belief Model Scale in addition to personal characteristics, and obstetric history of women. **Results:** The study revealed that 90.9% of the studied women had unsatisfactory level of total knowledge and 69.1% of them had low level of total beliefs about cervical cancer prevention. **Conclusion:** It can be concluded that the total women's knowledge were unsatisfactory and the total women's beliefs were low in all subscales of health belief model about cervical cancer prevention. Also, there was a highly statistically significant positive correlation between total women's knowledge and their total beliefs about cervical cancer. **Recommendations**: Implement preventive program based on a health belief model to increase women's knowledge and beliefs about cervical cancer prevention.

***Keywords:*** *Cervical Cancer, Health Belief Model, Knowledge, Preventive Program, Women.*

## INTRODUCTION

Cervical carcinoma is one of the most common gynecologic malignant tumors and a leading cause of death from genital malignancies in women. Cervical cancer is cancer of the cervix, extending into the upper end of the vagina. Globally, cervical cancer is the fourth most common cancer in women, causing an estimated 570 000 women were diagnosed with cervical cancer worldwide and about 311 000 women died from the disease with rates ranging from less than 2 to 75 per 100,000 women. This cancer type is also considered to be the second most common cancer in developing countries, with over 400,000 cases reported annually (World Health Organization, 2022).

The primary underlying cause of cervical cancer is human papillomavirus (HPV), which is a sexually transmitted infection. Studies have recognized a strong association between cervical cancer and HPV serotypes 16 and 18. This virus affects changes in the cervical epithelium metaplasia, and such changes usually occur more rapidly during puberty. The pathogenesis can evolve over a period of 10–20 years from precancerous lesions to invasive cancer, ultimately leading to death (Mittal, Gupta, Kachroo, Sinha, & Goyal, 2024).

There are many risk factors for cervical cancer, including sexual activity at younger than 21 years, having multiple sexual partners, prolonged use of hormonal contraceptives for more than 5 years, increasing parity (three or more full-term pregnancies), smoking, immunosuppressive disease, a history of sexually transmitted infections, and particularly dietary factors. The primary goal of cervical cancer prevention is to reduce the incidence by addressing the causes and risk factors (Abd El Salam, Ali, & Hassan, 2021).

Unfortunately, many women remain asymptomatic until the disease has advanced; when metastases start to occur, the most common symptoms include abnormal vaginal bleeding after sex, douching, menopause, bleeding and spotting between periods, heavier or longer menstrual period than usual, pain during sex, and abnormal vaginal discharge. Further, with advanced cervical cancer, women can suffer from pelvic pain, urinary frequency and urgency, loss of appetite, weight loss, severe back pain, and a decrease in red platelets (El-Kurdy, Mohammed, Ali, Fadel, & Mohamed, 2021).

Knowledge is defined as familiarity, awareness, or comprehension of someone or something, such as facts (descriptive knowledge), abilities (procedural knowledge), or objects (objective knowledge) (Fawzy, Hossien, Ibrahim, & Taha, 2023). Knowledge of cervical cancer about the screening program can help in reduce the risk of disease and death among women. The Pap smear remains the primary tool that identifies cytological abnormalities of the cervical transformation zone, and helps to reduce the incidence and mortality rates of cervical cancer remarkably. A Pap smear test has been recommended to be performed once a year for three years, then every three years if the first three ones were negative (El-Sayed, Elsayed, Mohamed, & Aboushady, 2020). Currently, another method for prevention of this cervical cancer is the human papilloma virus (HPV) vaccine, and in advanced clinical testing, it has been proven to be effective in preventing 65–76% of infections and lesions owing to the viruses among women who have not previously been exposed to HPV. In addition, nutrition factors like a diet rich in vitamin A, C, and folic acid, hygiene of the genitalia, visiting a doctor if symptoms have presented, and respecting ethical principles are also included in the preventive methods (Farag, Mohamed, Malk, & Hassan, 2024).

Measurements of health beliefs about cervical cancer have been made using the health beliefs model (HBM). HBM is one of the oldest and most widely used models that help people use free preventive programs for prevention and early detection of diseases. According to HBM, a person's intention to perform a given preventative behavior is influenced by his beliefs regarding that disease (Ahmed, Yakout, & Tosson, 2022).

Based on the health belief model, improving the knowledge of women regarding cervical cancer can eventually improve their beliefs. It involves six constructs: perceived threats or possibility of getting ill, perceived severity of outcomes, stimuli as cues to action, perceived barriers for adopting a behavior, perceived benefits of the new behavior, and self-efficacy to perform the new behavior. Hence, the HBM is deemed vital to clarify the relation between health beliefs and behaviors (Baker & Elkazeh, 2020; El-Kurdy, Mohammed, Ali, Fadel, & Mohamed, 2021).

Community health nurses are the cornerstone in the prevention of cervical cancer owing to their vital role in the healthcare delivery system. Fortunately, they play a key role in health education and promotion by increasing their knowledge about disease and modifying their beliefs. Moreover, they have the important task of teaching information

on risk factors, discovering early signs of cervical cancer, and encouraging females to undergo cervical cancer screening frequently. In addition, they collaborate closely with individuals, families, and communities to encourage preventive measures and early detection. They have the communication and teaching skills to work with women to change behaviors to reduce risk factors and change false beliefs about cervical cancer (Ahmed, Yakout, & Tosson, 2022).

