



# Cervical Cancer and Screening Test (PAP Test): Knowledge and Beliefs of Egyptian Women

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**Abstract:** Cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012. In Egypt the incidence of cervical cancer is 866 per year where mortality rate is 373 per year. The current study aims to determine women's beliefs and knowledge towards cervical cancer and Pap smear. The study was conducted at the outpatient obstetrics clinics of two hospitals namely El- Mainshawy health insurance Hospital, and El – Aiada El- Shamela at Tanta governorate. The study subjects comprised 1000 women attending the above mentioned settings two tools were used: An interview assessment sheet and the Health Believe Model (HBM). Results of the current study illustrated that Out of the 1,000 women interviewed, (68.0%) could know the definition of cervical cancer and related to a virus as its causative agent. About 95% of the women did not have an idea of the risk factors for cervical cancer, the knowledge about Pap test is quite poor, only 13.3% identify Pap smear test while 86.7% had no idea at all. In terms of the perceived benefits of Pap test, about 50.3% of the participants believed that Pap tests are the best way to detect cervical cancer, 42.9% believed that cervical cancer can be cured easily if detected early, and 62% disagree that a Pap test is important for save their health. The present study concluded that inefficient utilization of cervical cancer and its screening test would be affected by poor knowledge and negative beliefs related to cervical cancer screening in women. It was recommended that development of effective intervention programs strategies for Egyptian women and identify those women who are most at risk for cervical cancer and would benefit from intervention programs to increase cervical cancer screening rates.

**Keywords:** Knowledge, Beliefs, HBM, Papanicolaou Smear (Pap Smear), Benefits, Perceived Risk, Cervical Cancer

## 1. Introduction

Cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012 worldwide [1]. About half a million new cases are seen worldwide each year, most occurring in developing countries [2]. In Egypt the incidence of cervical cancer is 866 per year where mortality rate is 373 per year [3].

Cancer of the cervix is the commonest genital tract malignancy in the female [4]. Cervical cancer has positive association with infection of human papillomavirus (HPV), and repeated or persistent HPV infections appear to raise the chances of developing the disease [5]. Tobacco smoking,

high parity, long-term hormonal contraceptive use, co-infection with *Chlamydia trachomatis*, herpes simplex virus type 2, HIV, immunosuppression, certain dietary deficiencies, and genetic and immunological host factors are contributing factors to cervical cancers [6].

The availability of effective prophylactic HPV vaccines gives new promise for a primary prevention strategy for HPV infection and cervical cancer [7]. However, the current vaccines only protect against 70% of the disease, and are only effective for those not yet exposed to the virus.

Cervical cancer incidence and mortality have declined substantially in western countries following the introduction of screening programmes. Screening programmes in Africa are however often rudimentary or nonexistent. The screening techniques often used are Pap smear test [8].

The Papanicolaou smear is a reliable, inexpensive and effective screening test for cervical cancer [9, 10]. For a long time, the Papanicolaou smear (Pap smear) has been considered the most helpful test used for detecting cervical lesions at early stage [11]. Due to the high effectiveness of this preventive screening, women's incidence of invasive cervical cancer has substantially decreased. However, the greatest part of women who die from cervical cancer are in general those who have never had history of previous Pap smear uptake, or who have long intervals between Pap screenings [12, 13]. Needs assessment in any society is essential to any plan to promote health behavior in this area [14]. Therefore, it is important to not only study of the direct risk factors for cervical cancer that predominate in different subpopulations of women, but also of the cognitive, emotional, and environmental aspects that might influence women's decision to participate actively in preventive screening programs. So, Health Belief Model (HBM) has been considered to be one of the most representative ones due to its effectiveness in explaining change and maintenance of health behavior [15].

