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Knowledge and Attitude of First year Female Students in Medical Campus at Tanta University Regarding Cervical Cancer and its Vaccine

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Abstract: **Cervical cancer is a preventable disease, it is still a major public health burden in many developing countries. Cervical cancer vaccines provide protection against persistent cervical infections. The aim of this study was to assess knowledge and attitude of first year female students in Tanta medical campus regarding cervical cancer and its vaccine. This study followed a descriptive cross section design. The study was carried out at the Medical Campus, Tanta University, which included Faculties of (Nursing, Medicine, Pharmacy, Dentistry and Science). The subjects included 675 female students from the above mentioned setting. Tools of data collections; Two tools were used to collect data of the study. Tool I: Structured interview sheet it included, socio-demographic data and knowledge of female students regarding cervical cancer and its vaccine. Tool II: it included, assessment of female students attitude regarding cervical cancer and its vaccine. Results The main results of this study revealed that, the majority (81.5 %) of the studied female students had poor knowledge, also (53.2%) of them studied had negative attitude. Positive correlation between total scores levels of knowledge and attitude of the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and its vaccine. Conclusion; The present study concluded that there was poor level of knowledge and negative attitude about cervical cancer and its vaccine among studied female students The study recommended that there is urgent need for establishment of basic cancer education program for university female students to increase their knowledge and change their attitude regarding cervical cancer and its vaccine as well as provide students with the necessary information and health measures needed for protection and early detection of cervical cancer.**

Keywords: **Cervical cancer, Cervical cancer vaccines, Female students, Medical Campus.**

1. INTRODUCTION

Cervical cancer (CC) is a preventable disease, it is still a major public health burden in many developing countries[(1)]. It is one of the most common cancer that affect women's reproductive organs and the second most common Gynecological cancer among women living in less developed regions. Worldwide, approximately 270.000 women died from cervical cancer; more than 85% of these deaths occurring in low and middle income countries [(2)]. Globally, more than 290 million women have a human papillomavirus (HPV) estimated rate 6 million new infection every year [(3).]

In Egypt (2017), the Egyptian National Cancer Institute data reported that 59.58% of all female genital tract malignancy had Invasive cervical lesions [4, 5]. According to cancer profile in Gharbiah, Egypt (2014), it was estimated that the incidence of cervical cancer was 201 per 100.000 women per year [6]. Cervical cancer is becoming a real challenge in our country, according to Integrated Regional Information Networks (IRIN), the fact that the disease does not have any signs makes a large number of women discover their infection very late[5]. There are usually no signs or symptoms of early cervical cancer. Later symptoms may include abnormal vaginal bleeding especially after sex, pelvic pain or dyspareunia [7&8].

Human papillomaviruses (HPVs) are a group of more than 200 related viruses. More than 40 HPV types can be easily spread through direct vaginal, anal, and oral sexual contact, from the skin and mucous membranes of infected people to the skin and mucous membranes of their partners. Correct and consistent condom can reduce HPV transmission between sexual partners [9, 10, and 11]. HPV consider the main cause for approximately 5 % of all cancers worldwide [12]. Virtually all cases of cervical cancer are caused by HPV, types 16 and 18, which responsible for about 70 % of all cases [13].

Vaccination against HPV should be given before the first sexual activity for both males and females to prevent the risk of HPV infection [14]. HPV infection may be lead to cervical, vulvar, vaginal, anal cancers and genital warts among females, and anal cancer and genital warts among males**.** The Food and Drug Administration (FDA) has approved three vaccines to prevent HPV infection: ***Gardasil, Gardasil 9, and Cervarix***. These vaccines provide strong protection against new HPV infections, but they are not effective at treating established HPV infections or disease caused by HPV. ***Gardasil*** is approved for use in both females and males ages 9 through 26 years old , ***Gardasil 9*** is approved for use in females ages 9 through 26 and in males ages 9 through 15 and ***Cervarix*** for use in females ages 9 through 25 for the prevention of cervical cancer caused by HPV [15&16].

Cervical cancer vaccines (CCV) were found to provide nearly 100 % protection against persistent cervical infections with HPV types 16 and 18. Because the currently available HPV vaccines do not protect against all HPV types that can cause cancer, screening continues to be essential to detect precancerous changes in cervical cells before they develop into cancer [17-20]. According to FDA report, the three HPV vaccines are safe and effective and no serious side effects have been shown to be caused by its used. The vaccines have not been sufficiently tested during pregnancy and, therefore, should not be used by pregnant women [21&22].

