

Effect of Nursing Guideline about Genital Human Papilloma Virus Infection on perception of Female University Students

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Abstract

Background: Human papillomavirus (HPV) is a DNA tumor virus that is the primary cause of sexually transmitted infections (STIs). **Aim of this study** is to evaluate the Effect of nursing guideline about genital Human papilloma virus infection on perception of female university students'. **Sample Type:** A convenience sampling technique. **Research design:** Quasi-experimental design was used in this study. **Setting:** at Faculty of nursing in Alexandria University **Sample size:** Total sample size was two hundred seventy five (275) female students. Data was collected by, **1)** An Arabic structured Interviewing Questionnaire .2) Follow up sheet and 3) likert Scale. **Results:** the result of the present study findings had revealed that a highly significant improvement in total knowledge and attitude among the studied sample pre –nursing guideline compared to immediate and 6 months post-nursing guideline $P = < 0.01$. The majority of studied sample satisfied with the advanced knowledge included in the nursing guideline. **Conclusion:** the present study findings concluded that a significant improvement among studied sample' knowledge and attitude after implementation of guideline, this improvement mean that, an instructional supportive guideline had a positive impact on students' knowledge and attitude regarding genital Human papilloma virus infection. **Recommendations:** There is a need for awareness campaigns to improve the poor knowledge of female university students in order to change behavior and reduce risk of HPV infection so that they will take the HPV vaccine. As a step towards prevention of cervical cancer.

Key words: Human papillomavirus - Nursing guideline –Perception.

Introduction:

Human papillomaviruses (HPV) are the most common sexually transmitted infection (Ahmed, et al, 2018). Worldwide, 50%-80% of sexually active individuals will acquire an HPV infection in their lifetime. Almost 95% of all cervical cancer cases are linked to HPV and the majority of all HPV-associated Morbidity and mortality is due to cervical cancer. According to **National Cancer Institute, (2017)** Human papilloma virus infection cause approximately 5% of all

cervical cancers worldwide (Alessandro, et al, 2018). There are approximately 530,000 new cases of cervical cancer a year attributable to HPV and 265,700 deaths per year and there are wide disparities in the burden of cervical cancer (Laurent et al., 2018).

Human papillomavirus HPV genotypes categorized into two main types: the first one is low-risk types, which including HPV-6/11/40/42/43/44/54/61 and -72 which cause genital warts, but do not cause

cervical cancer (**Chabeda et al , 2018**). The second one is High-risk (hr) type which including HPV-16/18/ 31/35/ 39/45/51/ 52/56/58/66 and -68, which are responsible for 99.7% of cervical cancer cases. While other types classified as probably or possible carcinogenic are rarely found in large series of cancers or are associated with additional factors, so their oncogenicity remains to be clarified (**Bravo & Sanchez, 2015**).

There are more predisposing factors that contributed with Human papilloma virus infection of developing cervical cancer such as sexual behavior, abuse behavior (smoking and Alcohol intake), Mode of infection pathway, Long-term use of oral contraceptives, Immunosuppression and Sexually transmitted infections (STI) (**Zitkute& Bumbuliene, 2016**). The two most common clinically significant manifestations of genital HPV infection are Genital warts that are visualized without magnification, and cervical cellular abnormalities that are detected by Pap test screening. Vulvar warts can cause dyspareunia, pruritis, and burning discomfort. Moreover vaginal warts occasionally cause discharge, bleeding, or obstruction of birth canal (due to increased wart growth in pregnancy) and Perianal and intra-anal warts occasionally cause pain, bleeding on defecation, or pruritis (**Shimizu et al., 2019**).

Human papilloma virus infection (HPV), diagnosed through, Pap smear, cytology screening and HPV test. All HPV screening tests right now are being used depending on the identification of viral nucleic acids based on the fact that HPV can't be cultured (**Parmin et al., 2019**).The successful management of HPV infection focused on medical therapy and

Therefore nursing guideline can be applied through different nursing roles (nurse as counselor, nurse as a researcher, and nurse as caregiver / care provider & nurse as educator (**Nartey et al., 2018**).