The Health belief model was originally developed in the 1950s by a social psychologist in the United States public Health Service to explain the widespread failure of people to participate in programs to prevent and detect disease. Later, the model was extended to study peoples' responses to symptoms and their behaviors in response to diagnosed illness, specially adherence to medical regimens [16]. This model aims to explain preventive health behaviors rather than behaviors in time of illness [17]. Major health behaviors emphasized by the Health Belief Model focus on prevention exposure of diseases at their asymptomatic stage [18]. For example, as delineated by the Health Belief Model (HBM) [19], the likelihood that an individual will take action to prevent or detect disease is determined by several factors: perceived vulnerability to the health condition, perceived severity of the health threat, perceived benefits of performing the health behavior, and perceived costs and barriers of performing this behavior [19]. Later on, self-efficacy was added to HBM to measure the belief in one's own ability to perform a certain behavior [20]. The HBM was originally developed as a systematic method to explain and predict preventive health behaviors and is still one of the most widely used conceptual frameworks of health behavior [21].

Maternity nurse have an opportunity to affect the incidence and mortality of cervical cancer by improving screening practices of women. While preparing their initiations, it is extremely important for nurses to know the knowledge level and health beliefs of the women living in the region in order to improve their participation in cervical cancer screening and increase their benefiting from the services offered. At the same time, this information may help in planning nursing initiatives that are created to support and encourage women at the first step to improve their participation in cervical cancer

screening. Currently, education of women is focused on in programs carried out to increase the participation of women in cervical cancer screening education. In studies on the efficiency of training shown that culturally specific educational programs are more effective for raising the level of knowledge and correcting the wrong information [22, 23, 24, 25]. Accurate health care information and communication by health providers are importance to gain the true knowledge and the health behaviors and to change the false beliefs. Therefore, maternity nurse need to address the knowledge and beliefs of the women about cervical cancer and its screening test.

The Health Belief Model Scale for Cervical Cancer and the Pap Smear Test was found to be a valid and reliable tool in assessing the women's health beliefs. Understanding the beliefs of women in respect of cervical cancer and the Pap smear test will help healthcare professionals to develop more effective cervical cancer screening programs.

### 1.1. Aim of the Study

This study aimed to assess women's knowledge and beliefs toward cervical cancer and screening test (PAP) in Egypt.

### 1.2. Research Questions

1. Did the Egyptian women have knowledge about cervical cancer and PAP smear test.
2. What are their beliefs about cervical cancer in general and screening test (PAP smear) in particular.
3. Is there any relationship between socio-demographic characteristics of women and their level of knowledge about cervical cancer and screening test (PAP Smear).

### 1.3. Conceptual Definition

Perceived susceptibility: The degree to which an individual feels personally susceptible to contracting a condition. Perceived severity: The degree to which an individual values the condition as serious; through emotional arousal or consideration of the consequences of the condition. Perceived benefits: The degree to which an individual believes that taking a specific action to prevent a condition will be beneficial and effective. Perceived barriers: The degree to which negative aspects of an action serve as barriers to action, causing avoidance. Cues to action: Triggers that prompt an individual to action. [26]

## 2. Subjects and Method

### 2.1. Study Design and Setting

Descriptive exploratory cross sectional and correlation design was used. This study, carried out on two hospital in Egypt namely El- Mainshawy health insurance Hospital, and El – Aiada El- Shamela at Tanta governorate at the outpatient clinics of the gynecology and obstetrics departments of the hospitals. These setting serve a large number of population free.

## 2.2. Subject

Convenient sample of (1000) women who agreed to participate in this study.

## 2.3. Tools

Data of this study was collected using the following two tools:

Tool 1. Structured Interviewing Questionnaire (SIQ) was developed by the researchers based on literature review, it included two parts:

Part I: Socio-demographic characteristics such as age, level of education, marital relation, duration of marriage, number of children, smoking and family history of cervical cancer.

Part II: to assess knowledge of subjects about Pap test, HPV vaccine and cervical cancer

Tool II: Health Belief Model Scale for Cervical Cancer and Pap Smear Test. It was used to determine women's beliefs regarding cervical cancer and its screening. This scale was adapting from Champion's Breast Health Survey [27, 28], Ackerson K, Gretebeck K [29]. and Akyüz A, Güvenç G, Yavan T, et al [30]. which specifies five motivational cognitions (perceived susceptibility, Perceived severity, Perceived benefits, Perceived barriers and cues to action)

## 2.4. Validity and Reliability

Content validity of the questionnaire was determined using the comments of eight experts including gynecologists and midwifery faculty members and its reliability using test-retest. Cronbach's alpha coefficients ranged from 0.84 (perceived severity) to 0.98 (cues to action), indicating that each subscale had good internal consistency. All test-retest correlations were greater than 0.90 and significant at the 0.01 level.