The retail price of the vaccines is approximately $130 to $160 that equal 2500 Egyptian pounds per dose , and in order to be totally immunized, women need to get these vaccines three times over a period of six months[7]. Because around 25 % of Egyptians live in poverty, according to the state-run Central Agency for Public Mobilization and Statistics , so prevention and treatment are unaffordable for many of Egypt's poor [7&19]. CAIRO, 14 June 2014 (IRIN) - On 30 April the Egyptian government launched a nationwide campaign to raise awareness of cervical cancer and offer free immunization to 15,000 unmarried women on the assumption that they would not have had any sexual contact [7].

HPV infection is a serious infection which may be led to fatal events for the women. We are as academic nurse's staff well appropriate to educate students about transmission, hazard and prevention of HPV infection [23]. Nurses and school nurse play a key role in disease prevention because they are the first line to contact with a large number of girls and women (who are at risk for cervical cancer), in different community setting can and provide an essential education to the public about effective cervical cancer screening and treatment programs including prevention with HPV vaccination for young girls as well as rise population awareness about HPV and cervical cancer [24, 25].

Aim of the study

The aim of this study was to assess knowledge and attitude of first year female students in Tanta Medical Campus regarding cervical cancer and its vaccine.

Research Questions:

1- What is the level of knowledge and attitude of first year female students in Medical Campus Tanta University, regarding cervical cancer?

2- Is there correlations between knowledge, of first year female students and their attitude regarding cervical cancer?

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2. SUBJECTS AND METHODS

Study design: A descriptive cross section design was used in carrying out this study.

Setting: The study was conducted in the Medical Campus, Tanta University which included Faculties of Nursing, Medicine, Pharmacy, Dentistry and Science.

Sample size:

A convenience sample of total 675 of first year female students, the sample size was calculated based on the 95% *confidence* limit and 80% power of the study according to the margin of error 5%.

Subjects: The study included a convenience sample of all available students at the period from 20/2/2018 to 20/4/2018 three days/week, the total number of students interviewed by the researchers were **750** female students, **75** of them represented the sample of the pilot study, to test the clarity, applicability, relevance and organization of the tools and to determine the time needed to fulfill it and accordingly modification was done. Those students were excluded from the sample, so the remind number who actually involved in this study was **675** selected according to the following criteria; (female students, their age ranged from 18-20 years old, and they are willing to participate in this study).

Tools of data collection:-

Two tools were developed by the researchers based on the previous studies and literature review[1,5] to obtain the necessary data:-

Tool I. Structured interview sheet: This tool was used to collect the basic data; it included the following 2 parts:

Part 1: Socio-demographic data of the studied subjects such as, age, residence and marital status of the female students.

Part 2: Female Student's knowledge regarding cervical cancer and its vaccine such as (knowledge about cervical cancer, causative agent, methods of transmission, signs & symptoms, high risk group and knowledge about cervical swap). Knowledge about cervical cancer vaccination such as, (names of vaccines, types of vaccines , the effect of vaccine, suitable time for vaccination , side effect and contraindication) as well as their source of knowledge.

Female student's knowledge was scored as follow:

The scoring system of the answers:

- Correct answer was take (2) score.

- Incorrect and don't know answers were taken (1) score.

The total knowledge score level was as follow:

-Good level of knowledge ≥75%.

- Fair level of knowledge 50% - < 75%.

- Poor level of knowledge < 50%.

Tool II: *Female Student's attitude regarding cervical cancer and its vaccine*: Three point Likert's scale to assess the attitude of the female students. It comprised of items related to their attitude such as, high risk women for cervical cancer, transmission of infection (HPV), procedures to protect female students from cervical cancer and procedures for early discover of cervical cancer among female students in the Medical Campus.

The scoring system of the female student's attitude answers:

Female student's attitude was measured used three point Likert's scale; agree = 3, uncertain = 2, and disagree =1. Total score of attitude considered **positive attitude** if the total score is equal or more than **75%** and considered **negative attitude** if the total score is less than **75%** marks.

** N B: After the needed data was collected, a brochure was prepared by the researchers and given to the students to enhance their knowledge regarding cervical cancer and its vaccine by the researchers using simple Arabic language and illustrated pictures. It includes the following:

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-Information needed for female students about cervical cancer and its vaccine, which included; definition of cervical cancer, causative agent, methods of transmission symptoms, and signs, high risk group, cervical cancer vaccine (name of vaccine ,types of vaccine, the effect of vaccine ,suitable age, side effect, and contraindication of the vaccine).

Method:

This study was carried out in the following steps:

1. A written approval was obtained from the Deans of Faculties of (Nursing, Medicine, Pharmacy, Dentistry and Science) Tanta University to conduct the study after explanation of its purpose.

