Cervical Cancer Relevant Knowledge and Preventive Behavior among Secondary School Females in Port Said City

Nor El-Hoda Mohamed El-Sayed El-Shabory[1],Azhar Abdel–Fatah Mohamed Shehata[2], Shymaa Abdel- Rahman Osman Abdel-Haleem[3].

1) Maternity, Gynecology and obstetrics, Faculty of Nursing, Port Said University, Egypt.
2) Department of Community Health Nursing, Faculty of Nursing, Zagazig University, Egypt.
3) Maternity, Gynecology and obstetrics, Faculty of Nursing, Port Said University, Egypt.

Abstract

Background: Cervical cancer remains a major public health problem, classifying as the fourth mostly prevalent etiology of cancer incidence and mortality among females all over the world. It is a preventable problem when applying suitable surveying and prophylactic methods. Then, knowledge and awareness deficit cause preventive methods loss. **Objective:** The current study aimed to assess cervical cancer relevant knowledge and preventive behavior among secondary school females in Port Said City. **Method:** A cross-sectional study was conducted in three secondary schools in Port Said city. Participants were 250 female students selected by systematic random sampling techniques. Data collected by questionnaires to determine the knowledge of the adolescent girls on cervical cancer and its prevention. **Results:** Only 21% of the students reported good knowledge level concerning cervical cancer and 76.8% of the studied sample had inadequate level of knowledge. The present study revealed unsatisfactory preventive behaviors about cervical cancer. **Conclusion and recommendation:** The present study revealed unsatisfactory cervical cancer and prevention behaviors knowledge as a disease among the female students. Our research recommended that there is a need for educational programs for secondary school females about cervical cancer and prevention behaviors.

Keywords: Cervical Cancer, Knowledge, Secondary School Females And Prevention Behaviors.

Email:ekraamshehata@gmail.com

Introduction

Cervical cancer is a major public health problem; it is the 4th mostly common cancer, also 4th leading cause of deaths from cancer between females around the world **(Bray et al., 2018)**. The rate is increasing because lack of effective screening programs with high coverage lead to insufficient screening particularly nonexistent screening techniques for early detection **(Jassim, et al., 2018)**. Therefore, it is not surprisingly that incidence of cervical cancer is suspected to increase by more than 75.0% in developing countries by the year 2025 **(Torre et al., 2015)**.

In Egypt, as per the World Health Organization (WHO) latest estimates, annually 969 females are detected with

cancer of the cervix uteri and 631 deaths from cervical cancer **(Human Papillomavirus and Related Cancers, Fact Sheet, 2018)**.

The major cervical cancer signs are abnormal bleeding, foul smelling discharge, and contact bleeding, while and in many cases, no symptoms. Many predisposing factors associated with cervical cancer around world, mainly due to sexually acquired infections. Based on that, sexually transmitted diseases (especially HPV, herpes simplex virus), sexual & reproductive factors (different partners, prostituted women), over sexual intercourse frequency, sexual intercourse and pregnancy in early age. Other factors involve smoking, obesity, oral contraceptives over uses; lack of Vitamin C or Beta-carotene and other host factors as genetic sensitivity **(Momenimovahed & Salehiniya, 2017)**

The lack of cervical cancer's knowledge may be due to that women are unaware of the causes, risk factors and the available preventive patterns. At a time when all of these prevention and screening developments of cervical cancer occur, it is essential to all women, including those living in developing countries, benefit from these strategies. Proper knowledge and awareness will decrease the burden of disease. Thus, the treating cost of cervical cancer later is much higher than the cost of early cancer stage. It was obvious that early screening for cancer at an early stage may help with treatment more effectively **(Ginsberg et al., 2012, Mehraban et al., 2018)**.

With the increasing statistical incidence of cervical cancer, the need for adolescent girls to receive knowledge about it and its prevention in order to protect themselves in light of the pressure placed by the World Health Organization to design messages to educate adolescent girls about this disease **(Torkornu, 2014)**. In order to ensure this, it becomes necessary to collect data from adolescent girls to reflect what they know and the source of their knowledge about the disease. Several studies have shown that adolescent girls and women in general lack knowledge of cervical cancer, the extent of the health problem, and how to prevent it **(Dhendup&Tshering, 2014)**.

