Effect of Nursing Guideline about Genital Human Papilloma Virus Infection on Knowledge and attitude of Female University Students

Naglaa Hassan Abuel-Zahab[1], Mona Ahmed el-Sheikh[2], Hanan Abdel-Fattah[2], Nevin Samir Metwally[2]

[1]Clinical Instructor, M.Sc. of Maternity and Gynecological Health Nursing-Faculty of Nursing Alexandria University, [2]Prof. of Maternal and Gynecological Nursing-Faculty of Nursing Ain Shams University

Abstract

Human papillomavirus (HPV) is a DNA tumor virus that is the primary cause of sexually transmitted infections (STIs). The present study aimed to to evaluate the Effect of nursing guideline about genital Human papilloma virus infection on Knowledge and attitudeof 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 andattitude after implementation of guideline.

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.

Keywords: *Human papillomavirus-Nursing guideline–knowledge-attitude.*

Introduction

Human papillomaviruses (HPV) are the most common sexually transmitted infection[(1)]. 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[(10)] Human papilloma virus infection cause approximately 5% of all cervical cancers worldwide. 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[(8)].

Human papillomavirus HPV genotypes categorized into twomain 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[(6)]. The secondone is High-risk type whichincluding 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 asprobably or possiblecarcinogenic are rarely found in large series of cancers or are associated with additional factors, so their oncogenicity remains to be clarified[(5)].

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)[15]. 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[12].

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 [11]. The successful management of HPV infectionfocused on medical therapy and surgical therapy[2]. 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[9]. 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[3].

Aim of the Study: was to evaluate the Effect of nursing guideline about genital Human papilloma virus infection on Knowledge and attitudeof female university students.

Research Hypothesis: University Female Students who receive the nursing guideline will have high Knowledge and attitude regarding genital Human papilloma virus infection.

Methodology

A. Research design: Quasi-experimental design was used in this study

B. 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

- 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 thefirst and the second academic year.

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

Tools of Data Collection:

Tool I: An Arabic structured Interviewing Questionnaire:

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.
- Assess pervious obstetrical and gynecological history.
- Part II:HPVKnowledge Questionnaire
- It was developed by the researcher depending on the literature review . This part was used to assess students' knowledge regarding genital Human papilloma virus infection and its vaccination that included the following:(definition, method of transmission, Risk factors of Human papilloma virus, method 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: Likert Scale: It was developed by the researcher depending on the literature reviewto evaluate attitude of Females student's towards human papilloma virus infection before and after using guideline., 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 ≥ 80% (score more than 31.2 grade from 39), negative attitude if score > 80% (score less than 31.2 grade from 39).

Supportive material: Nursing guidelines was designed by researcher based on the identified need post the assessment of knowledge and attitude to Increasing perception of female students about genital Human papilloma virus Infection and 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.

II- Field work: Would be included preparatory phase, implementation phase, Evaluation phase and follow up phase.

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.

- **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.

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.

b) Implementation phase: At the first the researcher was obtainon 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 55 female students 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.
- The assessment phase was started using the data collection tools for 6 months which comply with the nursing guideline to assess female students' knowledge and attitude related to Human papilloma virus infection
- After the completion of assessment, Nursing guideline was designed and implemented about genital Human papilloma virus infection on perception of female university students' during five sessions, each session ranged from 20 to 30 mints .

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

IV- Data management and analysis: The appropriate statistical method and tests will be used for analysis of results, presented in tables, figures and graphics as required.

Results

Table (1): Number and Percentage Distribution of the studiedstudents 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 historyof 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

Table (3): Number and Percentage Distribution of the studied students according to their knowledge about the important of early detection & screening tests of genital human papilloma virus infection (HPV) pre, post and follow up application nursing guidelines. (N=273).