Significance of the study:

Human papillomavirus HPV is risk factor for cervical cancer. In Egypt About 866 new cervical cancer cases are diagnosed annually, Cervical cancer ranks as the 13th most frequent cancer among women in Egypt and the 10th most frequent cancer among women between 15 and 44 years of age (**Bruni et al., 2017**). So that advanced nursing guideline approach among human papilloma virus infection including education, vaccination, screening, and treatment is very important to improve knowledge and attitude among university female students and therefore improve community knowledge and hence reduction of morbidities and mortalities resulting from cervical cancer related human papilloma virus (**Villanueva et al,2019**)

Aim of the study:

The aim of the current study is to evaluate the effect of nursing guideline about genital Human papilloma virus infection on perception of female university students'

Research Hypothesis:

University Female Students who receive the nursing guideline will have high perception regarding genital Human papilloma virus infection.

Subjects and Methods:

Research design: Quasi-experimental design was used in this

study

Setting: The study was conducted at Faculty of nursing in Alexandria University.

Sample Type: A convenience sampling technique.

Sample size: Total sample size was two hundred seventy five (275), all female students of first and second academic year in faculty of nursing at Alexandria University who agreed to participate in the study at previously mentioned study setting through 2nd term of academic year 2018-2019. Follow up using guideline (booklet & its effect) took another term in academic year 2019-2020

These numbers were determined based on a convenience total number of female students enrolled in first and second academic year (2018-2019).

Sample criteria:

- All female University students from first and second academic year.

Sample technique:

The sample included all female students from first and second academic year at faculty of nursing in Alexandria University during 1 year started from 9/2/2019 to 9 / 2 / 2020 .

Tools of Data Collection:

Tool I: Structured Interviewing Questionnaire: it was developed by the researcher based on literature review. It divided into three parts as follow:

Part I:

Assessed student's general

characteristics included in the study as Personal data of the study sample: such as age, level of education, marital status, level of mother's education and student's mother occupation.

- Assess pervious obstetrical and gynecological history.

Part II: HPV Knowledge Questionnaire

It was prepared by the researcher after an extensive reviewing of the related literature to assess students' knowledge regarding genital Human papilloma virus infection and its vaccination (from question No.15 to 44) that included the following:(definition, methods of transmission, Risk factors of Human papilloma virus, methods of prevention, complications of it and routine examination, the vaccine and doses of vaccine)

Scoring System for knowledge:

The female student's knowledge would be checked with a model key answer Zero grade would be given to uncorrected answer and one grade would be given to corrected answer. Accordingly the female students total knowledge will be categorized into either satisfactory level of knowledge (>60%), and unsatisfactory knowledge (<60%).

Tool II: Attitude of Females student's towards human papilloma virus infection pre and follow up 6 months using guideline.

It was developed by the researcher depending on the literature review (McRee et al, 2010), and based on a three-point Likert scale“ It includes 13 statements, level of attitude was assigned to each answer representing Agree,

Uncertain, and disagree.

Scoring System:

The total score of attitude rating scale was 39 grade .each statement was assigned a score according to female students attitude, response were " agree", 'uncertain ", "disagree' 'and were scored 3, 2 and 1 respectively. The score of the items were summed-up and total divided by the number of the items, given a mean score for attitude .these score were converted into a percent score .the attitude was considered positive attitude if score $\geq 80\%$ (score more than 31.2 grade from 39), negative attitude if score $< 80\%$ (score less than 31.2 grade from 39).

Tool III: student's Satisfaction tool" adopted from (Bhamani and Hussain,2012), was designed by researcher to assessed student' satisfaction after using guidelines which involved **five statements**. Upon which students respond as satisfied, Unsatisfied and don't know

Supportive material (Arabic educational booklet): It was designed by the researcher based on literature review. It was designed in the form of handout (booklet) using simple Arabic language and different illustrative pictures in order to facilitate understanding its content, that includes (concept of Human papilloma virus, risk factors for HPV, signs and symptoms of genital Human papilloma virus Infection, complications of HPV, diagnostic and screening tests for early detection of cervical cancer, cervical cancer prevention, the importance of the screening and the vaccination.