2. Ethical and legal considerations:

a) An informed consent for participation in the study was obtained from the entire subjects after explanation of the nature and purpose of the study to them.

b) Nature of the study was not causing any harm and /or pain for the entire subjects.

c) Confidentiality and privacy were put into consideration regarding the data collected.

d) Brochure was developed by the researchers using simple Arabic language and given to the students after the needed data was collected

3. The study tool was developed after reviewing the related literature.

4. The tools were revised submitted to five experts in Obstetrics and gynecology nursing and community health nursing from faculty of nursing.

5. Opinion of experts on tools of the study was analyzed face validity 95% content validity 97% and modification was done according the experts opinion.

6. Before embarking on actual study, a pilot study was carried out on 75 female students attending the five colleges, 15 female students from each one. Those students were excluded from the study sample.

7. Subjects of this study were interviewed during their attendance in the college at the previous mentioned settings based on the exact time of the students' curriculum in each college.

8. The researchers begin the student's interview at the Faculty of Nursing followed by Faculties of Medicine, Pharmacy, Dentistry and Science.

Data collection:-

- **Tool I**, part **1&2** administered individually to each student of the study sample to collect data about the socio-demographic characteristics of them and their knowledge regarding cervical cancer, vaccination of cervical cancer and measures to overcome it.

- Tool II, was used to collect data of female students **attitude** regarding cervical cancer.

Statistical analysis:-

The data were computerized and verified using SPSS (Statistical package for social science) version 18 to perform tabulation qualitative variables were described in frequency and percentages, while quantitative variables were described by means and standard deviation. Analysis of collecting data was done through the use of several statistical tests as: Chi-square(x^2). P values of < 0.05 were considered statistically significant.

3. RESULTS

The results were presented under the following headings: **Table (1):** Represent distribution **of** the studied female students at first year in Medical Campus of Tanta University according to their demographic characteristics. The table shows that nearly two third (63.7%) of female students fell in age group 19 years and their age ranged from 18-20 years old with mean score 18.71±0.53. The majority (99.4%) of the interviewed female students were single. As regard to residence, more than two third (70.1%) were rural residents.

Table (2), shows that nearly three fifth of students (61%) reported that they didn't hear about cervical cancer, while (81.7%) of them didn't know the organism which cause cervical cancer. The same table illustrates that, only (0.6%) of students know the risk factors of cervical cancer infection and (16.6%) of them know the methods of cervical cancer organism transmitted. On the other hand (77.3%) of them didn't hear about Pap smear and the majority of students (86.22%) didn't know the times in which Pap test should be done.

Table (3), shows that more than two third of students (67.4%) know about the presence of (CCV), and (80.7%) of them don't know the vaccine is available in Egypt or not. The study was also illustrated that, (12.6%, 4.3%,7.3% & 6.8%) of them knew correctly the method, dose, booster dose of cervical cancer vaccine and the vaccine cannot be given in case of infected person with human papilloma virus and if the pre-cancerous changes was appeared respectively. The study also illustrated that only (0.7%, 2.2%) determine that, the vaccine can't be given for pregnant and lactating women respectively.

Table (4): Represents the total mean score of knowledge and the ranking of the studied female students of first year in Medical Campus at Tanta University; regard cervical cancer and its vaccine, show that; female students total knowledge ranged from 5-37 with mean scores was 15.71±8.87 and the highest rank was 1.58±0.49 in question about the signs and symptoms of cervical cancer. On the other hand the lowest ranking and score of students' knowledge was (0.46±0.40) about (CCV).

Table (5): Illustrates that only (7%) of studied students reported that young age women are more liable for infection with cervical cancer. On the other hand, more than half (56.1%) of the sample reported that cervical cancer is one of the diseases which affect women health. Nearly one third (33.3%) of students reported that sexual intercourse plays an important role in disease transmission. While (56.7%) of the students reported that Pap test helps in early detection of cervical cancer. The study also illustrates that nearly half (46.8%) of the studied female students reported that cervical cancer and method of its prevention should be studied for the students of health science (nursing and medicine)**.**

Table (6): Represents the total attitude scores of the studied female students at first year in Medical Campus of Tanta University about cervical cancer and its vaccine, was ranged from 22-61, with the means scores was 45.55±6.06 and the highest rank was 2.55±0.50 in question about Pap smear of cervical cancer.

Table (7): Represent distribution studied female students' in relation to their source of information about cervical cancer and its vaccine. The majority of the studied students' (56.14% and 67.4%) had no information about cervical cancer and cervical cancer vaccine respectively, while the highest percent their source of information about cervical cancer and cervical cancer vaccine was from doctors represent (16.3% and 18.8%) respectively.

Figure (1&2) show the level of total knowledge and attitude of the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and measures to prevent it. It was observed that the majority (81.5 %) of the studied female students had poor knowledge, while more than half (53.2 %) of the studied female students had negative attitude.

