

## **Awareness, Beliefs and Behaviors of Women About Cervical Cancer Screening at Primary Health Care Centers in Port Said City**

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### **ABSTRACT**

**Background:** The risk of disease and mortality among women can be decreased by increasing knowledge of cervical cancer causes and implementing screening programs. Additionally, they aid in reducing the burden of disease on medical services. **Aim of the study:** to identify awareness, beliefs, and behaviors of women about cervical cancer screening in Port Said City. **Design:** A descriptive research design was utilized. **Setting:** This study was conducted at six primary healthcare centers affiliated with Port Said City from each district one primary healthcare was randomly selected. **Subjects and methods:** A purposive sample of married women attending family planning clinics aged (18-50) years old. **Tools of data collection:** demographic characteristics, awareness women about cervical cancer, beliefs of women regarding cervical cancer, and women's behavior regarding cervical cancer. Most of the women had average awareness scores with percentage (89.54%) of the studied women, also there was a statistically significant relationship between health beliefs of women about screening of cervical cancer and women's awareness and beliefs on cervical cancer screening including susceptibility, health belief perceived severity, benefits, and cue to action. **Conclusion:** According to the study's findings, there are statistically significant relationships between monthly income and health belief perceived benefits, cue to action, and knowledge, and between educational level and health belief perceived severity, benefit, and knowledge, with a p-value of less than 0.05. While other personal characteristics did not show a statistically significant difference. **Recommendations:** Educational programs regarding the necessity of cervical cancer screening as part of improving women's awareness, beliefs, and behavior.

**Keywords:** Awareness, beliefs, behaviors, cervical cancer, screening.

## **INTRODUCTION**

A significant global health issue, the fourth most frequent malignancy among women overall is cervical cancer. In 2023, 4,310 cervical cancer fatalities were recorded in the United States, where mortality is 65% greater than in underdeveloped nations (American Cancer Society, 2023). In Egypt, about 969 new cervical cancer cases are diagnosed annually, the 11th most frequent form of female cancer in women between the ages of 15 and 44, it is the 14th most prevalent cause of cancer in females. More than 95% of cervical cancer fatalities are expected to occur in low- and middle-income countries by 2030 when the disease is expected to claim the lives of half a million women yearly (Bruni et al., 2019).

Cervical cancer affects women commonly in developing countries. Human papillomavirus (HPV) is a highly common STD that is typically acquired shortly after beginning sexual activity. A very prevalent sexually transmitted infection is the virus (HPV). The majority of HPV infections resolve on their own in one to two years, but those that do not, particularly high-risk HPV types (such HPV 16 and 18), may progress to cervical cancer precursors and eventually invasive cervical cancer. High-risk HPV types are found in almost all cervix malignancies, and the relative risk of cervical cancer associated with chronic, ongoing infection with high-risk HPV types is higher than the risk of lung cancer associated with smoking. About 70% of cases worldwide are caused by HPV 16 and 18. There is little geographic variation in the predominant HPV types associated with cervical cancer (De Sanjose, et.al, 2020).

Screening of Cervical cancer is a crucial component of a regular woman's healthcare, and most recommendations call for starting the procedure at age 21. A clinic, a community health center, or a doctor's office can all perform a cervical cancer screening. The main objective of screening is to locate HPV-caused precancerous lesions so that they can be surgically removed to stop the growth of aggressive malignancies. Finding cervical malignancies early, when they can typically be successfully treated, is a secondary objective. The prevalence of cervical cancer cases and fatalities can both be significantly decreased by routine cervical screening (CDC, 2020).

Measurements of behaviors and health beliefs about a screening of cancer have been made using the health beliefs model (HBM). In addition, it was intended to

highlight healthy behaviors that might be adopted before illness rather than after. The HBM's most significant health behaviors focus on preventing or becoming exposed to diseases when they are still asymptomatic. Perceived vulnerability, severity, barriers, and rewards are four factors that HBM embraces as determining factors for health behaviors. For healthcare professionals working with any population group, changing health perceptions is difficult. But the HBM can be used as a guide to raise women's awareness of cervical cancer and provide screening tools provided there are well-established health policies that take into consideration social and cultural beliefs and attitudes (Jarva, et al., 2022).

Being the largest profession in healthcare, nurses play a crucial part in promoting cervical cancer screening. Understanding the level of information and attitudes among women regarding concerns connected to the disease is a critical first step in preventing cervical cancer. This knowledge is also seen to be essential for fulfilling the screening, health promotion, and education objectives. Additionally, nurses are essential in identifying cervical cancer's early warning signs, persuading women to have regular screenings, and spreading information about risk factors (Ebrahim et al., 2021).