Students knowledge related to HPV	Pre- application Nursing guidelines		Immediate post-application Nursing guidelines		Follow up after 6 month		Friedman test	
	Correct	Incorrect & don't know	Correct	Incorrect & don't know	Correct	Incorrect & don't know	X^2	P. value
	%	%	%	%	%	%		
Is early detection of HPV accelerate the process of recovery and reduce the complication of the disease.	48.7	51.3	91.6	8.4	85.3	14.7	10.566	.006**
Diagnostic tests for HPV infection	0.7	99.3	74.7	25.3	73.3	26.7	9.301	.008**
Suitable age for women to start a Pap smear test	4	96	88.3	11.7	81.3	18.7	12.021	.004**
Can HPV infection cause cervical cancer.	1.8	98.2	70.7	29.3	65.9	34.1	7.379	.009**
HPV test used to indicate human papillomavirus vaccine is needed	1.8	98.2	50.2	49.8	54.9	45.1	8.807	.008**
Can be HPV infected both men & women	7	93	83.9	16.1	76.9	23.1	11.396	.003**

Table (3): Number and Percentage Distribution of the studied students according to their knowledge about vaccination for genital human papilloma virus infection pre, post and follow up nursing guidelines. (N=273)

Students knowledge related to HPV	Pre- application Nursing guidelines		* Immediate Post application Nursing guidelines		Follow up after 6 months		Friedman test	
	Correct	Incorrect & don't know	Correct	Incorrect & don't know	Correct	Incorrect & don't know	X^2	p. value
	%	%	%	%	%	%		
Suitable age for female against HPV vaccination	3.7	96.3	69.6	30.4	73.3	26.7	11.300	.004**
Vaccination take only for protection form HPV	3.7	96.3	83.5	16.5	86.1	13.9	9.556	.007**
How many Doses for used vaccination for protection HPV infection	4	96	91.6	8.4	91.6	8.4	16.584	.000**
Sites of injection for HPV vaccine	12.1	87.9	88.3	11.7	86.8	13.2	10.664	.005**
Side effects of vaccination	3.3	96.7	36.6	63.4	44	56	13.784	.002**
Barrier before vaccination	2.9	97.1	51.3	48.7	53.1	46.9	8.145.	.009**

Table (4): 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	X^2	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 attitude	Pre-Nursing guidelines			Follow up after 6 month			Friedman test	
	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	X^2	P. value
	%	%	%	%	%	%		
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**
Studentbelieve that, vaccine may be seen as not a risky	25.5	37	35.5	66.3	17.6	16.1	17.044	.000**
Studentbelieve 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**
Studentare sure that the HPV vaccine is highly effective	39.9	24.9	35.2	80.2	8.4	11.4	6.517	.010*

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. Moreover, 71.8% of the studied students their family income were not enough.

Table (2) illustrated that 60% of students have obstetric history and 41.7% of them delivered . In addition to, number of abortion among studied students represent 58.3%. Concerning mode of delivery revealed that 40.0% & 60.0% have normal Vaginal Delivery and Lower segment Cesarean Section respectively.

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

Cont.Table (3): showed that, there was a marked improvement in knowledge about vaccination for genital human papilloma virus infection of the studied students post implementation of nursing guidelines with statistically significant difference at (P= < 0.05) between pre, post and follow up implementation of nursing guidelines.

Table (4) 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, post and follow up implementation of nursing guidelines.

Discussion

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 [(4)] 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 [7], 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 .

In relation to Knowledge about genital Human papilloma virus infection, the present findings revealed that,the majority of the students had poor knowledge about genital human papilloma virus infection (HPV), the important of early detection, screening tests and vaccination for genital human papilloma virusinfection before application nursing guideline, which improved drastically immediately post application nursing guideline. This improvement of knowledge might be the effect of the nursing guideline on their knowledge. The findings of the current study are similar to the [13], who had done a study in North Carolina about an educational intervention to improve human papilloma virus (HPV) and cervical cancer knowledge among African American college students, they found that, there was a highly significant improvement of students' knowledge because students didn't have knowledge pre intervention compare post intervention, the majority of students reported knowledge of the HPV vaccinewith the intervention & students' knowledge score, correct response rates significantly increased with the intervention.

The present study findings revealed that a highly significant improvement in students' totalattitude 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[14],who found thatutilized 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 [4], who stated that there was an improvement in student's total attitude scores after conduction of nursing guideline and positive attitude towards HPV.