Content validity and reliability:

The tools of data collections were developed by the researcher was reviewed for appropriateness of items and measuring the concepts through jury of three specialized. University Prof at faculty of nursing, Ain shams University to assure content of validity of the questionnaire then accordingly to their comments, modification were considered. On the other hand there were Reliability was done by Cronbach's Alpha coefficient test which $r=0.79$

Ethical consideration:

- The research approval was obtained from Scientific Research Ethical committee in Faculty of nursing at Ain Shams University before starting the study.

- The aim of the study was explained to each student before applying the tools to gain her confidence and trust.

- An oral consent was obtained from each student prior to participate in the study.

- Data was confidential and using coding system for it. The study did not cause any harmful effects on participating students. Each student has right to withdraw from the study at any time.

Operational design:

a) Preparatory phase:

Reviewing of the current local and international related literature using books, articles and scientific magazines will be done by the researcher to be acquainted with the problem and guided them in the process of tools' designing of data collection and designed an instructional supportive guideline.

Pilot study:

A pilot study was conducted for 10% from total number of sample to evaluate the simplicity and clarity of tools that was used in the study. It included from the sample and its result.

b) Implementation phase:

At the first the researcher was obtain on oral consent after explain aim of the study and explained how to fill the tools.

The researcher was attended the Previous mentioned study setting for five days per week (from 8 am to 2 pm).

The researcher was interviewed nearly 27 Female student's nurses /day according to sequence of their attendance in collage and explain the aim of the study to female students nurses (duration of each interview 20 min). The researcher was completed the tool by interviewing the students.

d) Follow-up:

Follow up for female students after receiving nursing guideline session to find out the effect of it after 6 month.

Administrative Design:

An official written approval letter clarifying the purpose of study was obtained from Dean of Faculty of Nursing Ain Shams University and Dean of Faculty of Nursing Alexandria University.

Statistical Design:

The appropriate statistical methods and tests will be used for analysis of results, presented in tables, figures and graphics as required.

Limitation of the study:

❖ A Supportive instructional guideline implementation was postponed from one to eight days due to midterm exams and an official holiday that are (25 April, 29 April, 1 may).

❖ Two students withdrawal from the study because transferred to another college.

Results

Table (1) demonstrate that, 57.5% of the studied students their age ranged between 19-20 years, the mean of age of them was 19.1 ± 1.3 year. . In relation to the academic year of the students under study , it was found that, 56.1% of them were at second year.

Table (2) This table (3) show that, 94.4% of the studied students were suffering from strong abdominal cramp. Also, 72.2% of the studied students didn't have symptoms of vaginal infections, 76.3% of them suffering from vaginal secretions. Moreover, 95.6% of the studied students didn't have redness or swelling of the external genitalia. Also, 99.3% of the studied students didn't have past history of cervical cancer.

Table (3) revealed that, there was a marked improvement in attitude about genital human papilloma virus infection of the studied students post implementation of nursing guidelines with highly statistically significant difference at ($P = < 0.01$) & ($P = < 0.05$) between pre and follow up implementation of nursing guidelines.

Table (4) demonstrated that, 80.6% & 80.2% of the studied students were satisfied a about learn new information about HPV and the guideline

simplified and clear respectively. Also, 74.4% of the studied students were satisfied about the training sessions help them to evaluate their information and attitudes

Table (5) showed that, there was statistically significant relation between total knowledge post nursing guidelines about genital Human papilloma virus infection of the studied nurses and their age and academic year at ($P = < 0.05$). While, there was statistically insignificant relation with their marital status at ($p = > 0.05$).