Table (8) show that the majority (65.6%) of the studied female students whom had fair score of total knowledge had positive attitude, on the other hand also the majority (57.5%) of the studied female students whom had poor score of total knowledge had negative attitude. So there was positive correlation between scores of knowledge and positive attitude of the studied female students regarding cervical cancer and its vaccine, the differences was statistically significant ($P < 0.0001$*).

Figure (3): Reflects the correlation between total scores of knowledge and attitude of the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and measures to prevent it. A significant positive correlation was detected between total scores of knowledge and attitude of the studied female students regarding cervical cancer and measures to prevent it. This denoted that students who had a better knowledge were holding more positive attitudes and vise versa.

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Table (1): Demographic data of the studied female students at first year in Medical Campus of Tanta University (n= 675).

Variables	The studied female students (n=675)	
	n	%
Age (years):		
18	219	32.4
19	430	63.7
20	26	3.9
Range	18-20	
Mean±SD	18.71±0.53	
Marital status:		
Married	4	0.6
Single	671	99.4
Residence:		
Rural	473	70.1
Urban	202	29.9

Table (2): Distribution of the studied female students at first year in Medical Campus of Tanta University according to their knowledge regarding cervical cancer (n=675).

Knowledge items about cervical cancer	The studied female students (n=675)	
	N	%
▪ Hearing about cervical cancer:		
No	412	61.0
Yes	263	39.0
-If yes, what is the organism which cause cervical cancer:	**N**= 263	
Incorrect answer	*215*	*81.7*
Correct answer	*48*	*18.3*
▪Methods of cervical cancer organism transmission:		
Don't know	243	34.7
Incorrect answer	329	48.7
Correct answer	112	16.6
▪ Cervical cancer associated with any symptoms?		
No	280	41.5
Yes	395	58.5
-If yes, what are these symptoms:		
Poor (<50%)	*171*	*43.3*
Fair (50-75%)	*62*	*15.7*
Good (>75%)	*162*	*41.0*
▪ Treatment for the organism which causes cervical cancer?		
No	317	47.0
Yes	358	53.0
-If yes, what are the treatment options:		
Poor (<50%)	*91*	*25.4*
Fair (50-75%)	*57*	*15.9*

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Good (>75%)	*210*	*58.7*
▪ Causes of cervical cancer		
Don't know	327	48.44
Incorrect answer	204	30.22
Correct answer	144	21.33
▪Risk factors of cervical cancer infection?		
Don't know	224	33.2
Incorrect answer	447	66.2
Correct answer	4	0.6
Methods of early detection of cervical cancer		
Don't know	435	64.4
Incorrect answer	192	28.4
Correct answer	48	7.1
▪ Hearing about pap smear?		
No	522	77.3
Yes	153	22.7
-If yes, what are the importance of Pap test?:		
Incorrect answer	*85*	*55.6*
Correct answer	*68*	*44.4*
▪ Times in which Pap test should be done.		
Don't know	582	86.22
Incorrect answer	63	9.33
Correct answer	30	4.44

Table (3): Distribution of the studied female students at first year in Medical Campus of Tanta University according to their knowledge regarding cervical cancer vaccine (n=675).

Knowledge items about cervical cancer vaccine	The studied female students (n=675)	
	N	%
▪ Presence of vaccine against cervical cancer?		
No	455	67.4
Yes	220	32.6
-If yes, mention the name of the vaccine against cervical cancer:	N=220	
Don't know	*14*	*6.4*
Incorrect answer	*98*	*44.5*
Correct answer	*108*	*49.1*
▪For whom should the vaccine of cervical cancer should be given.		
Don't know	335	49.6
Incorrect answer	262	38.8
Correct answer	78	11.6
▪The goal from giving vaccine against cervical cancer.		
Don't know	297	44.0
Incorrect answer	271	40.1
Correct answer	107	15.9
▪ Method of giving vaccine.		
Don't know	428	63.4
Incorrect answer	162	24.0
Correct answer	85	12.6

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▪Doses cervical cancer vaccine.		
Don't know	458	67.9
Incorrect answer	188	27.9
Correct answer	29	4.3
▪Proper age for giving the cervical cancer vaccine.		
Don't know	371	55.0
Incorrect answer	174	25.8
Correct answer	130	19.3
▪ Booster dose of cervical cancer vaccine.		
Don't know	581	86.1
Incorrect answer	45	6.7
Correct answer	49	7.3
▪ The vaccine can be given with another vaccination.		
Don't know	573	84.9
Incorrect answer	56	8.3
Correct answer	46	6.8
▪ The vaccine can be given for person infected with human papilloma virus and if pre -cancerous changes appears.		
Don't know	573	84.9
Incorrect answer	56	8.3
Correct answer	46	6.8
▪When should stop giving the vaccine?		
Don't know	474	70.2
Incorrect answer	155	23.
Correct answer	46	6.8

Table (3): Continue.