## 2.5. Administrative Design

An official permission was obtained from the concerned departments to conduct the proposed study. Once permission was granted to proceed with the proposed study, the data was collected via face-to-face interviews by one trained interviewer using a structured questionnaire.

## 2.6. Pilot Study

In preliminary work; the items were translated into Arabic to be appropriate for Arab language. The study tools were pre-tested on a random sample of 100 women (10%) selected from the same study setting to check the clarity, applicability, any difficulties with their application, and to determine the time needed for completion of the tools. Modification of the tools was done according to the pilot study results. Subjects who shared in the pilot study were excluded from the study subjects.

## 2.7. Procedure

- The aim of this phase was to collect data about women to

determine those who have knowledge and to explore their beliefs using tool I & II.

-Subjects who agreed to participate in the study, the researchers introduced themselves to the respondents, and explained the aim and objectives of the study to them in the study settings.

-Then, they were individually interviewed by the researcher to complete the basic data using an Interviewing Assessment Sheet.

- Each questionnaire was semi-structured, consisting of 20 questions. The first 9 questions on the questionnaire gathered background information on the participant. The next 11 questions were divided into those assessing the participant knowledge regarding cervical cancer and its screening test (Pap), including table (2, 3, 4). After the completion of the last 11 questions, women were interviewed to assess their beliefs according to the following; perceived benefits was assessed using five items, perceived severity was assessed using six items and perceived barriers was assessed using nineteen items. Beliefs of the studied women about Perceived susceptibility to acquire cervical cancer or to have an abnormal Pap test was assessed using 10 items. Beliefs of the studied women about cues to action that cause that women take the Pap test was assessed using twelve items

- The time taken for every questionnaire to be completed was about 20-30 minutes for each subject.

- The study was conducted throughout a period of six months from March 2015 to the end of August 2015

## 2.8. Ethical Consideration

Before the beginning of the study, an informed oral consent was taken from the women after explaining the aim of the study. The participants were assured of the confidentiality of their personal information. Women were allowed to withdraw from the study at any time.

## 2.9. Statistical Analysis

SPSS ver.17 for data analysis. F test (ANOVA) Statistically significant at  $p \leq 0.05$ , student t-test statistically significant at  $p \leq 0.05$  and  $\chi^2$ : Chi square test; MC: Monte Carlo for Chi square test significant at  $p \leq 0.05$

-HBM model scale: The following provides a description of each item within each subscale measured in our study. Responses to each item was scored on a four-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). the scores were summed and then were converted to 0-100 to make the total scores more informative. Higher score reflects a higher or better beliefs about Pap smear. Beliefs score was classified into 0-50 "negative beliefs" and 50 and upper "positive beliefs".

-Knowledge questions had two options. To calculate knowledge scores, correct answers was given score 1 and incorrect answers will be given score 0. The scores was summed and then were converted to 0-100 to make the total scores more informative. Higher score reflects a higher knowledge about cervical cancer and its Pap smear. Total

knowledge score was classified into three level; scores 0-33.3 "low", scores of 33.4-66.6 level of "moderate" and a score of 66.7 or higher level of "high".

### 3. Results

**Table 1.** Socio-demographic characteristics of studied women (n= 1000).

Variables	No.	%
1- Age (years)		
< 20	280	28.0
20 - < 30	586	58.6
30 - < 40	110	11.0
40 - < 50	14	1.4
≥ 50	10	1.0
2- Marital status		
Married	751	75.1
Divorced	188	18.8
Single	51	5.1
Widow	10	1.0
3- Level of education		
Illiterate	122	12.2
Read and write	127	12.7
Primary education	264	26.4
Secondary education	224	22.4
University or higher	263	26.3
4- number of children		
None	694	69.4
One child	96	9.6
2 or 3 children	140	14.0
4 or 5 children	68	6.8
6 or more children	2	0.2
5- Duration of marriage		
Unmarried	51	5.1
1 year	185	18.5
2 - 3 years	137	13.7
3 to less than 6 years	127	12.7
6 to less than 10 years	239	23.9
More than 10 years	261	26.1
6- Smoking		
Yes	53	5.3
No	947	94.7
7- Passive smoke		
Yes	762	76.2
No	238	23.8
8- Family history cervical cancer		
Yes	171	17.1
No	829	82.9