Table (6) revealed that, there was highly statistically significant relation between total attitude post nursing guidelines about genital Human papilloma virus infection of the studied nurses and their age at ($P = < 0.01$). Also, there was statistically significant relation with their academic year While, there was statistically insignificant relation with their marital Status at ($p = > 0.05$).

Results:**Table (1):** Number and Percentage Distribution of the studied students according to their General Characteristics. (N=273)

General Characteristics	No	%
Age (years)		
18-	116	16.1
19- 20	157	57.5
\bar{x} 19.1±1.3		
Residence		
Rural	200	73.3
Urban	73	26.7
Marital Status		
Single	253	92.7
Married	20	7.3
Academic year		
First year	120	43.9
Second year	153	56.1

Table (2): Gynecological history of the studied students (N=273)

Gynecological history regarding associated Problems	No	%
Suffering from symptoms during menstruation		
No	95	34.8
Yes (178) :		
Strong abdominal cramp	168	94.4
Bleeding during the course	10	5.6

• History of vaginal infections symptoms		
No	197	72.2
Yes (76):		
Abnormal Vaginal secretions	58	76.3
Itching	18	23.7
• Redness or swelling of the external genitalia		
Yes	12	4.4
No	261	95.6
• Family history of cervical cancer		
No	271	99.3
Yes : cervical cancer	2	0.7

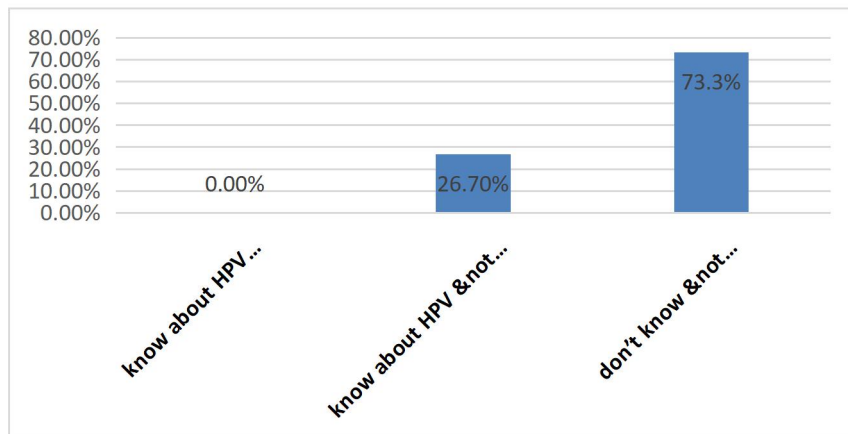


Figure (1): Percentage Distribution of studied Students according to assessment students' Knowing about genital Human papillomavirus infection and its vaccination pre-application nursing guideline (N=273)

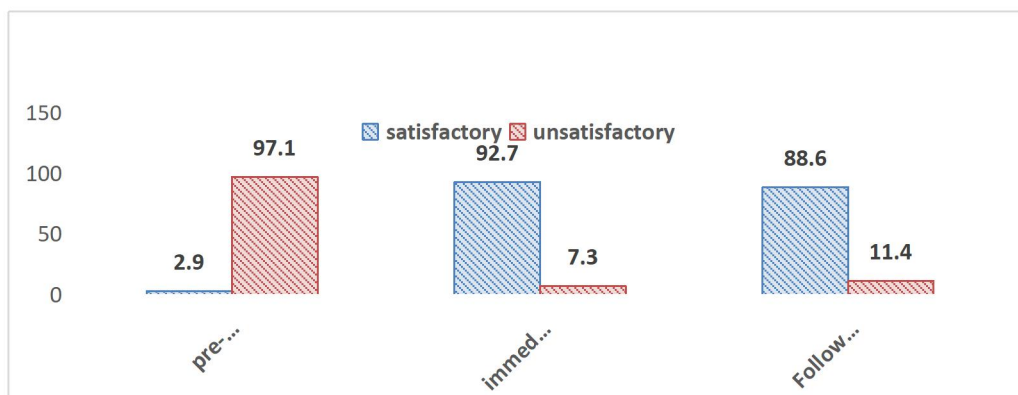


Figure (2): Percentage Distribution of the studied students according to their total knowledge score of pre, post and follow up after 6 months nursing guidelines about genital Human papilloma virus infection. (N=273)