Knowledge items about cervical cancer	The studied female students (n=675)	
	n	%
▪ Is the vaccine can be given for pregnant women?		
Don't know	545	80.7
Incorrect answer	125	18.5
Correct answer	5	0.7
▪ Is the vaccine can be given during lactation?		
Don't know	514	76.1
Incorrect answer	146	21.6
Correct answer	15	2.2
▪Side effects of this vaccine.		
Don't know	534	79.1
Incorrect answer	16	2.4
Correct answer	125	18.5
▪ Is the vaccine available at Egyptian Ministry of Health?		
Don't know	545	80.7
No	92	13.6
Yes	38	5.6
▪ The suitable place for obtaining the vaccine.		
Don't know	442	65.5
Incorrect answer	206	30.5
Correct answer	27	4.0

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Table (4): Mean scores and ranking of knowledge sub items about cervical cancer and its vaccine among the studied female students at first year in Medical Campus of Tanta University (n=675).

Knowledge about cervical cancer	No. of questions Scores	The studied female students (n=675)			
		Range	Mean±SD	Mean±SD/ No. of questions	Rank
▪Organism which cause cervical cancer	(0-4)	1-4	2.21±0.95	1.11±0.47	4
▪Signs and symptoms of cervical cancer	(0-2)	1-2	1.58±0.49	1.58±0.49	6
▪Treatment of cervical cancer	(0-2)	1-2	1.53±0.50	1.53±0.50	5
▪Risk for cervical cancer	(0-4)	0-4	1.70±1.32	0.85±0.66	3
▪Pap smear	(0-6)	1-5	2.17±1.48	0.72±0.49	2
▪Vaccine against cervical cancer	(0-32)	1-24	7.31±6.42	0.46±0.40	1
Total knowledge scores	**(0-50)**	**5-37**	**15.71±8.87**		

Table (5): Attitude of the studied female students at first year in Medical Campus of Tanta University about their attitude towards cervical cancer and its vaccine (n=675).

Attitude items towards cervical cancer Do you think that:	Agreement of the studied female students (n=675)					
	Disagree		Not sure		Agree	
	n	%	n	%	n	%
1- Young age women more liable for infection with cervical cancer	73	10.8	555	82.2	47	7.0
2-Cervical cancer is one of the diseases which affect women health	21	3.1	275	40.7	379	56.1
3- Sexual intercourse plays an important role in disease transmission	18	2.7	432	64.0	225	33.3
4- Organism which causes cervical cancer can be transmitted by infected food	107	15.9	481	71.3	87	12.9
5- Pap test is very important	16	2.4	277	41.0	382	56.6
6- Pap test helps in early detection of cervical cancer	6	0.9	286	42.4	383	56.7
7-Vaccination against cervical cancer helps to increase immune system for disease prevention	8	1.2	355	52.6	312	46.2
8- Taking complete vaccination at their correct time is very important	15	2.2	317	47.0	343	50.8
9- Giving vaccine early for girls and boys is very important	73	10.8	441	65.3	161	23.9
10- There are more than one vaccine against cervical cancer	23	3.4	471	69.8	181	26.8
11- Vaccine against cervical cancer is very painful	48	7.1	430	63.7	197	29.2
12- Vaccine against cervical cancer is very expensive	46	6.8	473	70.1	156	23.1
13- Vaccine against cervical cancer has side effects which may become complicated	120	17.8	384	56.9	171	25.3
14- Vaccine not given for pregnant women	120	17.8	384	56.9	171	25.3

15- Vaccine against cervical cancer can be given for any women at any age	147	21.8	417	61.8	111	16.4
16-vaccine against cervical cancer can be given for any women regardless of their health status	203	30.1	361	53.5	111	16.4
17-Vaccine against cervical cancer is connected with appropriate time with menstrual cycle	107	15.9	456	67.6	112	16.6
18-Vaccine against cervical cancer can be given for women who are infected with causative organism of cervical cancer	121	17.9	376	55.7	178	26.4
19-Vaccine against cervical cancer can be given with another vaccination	134	19.9	438	64.9	103	15.3
20-Vervical cancer and method of its prevention should be studied for the students of health science (nursing and medicine)	99	14.7	260	38.5	316	46.8
21-Vaccine can be obtained easily in Egypt	272	40.0	357	52.9	46	6.8
Total agreement	**84**	**12.4**	**392**	**58.1**	**199**	**29.5**

Table (6): Mean scores and ranking of attitude sub items about cervical cancer and its vaccine among the studied female students at first year in Medical Campus of Tanta University (n=675).