Cervical cancer is a preventable disease among females. **(Fasry et al., 2020)**. It is clear that the most significant role is adolescent female students' understanding of the importance of prevention, early diagnosis and regular control regarding cervical cancer. There are three types of prevention primary ,secondary prevention, and tertiary prevention. Primary prevention includes education of adolescents, such as health education, and self-protection against causes and risks. Currently, primary prevention includes responsible sexual behavior, that is, modification of sexual behavior in terms of the smallest number of sexual partners ,Primary prevention is the prevention of cancer caused by HPV and the use of HPV vaccine to reduce the risk of developing cervical cancer. It is effective in women from 16 to 26 years old. **(Guljas Slivecko I and Nasice GH , 2017)**.

As for secondary prevention, it means early detection of the disease, by visiting a gynecologist and cytologist at the beginning of sexual activity, but no more than the age of twenty, as such

regular check up can detect the causes of sexually transmitted infections, the primary stages of cancer when it is still curable. Regular Pap smear screening will decrease the chances of carcinoma of cervix remarkably. Finally, tertiary prevention includes palliative care during diagnosis and treatment of invasive cervical cancer. Carefully designed messages are necessary in order to educate communities, parents, teachers, adolescents and other stakeholders about the HPV vaccine, HPV infection and cervical cancer and the availability of services. Programs can be quickly undermined by rumors and misinformation if the reasons for targeting girls only are not fully and sensitively communicated. **(Guljas Slivecko I and Nasice GH , 2017).**

Significance

Cervical cancer classifies as the fourteenth most frequently type of cancers among females in Egypt and the eleventh most frequently cancers in women between ages of fifteen and forty four **(Ferlay et al., 2018)**. It ranks seconed incidence and mortality after cancer of the breast among lower human development index countries. Thus, related largely to awareness lack of preventive lifestyle factors, surveying and vaccination programs available, that leads female to seek treatment late leading to bad results and increasing mortality rates. This agrees with trends that 80% of cervical cancers are treated early with better results **(Bray et al, 2018)**. At present, little is known about the knowledge level of female students about cervical cancer and its risk factors. Thus, our study aimed to assess cervical cancer relevant knowledge and preventive behavior among secondary school females in Port Said City.

Aim of the study:

The current study aimed to assess cervical cancer relevant knowledge and preventive behavior among secondary school females in Port Said City.

Materials and methods

A. Technical design:

Research design:

A cross sectional descriptive design was used.

Setting:

Our study was conducted in three secondary schools who selected randomly from 14 female secondary schools in Port Said City namely Alam-Eldin, Port Said school, and El Gorpha Eltogaria secondary school, to determine level of knowledge among female students would reflect in their preventive behaviors.

Subjects

A cross sectional studies recruited 250 female students from three secondary schools which have been randomly selected by systematic random sampling from list of 14 female secondary schools in Port Said City. The female students were selected by choosing every 10 female adolescent's students.

Data collection tool:

Interviewing sheet was used to collect data related to the research variables to attain the objective of the proposed analysis. Which developed by the researchers based on reviewing

related literature, **it includes three parts:**

Part I:

- Personal data such as (age, educational grade, monthly family income, occupation of their parents, and where they live).
- Health history of the study subjects which include menstrual history, medical and surgical history etc.

Part II:

Knowledge of the studied students regarding cervical cancer and sources of information to measure students' knowledge regarding the cervical cancer (meaning, causes, risk factors, symptoms, diagnosis, methods of treatment, and methods of prevention), cervical cancer screening (meaning of Pap smear screening, who need Pap smear screening, purpose, part of body which Pap test checked, time of beginning cervical cancer screening, frequency of Pap smear/year, preparations needed before screening, what meant by abnormal Pap test, and follow up after abnormal Pap test) , HPV vaccine (target population for vaccine, and recommended age group for taking vaccine), and sources of information on cervical cancer and its prevention.

Scoring system:

The answers were graded into two categories (1) degree for correct answer (0) for an incorrect or unclear answer. The score of total knowledge was divided into 2 levels, the female was considered to have a satisfactory level if the score was 60% or more and unsatisfactory if less than 60%.

Part III:

Questionnaire to assess practiced cervical cancer preventive behaviors as eating balancing diet, taking vitamins, doing things to improve health, taking care of personal hygiene, practicing exercise regularly, having intention to do pap smear, or receiving HPV vaccine.