Table (3): Percentage Distribution of the studied students according to their attitude about genital Human papilloma virus infection pre and follow up after 6 month nursing guidelines. (N=273)

Student attitude	Pre-Nursing guidelines			Follow up after 6 month			Friedman test	
	Agree %	Uncertain %	Disagree %	Agree %	Uncertain %	Disagree %	X2	P. value
Student believe that, HPV Education should be implemented at school & university	5.8	54.6	39.6	36.7	20.5	42.9	11.220	.001**
Student believe that HPV virus is serious and life threatening	7.9	43.6	38.5	21.2	18.3	60.4	9.610	.009**
Student believe that HPV can cause cervical cancer	2.9	57.9	39.2	65.9	22.7	11.4	6.674	.011*
Student believe that you are susceptible for the HPV infection and must get the vaccine	9.5	50.2	40.3	62.3	29.3	8.4	10.357	.007**
HPV vaccination is not necessary because a Pap test can be done to rule out cervical cancer	35.5	29.3	35.2	10.6	11	78.4	16.087	.000**
Women are worried to get a Pap test	24.2	38.8	37	71.1	15.4	13.6	9.081	.008**
HPV vaccination is important for cervical cancer prevention	23.8	37	39.2	67.8	18.3	13.9	19.110	.000**
Student believe that, vaccine may be seen as not a risky	25.5	37	35.5	66.3	17.6	16.1	17.044	.000**
Student believe that, HPV vaccination given will be impressed that have sexually active	26.1	53.8	21.1	15	23.8	61.2	11.999	.007**
Student worry about potential side effects from HPV vaccine	33	30.8	36.2	80.2	9.2	10.6	9.371	.007**
Student would recommend this vaccine for my female college friends	30.4	34.8	34.8	70.7	16.5	12.8	12.084	.004**
It is preferable to vaccinate both male & woman	26.1	39.6	34.3	80.6	11	8.4	17.056	.000**
Student are sure that the HPV vaccine is highly effective	39.9	24.9	35.2	80.2	8.4	11.4	6.517	.010*

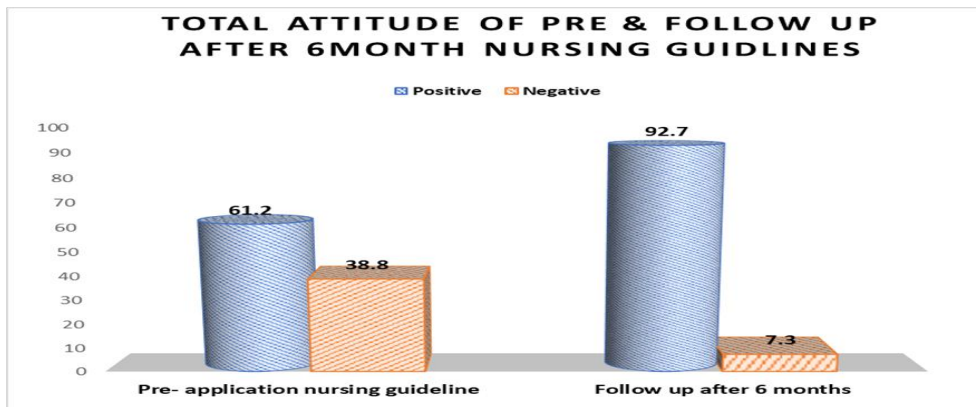


Figure (3): Number and Percentage Distribution of the studied students according to their total attitude of pre and follow up after 6 months nursing guideline about genital Human papilloma virus infection. (N=273)

Table (4): Number and Percentage Distribution of the studied students according to their satisfaction post Nursing guidelines about genital Human papilloma virus infection. (N=273)