Attitude sub items about cervical cancer	No. of questions Scores	The studied female students (n=675)			
		Range	Mean±SD	Mean±SD/ No. of questions	Rank
▪ **General questions about cervical cancer**	**3 (3-9)**	3-9	6.81±1.11	2.27±0.37	**3**
▪ **Mode of transmission of cervical cancer**	**2 (2-6)**	2-6	4.28±0.77	2.14±0.38	**2**
▪ **Pap smear of cervical cancer**	**2 (2-6)**	2-6	5.10±1.00	2.55±0.50	**4**
▪ **Vaccine against cervical cancer**	**14 (14-42)**	15-42	29.36±4.26	2.10±0.30	**1**
Total attitude scores	**21 (21-63)**	22-61	45.55±6.06		

Table (7): Distribution of studied female students at first year in Medical Campus of Tanta University in relation to their sources of information about cervical cancer and its vaccine (n=675).

Sources of information	The studied female students (n=675)	
	n	%
▪**Information about cervical cancer:**		
No source mentioned	379	**56.14**
Doctors	110	16.3
Media	97	14.4
Friends and relatives	40	5.9
Study course	55	8.1
Books and magazines	22	3.3
Teachers	11	1.6
Neighbor	8	1.2

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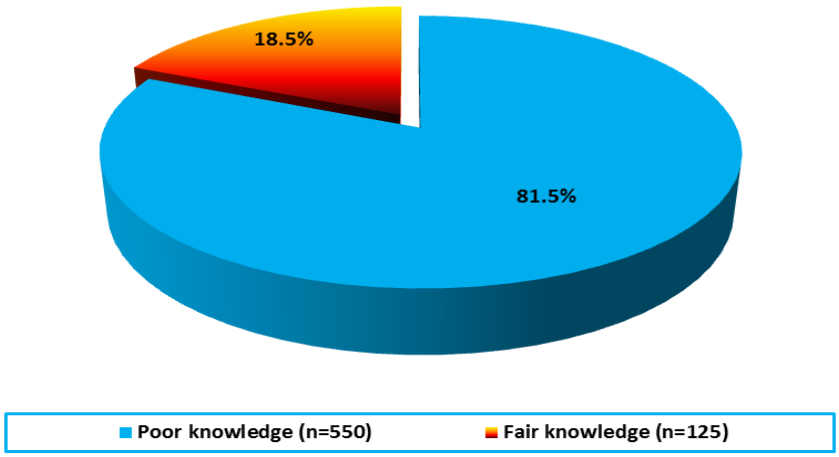
▪**Information about cervical cancer vaccine:**		
No source mentioned	455	**67.4**
Doctors	124	18.4
Media	90	13.3
Friends and relatives	27	4
Study course	30	4.4
Books and magazines	40	5.9
Teachers	8	1.2
Neighbor	13	1.9

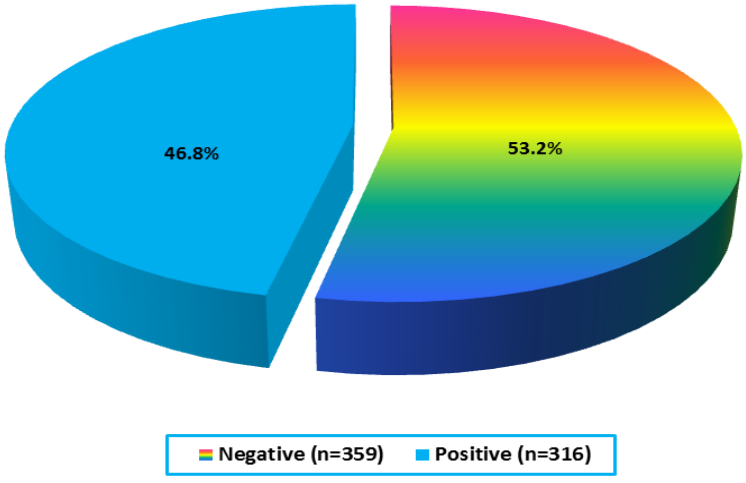
#More than one answer was chosen

Figure (1): Mean scores of knowledge for the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and its vaccine (n=675).



NB: Mean knowledge scores: (Range (0-50) = 5-37 and Mean±SD = 15.71±8.87)

Figure (2): Mean scores of attitude for the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and its vaccine (n=675).