Scoring system:

The answers were graded into two categories (1) degree for (yes) answer (0) for (no) answer. The total score was divided into 2 levels, the female was considered to have a satisfactory level if the score was 60% or more and unsatisfactory if less than 60%.

Content Validity:

It was ascertained by a Jury consisting of five consultants within the obstetric nursing, to create certain that the measuring instrument looks as though it is measuring what purports to measure and check its translation. Changes were done according to the consultants opinions.

Reliability:

Cronbach alpha coefficient was accustomed assess the reliability of through their internal consistency. This phase was carried out in a period of one month. The reliability of the total items was Cronbach's $\alpha = 86$.

B. Operational design: Including:

Preparation phase:

It involved relevant literature review, various books, research articles, internet and magazines.

Field of work:

A period of six months from October 2018 to March 2019 was the time for gathering data. The questionnaire administration process was negotiated with the heads of the school to ensure that the study did not disrupt the normal daily routine of the school especially during lesson hours.

Administrative design:

An official letters obtained from Dean of the faculty to the directors of each study setting to take cooperation and permission.

C. Ethical considerations:

This research was approved by faculty of nursing ethics committee, an informed consent was obtained from secondary school female students to participate in the study. The purpose of the study was explained to all study subjects. Data confidentiality, privacy and their anonymity was assured. The participants were assured that their participation is voluntary and they can withdraw at any time of the study.

D. Statistical design:

Data analysis was done using SPSS 16.0 version. Data were displayed as recurrence and percentages (Qualitative factors) and mean & standard deviation (Quantitative persistent factor). Qualitative variables compared using t-test. Statistical significance was considered at p-value <0.05.

Results

Table 1 reveals the personal data of the studied sample. The table illustrates that the ages of students ranged from 17 to 21. More than half of them (68.8%) were in 1st grade. In regarding to crowding index, the index is with a mean of 1.6±0,6. More than half of the studied students about two third reported that the monthly family income was not enough.

Table 2 shows the distribution of female adolescent students according to their menstrual history. More than half of the sample (54.0%) stated that age of menarche was between 9 -<12, while the minority of them was at 14 or more. About three quarters of them (74.0%) have been changing pads for about 1-2 times per day. As regards the reported menstrual disorders, it is clear that the most common problems were irregular menstrual cycle followed by vaginal inflammations and severe pain (18.0%, 22.4 %, and 59.6% respectively).

Table 3 clarifies the distribution of students according to their medical and surgical history. Most of them (96.0%) reported no chronic diseases. Concerning the previous operations, it is obvious that the more than three quarters of them had no previous operations. Few numbers (1.6%) diagnosed for early examination for cervical cancer. Only 12.4% of the participants reported yes for family history for cervical cancer have been suffering from it.

Table (4) describes the knowledge regarding cervical cancer among secondary school students in Port Said, it is revealed that quite number of them had satisfied knowledge regarding main causes, ways for infection, and general symptoms of cervical cancer (24.0% , 24.0%,24.0% respectively), while all of them had unsatisfied knowledge regarding all items.

Figure (1) displays the total knowledge regarding cervical cancer among secondary school students in Port Said. It is obvious that more than three quarters of them (76.8%) had poor, while only 21.6% of them had good knowledge.

Figure (2) illustrate the sources of information among secondary school students. It is noticed that more than one third of them (38.6 %) had acquired knowledge from internet, followed by media to be (30.1%). On the other hand, it is noticed that the least of students had acquired knowledge from family /friends, medical team and past history (15.2 %, 12.4 % , 3.7% respectively).

Table (5) shows the relation between students' characteristics and total knowledge of the students. There were statistically significant relation between total knowledge and student characteristics regarding age (years), family income, age of menarche (years) and previous operations (p-value less than 0.05). On the other hand, there is not a statistically significant relation between total knowledge and other students' characteristics.

Figure (3) illustrate the distribution of the studied students regarding to their practiced preventive behaviors about cervical cancer (n: 250). It is noticed that more than three quarter of respondents (78%) had unsatisfactory knowledge regarding preventive behaviors of cervical cancer.