Response	Post Nursing guidelines					
	Satisfied		Unsatisfied		Don't know	
	No	%	No	%	No	%
learn new information about HPV	220	80.6	42	15.4	11	4
The guideline simplified and clear	219	80.2	45	16.5	9	3.3
The sessions cover the content of the guideline	183	67	80	29.3	10	3.7
The student would recommend re-use this guideline in other place in the future.	172	63	83	30.4	18	6.6
The Nursing guideline help the students to develop their information and attitudes about HPV	203	74.4	61	22.3	9	3.3

Table (5): Relation between demographic characteristics of the studied students and total knowledge post nursing guidelines about genital Human papilloma virus infection. (N=273)

Demographic characteristics		Total knowledge post Nursing guidelines				Chi-square	
		Satisfactory		Unsatisfactory		X2	P-value
		N	%	N	%		
Age	18 -	107	39.2	9	3.3	6.992	.030*
	19-20	146	53.5	11	4		
Marital Status	Single	236	86.5	17	6.2	1.872	.171
	Married	17	6.2	3	1.1		
Academic year	First year	108	39.6	12	4.4	4.672	.019*
	Second year	145	53.1	8	2.9		
Residence	Rural	193	76.3	7	35	9.331	.009**
	Urban	60	23.7	13	65		

Table (6): Relation between demographic characteristics of the studied students and total attitude 6 months after nursing guidelines about genital Human papilloma virus infection. (N=273).

Demographic characteristics		Total attitude 6 months after Nursing guidelines				Chi-square	
		Positive 260		Negative 13		X2	P-value
		N	%	N	%		
Age	18-	111	42.7	5	38.5	14.926	.001**
	19- 20	149	57.3	8	61.5		
Marital Status	Single	240	87.9	13	4.8	1.079	.299
	Married	20	7.3	0	0.0		
Academic year	First year	115	44.2	5	38.5	14.465	.002*
	Second year	145	55.8	8	61.5		
Residence	Rural	192	73.8	9	69.2	2.365	.075
	Urban	69	16.2	4	30.8		

Discussion:

Human Papillomavirus (HPV) is the etiological agent of the most common viral infection of the genital tract worldwide. It has been identified as the cause of approximately 5% of all cancers worldwide. Approximately 90% of cervical cancers occur in low-income and middle-income countries that lack organized screening and HPV vaccination programmes. The new cases of cervical cancer, an estimated 569 847 were diagnosed and 311 365 deaths occurred worldwide, due to this malignancy, although incidence and mortality vary widely with geographic location (Cinar, et al., 2019).

The present study was aimed to evaluate the Effect of nursing guideline about genital Human papilloma virus infection on knowledge and attitude of female university students'. This aim was significantly approved within the framework of the present study's research hypothesis which was university female students who receive the nursing guideline will have high knowledge and positive attitude regarding genital Human papilloma virus infection. The total sample size was two hundred seventy three (273) female students of first and second academic year. Let's discuss the most important results of this study.

In relation to the general characteristics of the studied students, the current finding revealed that more than half of them were between 19 to 20 years old. Concerning residence, nearly three – quadrant of the studied students from rural area .While, the majority of studied students were single. This finding agree with (Amukugo et al., 2018) who conducted a study on knowledge, attitude and practices regarding human papilloma virus among female students at the

University of Namibia reported that the majority of participants were nursing students, below 25 years and, single.

Concerning gynecological history of the studied students, the current study showed that more than two third of studied students have symptoms during menstruation and the most dominant symptoms were strong abdominal cramp. While more than two third of sample didn't have symptoms of vaginal infection. Moreover, the present study was disagreed with (Frank and Ehiemere, 2017), who carried out study on Factors Influencing Uptake of Cervical Cancer Screening among Female Health Workers in University of Port Harcourt Teaching Hospital, Rivers State who reported that more than one-tenth had a family history of cervical cancer among young women.

This might be because the lack of research studies and health education program introduced to these groups in these areas and the higher incidence rate in Port Harcourt.