NB: Mean attitude scores: (Range (21-63) = 22-61 and Mean±SD = 45.55±6.06)

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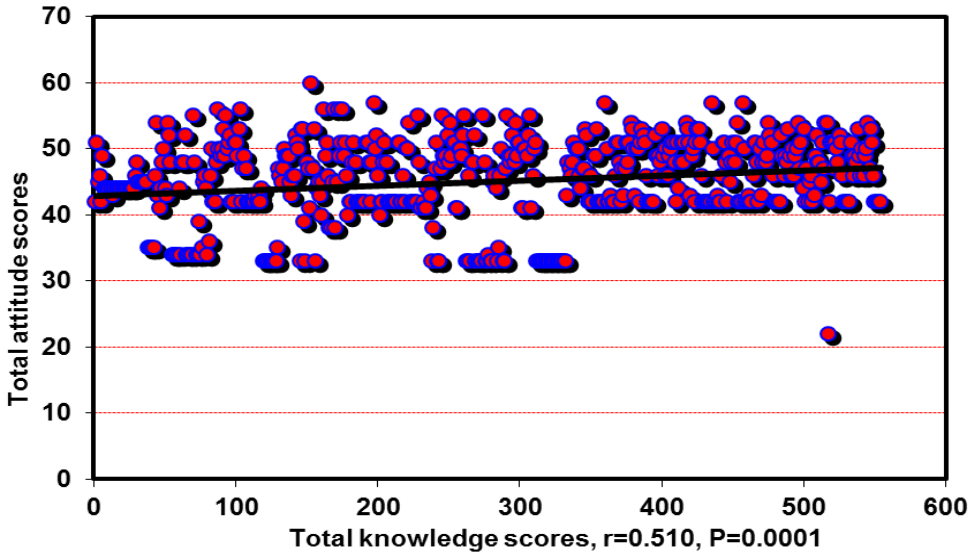
Table (8): Relationship and correlation between total of knowledge and attitude scores of the studied female students at first year in Medical Campus of Tanta University, regarding cervical cancer and measures to prevent it (n=675).

Total attitude	Levels of total knowledge of the studied female students (n=675)				χ^2	P
	Poor (n=550)		Fair (n=125)			
	n	%	n	%		
▪Levels of total attitude:						
Negative	316	57.5	43	34.4	20.830	0.0001*
Positive	234	42.5	82	65.6		
r	0.510					
P	0.0001*					

***Significant (P<0.05)**

r=Correlation Coefficient

Figure (3): Correlation between total knowledge and attitude scores of the studied female students at first year in Medical Campus of Tanta University regarding cervical cancer and measures to prevent it (n=675).



4. DISCUSSION

Cervical cancer (CC) is a preventable disease. Vaccination against the human papilloma vaccines (HPV) has been shown to prevent cervical cancer [(26).] Vaccination against HPV should be given before the first sexual activity for both males and females to prevent the risk of HPV infection [(14).] The aim of this study was to assess knowledge and attitude of first year female students in Tanta Medical Campus regarding cervical cancer and its vaccine.

The student's respondents were between 18-20 years and their mean age was 18.17 years. Similar finding was reported by **(Naik et.al. 2012)** who stated that their study sample belonged to age group 17-20 years with a mean age was 18.85 years [(27).] From the researcher point of view this harmony between the results due to that the researchers in both the study take the sample from the students of first year as much as possible before the first sexual act of them. On the other hand **(Tsegaye et.al.2018)** found that the majority of the respondents, belongs to the age group 21-23 years old because the researchers of that study was collect from female Hawassa University students at different academic years and not only the first **year** [(28).]

The result of the present study found that nearly more than half of the studied female students heard about cervical cancer. These result is agreed with **(Hoque et.al.2014)** who stated that more than half of their respondents heard about cervical cancer [29]. This finding disagreed with **(Tapera et.al.2017)**, who stated that, all students completed the questionnaire and they reported that they were aware of cervical cancer [30]. The same finding reported by **(Ali et.al. 2018)** who found that, 94% of the respondents had ever heard of Cervical Cancer [31].

The present study found that more than two fifth (43.3%) of the study sample have poor knowledge regarding the signs and symptoms of cervical cancer. Similar finding was reported by **(Bansal et.al. 2015 and Goyal et.al. 2013)** they stated that nearly half of the studied women and nursing staff have poor knowledge about cervical cancer signs and symptoms [32, 33]. On the other hand this finding was contradicted with the result of **(Ahmed et.al. 2015)** who found that only 8.7% of the studied nurses had poor knowledge regarding the signs and symptoms of cervical cancer[1]. Furthermore**, (Gol and Erkin 2018)** they stated that 70.9% of their studied sample don't know the sign and symptom of cervical cancer [31].

Regarding the (CC) risk factor, the present study found that more than three fifth of the studied female students have little knowledge regarding the risk factors .This result was in line with **(Gol and Erkin 2018)** they found that nearly three quarters of their studied sample have little knowledge regarding (CC) [34].The result of the present study disagreed with the result of **(John 2012 and Beining 2012)** they found that, the most common risk factor mentioned by the participants was multiple sexual partners [35, 36]. This result is contrast with **Ahmed et.al. 2015)** who found that, only (5.3%) of the studied nurses had poor knowledge regarding the risk factors of cervical cancer [1].