Table1: Distribution of the studied students regarding to their personal data (n: 250)

Characteristics	Number	Percent
(Age) years		
14 ≥ 16	177	70.8
14 ≥ 16	21	8.2
16 ≥ 18	52	20.8
18 or more		
Grades		
First-	172	68.8
Second-	61	24.4
Third	17	6.8
Monthly family income		
Enough	80	32.0
More than enough	33	13.2
Not enough	137	54.8
Crowding index		
Min-Max	0.7-3.5	
Mean±SD	1.6±0.6	

Table 2: Distribution of the studied students regarding to their menstrual history (n: 250).

Characteristics	Number	Percent
Age of menarche (years)		
9 ≥ 12	135	54.0
12 ≥ 14	64	25.6
14 or more	51	20.4
Duration		
3 ≥ 5	171	68.4
5 ≥ 8	53	21.2
8 or more	26	10.4
Pads changes		
1-2	185	74.0
3-4	40	16.0
5 or more	25	10.0
Menstrual disorders		
Irregular	45	18.0
Sever pain	149	59.6
Vaginal inflammations	56	22.4

Table 3: Distribution of the studied students regarding to their medical and surgical history (n: 250).

Characteristics	Number	Percent
Chronic disease		
No	240	96.0
Yes	10	4.0
Previous operations		
No	222	88.8
Yes	28	11.2
Diagnosis for early examination of cervical cancer		
No	246	98.4
Yes	6	1.6
Family suffer from cancer		
No	219	87.6
Yes	31	12.4

Table 4: Distribution of the studied students regarding to their cervical cancer's knowledge (n: 250).

Variables	Knowledge			
	Satisfactory		Unsatisfactory	
	No	%	No	%
Definition of cervical cancer	54	21.6	196	78.4
Main cause of cervical cancer	60	24.0	190	76.0
Dangerous factors of cervical cancer	24	9.6	226	90.4
General symptoms of cervical cancer	60	24.0	190	76.0
Local symptoms of cervical cancer	54	21.6	196	78.4
Ways for infection of cervical cancer	60	24.0	190	76.0
Stages of cervical cancer	36	14.4	214	85.6
Complication of cervical cancer	54	21.6	196	78.4
Prevention of cervical cancer	54	21.6	196	78.4

Table 5: Distribution of the studied students regarding to relationship between students' characteristics and their total knowledge (n: 250).

Characteristics	Total knowledge			
	Mean	SD	t-test	p-value
Age (years)				
14 -<16	1.4124	3.04035	3.331	.002*
16 -18 or more	2.8219	3.66418		
Monthly family income				
Enough	2.7000	4.34741	3.484	0.0001*
More than enough	1.5721	3.11931		
Not enough	3.8214	3.94456		
Age of menarche (years)				
9 -<12	1.3704	2.92376	2.384	.018*
12 -14 or more	2.3565	3.61573		
Chronic disease				
No	1.7875	3.24596	.859-	.391
Yes	2.7000	4.34741		
Previous operations				
No	1.5721	3.11931	3.484	.001*
Yes	3.8214	3.94456		
Diagnosis for early ex of cervical cancer				
No	1.7886	3.26578	1.335	.183
Yes	4.0000	4.61880		
Family suffer from cancer				
No	1.6621	3.18180	2.081	.038*
Yes	2.9677	3.84260		