**Significance of the study**

In Egypt has a population of 33.2 million women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 1320 women are diagnosed with cervical cancer and 744 die from the disease. Cervical cancer is the 12$^{th}$ greatest cause of cancer death in Egyptian women aged 15 to 44, with an annual age-standardized mortality rate of 1.5 per 100,000 (Bruni et al., 2021). Studies had showed that the importance of increasing awareness and dissemination of health knowledge directed to the women with no symptoms at reproductive age (Kimambo, Mohamed, & Mikheal, 2023). Also, there are few studies on actual cervical cancer prevention based on health belief model done in Port Said. So the aim of the study assessing knowledge and beliefs of women about cervical cancer prevention in Port Said City.

**AIM OF THE STUDY**

This study aimed to assess knowledge and beliefs of women about cervical cancer prevention in Port Said City.

**Objectives of the study:**

- Identify women's knowledge about cervical cancer prevention.
- Estimate women's beliefs about cervical cancer prevention.
- Explore the relation between women's knowledge and beliefs among women.

## SUBJECTS AND METHOD

### I. Technical Design

Technical design includes description of the research design, setting, subjects and tools of data collection.

***Research design***

A descriptive research design was utilized in this study.

***Setting***

This study was conducted at gynecological and family planning clinics in primary health care centers within the city of Port Said. There are five districts located at Port Said namely; Eldawahey district, Elzhour district, Elarab district, Elmanakh district and Elshark district. One primary health care center chosen randomly from each district as follows; Mostafa Kamel health care center, Elgwhara health care center, Elarab health care center, Al-Elag El Tabeey health care center, and Sehat Osra Alarab unit, respectively. These settings are affiliated by Egypt Health Care Authority in Port Said. These centers are an accessible all days of the week from 8.00 AM to 8.00 PM.

***Study sampling and subjects:***

Multi- stage cluster sampling technique was used in the study in which with total no. 110 women were chosen based on the inclusion criteria until the sample size was completed.

**Inclusion criteria**

The study population included women aged between 18-50 years who attending above mentioned settings.

**Sample size**

The sample size was determined by the electronic sample size calculator, Epi-info 7 programs (Xu, Lin, Yang, & Zhang, 2020) using the following parameters:

- Population size =2700 (The number of women who meet the inclusion criteria who repeatedly visit the following centers (Mostafa kamel=720, El-gawhara=600, El-arab=600, Al Elag Altabeey=540, Sehat Osra Alarab =240) over a period of six months.

- Expected frequency =50%
- Acceptable error=10%
- Confidence coefficient=97%

The program revealed that the sample size =105 (women): Due to the expected non-participating rate (5%); the final sample size was **110** women who attended these centers and met the inclusion criteria and distributed in the centers as the following:

**Table (1):** Distribution of the studied women in the selected center

| No. | Centers | Number of women |
|---|---|---|
| 1 | Mostafa Kamel | 30 |
| 2 | El-Gawhara | 24 |
| 3 | El-Arab | 24 |
| 4 | Al Elag Altabeey | 22 |
| 5 | Sehat Osra Alarab Unit | 10 |
| Total sample size | | 110 women |

**Tools of Data Collection**

Two data collection instruments were used:

**Tool (I): women's knowledge structured interview questionnaire about cervical cancer:**

This tool adopted from (Alshehri, Eltohamy, Elgzar, 2020; El-Sayed et al., 2020) in an Arabic language to assess women's knowledge about cervical cancer. It consisted of three parts:-

Part I: personal characteristics of the studied women.

This part included 6 items that used to collect the necessary data to assess personal characteristics of the studied women including: age, educational level, working condition, and marital status.

Part II: Obstetric history among the studied women

This part included 20 items that used to assess health history of the women including medical, obstetric, gynecological and menstrual history including age at menarche, age of marriage, age of first pregnancy, age of first delivery, number of gravida, number of parity, family history of cervical cancer, contraceptive method use, and smoking exposure.

Part III: women's knowledge about cervical cancer.

This part involved 17 items (10 yes or no, and 7 multiple choice). It used to assess women's knowledge regarding cervical cancer including cervical cancer definition, symptoms, risk factors, diagnosis, treatment, prevention, Human Papilloma Virus vaccine, and Pap smear.

**Scoring system:**

The questions were scored as follows: For multiple-choice: One for a 'yes' answer and zero for a 'no' answer. The questions that having answers were categorized into: Do not know was given zero, incomplete answer was given one, and complete answer was given two. The total knowledge score was calculated by adding the scores for each correct answer which was (23) score. The higher scores reflected higher levels of knowledge about prevention of cervical cancer. It classified into: from (0-11) unsatisfactory level of knowledge if score less than 50 % and satisfactory level (12-23) of knowledge if score more than 50%.

**Tools validity and reliability**

The tool of data collection was proven to be valid as the tool was ascertained by a jury consisting of 5 expertise in the field of community health nursing and maternal and neonatal health nursing. Additionally, the reliability was assured by calculating Cronbach's alpha coefficient (r =0.86), which indicates that the Arabic version demonstrates an acceptable internal consistency (Abu shady, 2020).