### **Significance of the study**

Cervical cancer is the third most frequent cancer in women overall, and most cases are seen in those between the ages of 40 and 49. Cervical cancer is common, however it is more common in underdeveloped nations where mortality rates are significantly impacted by racial, regional, and economic inequalities (WHO, 2023). In Egypt, where there are 30.55 million people, women over the age of 19 are at risk for cervical cancer. Current figures show that every year, 866 women are diagnosed with cervical cancer, and 373 of them pass away. According to Ahmed et al. (2022) among Egyptian women aged 19 to 44, the seventh most prevalent type of cancer is cervical cancer. By raising awareness of the causes of cervical cancer and implementing screening programs, the risk of disease and mortality among women can be reduced. For women's health to improve and the risk of cancer-related death to diminish, early identification of cervical cancer is crucial (Zagloul et al., 2020). Early detection and disease awareness programs are the best lines of defense against cervical cancer. Lack of awareness, bad attitudes, and poor conduct towards cervical cancer screening and preventative measures are the main causes of the disease's increase in cases. Cervical cancer can be prevented in

up to 80% of cases with screening, early detection, and treatment (Weng, Jiang, Haji, Nondo, & Zhou, 2020). Therefore, This study aimed to identify the awareness, beliefs and behaviors of women beliefs about screening of cervical cancer in Port Said City.

### **Aim of the study**

This study aimed to identify the awareness, beliefs, and behaviors of women about cervical cancer screening in Port Said City.

### **Research Questions**

1. What is the women awareness regarding cervical cancer?
2. What is the women beliefs regarding cervical cancer?
3. What is the women behaviors regarding cervical cancer?
4. Is there a relationship between women beliefs about cervical cancer in general and a screening test in particular?

## **SUBJECTS AND METHOD**

### **Study Design**

This study was carried out using a descriptive research design.

### **Setting**

This research was conducted at clinics of family planning affiliated with six primary healthcare centers affiliated to Egypt health care authority in Port Said governorate, one primary healthcare center was randomly selected from each district, namely, the Arabs healthcare center representing El Arab district, Kuwait center representing El Manakh district, Fatima Zahra Center representing El Dawahy district, Omar bin al-Khattab representing El-Zohur district, Bahar El bakar center representing South (El-Ganoub) district and Aljerabah centers representing West (El Gharb) district.

### **Subjects**

A purposive sample of married women aged (18-50) years who attended a family planning clinic and were recruited into this study under inclusion criteria, women who hadn't a history of cervical cancer and aged 18-50 years.

## Sample Size

According to the equation found by utilizing the following equation, the sample size was computed (Daniel, 1999).

$$\text{Sample size} = \frac{N \times P (1-P)}{N-1 \times (d^2 \div z^2) + P (1-P)}$$

Where:

N=5000 total population

Z = Class standard corresponding to the level of significance equal to 0.95 and 1.96

D = The error rate is equal to 0.05

P = Ratio provides a neutral property = 0.50

$$\text{Sample size} = \frac{5000 \times 0.5(1-0.5)}{5000-1 \times (0.05^2 \div 1.96^2) + 0.5 (1-0.5)} = 358$$

- Assuming a 5% attrition rate:

$$358 \times 5\% = 17.9$$

$$358 + 18 = 376$$

- The final sample size will be 376 married women.

## Tools of data collection

Four tools were used to collect data.

### The first tool: Self-administered questionnaire about demographic characteristics and cervical cancer

The tool was adopted from Ahmed, Esa and Elzayat (2018) in Arabic language, it consisted of eleven questions, ten multiple choice questions about age, education, occupation, income, use of a contraceptive method, the type of method, family history of cervical cancer, the relationship, hearing about cervical cancer screening, where the first learn about cervical cancer screening, and one open question about marital and obstetric history that included a five-point scale for age at first pregnancies.

**The second tool: Women awareness about cervical cancer questionnaire**

It was used to assess women awareness about cervical cancer . The tool was adopted from Ahmed, Esa and Elzayat (2018) in Arabic language. The first point consists of ten closed questions with a yes or no response to assess the signs and symptoms of cervical cancer, such as whether vaginal bleeding in between periods could be a sign of the disease, whether persistent lower back pain could be a sign of the disease, whether persistent vaginal discharge that smells unpleasant could be a sign of the disease, whether discomfort or pain during sex could be a sign of the disease, and whether irregular menstrual periods could be a sign of the disease., if the vaginal bleeding during or after sex could be a sign of cervical cancer, if the unexplained weight loss could be a sign of cervical cancer and if the blood in the stool or urine could be a sign of cervical cancer.