The total knowledge scores of the studied female students, was poor to moderate score. *This result may be attributed to lack of awareness of the studied female students at first year in Medical Campus of Tanta University about cervical cancer and its vaccine.* This was in accordance with many studies done in Egypt by **(Fouda and abo Elghite 2013)** they found that the majority of the studied samples had inadequate knowledge about HPV transmission, cause, risks, symptoms, treatment and its method of prevention Also, the study finding suggest that women knowledge scores was increased after implementing the educational program [26].

The results of the present study found that; more than half of the studied female students had negative attitude in both of poor and fair score of knowledge. This result was contradicted with the study done by **(Stormo et. al. 2014)** in Brazil's they stated that; the majority of the studied sample had very effective attitudes, and knowledge of health professionals working in health units regarding cervical cancer [34]. The results of the present study were relatively lower than that reported in a study by **(Agam et. al. 2015)** which found that there was 80.5% of the studied women have favorable attitude toward cervical cancer [35]. From the researcher point of view this contradict because the studied female students' in that study were at first year and version, so they didn't have any chance for educational and social interaction hence they have little knowledge about cervical cancer (CC).

Regarding the Pap smear test, the present study found that more than half of the studied female students have incorrect knowledge regarding Pap smear test. This result in agreement with the result of **(Tapera et.al.2017)** who found that 52.8% of the respondents not heard about the Pap smear [30]. This result in contrast with (**Ahmed et.al. 2015)** who found that, the majority of the studied sample had good knowledge regarding Pap smear [1]. Meanwhile**, (Agam et. al. 2015)** they found that, nearly one-third of the studied women had heard of cervical cancer screening test [38]. It is not surprising that study done on secondary school students by **(Jalani et.al. 2018)** found that about one quarter of the studied students have little knowledge regarding Pap smear as well as **(Hwaid 2013)** Also found one quarter of the studied University students have little knowledge regarding Pap smear [39& 40].

The present study denoted that more than two third of the students have poor knowledge regarding cervical cancer and its vaccine. ***From the researcher point of view, this may be due to lack of population-based screening programs, inefficient mass media campaigns, and cultural barriers where force females in Egypt feel shy to discuss the diseases affecting the sexual organs. Also, this because the student are young age and they are less exposed to health centers which help them to know more about the disease and its vaccine from the health care providers.*** The results of **(Saqer et.al.2017) and (Hoque et.al.2014)** They found that about one third of their study sample have lack of information regarding cervical cancer and its vaccine [41 & 29]. On the other hand **(Tsegaye et.al.2018)** found that, more than half of the participants have information about cervical cancer and its vaccine Also **(Jalani et.al. 2018)** reported that, more than three quarters of the participants have information about cervical cancer and its vaccine [28 & 40]. Also **(Ganju et. al. 2017)** found that the majority of the participants in their study were aware that a vaccine is available against HPV [42].

In the present study doctors and mass media are considered as a main source of information regarding cervical cancer and its vaccine. This result was in line with **(Kumar et. al. 2014)** who stated that, mass media could be used to educate the women regarding cervical cancer and it's screening [43]. On the other hand the result disagree with **(Tapera et.al.2017)** who found that the awareness was mostly through brochures, posters and other printed material [30].

The finding in this study revealed that, a significant positive correlation was detected between total scores of knowledge and attitude of the studied female students regarding cervical cancer and its vaccine. ***This denoted that students who had a better knowledge were holding more positive attitudes and vice versa.*** This results in line with **(Martianus et. al.2018)** they reported that there was a positive correlation between the knowledge and attitude of the studied sample about cervical cancer [44]. This result was contradicted with **(Shrestha and Dhakal. 2017)** who found that there was strong negative correlation between knowledge score and attitude score regarding cervical cancer screening among women [45].

5. CONCLUSION

Based on the finding of the present study it can be concluded that the majority of the studied students had poor knowledge and negative attitude about cervical cancer and its vaccine. There was a positive correlation between total scores levels of knowledge and scores levels of attitude of the studied female students regarding cervical cancer and its vaccine. This denoted that students who had a better knowledge were holding more positive attitudes and vice versa.

6. RECOMMENDATIONS

According to the results of the present study the following recommendations are suggested:-

1- There is urgent need for establishment of basic cancer education program for University students to increase their knowledge and change their attitude regarding cervical cancer and its vaccine.

2- Provide students the necessary information and health measures needed for protection as well as early detection from cervical cancer.

3- Increase governmental health expenditure directed to cervical cancer vaccine (CCV), also should available in schools and health centers.

4- Cervical cancer vaccine should be obligatory recommended for all girls at school age.

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