**Tool II: Women's beliefs regarding cervical cancer scale**

This scale was developed by Champion, (1999) in an English language and translated by (Alshehri, Eltohamy, Elgzar, 2020) in an Arabic language to assess women beliefs about cervical cancer. Health Belief Model (HBM) scale covers six subscales and included 41 items. Five items for perceived susceptibility such as (I am at a risk for developing cervical cancer, My chances of getting cervical cancer in the next few years are high……,etc.), four items for perceived seriousness such as (Cervical cancer may lead to death, Cervical cancer may lead to a hysterectomy…….,etc.) , ten items for perceived barriers such as (Getting cervical test would only make me worry, Screening is not necessary as there is no cure for cancer,…….etc.), five items for perceived benefits such as (The Pap screening can save my life,……etc.), nine items for cues to action such as (I eat a well-balanced diet,….etc.) , and eight items for self-efficacy such as to what extent that you sure to get a cervical test even if your friend advises you not to do it,…etc.). Each the subscale was assessed separately.

Scoring system of Health Belief Model Scale:

All the items of subscales have five-point likert scale response choices. In each item the participant has to choose one of five alternatives. All subscales had positive responses related to screening behavior, except for barriers which have negatively associated. Scores of positive statements were given score of strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1) with regard to each item. Scores of negative statements were inversed as follows: strongly agree (1), agree (2), neutral (3), disagree (4) and strongly disagree (5). The scores summed up for each construct then for the six constructs. The score of perceived susceptibility (5- 25), perceived seriousness (4-20), perceived barriers (10-50), perceived benefits (5-25), perceived cues to action (9-45) and self-efficacy (8-40). The total score ranged from 41 to 205. It considered to have low (41≤95), moderate (96≤149) or high (150≤205) health belief (Alshehri, Eltohamy, & Elgzar, 2020).

**Tools validity and reliability:**

The tool of data collection was proven to be valid as the tool was ascertained by a jury consisting of five expertise in the field of obstetric nursing and a statistician. The reliability was assured by calculating cronbach's alpha coefficient (r=0.87), which

indicates that the scale demonstrates an acceptable internal consistency (Alshehri, Eltohamy, Elgzar, 2020).

## II. Operational Design

The operational design includes preparatory phase, pilot study and field work.

### Preparatory phase

It includes reviewing of related literature, different studies and theoretical knowledge of various aspects of the current study using books, research articles, internet, periodicals and magazines related to cervical cancer prevention.

### Pilot study

A pilot study was undertaken before starting the data collection phase. It was carried out on 10% of the study sample, which included 11 women, who were selected randomly. The pilot study was conducted from the first of October to the end of October 2022. The purpose of the pilot study was to test the applicability and feasibility of the study tools, and it served to estimate the time needed to complete the tools. It also helped to find out any obstacles or problems that might interfere with data collection. Studied women who shared in the pilot study were excluded from the entire sample of research work. Based on the findings of the pilot study, the tools were applicable and clear. Thus, no modifications were made.

### Field work

Data collection was carried out at Port Said's heath care centers from the beginning of November 2022 until the end of March 2023, for a period of 5 months. After preparing the tools, the study sample was recruited according to the set criteria. This was followed by collecting data. The researcher met the studied women who attended the outpatient clinic for regular follow-up one day per week (Monday or Tuesday). The orientation was done about researcher's name, purpose of the study, content of the study tools, and finally obtaining the oral consent to participate in the study. The researcher began to clearly explaining how to fill it out the written pre mentioned tools and distributed the questionnaire sheet in the form of Arabic language of the studied women to assess their existing level of knowledge and beliefs regarding

cervical cancer. Confidentiality of all collected information was strictly assured. The time needed to fill each one extended from 30 to 45 minutes, depending on the response of each woman. The researcher also obtained information about the regular visits of the studied women from the outpatient record by assistance of nurse working at outpatient clinic. The researcher visited one of each center one day per week. After finishing the required number of women then visit another health care center. Number of women, and the period of data collection are mentioned in the below table (2). Finally, the studied women were thanked for their effort and time they offered.

**Table (2):** Distribution of the number of women, and weeks at selected centers

| No. | Centers | Number of women | No. of Weeks |
|---|---|---|---|
| 1 | Mostafa Kamel | 30 | 4 |
| 2 | El-Gawhara | 24 | 4 |
| 3 | El-Arab | 24 | 4 |
| 4 | Al Elag Altabeey | 22 | 4 |
| 5 | Sehat Osra Alarab Unit | 10 | 2 |
| Total | | 110 women | 20 week |

### III. Administrative Design

Before starting any step in the study, an official letter was issued from the Dean of the faculty of nursing to the director of each study setting, contacted and informed in requesting their cooperation and permission to conduct the study.

**Ethical consideration:**

The research consent was obtained from the scientific research ethical committee in the faculty of nursing at Port-Said University before starting the study {Code Number: NUR (1/5/2024) (37). Explain the aim of the study to the directors of gynecological and family planning clinics in primary health care centers and ask for their permission to do this study. The process of data collection did not disturb the harmony of the work. Oral consent was obtained from the studied women. Explain the aim of the study to each participant so they are familiar with the importance of their participation and have the

right to withdraw from the study at any time. The researcher ensured participants that their identities and answers were kept confidential and used only for this study.

### IV. Statistical Design

Upon completion of the data collection, collected data managed, coded, arranged, entered and analyzed according to the type of each data to answer the research question using Statistical Package for Social Sciences program (SPSS) version 22. Data presentation done by using suitable tables and graphs. Frequency distribution, percentages, mean and standard deviation calculated. The following statistical techniques were used as Chi-square (X2) and Pearson's correlation coefficient were used to test correlation between variables and T-test used to compare between two groups. Statistical significant was considered at P value ≤ 0.05 and highly statistically significant at P value ≤ 0.01.