The second aspect is risk factors for cervical cancer. eleven questions with a Likert scale of 1 to 5, including strongly disagree, disagree, unsure, agree, and strongly agree, are used to evaluate the risk factors for cervical cancer, such as whether human papillomavirus infection, smoking, having a weakened immune system (due to HIV infection or organ transplantation, for example), and whether long-term use of contraceptives is a risk factor, if the having many sexual partners was a risk factor of cervical cancer, if having many sexual partners was a risk factor of cervical cancer, if having many children (>5) was risk factor of cervical cancer, if having a sexual partner with many previous sexual partners was a risk factor of cervical cancer and if not going for regular smears (Pap tests) was a risk factor of cervical cancer.

The third point is related to cervical cancer screening, treatment, and preventative methods. It consists of seven multiple-choice questions to evaluate the prevention, treatment, and screening methods for cervical cancer, including how to prevent developing cervix cancer, how to treat cervix cancer in its earliest stages, how cervical cancer was treated in this country, how frequently screenings for the disease were conducted, who should be screened, and the procedures used in screening.

**Scoring system**

The scoring system for awareness and calculated as follow, in relation to the answer of questions with "Yes' and "No" would be calculated as follows: "One" for a 'yes' answers and "zero" for a "no" answer. The total knowledge score will be calculated

by sum the scores for each correct answer. The total score of knowledge ranged from "1 to37 " points, and the score it will be considered 'poor' if the knowledge scored from"1 to10", 'average' from "11 to 20", and 'good' from "21 to37" points.

### **The third tool: Women belief regarding cervical cancer scale**

It was used to assess beliefs of women regarding screening of cervical cancer, to assess women beliefs on cervical cancer screening. It was the HBM scale that was adapted from Champion (1999) and modified by the researchers after reviewing available related literature, it consists of 39 items and composed of five subscales.

**Perceived susceptibility:** this construct includes seven items it was used to assess risk of cervical cancer and risk of getting cervical cancer.

**Perceived severity:** this construct includes ten items it was used to assess fearing of getting cervical cancer.

**Perceived barriers:** this construct includes ten items it was used to assess barriers of cervical cancer.

**Perceived benefit:** this construct includes five items it was used to assess benefit of pap screening.

**Perceived cues to action:** this construct include five items it was used to assess the good action that prevent cervical cancer ,it utilized three point of likert scales following one for agree, two for neutral and three for dis agree.

### **Scoring system**

Every subscale's item offers three response options on the Likert scale: Three points are awarded for agreement, two for neutrality, and one for disagreement. The final score was determined as follows: 21 for perceived susceptibility, 30 for perceived severity, 15 for perceived benefits, 30 for regarded barrier, and 21 for signals to action. The final score, which may range from 1 to 117, was determined in this way.

**The four tool: Women behavior regarding the cervical cancer questionnaire:**

It consists of eight multiple-choice questions and was used to evaluate how women behaved in relation to cervical cancer. four distinct questions, such as whether there is a family history of cervical cancer, whether you have had a cervical cancer screening, how often you get a swab test, and the unsettling aspects of getting a smear, as well as four connected questions, like whether you've ever gotten a swab test yet, why, how you get an accurate pap smear test result, are asked.

**Scoring system**

The replies to each question were coded, with "one" being given for practicing cervical cancer behaviors and "zero" for not intending to do so. By adding the scores for the possess intention replies, the total intention score was calculated.

**Validity of the tools of study:**

The content validity of the instruments was assessed by seven specialists, including two from the department of maternity health nursing at Port Said University and five from the field of community health nursing. To verify the intelligibility and practicality of the instrument, ten content validity improvements were made in response to their feedback.

**Reliability of the tools of study**

Using Cornbrash's -coefficient to assess reliability, it was discovered that the tools' items were largely homogeneous. A minimum of 0.7 was present in each dimension.

**Pilot study**

Before starting the data collection, a pilot study was conducted in the early months of November 2021, 10% (38 women) of the sample study's total (376 women) who attended the prior setting were subjected to it; they were eliminated from the main sample's study. The pilot study's goal was to detect whether the study tools were applicable, practical, and objective as well as to determine how long it would take to fill them out. It also aided in identifying any impediments or obstacles that would obstruct

the collection of data, and further adjustments were made following the findings of the pilot study.