(*) Statistically significant at p < 0.05

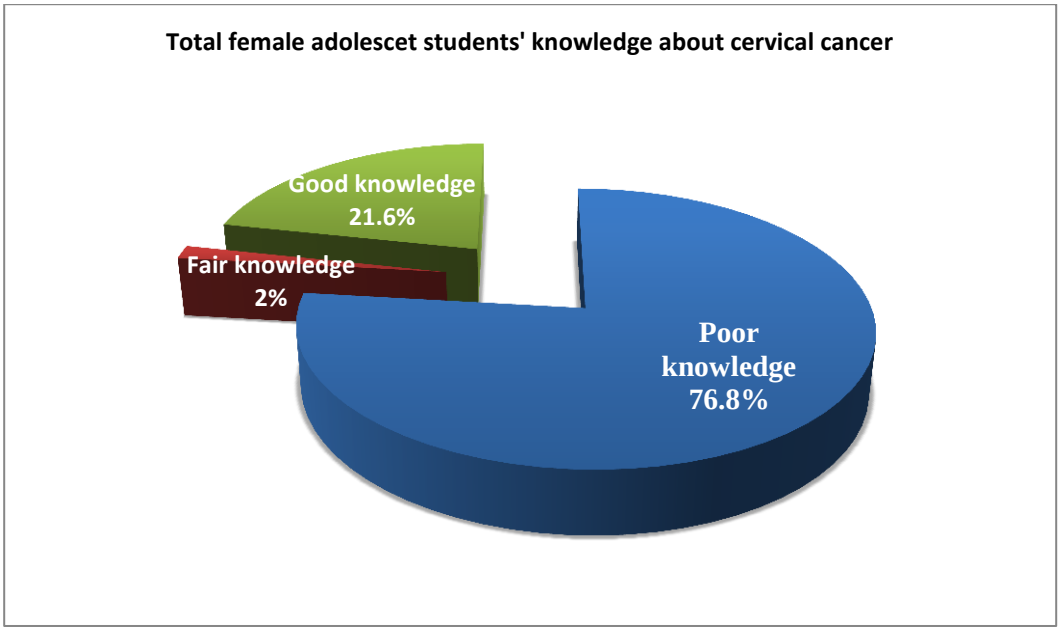

Figure 1. Distribution of the studied students according to total Level of knowledge about cervical cancer.

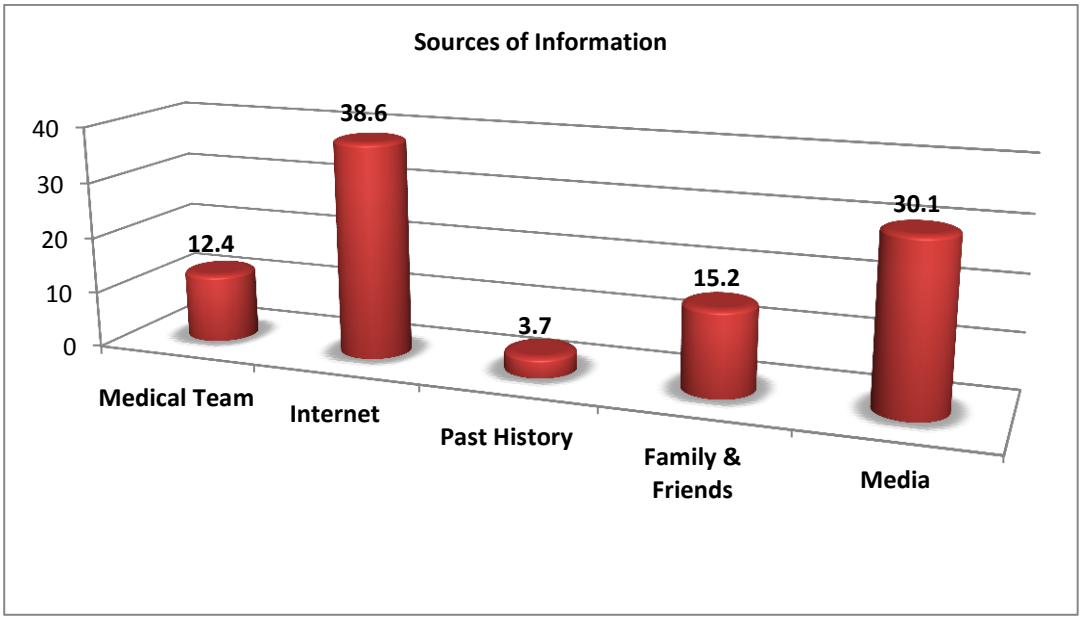

Figure 2. Distribution of the studied students according to sources of information regarding cervical cancer.