## RESULTS

**Table (3):** illustrates distribution of the studied women according to their personal characteristics, 49.1% of them were in the age group 21-30 years with Mean ± SD is 29.63 ± 6.31. Regarding education, 37.3% of them had secondary education. As regard to working condition and family monthly income, 71.8% of them were working and 60.9% of them had insufficient income. Moreover, 87.3% of them were married.

**Table 4-a** shows the distribution of the studied women according to their obstetric history, 69.1% of the studied women, their age at menstruation was 12 ≤15 years, with Mean ± SD is 12.80 ± 1.59 years. Also, 92.7% of them, their age at first pregnancy was 20 ≤30 years, with Mean ± SD is 22.71 ± 2.65 years. Moreover, 91.8% of them, their age at first labor was 20≤30 years, with Mean ± SD is 23.33 ± 2.66 years. Furthermore, 87.3% of them, their age at marriage was 18 - 29 years, with Mean ± SD is 22.65 ± 2.59 years. Also, 37.3% of them, their marriage duration was 1-5 years, with Mean ± SD is 6.87 ± 2.62 years. Regarding number of times marriage, 90.0% of them had one time marriage. Furthermore, 34.6% of them had two pregnancies and 34.6% of them had one time labor.

**Table 4-b** displays the distribution of the studied women according to their obstetric history, 34.6% of them had one living children. Also, 91.8% of them didn't have

history from abortion. Moreover, 63.6% of them didn't take medications to prevent abortion before. Furthermore, 74.5% of them performed gynecological examination before. Also, 40.0% of them didn't have a medical history for any of chronic diseases. Moreover, 79.1% of them had operations on the reproductive system before, 70.1% of them had caesarean section and 67.3% of them didn't have family history for cancer. Regarding contraceptive method, 35.5% of them used pills and 59.8% of them used contraceptive method from 1-5 years. In addition, 65.5% of them exposed to passive smoking.

**Figure 1** displays that, 70.9% of the studied women didn't have information about cervical cancer. While 10.0% of them had information from their friends or neighbors.

**Figure 2** shows that, 90.9% of the studied women had unsatisfactory level of total knowledge about cervical cancer prevention while, 9.1% of them had satisfactory level.

**Figure 3** displays that, 69.1% of the studied women had low level of total beliefs about cervical cancer prevention, 21.8% of them had moderate level, and 9.1% of them had high level.

**Table 5** reveals correlation between total score of knowledge and total score of beliefs among the studied women, there was a highly statistically significant positive correlation between total women' knowledge and their total beliefs about cervical cancer at $p \leq 0.01$.

**Table (3):** Frequency distribution of the studied women according to their personal characteristics (n=110).

| Personal characteristics | No. | % |
|---|---|---|
| **Age (years)** | | |
| 18-20 | 3 | 2.7 |
| 21-30 | 54 | 49.1 |
| 31-40 | 40 | 36.4 |
| >40 | 13 | 11.8 |
| **Mean ± SD** | **29.63 ± 6.31** | |
| **Educational level** | | |
| Don't read or write | 2 | 1.8 |
| Read and write | 12 | 10.9 |
| Basic education | 22 | 20.0 |
| Secondary education | 41 | 37.3 |
| University education | 31 | 28.2 |
| Postgraduate education | 2 | 1.8 |
| **Working condition** | | |
| Working | 79 | 71.8 |
| House wife | 31 | 28.2 |
| **Family monthly income** | | |
| Enough and more | 4 | 3.6 |
| Sufficient | 39 | 35.5 |
| Insufficient | 67 | 60.9 |
| **Marital status** | | |
| Married | 96 | 87.3 |
| Divorced | 12 | 10.9 |
| Widow | 2 | 1.8 |

**Table (4-a):** Frequency distribution of the studied women according to their obstetric history (n=110) Cont.

| Obstetric history | No. | % |
|---|---|---|
| **Age at menarche (in years)** | | |
| 9 ≤12 | 18 | 16.4 |
| 12 ≤15 | 76 | 69.1 |
| 15-18 | 16 | 14.5 |
| **Mean ± SD** | **12.80 ± 1.59** | |
| **Age of first pregnancy** | | |
| <20 | 4 | 3.6 |
| 20 ≤30 | 102 | 92.7 |
| 30-40 | 4 | 3.6 |
| **Mean ± SD** | **22.71 ± 2.65** | |
| **Age of first labor** | | |
| <20 | 3 | 2.7 |
| 20 ≤ 30 | 101 | 91.8 |
| 30-40 | 6 | 5.5 |
| **Mean ± SD** | **23.33 ± 2.66** | |
| **Age at marriage /years** | | |
| < 18 | 6 | 5.5 |
| 18 – 29 | 96 | 87.3 |
| 30 – 40 | 8 | 7.3 |
| ≥40 | 0 | 0.0 |
| **Mean ± SD** | **22.65 ± 2.59** | |
| **Marriage duration/years** | | |
| 1-5 | 41 | 37.3 |
| 6-10 | 33 | 30.0 |
| 11-15 | 20 | 18.2 |
| > 15 | 16 | 14.5 |
| **Mean ± SD** | **6.87 ± 2.62** | |
| **Number of times marriage** | | |
| Once | 99 | 90.0 |
| Twice | 10 | 9.1 |
| Three | 1 | 0.9 |
| More than three | 0 | 0.0 |
| **Number of pregnancies** | | |
| Once | 35 | 31.8 |
| Twice | 38 | 34.6 |
| Three | 25 | 22.7 |
| More than three | 12 | 10.9 |
| **Number of labors** | | |
| Once | 38 | 34.6 |
| Twice | 37 | 33.6 |
| Three | 21 | 19.1 |
| More than three | 10 | 9.1 |
| Nothing | 4 | 3.6 |