Regarding (Table 1) socio-demographic characteristics of the studied subjects, 58.6% women aged between 20 to less than 30 years, 12.7% were read and write while 26.4 had primary education and 26.3% had a university education, 5.1% single while 81.9% were ranged from divorced, married and widow, 23.9 married for less than 10 years, 69.4% had no children, 94.7% nonsmokers but 76.2 were passive smokers and most (82.9%) had no history of cervical cancer while 17.1 had history.

**Table 2.** Knowledge of studied women about Pap smear as screening test (n= 1000).

Variables	No.	%
Did you know Pap test?		
Known	133	13.3
Not known	887	88.7
*Reasons not doing pap smear		
Do not know	887	88.7
Fear of vaginal examination	189	18.9
Sense of modesty	70	7.0
Absence of symptoms	408	40.8
Lack of interest	176	17.6
My doctor did not ask me to do this examination	451	45.1
Not married	51	5.1

\*more than one answer

Less than one quarter (13.3%) of the 1,000 women had known a Pap screening while the majority (88.7%) not know. The major reason by the women who had not done Pap test was lack of awareness as noted by 88.7%. The other reasons were fear of vaginal examination (18.9%) lack of interest (17.6%), absence of symptoms (40.8%), or the doctor did not requested for her (45.1%). Table (2)

**Table 3.** Knowledge of studied women about HPV vaccine (n= 1000).

Variables	No.	%
24- Did you take HPV vaccine?		
Yes	199	19.9
No	801	80.1
25- If answer no, why? (n = 801)		
I do not know anything about the vaccine	667	83.3
Because it is expensive	22	2.7
Fear of infection as a result of this vaccination	71	8.9
Refused to parents or husband	41	5.1

Regarding Table (3), the majority (80.1%) of the study subjects did not take HPV vaccine because the majority (83.3%) they do not know it while about one fifth (19.9%) of them take the vaccine. The other reasons were fear of infection (8.9%), expensive (2.7%) and refused from parents or husband (5.1%).

**Table 4.** Proportion of correct answers to knowledge questions about cervical cancer and PAP screening test (n= 1000).

Variables	Correct answer	
	No.	%
Identification the definition of cervical cancer?	680	68.0
Identification of cervical cancer lead to death	89	8.9
Identification of risk Factors lead to cervical cancer	58	5.8
Identification of symptoms of cervical cancer	78	7.8
Identification of prevention of cervical cancer	50	5.0
Identification of pap smear or test?	133	13.3
Identification that affected person can recover from cervical cancer?	83	8.3
Identification that early detection of cervical cancer, more effect of treatment?	504	50.4

According to Table (4). Out of the 1,000 women interviewed, only (68.0%) could know the definition of cervical cancer but not known its causative agent. About 95% of the women did not have an idea of the risk factors for

cervical cancer and they suggested due to evil eye, and poor hygiene as the cause. So, 94.2% were unable to correctly identify that family history, cigarette smoking, hormonal contraception usage, poor diet and HIV/AIDS as risk factors for cervical cancer. They were minority (7.8%) able to identify the symptoms of cervical cancer. Only 5% of the women could identify screening and vaccination as ways to prevent cervical cancer. The knowledge about pap test is quite poor, only 13.3% identify PAP smear test while 86.7% had no idea at all. Eighty three (8.3%) of the 1,000 women answered correctly that affected person can recover from cervical cancer.

**Table 5.** Knowledge of studied women about cervical cancer and its screening test (n= 1000).

	No.	%
Low (<33.3%)	842	84.2
Moderate (33.33 – 66.6%)	123	12.3
High (>66.6%)	35	3.5

Regarding table (5), it was noticed that the majority (84.2%) of the study subjects had low level of knowledge about cervical cancer and its screening test while a minority (3.5%) had higher level of knowledge.