### **Fieldwork**

Consent has been taken before data collection, the real field's development was underway. Between December 2021 and March 2022, the researcher collected data from the chosen environment using the pre-built tool. Two days per week, Saturday and Tuesday, from 9.00 a.m. to 2.00 p.m., the researchers visited the aforementioned location during the morning shift. Using the aforementioned tools, which took each tool between 15 and 20 minutes to complete, the data was gathered, every center take 20 days to collect the data and the total time of data collection was four months . Before giving out the questionnaire sheet, the researcher described the study's goals to the ladies who met the aforementioned eligibility requirements and consented to take part.

### **Administrative design**

The director of each PHC in Port Said City that was chosen would receive a formal letter from the nursing faculty. The Egypt Health care Authority Hospitals and the directors of each chosen center gave their official consent for the study to be carried out. After being informed of the study's nature and objectives and using the appropriate communication channel, each participant who has agreed to participate must give their verbal agreement.

### **Ethical consideration**

At Port Said's nursing faculty's ethics committee, code (28), authorization has been sought. The Egypt Health Care Authority would need to approve. Following the study's purpose and methodology explanation, the administrators or directors of primary health care centers would be asked for their agreement to conduct the study. After explaining the study's purpose and obtaining oral agreement from each participant, the researcher reminds them that they are free to stop participating in the study whenever they wish to do so. The confidentiality and anonymity of the data collected will be guaranteed to the participants, and it will only be used for the study.

### Statistical analysis of the data

Data were gathered, coded, and transformed into specifically designed formats to be fed into computers after data entry. Following these procedures, data entry correctness was checked using frequency analysis, cross-tabulation, and manual reversal. These steps were taken to ensure that there were no mistakes made when entering the data. The SPSS (statistical package of social sciences) version 23.0 was used for data statistical analysis and presentation. Some descriptive metrics included count, percentage, standard deviation, minimum and maximum. The difference was regarded as significant at  $p < 0.05$ .

## RESULTS

The distribution of the studied women is shown in **Table (1)** based on demographic information. It was discovered that 59.6% of the women were unemployed and 56.5% of them said their income was insufficient. Additionally, it was found that 45.5% of the women surveyed had a university degree.

**Table (2)** Shows the distribution of the studied women's awareness of cervical cancer prevention, treatment, and screening. It was found that (94.1%, 81.4%, 64.4% & 59.0%) respectively of the studied women knew that cervical cancer is prevented by avoiding multiple sexual partners, cervical cancer can be prevented by screening, vaccination against HPV infection, and avoiding early sexual intercourse.

**Table (3):** As elicited in this table, 70.5% of them having a smear test at regular intervals cervical cancer screening. When the ladies in this group were questioned regarding the purpose of the test 38.3% of them responded that they had it because their doctors had recommended it or because it was standard procedure at the hospital where they had gone. About 80.0% of these ladies reported having had normal test findings. The following are the factors that worry women the most when getting a smear: a male doctor (25.3%), the examination table (24.3%), shame (19.6%), and fear of the pathological results (17.6%).

As shown in **Table (4)**; a multivariate linear regression analysis was employed to examine the relationship between the dependent variable knowledge and the constructs of the health belief model (HBM). According to the tabulated results, there were statistically

significant relationships between knowledge of women and perceived vulnerability, perceived severity, perceived advantages, and reported cues to action.

Health belief perceived vulnerability, severity, advantages, and prompt to action "r" = 0.172, 0.126, 0.275, and 0.134, respectively. Table (5) Evidence that there were statistically significant relationships between women's awareness and their views towards cervical cancer screening. Women's awareness and health beliefs and perceived barriers did not have a statistically significant relationship, although "r" = 0.051 indicated that they did.

**Table (6)** details the correlation between the sociodemographic traits, level of knowledge, and HBM scale for cervical cancer screening in the examined women. A statistically significant association was demonstrated between educational attainment and health belief perceived severity, benefit, and knowledge, as well as a statistically significant relationship between monthly income and health belief perceived benefits, cue to action, with a p-value of less than 0.05. Other personal qualities, however, did not show a statistically significant difference.