**Table (4-b):** Frequency distribution of the studied women according to their obstetric history (n=110) Cont.

| Obstetric history | No. | % |
|---|---|---|
| **Number of living children** | | |
| Once | 38 | 34.6 |
| Twice | 37 | 33.6 |
| Three | 22 | 20.0 |
| More than three | 9 | 8.2 |
| Nothing | 4 | 3.6 |
| **Number of times of abortion** | | |
| Once | 6 | 5.5 |
| Twice | 3 | 2.7 |
| Nothing | 101 | 91.8 |
| **Taking medications to prevent abortion before** | | |
| Yes | 40 | 36.4 |
| No | 70 | 63.6 |
| **Performing any gynecological examination before** | | |
| Yes | 82 | 74.5 |
| No | 28 | 25.5 |
| **Having a medical history for any of these diseases** | | |
| Sexually transmitted diseases | 8 | 7.3 |
| Immunodeficiency diseases | 10 | 9.1 |
| Pelvic inflammation | 8 | 7.3 |
| Cervix inflammation | 8 | 7.3 |
| Frequent infection | 17 | 15.5 |
| Chronic diseases as diabetes mellitus | 14 | 12.7 |
| Genital warts | 1 | 0.9 |
| Nothing | 44 | 40.0 |
| **Previous operations on the reproductive system** | | |
| Yes | 87 | 79.1 |
| No | 23 | 20.9 |
| **If yes, specify the type of operation (n=87)** | | |
| Caesarean section | 61 | 70.1 |
| D &C | 5 | 5.8 |
| Cautery ulcer | 2 | 2.3 |
| IVF | 3 | 3.4 |
| Episiotomy | 2 | 2.3 |
| Caesarean section and D &C | 14 | 16.1 |
| **Family history of cancer** | | |
| Yes | 36 | 32.7 |
| No | 74 | 67.3 |
| **A contraceptive method use** | | |
| IUD | 32 | 29.1 |
| Pills | 39 | 35.5 |
| Injection | 6 | 5.5 |
| Capsule | 6 | 5.5 |
| Condom | 2 | 1.8 |
| Natural methods | 2 | 1.8 |
| No | 23 | 20.9 |
| **If yes, duration of contraceptive use (n=87)** | | |
| < one year | 21 | 24.1 |
| 1-5 years | 52 | 59.8 |
| 6-10 years | 12 | 13.8 |
| > 10 years | 2 | 2.3 |
| **Exposure to passive smoking** | | |
| Yes | 72 | 65.5 |
| No | 38 | 34.5 |

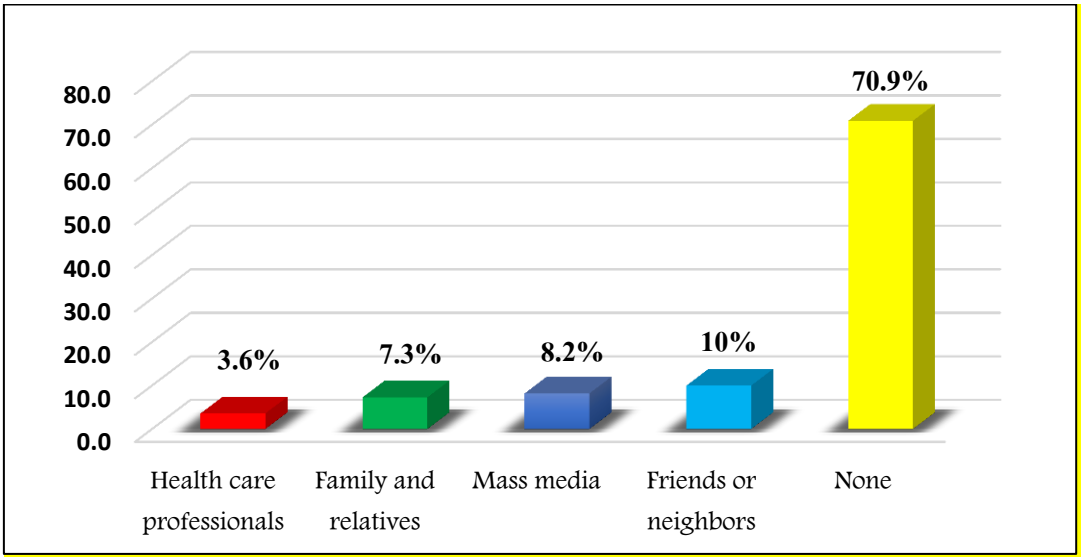


**Figure (1):** Percentage distribution of the studied women according to their source of information about cervical cancer (n=110).