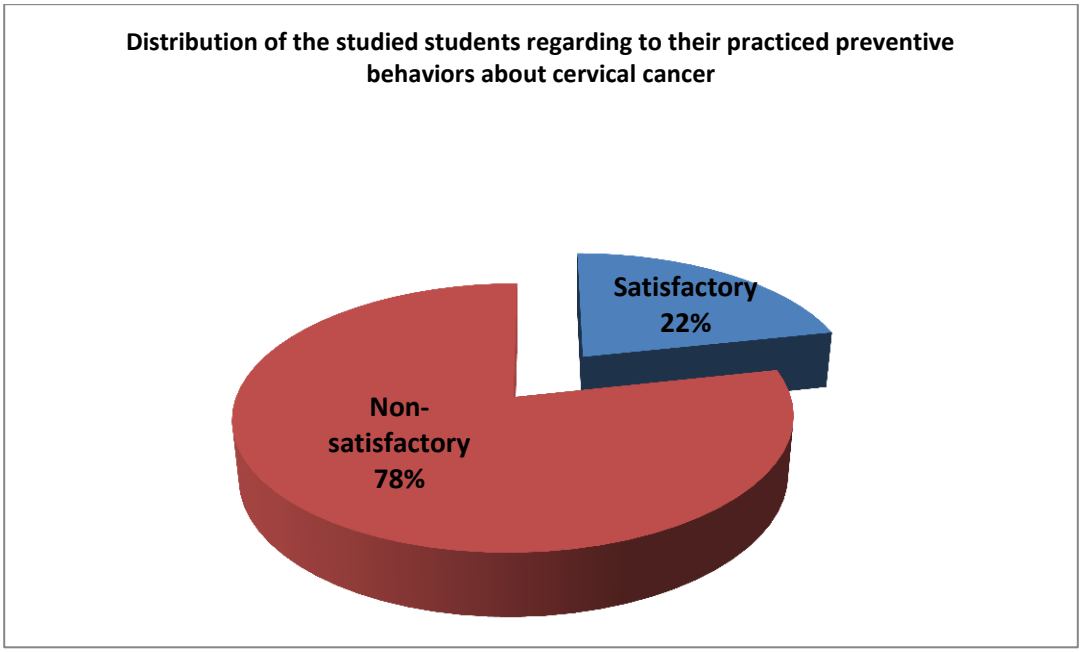

Figure 3. Distribution of the studied students regarding to their practiced preventive behaviors about cervical cancer (n: 250).

Discussion

Cervical cancer is the second mostly prevailing diagnosed cancer and the third leading cause of cancer mortality among females worldwide. Approximately 83% of the world's new cases and 85% of whole cervical cancer-related mortality happen in developing countries. It is principally caused by human papilloma virus (HPV); that prevented with safe sexual practice and using immunizations **(Mengesha et al., 2020)**.

Communication can be used to decrease it through increasing awareness **(Mailhot et al., 2019)**. The present study aimed to assess cervical cancer relevant knowledge and preventive behavior among secondary school females in Port Said City.

According to the obtained results of the current study, more than three quarters of samples expressed that they have less knowledge about cervical cancer. Higher percentages of lack of awareness have been observed in various studies **(Hoque E, Hoque M, 2009; Wong et al., 2009)** according to the point that the participants in this study were students while cervical cancer is the second largest cancer-related mortality factor among women in developing countries **(Ali et al., 2010),** unawareness of samples is very important and could not be neglected.

Also, this study came in parallel with the one conducted in Ethiopia, Uganda and Nigeria **(Envuladu et al., 2013 and Getahun et al., 2013)**. The result of this study also shows that the participants had poor knowledge of cervical cancer. Indicators of this poor knowledge were that 79.4% and 61.5% of the participants did not know the causes and mode of transmission of cervical cancer. This was higher than the study conducted among adolescent students in Uganda **(Mullera et al., 2011)** where 61.6% and 46.1% of participants in Uganda did not know the cause of prevalence and assess the situation. From transmission of cervical cancer in a row, the result of this study indicated that 67.1% of the participants did not recognize symptoms of cervical cancer which is lower compared to the study in Ogun State, Nigeria **(Abiodun et al., 2013)** where 97.9% had poor cognitive symptoms of cervical cancer.

On the other hand, in our study about one quarter of the participants had good level of knowledge related to cervical cancer. Approximately in consistent with the present study results; **Mengesha et al, 2020** reported (19.87%) of the studied sample had good knowledge concerning cervical cancer and its prevention. This indicates even majority of those who had heard regarding the disease didn't have adequate knowledge concerning cancer of cervix uteri.