**Table 6.** Beliefs of the studied women about the perceived benefits, severity and barriers to take PAP test to reduce risk of cervical cancer (n= 1000).

	Strongly agree		Agree		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%
Perceived Benefits								
Pap test makes me feel good	189	18.9	447	44.7	345	34.5	19	1.9
For early detection of cervical cancer	86	8.6	531	53.1	356	35.6	27	2.7
Getting a Pap test is a good investment of my time in health	107	10.7	461	46.1	409	40.9	23	2.3
A Pap test can find cervical cancer when it is possible to cure	250	25.0	298	29.8	429	42.9	23	2.3
The Pap can save my life	97	9.7	240	24.0	620	62.0	43	4.3
Perceived Severity								
An abnormal pap test, Can lead to cervical cancer without treatment	164	16.4	505	50.5	327	32.7	4	0.4
Not having a pap test, Can result a serious health problem	154	15.4	559	55.9	274	27.4	13	1.3
Cervical cancer may Lead to death	82	8.2	261	26.1	621	62.1	36	3.6
Cervical cancer may lead to Hysterectomy	97	9.7	523	52.3	361	36.1	19	1.9
Cervical cancer is not a Serious health problem	159	15.9	543	54.3	298	29.8	0	0.0
Cervical cancer can lead women to receive Chemotherapy	178	17.8	341	34.1	481	48.1	0	0.0
Perceived Barriers								
Do not have time to get a pap test	46	4.6	246	24.6	677	67.7	31	3.1
Move the intrauterine device	34	3.4	170	17.0	776	77.6	20	2.0
Getting a pap test is painful	18	1.8	317	31.7	629	62.9	36	3.6
Getting a Pap test only will give me problems	79	7.9	457	45.7	383	38.3	81	8.1
Getting a Pap test is expensive	18	1.8	235	23.5	710	71.0	37	3.7
Getting a Pap test is embarrassing	20	2.0	301	30.1	676	67.6	3	0.3
I do not have information about it	435	43.5	432	43.2	128	12.8	5	0.5
I prefer that a female gives me the Pap test	300	30.0	469	46.9	211	21.1	20	2.0
I have not taken the Pap test because they treat me badly in the health center	153	15.3	196	19.6	573	57.3	78	7.8
I do not know if I need to have a Pap test	210	21.0	103	10.3	612	61.2	75	7.5
I do not know at what age	260	26.0	384	38.4	352	35.2	4	0.4
I have not taken a Pap test because I need to wait a long time to seen	138	13.8	233	23.3	612	61.2	17	1.7
My husband does want me to get a pap test	48	4.8	207	20.7	728	72.8	17	1.7
Do not have money for transportation	36	3.6	99	9.9	826	82.6	39	3.9
I am afraid to find out cervical cancer	7	0.7	97	9.7	857	85.7	39	3.9
Health care center is only open during hours when I can not go	0	0.0	127	12.7	820	82.0	53	5.3
Embarrassed to have genital exam	116	11.6	187	18.7	665	66.5	32	3.2
Do not know how often I need to get a Pap test	80	8.0	282	28.2	596	59.6	42	4.2
It Is difficult to get an appointment	83	8.3	266	26.6	621	62.1	30	3.0

In terms of the perceived benefits of Pap test, about 50.3% of the participants believed that Pap tests are the best way to detect cervical cancer, 42.9% believed that cervical cancer cannot be cured easily if detected early, and 62% beliefs that a Pap test is not important for save my health.

With regard to the perceived severity variables, women who perceived severity, 62.1% of them disagree that Pap test decreases the chances of dying from cervical cancer. More than half 50.5%, 55.9% and 52.3% 54.3% agree that an abnormal pap test, can lead to cervical cancer without treatment, not having a pap test, can result a serious health problem, cervical cancer may lead to hysterectomy and Cervical cancer is not a Serious health problem respectively.

The participants experienced some access barriers to obtaining a Pap test. For example, some women believed that, they do not have information about it (43.5%) and prefer that a female gives her the Pap test (46.9%) believing that one's spouse would be uncomfortable with screening performed by a male doctor but the majority(82.6%, 85.7%,) disagree about not have money for transportation or afraid to find out cervical cancer respectively. in addition, 67.7%, 77.6% disagree that they do not have time to get a pap test or to move the intrauterine device respectively. 61.2%, disagree that one does not need a test if feeling well, believing a test will be painful or unpleasant (31.7%), and believing a Pap test will be embarrassing (30.1%).as shown in Table (6).