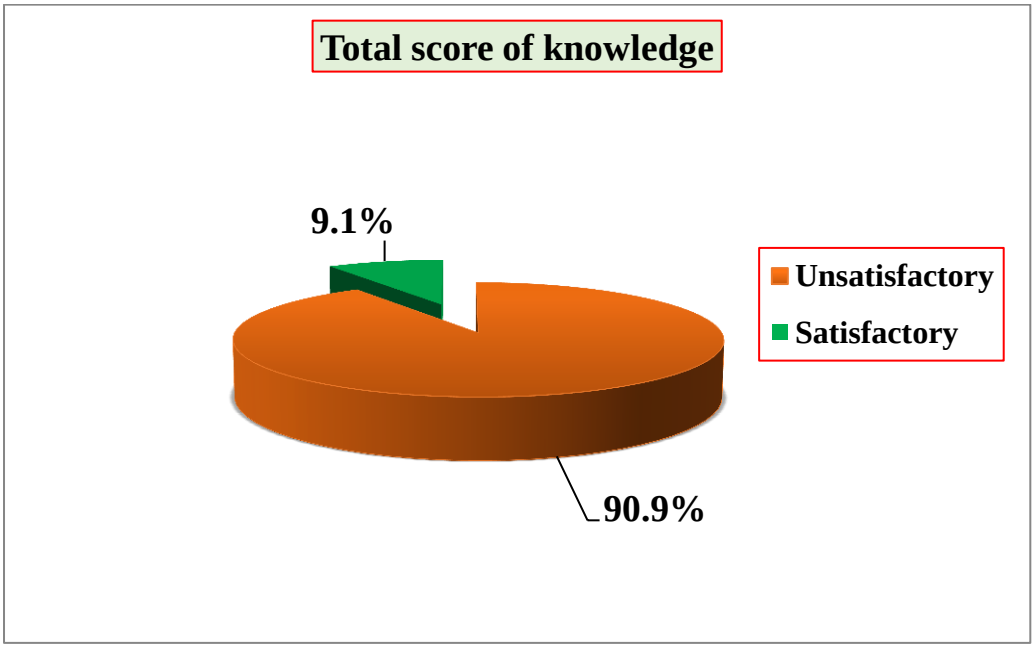


**Figure (2):** Percentage distribution of total women's knowledge about cervical cancer prevention (n=110).

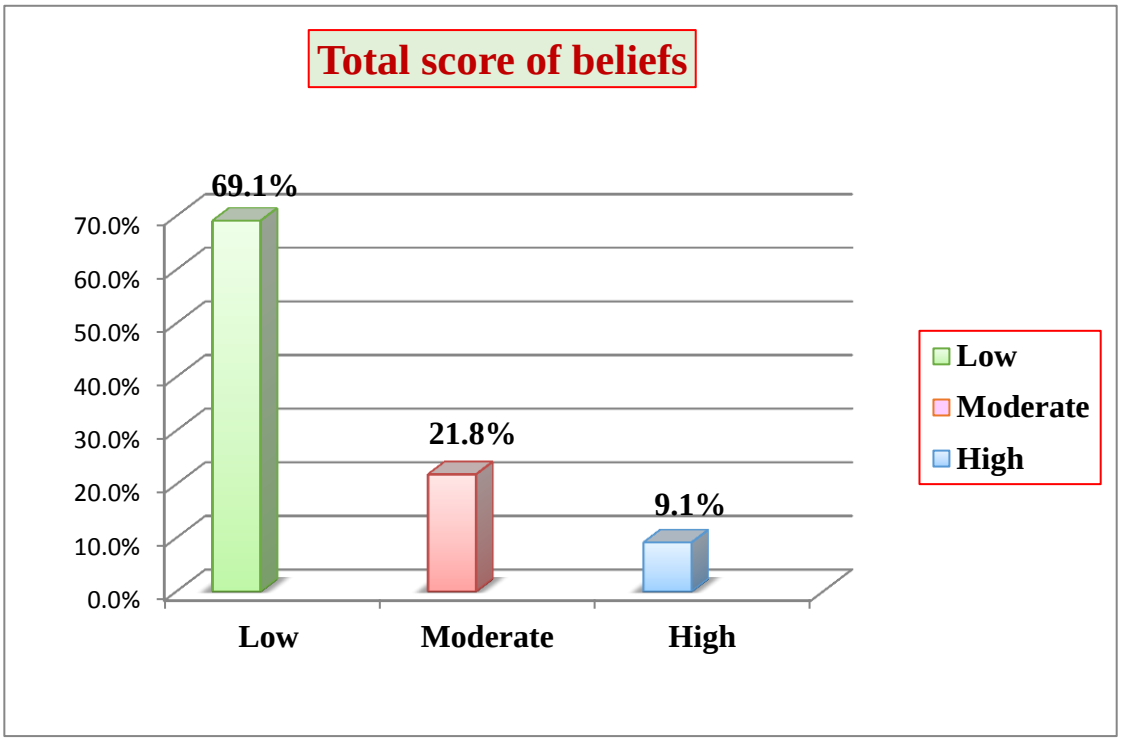


**Figure (3):** Percentage distribution of total women's beliefs about cervical cancer prevention (n=110).

**Table (5):** Correlation between total score of knowledge and total score of beliefs among the studied women

| Variables | | Total women' beliefs | |
|---|---|---|---|
| | | Pre | Post |
| Total women' knowledge | r | 0.618 | 0.758 |
| | p | 0.000** | 0.000** |

**R= correlation coefficient test. * Significant at p ‹ 0.05. **highly significant at p ‹ 0.01.**

## DISCUSSION

Cervical cancer is a major public health concern worldwide. According to the World Health Organization, one woman dies from cervical cancer every two minutes (WHO, 2020). Cervical cancer is still one of the most common cancers in women around the world. Cervical cancer in its early stage is usually asymptomatic. Therefore, regular utilization of cervical cancer screening is the first step to detect the deadly cancer in its

early stage and prevent its spread (Cohen, Jhingran, Oaknin & Denny, 2019). So, this study was conducted to assess the knowledge and beliefs of women about cervical cancer prevention in Port Said City.