Finally 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, based on students' knowledge and attitude regarding genital HPV infection and its vaccine, the majority of students not knowing and have negative attitude before application nursing guideline. While immediate and follow-up after 6 months application of nursing guideline, there were highly significant improved in knowledge and positive attitude. So the present study hypothesis was significantly approved with the aim of the present study.

Recommendations:

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

- There is a need for raise on awareness campaigns to improve the poor knowledge of female university students and reverse the common attitude, adolescents should be provided with statistics showing how prevalent is HPV at an early age, 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.
- Curriculum development and integrate the topic of Human papilloma virus infection and vaccination to increase students understanding about HPV and to promote positive attitudes towards preventive health behaviors.
- 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 preventrisk of HPV infection and use vaccination.

Ethical Clearance: Taken fromthe Scientific Research Committee at the Faculty of Nursing, Ain Shams University.

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Conflict of Interest: Nil

References

1. Ahmed S, Esa A, El Zayat O. Health Belief Model-based educational program about cervical cancer prevention on women knowledge and beliefs. Egyption nursing journal. 2018;15(1):p39-49.
2. Alessandro P, Arduino B, Saccone G, Venturella R, Cello A and Zullo F. Loop Electrosurgical Excision Procedure versus Cryotherapy in the Treatment of Cervical Intraepithelial Neoplasia: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Gynecology and Minimally Invasive Therapy. 2018; 7 (2018): 145-151
3. Altamimi T. Human papillomavirus and its vaccination: Knowledge and attitudes among female university students in Saudi Arabia. Journal of Family Medicine and Primary Care. 2020; 9(4): P: 1849-1855
4. Amukugo H, Rungayi B and Karera A,. Awareness, knowledge, attitude and practices regarding human papilloma virus among female students at the University of Namibia, International Journal of Healthcare. 2018;4(2),:51-57
5. Bravo I and Sanchez M. Papillomaviruses: Viral evolution, cancer and evolutionary medicine, Evolution, Medicine, and Public Health. 2015. (1):32-51
6. Chabeda A, Yanez R, Lamprecht R, Meyers A, Rybicki E and Hitzeroth I. Therapeutic vaccines for high-risk HPV-associated diseases.Papillomavirus Research. 2018. 5(2018): 46-58
7. Frank MD, Ehiemere I. Factors influencing uptake of cervical cancer screening among female health workers in University of Port Harcourt Teaching Hospital, Rivers State.Journal of Health Science Research. 2017;2:1-9.
8. Laurent J, Luckett R and Feldman S. HPV vaccination and the effects on rates of HPV-related cancers. Journal of Current Problems in Cancer. 2018;42(5):493-506
9. Nartey Y, Hill P, Antwi K, Asmah R, Nyarko K, Yarney J, Damale N and Cox B . Recommendations for cervical cancer prevention and control in Ghana: public education and human papillomavirus vaccination. Ghana Med J. 2018; 52(2): 94–102.
10. National Cancer Institute. Available at: 2017 https://seer.cancer.gov/statfacts/html/cervix.html.
11. Parmin N, Hashim U, Gopinath S,Nadzirah S,Rejali Z, Afzan A,Uda M..Humanpapilloma virus E6 biosensing:current progression on early detection strategies for cervical cancer . International Journal of Biological Macromolecules. 2019; 126(2019):877-890
12. Shimizu A, Kuriyama Y, Hasegawa M, Tamura A and Ishikawa O. Nail Squamous Cell Carcinoma: A Hidden High-risk HPV Reservoir for Sexually Transmitted Infections.Journal of the American Academy of Dermatology. 2019; 81(6):1358-1370
13. Staples J, Wong M, Rimel B. An educational intervention to improve human papilloma virus (HPV) and cervical cancer knowledge among African American college students.Gynecologic Oncologyjournal. 2018; 149(1):101-105
14. Tung W, Lu M, Qiu X and Ervin S, 2019. Human papillomavirus knowledge, attitudes, and vaccination among Chinese college students in the United States. Journal of vaccine. 2019; 37(24): 3199-3204
15. Zitkute V, Bumbuliene Z .Risk Factors Affecting HPV Infection, Persistence and Lesion Progression in Women and Men. Clin Res Infect Dis.2016; 3(2): 1026.