**Table 7.** Beliefs of the studied women about Perceived susceptibility to acquire cervical cancer or to have an abnormal Pap test (n=1000).

	Strongly agree		Agree		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%
I am not at risk for an abnormal pap test	97	9.7	376	37.6	521	52.1	6	0.6
I have No symptoms	190	19.0	377	37.7	368	36.8	65	6.5
I have No children	172	17.2	370	37.0	358	35.8	100	10.0
Not married	51	5.1	-	-	660	66.0	289	8.9
Not Pregnant	156	15.6	231	23.1	543	54.3	70	7.0
I have Infertility no need for pap test	137	13.7	144	14.4	707	70.7	12	1.2
I am not at Risk for developing cervical cancer	49	4.9	76	7.6	832	83.2	43	4.3
If I have cervical cancer, I can die	14	1.4	115	11.5	779	77.9	92	9.2
Cervical cancer is most common among women	80	8.0	131	13.1	713	71.3	76	7.6
I do not have history of cervical cancer in my family, it is very unlikely to get	113	11.3	247	24.7	623	62.3	17	1.7

With regard to perceived risk in Table (7), 83.2% of participants considered themselves at risk for developing cervical cancer and 37.7% agree that they have no symptoms so they not susceptible to acquire cervical cancer or to have an abnormal Pap test (52.1%). The study subjects (70.7%,

77.9%, 71.3%, and 62.3%) disagree that if they have Infertility no need for pap test, can die from cervical cancer, cervical cancer is most common among women and not have history of cervical cancer in their families. So, it is very unlikely to get respectively.

**Table 8.** Beliefs of the studied women about cues to action that cause that women take the Pap test (n=1000).

	Strongly agree		Agree		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%
Take care of my health	66	6.6	371	37.1	554	55.4	9	0.9
After hearing something about cervical cancer	128	12.8	360	36.0	499	49.9	13	1.3
Mid wife tell me	63	6.3	360	36.0	480	48.0	97	9.7
Doctor tell me	78	7.8	295	29.5	488	48.8	139	13.9
My mother spoke to me	67	6.7	212	21.2	581	58.1	140	14.0
Friend spoke to me	52	5.2	182	18.2	627	62.7	139	13.9
My family told me to get	20	2.0	144	14.4	694	69.4	142	14.2
I read something in Newspaper	44	4.4	348	34.8	488	48.8	120	12.0
Because I have genital Bleeding	95	9.5	469	46.9	307	30.7	129	12.9
Because I have Pain in genital area	119	11.9	418	41.8	308	30.8	155	15.5
Because I had Discomfort in my genital area	65	6.5	302	30.2	489	48.9	144	14.4
Because I Know well (family, friend, neighbor) had cervical cancer	68	6.8	245	24.5	569	56.9	118	11.8

Table (8) revealed that, Five hundred fifty four clients (55.4%) disagree that Pap smear tests can take care of their health. About one half (41.8%) and more than one half (46.9%) agree that they had Pap smear tests if they had gynecological problems such as genital bleeding or pain respectively. Six hundred twenty seven clients (62.7%) their believes ranged from disagree to strongly disagree that health care providers not made them aware of the importance of early detection of cervical cancer such as doctors.

**Table 9.** Total believes scores about cervical cancer and PAP screening test (n= 1000).

	Total score	% score	Negative beliefs (<50%)		Positive beliefs (≥50%)	
			No.	%	No.	%
Beliefs about the perceived benefits, severity and barriers to take PAP test to reduce risk of cervical cancer	2.52±0.16	50.73±5.21	369	36.9	631	63.1
Beliefs about Perceived susceptibility to acquire cervical cancer or to have an abnormal Pap test	2.66±0.35	55.28±11.57	224	22.4	776	77.6
Beliefs about cues to action that cause that women take the Pap test	2.34±0.49	44.70±16.48	642	64.2	358	35.8
Overall beliefs	2.51±0.16	50.22±5.17	464	46.4	536	53.6

In relation to table (9), it was noticed that more than three quarters (77.6%) of the studied subjects had positive beliefs about Perceived susceptibility to acquire cervical cancer or to have an abnormal Pap test and about two thirds (63.1%) had positive beliefs about the perceived benefits, severity and barriers to take PAP test to reduce risk of cervical cancer. While beliefs about cues to action that cause that women take the Pap test, about two thirds (64.2%) had negative attitude.