Regarding the studied women according to their obstetric history, the results of the present study revealed that more than two thirds of the studied their age at menstruation was 12 ≤15 years. Also, the most of them their age at first pregnancy was 20 ≤30 years. Moreover, the most of them their age at first labor was 20 ≤30 years. Furthermore, the most of them their age at marriage was 18 - 29 years. As well, more than one third of them their marriage duration was 1-5 years. Regarding number of times marriage, the most of them had one time marriage. Also, more than one third of them had two pregnancies. Moreover, more than one third of them had one time labor.

These results are in similar with the results of study performed in India entitled " The effect of the health belief model education for cervical cancer prevention, screening promotion among rural women in Chengalpattu district, Tamil Nadu" by (Logaraj, 2023) who stated that more than half of the studied subject were pregnant in the age group of 20 ≤35 years old and had previous two pregnancies and labors and more than two thirds of them didn't have abortion and had first birth at the age from 20 to <30 year. Moreover, these results are in the same context with study entitled "The effect of a health education program on prevention of breast and cervical cancer based on the health belief model among female employees at medical campus" where carried out in Tanta by (El-kest, Elagemy, & El-Gamal, 2021) who showed that more than half of the studied women were aged from 20 to > 30 year at marriage and had previous from two to three numbers of pregnancy and labor.

Additionally, the current study revealed that more than one third of them had one living children. Also, the most of them didn't have history from abortion. Moreover, less than two-thirds of them didn't take medications to prevent abortion before. Furthermore, three quarters of them performed gynecological examination before. As well, two fifth of them didn't have a medical history for any of chronic diseases. Moreover, more than three quarters of them had operations on the reproductive system before, more than two thirds of them had caesarean section. Also, more than two-thirds of them didn't have family history for cancer.

These findings agree with the results of study entitled "Cervical cancer screening behavior of African women: The Rosenstock health belief model assessment" in Taiwan by (Maseko, Huang & Lin, 2021) who found that nearly two thirds of the studied women didn't have family history for cervical cancer but, more than half of them had history of previous gynecological surgery. Also, these results are in harmony with a study entitled "A cross-sectional study of barriers to cervical cancer screening uptake in Ghana: An application of the health belief model " by (Ampofo, Adumatta, Owusu & Awuviry-Newton, 2020) who clarified that more than two thirds studied women hadn't family history for cervical cancer and had previous more than two tomes of cesarean section.

Also, the existing study showed that more than one third of the studied women used pills. Also, more than half of them used contraceptive method from 1-5 years. Moreover, less than two-thirds of them exposed to passive smoking. This might be due to increased women awareness about using family planning methods. These results are supported by the study carried out in Benha entitled "Health Belief Model for Women regarding Cervical Cancer" by (Amin, Sabry& Abdelrahman, 2023) who showed that the majority of the studied women used family planning methods, near to three quarters of them used intrauterine device and pills and less than half of them used the method for more than five years. Also, these finding are in the same direction with study done in Benha entitled "Knowledge, attitude and practices of women regarding cervical cancer" by (Omran, Attia, Said,& Abd Elaleim., 2020), who found that most of study subjects used contraceptive methods and more than half of them used intrauterine device and pills.

Regarding source of information about cervical cancer among the studied women, the present study revealed that more than two thirds of the studied women didn't have information about cervical cancer. While the minority of them had information from their friends or neighbors. This finding may be due to there is a lack for regional implementation guidance on the prevention and management of cervical cancer and a national comprehensive cervical cancer program.

This result is approved with a study entitled "The effect of educational program based on beliefs, subjective norms and perceived behavior control on doing pap-smear test in sample of Iranian women" who performed by (Khani Jeihooni, Jormand & Harsini, 2021) who represented that the minority of women who had knowledge about cervical

cancer their sources information were from relatives. But, this finding is in difference with study entitled "Using the health belief model to assess beliefs and behaviors regarding cervical cancer screening among Saudi women" by (Aldohaian, Alshammari & Arafah, 2019) who illustrated that almost half of the participants had knowledge about cervical cancer and Pap smear test. The most popular sources of relevant information were health professionals followed by the media at less than one quarter of them.

Concerning the studied women according to their total knowledge about cervical cancer the findings of the current study revealed that most of them had unsatisfactory level of total knowledge about cervical cancer prevention while, minority of them had satisfactory level. These results may be due to that most women who participated had secondary education and said the female genital tract is often considered private, and women may be shy about discussing symptoms related to it.

This result is approved with a study entitled "A cross-sectional study on assessment of perceived threat to cervical cancer using health belief model among women in a slum area of Kolkata" by (Yadav, Dobe, Paul, & Taklikar, 2022) who reported that the study population had very unsatisfactory levels of knowledge about cervical cancer. In addition, these findings agree with the results of study done in Nepal entitled "Knowledge, Attitude, and Practice of Cervical Cancer Screening Among Women Attending a Gynecology Clinic at a Tertiary Level Hospital" by (Kumari, Ojha, & Bista, 2022) who reported that total knowledge about cervical cancer are poor in women.