The present study finding reported nearly three-quadrants of sample didn't know and not vaccinate. The present finding was supported by(Altamimi T , 2020), who conducted a study on Human papillomavirus and its vaccination: Knowledge and attitudes among female university students in Saudi Arabia, who reported The majority of students did not know about HPV and its vaccine . This similarity may be due to similar their sample and community.

In relation to total knowledge score between pre-guideline, immediate post –guideline and follow up after 6 months The present study, it was observed that there was a significant

difference in total knowledge score between pre-guideline, immediate post – guideline and follow up after 6 months surmised that nursing guideline efforts were appropriate for the target audience. Furthermore, The present study findings revealed that a highly significant improvement in students' total attitude scores about genital Human papilloma virus infection after 6 months guideline application compare to pre –application, this improvement of students' attitude could be explained by nursing guideline that play a major role in health education, promotion and provide a comprehensive, important &complete information about HPV infection. Similar findings were obtained in a study of Human papillomavirus knowledge, attitudes, and vaccination among Chinese college students in the United States (**Tung et al, 2019**), who found that utilized guideline was a highly significant improved student's attitude post application nursing guideline. Moreover, these results are in agreement with a study related to Awareness, knowledge, attitude and practices regarding human papilloma virus among female students at the University of Namibia (**Amukugo, 2018**), who stated that there was an improvement in student's total attitude scores after conduction of nursing guideline and positive attitude towards HPV.

The implemented guideline contributes to the development and updating students' knowledge regarding genital Human papilloma virus infection and enhance students' attitude. Moreover, the majority among studied sample was suggested to replicate guideline to another students in another setting in the future to enhance students' knowledge and attitude and the majority of students were highly satisfied with implementation guideline.

Concerning the Relation between general characteristics of the studied students and total knowledge score, the present study findings revealed that, there was significant relations between total knowledge score and student's general characteristics (age and academic year)post nursing guidelines implementation. This refer to the students age increased, the chance of hearing &known about HPV also increased. Furthermore, there is a highly significant relations between total knowledge post nursing guidelines and Residence. The present Study finding was agreed with (**Ping et al ,2018**) who found that there was a highly significant difference post application nursing guideline and significant association with students (age, Academic year and Residence) with their knowledge level about genital Human papilloma virus infection .

The present study revealed that there were highly statistically significant relation between general students characteristics and total attitude score after nursing guidelines about genital Human papilloma virus infection, these findings supported by (**Tung et al, 2019**) who found that there was a highly significant difference post application nursing guideline between general students characteristics with their attitude . Also the results of the current study indicated that there was a positive statistically significant correlation between total knowledge score of the studied students and their total attitude score post nursing guideline. This might be because of nursing guideline, as it provided the students with valuable information that can affect their health attitude and preventive behaviors.

Lastly the present study findings highlight attention toward the effectiveness and practicability of the

implemented the present study guideline to student's nurses as a method for continuous updating and improved their knowledge and attitude to promote and improve their competences.

Conclusion:

In conclusion, the present study findings were concluded that students' knowledge and attitude regarding genital HPV infection were highly significant improved after immediate and follow-up after 6 months implementation of nursing guideline.

Also, there was a highly positive association between studied students' total knowledge score, total attitude score and satisfaction at post application phase. Moreover, the present study findings showed that students' response toward genital HPV infection after 6 months from using nursing guideline were significantly improved. So the present study hypothesis was significantly approved with the aim of the present study.

Recommendation

In the light of the study results, the study recommended the following:

- There is a need for awareness campaigns to improve the poor knowledge of female university students in order to change behavior and reduce risk of HPV infection so that they will take the HPV vaccine. As a step towards prevention of cervical cancer.

- Human papilloma virus infection and vaccination programs should be integrate among university student for the prevention of cervical cancer and to reduce mortality.

- Further researches are needed on a wide scale to assess What factors that affects the knowledge so that, not only young women, but all adolescents students will get inspired to prevent risk of HPV infection and use vaccination.

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