**Table 10.** Relation between socio-demographic data and total score of knowledge.

	Knowledge						$\chi^2$	p
	Low<33.3% (n=842)		Moderate 33.3-66.6% (n=123)		High>66.6% (n=35)			
	No.	%	No.	%	No.	%		
Age								
Less than 20 years	234	27.8	23	18.7	23	65.7	62.504*	<sup>MC</sup> P =<0.001*
From 20 to less than 30 years	511	60.7	63	51.2	12	34.3		
From 30 to less than 40 years	73	8.7	37	30.1	0	0.0		
From 40 to less than 50 years	14	1.7	0	0.0	0	0.0		
50 and more	10	1.2	0	0.0	0	0.0		
Marital Status								
Married	623	74.0	93	75.6	35	100.0	17.369*	0.005*
Divorced	161	19.1	27	22.0	0	0.0		
Single	48	5.7	3	2.4	0	0.0		
Widow	10	1.2	0	0.0	0	0.0		
Level of education								
Illiterate	113	13.4	9	7.3	0	0.0	259.428*	<sup>MC</sup> P =<0.001*
Read and write	118	14.0	9	7.3	0	0.0		
Primary education	252	29.9	12	9.8	0	0.0		
Secondary education	217	25.8	7	5.7	0	0.0		
University or higher	142	16.9	86	69.9	35	100.0		
Number of children								
No	643	76.4	50	40.7	1	2.9	236.977*	<sup>MC</sup> P =<0.001*
one child	59	7.0	37	30.1	0	0.0		
2 or 3 children	70	8.3	36	29.3	34	97.1		
4 or 5 children	68	8.1	0	0.0	0	0.0		
6 or more children	2	0.2	0	0.0	0	0.0		
Duration of marriage								
Unmarried	48	5.7	3	2.4	0	0.0	257.093*	<0.001*
one year	179	21.3	5	4.1	1	2.9		
2 - 3 years	98	11.6	39	31.7	0	0.0		
3 to less than 6 years	80	9.5	20	16.3	27	77.1		
6 to less than 10 years	177	21.0	55	44.7	7	20.0		
More than 10 years	260	30.9	1	0.8	0	0.0		

 $\chi^2$ : Chi square test

MC: Monte Carlo for Chi square test

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

Knowledge of cervical cancer and Pap test was high (65.7%) among subjects with younger age (less than 20 years), who married (100%) and duration of marriage between 3 to less than 6 (77.1%), had higher education (100%) and had 2 or 3 children (97.1%). The difference was statistically significant at  $p \leq 0.05$ . Knowledge of cervical cancer and Pap test was lowest among women with primary education, had no children. Table (10)

## 4. Discussion

Cervical cancer is a preventable disease, and a key aspect of its prevention is the detection of the premalignant lesion by cervical screening [31]. The major findings of the present study showed that 88.7% of the respondents were not known of the cervical screening (Pap smear), however, only 13.3% had known the test. The major drawback of this study is the high percentage of respondents, their education ranged between illiterate, read and write, primary or secondary education, which is usually expected in a typical population of a developing country. In contrast knowledge of cervical cancer and Pap test was high (65.7%) among women with high education, this result congruence with result of Roberts et al. (2004), who found a positive relationship between the

education and level of awareness on Pap smear among respondents [32].

In this study, 80.1% of the women were not know of HPV as a risk factor for cervical cancer. This result in line with Shin-Y L. (2015) conducted a study in Chicago in a sample consisting of 159 Korean-American women, 40-69 years of age. 26% of the respondents had never heard of the Pap smear test. Only 34% of respondents reported having had a Pap smear for screening, while another 20.8% reported having had a Pap smear due to health problem. The most frequently cited reason for not having had a Pap smear was not known it [33].