**Table (1): Distribution of the studied women according to demographic characteristics (n = 376)**

Demographic data	No.	%
<b>Age (years)</b>		
18-29	147	39.1
30-39	140	37.2
≥40	89	23.7
<b>Educational level</b>		
Illiterate	30	8.0
Basic	68	18.1
Secondary	107	28.5
University	170	45.2
Master	1	0.3
<b>Employment status</b>		
Unemployed	224	59.6
Employed	152	40.4
<b>Monthly income</b>		
Insufficient	213	56.6
Sufficient	163	43.4

**Table (2): Distribution of the studied women's awareness about the prevention, treatment, and screening of cervical cancer (n = 376)**

Items	No.	%	No.	%
<b>Preventive Methods of cervical cancer</b>				
Avoiding early sexual intercourse	222	59.0	154	41.0
Quitting smoking	94	25.0	282	75.0
HPV Vaccination	242	64.4	134	35.6
Screening	306	81.4	70	18.6
<b>Cervical cancer can be cured in its earliest stages</b>				
Yes	319	84.8	57	15.2
No	45	11.9	331	88.1
<b>Types of treatment (n=319)</b>				
Chemotherapy	69	18.3	307	81.6
Surgery	79	21.0	297	79.0
Radiotherapy	85	22.6	291	77.4
<b>Cost of cervical cancer treatment</b>				
Free of charge	44	11.7	332	44.3
Reasonable price	40	10.6	336	89.4
Moderately expensive	41	10.9	335	89.1
Very expensive	109	29.0	267	71.0
<b>Frequency of cervical screening</b>				
Once a year	176	46.8	200	53.2
Every three year	38	10.1	338	89.9
Every five year	11	2.9	365	97.1
Any time	11	2.9	365	97.1
<b>Who should be screened</b>				
Women ≥25years	309	82.2	67	17.8
Elderly women	47	12.5	329	87.5
All women	54	14.4	322	58.6
<b>Procedures Used in cervical cancer screening</b>				
Visual Inspection with Acetic Acid (VIA)	57	15.2	319	84.8
Pap smear	159	42.3	217	57.7
Biopsy	227	60.4	149	39.6

\* More than one answer

**Table (3): Distribution of the studied women's behavior related to cervical cancer screening (n =376)**

Items	No	%
<b>Having a smear test at regular intervals</b>		
Yes	261	70.5
No	115	29.5
<b>Why? (n=261)</b>		
At her own will	72	27.8
doctor request	100	38.3
routine practice of institution	89	34
<b>Smear test result (n=261)</b>		
Normal	209	80.0
Infection	32	12.3
Doubtful	20	7.7
<b>Accurate Pap smear test result practices (n=261)</b>		
Done	39	14.8
Undone	222	85.2
<b>*Disturbing points in having a smear made</b>		
Male doctor	96	25.3
Desk	92	24.3
Embarrassment	74	19.6
Fear of pathological result	66	17.6
Speculum (examination tools)	37	10.1
Smear brush	4	1.0
No problem	7	2.1

\*more than one answer

**Table (4): Multivariate Linear regression for health belief model about factors affecting women Knowledge of cervical cancer screening.**

	B	Beta	T	P	95% CI	
					LL	UL
<b>Knowledge</b>						
<b>Perceived susceptibility</b>	0.272	0.181	3.568*	<0.001*	0.122	0.422
R <sup>2</sup> =0.033, F=12.732*, p<0.001*						
<b>Perceived severity</b>	0.272	0.181	3.568*	<0.001*	0.122	0.422
R <sup>2</sup> =0.033, F=12.732*, p<0.001*						
<b>Perceived benefits</b>	0.158	0.131	2.555*	0.011*	0.036	0.280
R <sup>2</sup> =0.017, F=6.528*, p=0.011*						
<b>Perceived cues to action</b>	0.230	0.144	2.805*	0.005*	0.069	0.392
R <sup>2</sup> =0.021, F=7.870*, p=0.005*						

R<sup>2</sup>: Coefficient of determination

Beta: Standardized Coefficients

CI: Confidence interval

UL: Upper Limit

\*: Statistically significant at  $p \leq 0.05$ 

F,p: f and p values for the model

B: Unstandardized Coefficients

t: t-test of significance

LL: Lower limit

**Table (5): Correlation between women's awareness on cervical cancer screening and women's health beliefs regarding cervical cancer screening (n = 376)**

Women's health beliefs	Women's awareness	
	R	P
Health Belief perceived susceptibility	0.172*	0.001*
Health Belief perceived severity	0.126*	0.014*
Health Belief perceived barriers	0.051	0.325
Health Belief perceived benefits	0.275*	<0.001*
Health belief cues to action	0.134*	0.009*

r: Pearson coefficient

\*: Statistically significant at  $p \leq 0.05$

**Table (6): Relationship between socio-demographic characteristics, knowledge, and HBM scale for cervical cancer screening**