This result is contradicted with study entitled "Knowledge, attitude and perception on cervical cancer screening among women attending ante-natal clinic in Owerri west LGA, South-Eastern Nigeria" which conducted by (Dozie, et al., 2021) who mentioned that there was a high level of awareness (68.8%) of cervical cancer prevention among women. Also, These results disagree with a study done by (Mukama, Ndejjo, Musabyimana, Halage, & Musoke, 2017) entitled " Women's knowledge and attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda" which found that most women (88.2%) were knowledgeable about cervical cancer prevention.

According to total beliefs of the studied women regarding cervical cancer more than two third of them had low level of total beliefs about cervical cancer prevention and

less than one quarter of them had moderate level, while minority of them had high level. This is may be due to the studied women believed that cervical cancer screenings aren't necessary and don't cure the disease. Also, they reported that don't do screening tests due to fear, embarrassment, and the examination is painful.

This result is similar to study entitled "Knowledge, attitude and health beliefs on cervical cancer screening in Ajumako-Eyan-Essiam District, Ghana"which carried out by (Sampson, Nkpeebo, & Degley, 2021) who concluded that health beliefs of women toward cervical cancer are low. In addition, this finding is in disagreement with study carried out by (Amin et al., 2023) who found that more than two fifths of the studied women had high total health belief level regarding cervical cancer.

According to correlation between total women' knowledge and their total beliefs about cervical cancer, the present study revealed that, there was a highly significant statistical positive correlation between total women' knowledge and their total beliefs about cervical cancer. This result could be related to unsatisfactory level of knowledge has a great role in making beliefs of the studied women are low.

This result is congruent with the study achieved by (Amin et al., 2023) who found that there was a highly statistically significant relation between total knowledge level of the studied women and their total health belief level about cervical cancer. Also this finding is supported with (Ahmed et al., 2018), who reported that there were statistically significant positive correlations between total knowledge scores and health belief scores of the study sample before program. This finding also was supported with (El-kest et al., 2021), who stated that there was a significant positive correlation between the total knowledge score and total belief scores.

## CONCLUSION &RECOMMENDATIONS

Based on the findings of the current study, it can be concluded that most of the studied women had unsatisfactory level of total knowledge about cervical cancer prevention. In addition, about two-thirds of them had a low level of total beliefs. Finally, there was a statistically significant positive correlation between overall knowledge and total beliefs among the studied women.

***In the light of the results of the present study, the following recommendations are suggested:***

- Implement preventive program based on a health belief model to increase women's knowledge and beliefs about cervical cancer prevention.
- Carry out health education programs for girls in the different stages to increase knowledge and beliefs about cervical cancer prevention.
- Conduct community campaigns to encourage women about cervical cancer screenings and human papilloma virus vaccines through posters, photos, and booklets.

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# أثر القلق والأمل والدعم الإجتماعي على نوعيةحياة مرضى السرطان الخاضعين للعلاج الكيماوي

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## الـخـلاصــة

الإصابة بالسرطان حدث صادم يعمل على تغيير عالم المصاب بما ينتج عنه من تغيرات سلبية تؤثر في حياته وحياة الأسرة على جميع المستويات. خاصة المستوى النفسي والاجتماعي. كما يؤدي العلاج الكيماوي إلى آثار جانبية فسيولوجية ونفسية مختلفة. تشمل الآثار الجانبية النفسية التوتر والقلق والاكتئاب. وترتبط نوعية الحياة ارتباطا إيجابيا بالحاجات النفسية والاجتماعية. وهناك عدة عوامل يمكن أن تؤدي إلى خفض نوعية الحياة، وتتضمن تلك العوامل عدم وجود الدعم الاجتماعي الكافي. ولذلك، تهدف هذه الدراسه إلى تقييم أثر القلق والأمل والدعم الاجتماعي على نوعيه حياه مرضى السرطان الخاضعين للعلاج الكيماوي. تم استخدام دراسة وصفية ترابطية لإجراء الدراسة بمستشفى مجمع الشفاء بمحافظة بورسعيد؛ شملت الدراسة 155 مريض بالسرطان ممن يخضعون للعلاج الكيماوي. وقد أظهرت نتائج الدراسة أن 91% منهم لديه مستوى عالي من القلق،67.7% من المرضى لديهم مستوى عالي من الأمل وأوضحت أن 98.7% منهم يتلقون مستوى عالي من الدعم الأجتماعي و 85.8% منهم لديهم نوعية حياة متوسطة. كما أوضحت النتائج وجود علاقة احصائية بين مستوى القلق و الدعم الاجتماعي و الأمل مع مستوى نوعية الحياة لدي مرضى السرطان. وقد خلصت الدراسة إلى ,وجود علاقة سلبية للقلق على جودة الحياة لدى مرضى السرطان بينما يوجد علاقة ايجابية للدعم الاجتماعي والامل علي مرضى السرطان. وأوصت الدراسة بتنفيذ جلسات تعليمية لمقدمي الرعاية لمرضى السرطان عن دور تقديم الدعم الاجتماعي في خفض مستوى القلق وزيادة الامل وأثر ذلك على نوعية الحياة لديهم، كما أوصت بتقديم برنامج تدريبي للتمريض عن استراتيجيات تقليل مستوى القلق وتحسين مستوى الامل لدى مرضى السرطان.

***الكلمات المرشدة:*** الأمل، الدعم الاجتماعي، العلاج الكيماوي، القلق، مرضى السرطان، نوعية الحياة.