Using HBM constructs as a framework, our findings suggested that, although three-thirds (63.1%) of Egyptian women had positive beliefs about perceived benefits, severity and barriers to take PAP test to reduce risk of cervical cancer these beliefs do not translate into the action of getting a Pap test because 64.2% had negative beliefs about cues to actions. This result in line with result of Tanner S. (2010), who found that higher levels of perceived severity of cervical cancer were associated with increased odds of having had a Pap screening [34]. The inconsistency of the association between perceived severity and cervical cancer screening may be due, in part, to the poor knowledge about cervical cancer and its screening tests.

Also in the current study more than third of studied subjects (42.9%) believed that cervical cancer can be cured easily if detected early this come in the same line with Zakia *et al.* (2013), who found that more than three quarters of the participants perceived that Pap smear is beneficial. (80.7%), and having a test is valuable (86.3%) and will give them a sense of control [35]. Also, Zakia *et al.* (2013), added that, 90.6% has perceived that cervical cancer got more chance of cure and it is worth putting up with the treatment if any abnormal results are detected early. While the current study only 42.9% believed that cervical cancer can be cured easily if detected early. This in line with Grace *et al.* 2013, who stated that about 50% of the participants believed that Pap tests are the best way to detect cervical cancer, cervical cancer can be easily treated if detected early, and a Pap test is important for staying healthy [35, 36].

Indeed, in our study, 77.9% disagree that they can die from cervical cancer and 62.1% of studied subjects disagree that Pap test decreases the chances of dying from cervical cancer. Also, 62.3% not have history of cervical cancer in their families. So, it is very unlikely to get Pap test. Low perceived risks were demonstrated the importance of educating Egyptian women about the risk for cervical cancer in order to increase their awareness. This result contradict with Grace *et al.* (2013), who said that approximately one-third of women agreed with the statement: "Women having cervical cancer will die from it," [25].

Egyptian women in our study perceived significant barriers regarding access to health care. About one half of the participants expressed concerns about not had information and prefer to getting a Pap test, but the majority disagree that money or time act as a barrier, in contrast, these concerns were noted among Vietnamese American women [36]. Also, these factors which have already been reported in other studies [37, 38, 39, 40]. In our study, the most frequently perceived cultural barriers to obtaining Pap tests were being uncomfortable with having a test performed by a male doctor but prefer female doctor (46.9%), disagree not needing a test when feeling well (61.2%), believing a test will be painful or unpleasant (31.7%), and believing a Pap test is embarrassing (30.1%). The belief that it is unnecessary to have a Pap test when one feels well is consistent with cultural beliefs that healthcare is a service that one seeks for specific, manifested complaints and symptoms [41]. With the exception of one study [42], modesty is frequently cited as a barrier in accessing cervical cancer screening programs among Asian American women, including Vietnamese Americans [38, 43, 44].

These findings highlight the need to address these psychosocial concerns through education programs. While most such education programs only focus on women themselves, we believe husbands, and other family members should be involved in this collective effort. Their inclusion and comments were critical in providing recommendations for the design of educational and awareness campaigns for this community. Using a theoretical framework of HBM provides a close examination of Egyptian women's cultural beliefs and how these beliefs may be associated with cervical

cancer screening behavior.

## 5. Conclusion

The present study concluded that inefficient utilization of cervical cancer screening had been affected by poor knowledge, and negative beliefs related to cervical cancer and its screening test. Considerable numbers of the studied subjects had positive beliefs about Perceived susceptibility to acquire cervical cancer or to have an abnormal Pap test and perceived benefits, severity and barriers to take PAP test to reduce risk of cervical cancer. Also, large numbers had negative believes about cues to action that cause that women take the Pap test.

## Recommendations

Development of effective intervention programs strategies for Egyptian women and identify those women who are most at risk for cervical cancer and would benefit from intervention programs to increase cervical cancer screening rates. Health care providers must have a better understanding not only of the direct risk factors for cervical cancer, but also of the cognitive, emotional, and environmental aspects that might influence women's decision to participate actively in preventive screening programs.

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