Socio-demographic characteristics	Health belief					Knowledge
	Susceptibility	Severity	Barriers	Benefits	Cues to action	
<b>Age (years)</b>						
20-29	48.54 ± 19.71	52.82 ± 14.39	50.65 ± 15.66	65.31 ± 20.35	56.56 ± 19.95	56.84 ± 12.12
30-39	50.26 ± 16.04	51.93 ± 14.31	51.93 ± 14.67	63.79 ± 20.72	53.98 ± 18.10	57.32 ± 12.46
>40	50.40 ± 17.34	50.96 ± 14.38	50.84 ± 15.94	59.44 ± 21.55	53.05 ± 19.02	57.53 ± 10.61
<b>H (p)</b>	<b>2.119 (0.347)</b>	<b>0.624 (0.732)</b>	<b>0.182 (0.913)</b>	<b>5.017 (0.081)</b>	<b>2.893 (0.235)</b>	<b>0.672 (0.714)</b>
<b>Educational level</b>						
Illiterate	13.88±53.81	10.68±56.50	9.16±52.17	16.60±52.67	15.06±52.62	10.40±53.83
Basic	19.50±51.47	14.75±54.41	16.92±53.24	21.20±63.38	22.07±57.77	9.62±54.71
Secondary	19.07±50.40	17.73±50.23	17.36±50.65	21.21±64.86	20.42±53.27	10.69±58.88
University	16.85±47.73	12.05±51.47	14.18±50.59	20.65±64.06	17.36±54.71	13.18±57.50
Master	35.71	50.0	35.0	100.0	85.71	90.0
<b>H (p)</b>	<b>5.881 (0.208)</b>	<b>9.984* (0.041*)</b>	<b>7.448 (0.114)</b>	<b>12.813* (0.012*)</b>	<b>5.342 (0.254)</b>	<b>10.195* (0.037*)</b>
<b>Employment status</b>						
Unemployed	18.34±48.69	14.67±51.43	<b>16.20±50.85</b>	21.04±63.48	18.11±54.66	12.04±56.81
Employed	17.03±50.99	13.84±52.96	14.01±51.64	20.63±63.16	20.46±54.93	11.66±57.73
<b>U (p)</b>	<b>16013.5 (0.323)</b>	<b>16716.0 (0.764)</b>	<b>16744.5 (0.785)</b>	<b>16740.0 (0.781)</b>	<b>16989.0 (0.973)</b>	<b>16465.0 (0.585)</b>
<b>Monthly income</b>						
Insufficient	17.95±49.23	15.18±51.22	15.99±49.95	21.63±60.09	18.55±51.27	12.14±56.15
Sufficient	17.72±50.13	13.12±53.13	14.34±52.76	19.01±67.61	18.82±59.33	11.44±58.53
<b>U (p)</b>	<b>17066.50 (0.777)</b>	<b>15836.5 (0.141)</b>	<b>15563.0 (0.082)</b>	<b>13247.5* (&lt;0.001*)</b>	<b>12836.0* (&lt;0.001*)</b>	<b>15367.5 (0.054)</b>

## DISCUSSION

The fourth most prevalent female malignancy in the world is cervical cancer, which poses a serious threat to global health (Bray, 2018). 90% of the 342 000 deaths from cervical cancer that occurred in 2020 took place in LMICs, where mortality is 18 times greater than in wealthy nations (WHO, 2021). Human papillomavirus (HPV) screening and vaccination programs are efficient methods for disease prevention since high-risk subtypes of HPV are virtually always the cause of cervix malignancies (Crosbie, et al, 2013). The two most prevalent histological subtypes, squamous cell carcinoma, and adenocarcinoma, account for roughly 70% and 25% of all cervical malignancies, respectively (Small, Bacon, & Bajaj, 2017). Despite improvements in cervical cancer prevention, screening, diagnosis, and treatment over the past ten years, significant regional and global disparities in the disease's prognosis have prompted international gynecological cancer societies to release evidence-based management

guidelines to raise the standard of patient care (Cibula, Potter, Rand, & Planchamp, 2018).

The current study aimed to assess the awareness, beliefs, and behavior of women about cervical cancer screening in Port Said City. According to the concurrent study, the majority of the sample was 40 years or older, with the age group between 20 and younger than 30 and 30 to younger than 40 years comprising about more than half of the sample. This may be because all women who were childbearing age were married and visited MCH for services like immunization, pregnancy monitoring, and family planning.

The results of the study showed that fewer than half of the sample had a university degree, and fewer still had a basic university degree. The lack of interest in female education among Egyptian community customs and the difficulties in attaining a university education may be to blame for this. The study sample was primarily comprised of unemployed people.