People on cervical cancer was evaluated as intermediate for about half of the samples (52.9%) and as low for about one third of samples (34.9%) and only 10% of people had high knowledge on this issue. It seems that these findings are comparable with other similar studies since most of the similar studies on medical staff or public have shown the average score of awareness of people about cervical cancer and its monitoring methods especially Pap smear as low **(Balogun et al., 2012),** and some as intermediate **(Abedian and**

Mohammadi 2012), and only a few as high **(Esmailpour et al., 2011).**

It was observed in this study that there is a significant relationship between knowledge and age. This study came in agreement with a study conducted in India where there was positive correlation between knowledge and age, as a high knowledge of cervical cancer was seen among students over the age of 20 years and low knowledge among students under the age of 20 years **(Saha et al., 2010).** Also, in this study, there was a significant relation between household income and knowledge. This was in agreement with a study conducted in Johannesburg, South Africa, where knowledge was found to be high among students of high socioeconomic status and low among students with low economic status **(Rashwan, Ishaq, and Sawaluddin, 2013).**

The results of the current study showed that a lowest percentage of the participants had a family history of cancer. This may be due to lake of students' awareness about cervical cancer. This result was in agreement with **Davidson and Swan (2012)** who reported that the family history of cervical cancer among young women in Thailand was 0.6%, which had a negative effect on the level of knowledge about the disease. While the study conducted by **Frank and Ihmery (2017)** in Port Harcourt and Rivers State reported that more than one-tenth of them had a family history of cervical cancer among young women, which increased their level of knowledge.

Low awareness of the participants about this issue becomes highly important when notice that studies have reported that awareness level of common people about cancer and prevention methods is lower than medical science society **(Vanslyke et al., 2008)**.

In the light of the current study results, the finding showed that, the sources of information on cervical cancer among secondary school students were from internet and media sources. The possible explanation of that may be due to the internet can play a big alternative role because their scarce availability. In the study in Nigeria, the most common source was school teachers, but only 28.3% of respondents benefitted. Health staff must educate their clients more, as only 24% got their data from them **(Chris & Emmanuel, 2018)**.

This was similar to the **Hoque (2010)** study in South Africa which indicated that media (20%) was the main source of information on cervical cancer and its prevention. Most studies have also shown that the media is an important source of information on cervical cancer for adolescent girls in the fact that it was most often mentioned **(Rashwan, Ishaq and Suwaluddin, 2013)**. On the other hand, it is noticed that, the least of students had acquired knowledge from family /friends, medical team and past history (15.2 %, 12.4 % , 3.7% respectively).This was in congruent with (**Torkornu M, 2014)** who mentioned that the lowest sources of information were friends or peers, newspapers,magazines, parents, siblings, and religious leaders.

Other study of **Poudel & Sumi (2019)** under the title of Analyzing Awareness on Cervical Cancer Risk Factors, Barriers and Prevention among Pairs of Nepali High School Students

and Their Mothers, showed that the most common cervical cancer data sources was TV (56.7%), then the Internet (47.4%) and peers (26%).

In our study more than three quarter of respondents (78%) had unsatisfactory knowledge regarding preventive behaviors of carcinoma of cervix this is similar to the study of **Mapanga et al., 2019** who found that the participants' knowledge of the screening services and their availability is very low. Young females were unable to determine cervical cancer risk factors or know about cervical cancer screening and where it is offered. So, young females should be targeting in cervical cancer prevention, by screening from the age of 15 and after sexual debut.

Moreover, there were a lowest percentage of adolescent students who intended to receive the HPV vaccine and have a Pap smear. This may be attributed to the lack of an educational program designed for these students about Pap smear and vaccination against HPV. Also, cancer screening services are insufficient in Egypt due to the absence of a screening culture in the Egyptian culture, and many factors such as religious factors and the costs of these services which can create difficulties when administering the vaccine to those most vulnerable to cervical cancers. This was supported by **Ibrahim, 2011** who emphasized those religious factors, as Muslims and Arab women believe in fatalism and socio-economic factors, while coverage of cancer screening services is still limited in Egypt.

Conclusion and recommendations:

It can be concluded that: female adolescent students in Port Said secondary schools generally have low cervical cancer knowledge, and its preventive behaviors were unsatisfactory

According to our study results recommended that: Providing females' student adolescents with necessary educational guidelines about cervical cancer and its prevention should be done routinely to enhance females' knowledge about cervical cancer using visual aids such as posters and clear language booklets. Also, it is essential to initiate wide-range awareness campaigns and educational programs to be implemented to target population about cervical cancer and Pap smear screening to improve the understanding of the factors that increases the risk and the prevention methods of cervical cancer in youth women So , as to develop healthy behavior and decrease the incidence of the disease.

Acknowledgements

The author is very thankful to the director of the schools of study settings for their cooperation and support in data collection of this work.

Funding Statement:

Sources of funding: None

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