The current study's findings indicate that a small number of the participants had a family history of cervical cancer. This may be due to women not being aware of cervical cancer, as well as some women having a hysterectomy history in their families without understanding the cause. This finding is in agreement with Reis et al. (2014), who reported that a family history of cervical cancer among young women in Turkey was found in a small number of women. This finding may be related to research studies and health education programs introduced to these groups in Turkey, as well as Egypt's higher incidence rate due to a lack of awareness.

According to the current research, nearly all women were married between the ages of 17 and 20, and only a small percentage of participants got married after turning 28. This is because a larger portion of the sample had secondary education, and the Egyptian populace in general tends to want to get married young and complete their intermediate education at a young age. These results agreed with those of Peralta (2011) in Nepal, who discovered that more than half of the sample get married before the age of 20, but they differ from those of Shobeiri et al. (2016) in Iran, who discovered that more than half of the sample wed after the age of 20, possibly due to the desire to finish school before getting hitched.

Regarding the use of contraceptive methods, more than half of the participants were using contraceptive methods, these may be because the majority of the sample was in the childbearing period and reproductive age and had low economic status in addition to having a relatively higher number of children. The present study finding was not agreed with the study by Ibrahim, (2016) in Sudan who found that more than two-thirds of participating women do not use contraceptive methods because of a loss of awareness about it in Sudan more than in Egypt.

In this study the high percentage of women reported had the awareness on the cervical cancer that it was sexually transmitted disease this differ from Heena, (2019) which reported that the minor percentage of women had the awareness of the cervical cancer that it was sexually transmitted disease and the presenting study show that the cervical cancer was preventable and curable when diagnosed with major percentage this result was disagreed with Ahmed, (2018) which conducted a study on women in Helwan governorate and showed that one quarter of the studied sample revealed that the cervical cancer could be prevented and curable when diagnosed early and the two previous result agreed also in the difference in the point that two third of the studied sample showed that the cervical cancer screening at least once per year and Ahmed result show that quarter of the studied women agreed in this point also this was because of the similarities of people in Helwan and Port said and this is the same Egyptian community.

The findings of the current study contradict those of a study conducted by Heena (2019) among female healthcare professionals in Saudi Arabia, which found that the majority of women chose liquid-based cytology, the method used for cervical screening, and the frequency of screening was annual with the percentage exceeding two-thirds of the sexes. The current study's results showed that the majority of women choose cervical cancer screening (Visual Inspection with Acetic Acid (VIA)), and the screening frequency was made every five years. Additionally, the current study's findings supported Heena's findings, which indicated that the cost of treatment was high. When the two results concur, it is recommended that women over 25 undergo routine screening.

In terms of the behavior of the studied women, the results of the current study revealed that more than two-thirds claimed they hadn't had a smear test yet, while more than a quarter had previously undergone the procedure. Three-quarters of them who underwent the test did so at the doctor's request and as part of the institution's standard

operating procedure, and more than three-quarters of them had normal smear test results. These findings concur with those of Weng (2020),

The Health Belief Model (HBM) and its components were employed in this study to describe correlations between the screening of cervical cancer and women uptake who visited health clinics in the port mentioned city and health beliefs towards cervical cancer. According to the results of the current study, cervical cancer is more likely to strike women who view it as a serious matter. The factors that contributed to a high perceived susceptibility score were agreeing with having a high risk of obtaining cervical cancer and worrying a lot about it due to the likelihood that they would likely acquire cervical cancer during the next several years. Aldohaian, (2019), was not in agreement with this study. In Saudi Arabia, others disagreed with this statement.

The current study demonstrated a clear statistically significant correlation between women's awareness of and behaviors regarding cervical cancer and all HBM components, except perceived barriers. This finding was consistent with Shirazi Zadeh Mehraban, Namdar, and Naghizadeh, (2018) findings from Fasa, Iran, who also discovered similar correlations with the same variable. Shobeiri et al. (2016) found no relationship between perceived severity and the other study based on HBM in Hamadan. According to a prior study in Zarandyeh (Karimy et al., 2017) all of the HBM behavior components (susceptibility, severity, benefits, barriers, and cue to action) showed a positive correlation with a history of performing Pap smears.

The current study's findings showed that the most significant predictors of women's knowledge were perceived susceptibility, perceived severity, perceived benefit, and perceived cue to action. According to linear regression analysis, the most significant predictors of women's knowledge were perceived susceptibility, perceived severity, perceived benefit, and perceived cue to action. This conclusion differs from research conducted in Fasa, Iran by Mehraban (2018); statistically significant for all variables). The final predictors of the behavior of the women who participated in our study were knowledge, perceived harshness, and perceived advantages, according to the second phase of regression analysis, which looked at all demographic features to do with behavior.

Since these factors were found to be statistically significant in the current investigation, it is probable that higher levels of education, as seen in that study, were related to better knowledge. Similar to Aldohaian (2019), a Saudi Arabian study found that having a high level of education or having good knowledge of cervical cancer was positively correlated and that there were statistically significant relationships between educational level and health beliefs regarding perceived severity and benefit. This is in contrast to Yakout (2018) who found no statistically significant relations between them.

## **CONCLUSION**

A statistically significant relationship existed between educational level and health belief perceived severity, benefit, and knowledge. There was also a statistically significant relationship between monthly income and health belief perceived benefits, cue to action, and knowledge, with a p-value of 0.05. Other personal qualities, however, did not show a statistically significant difference.

## **RECOMMENDATIONS**

*Based on the results of this study, the following recommendations are proposed:*

1. Create health education initiatives to raise women's understanding of cervical cancer.
2. Reduce the incidence and burden of cervical cancer by regular health education for women and screening recommendations by nurses, obstetricians, and gynecologists and having a healthy habits to prevent the incidence of the disease.
3. Initiatives for educational programs should be made to increase public knowledge of cervical cancer prevention.
4. Governments and non-governmental organizations should cooperate to increase young women's awareness of cervical cancer screening.
5. Change women belief about cervical cancer screening and the fear of going to make the pap smear.

*It is necessary to conduct more extensive research to determine what obstacles exist in the way of cervical cancer prevention efforts.*

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## وعى ومعتقدات وسلوكيات السيدات حول فحص سرطان عنق الرحم بمراكز الرعاية الصحية الأولية بمدينة بور سعيد

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### الخلاصة

الوعي بأسباب سرطان عنق الرحم وتنفيذ الفحص يمكن أن يساعد في الحد من مخاطر المرض والوفاة بين النساء. علاوة على ذلك، فهي تساعد في تقليل عبء المرض على خدمات الرعاية الصحية؛ هذا وكان الهدف من الدراسة هو التعرف على وعى ومعتقدات وسلوكيات النساء حول فحص سرطان عنق الرحم في مدينة بور سعيد. هذا وتم استخدام تصميم بحث وصفي لإجراء هذه الدراسة وتم إجراء هذه الدراسة في ستة مراكز رعاية صحية أولية تابعة لمدينة بور سعيد من كل منطقة وتم اختيار رعاية صحية أولية واحدة بشكل عشوائي، وتم جمع البيانات من خلال عينة هادفة من النساء المتزوجات اللواتي تترددن على عيادة تنظيم الأسرة تتراوح أعمارهن بين (18-50) سنة، وتم جمع البيانات من خلال الفترة من (ديسمبر) 2021 حتى (مارس) 2022، وتم استخدام أربع أدوات لجمع البيانات، الخصائص الديموغرافية، وعى المرأة بسرطان عنق الرحم، إيمان المرأة بسرطان عنق الرحم، سلوك المرأة فيما يتعلق بسرطان عنق الرحم. النتائج: حصلت جميع النساء على درجة وعى جيدة فيما يتعلق بالتوعية بسرطان عنق الرحم والسلوكيات، وكانت هناك علاقات ذات دلالة إحصائية بين معتقدات صحة المرأة فيما يتعلق بفحص سرطان عنق الرحم ووعى النساء ومعتقداتهن حول فحص سرطان عنق الرحم بما في ذلك المعتقدات الصحية القابلة المتصورة، والشدة، والفوائد، والإشارة للعمل. وقد خلصت الدراسة الى ان كانت هناك علاقة ذات دلالة إحصائية بين المستوى التعليمي والاعتقاد الصحي الشدة المتصورة والفائدة والمعرفة، وهناك علاقة ذات دلالة إحصائية بين الدخل الشهري والفوائد المتصورة للمعتقدات الصحية، وهي إشارة إلى العمل والمعرفة، حيث قيمة  $p < 0.05$ . بينما لم يتم الكشف عن فروق ذات دلالة إحصائية مع الخصائص الشخصية الأخرى وتم التوصية بتزويد النساء ببرامج تثقيفية مستمرة في الخدمة فيما يتعلق بفحص سرطان عنق الرحم لتحسين وعيهن ومعتقداتهن وسلوكهن.

الكلمات المرشدة: وعى - معتقدات - سلوكيات- سرطان عنق الرحم -الفحص.