

# Knowledge and Attitude Regarding Cervical Cancer Vaccination among Female Undergraduates at Kampala International University-Western Campus

**Diana Dawa**

**Department of Medicine and Dentistry, Kampala International University, Uganda.**

## ABSTRACT

Globally, cervical cancer is the fourth most frequent cancer in women and in Uganda, cervical cancer is the leading cause of cancer deaths in women. A total of 150 respondents were recruited to complete a pretested self-administered questionnaire through consecutive sampling. Collected data was entered and analyzed in SPSS version 25 software. Chi square was used to get the significant factors at  $P \leq 0.05$ . 40.6% of the respondents exhibited good knowledge about HPV vaccination while the rest 59.4% exhibited poor knowledge. Seventy percent (70%) of the respondents exhibited a positive attitude while 30% exhibited a negative attitude. The uptake of HPV vaccine was very low (10%) and it was associated with urban residence ( $X^2=17.65$ ,  $P=0.001$ ), being a medical student ( $X^2=6.48$ ,  $P=0.011$ ), 5<sup>th</sup> year of study and awareness about HPV ( $X^2=7.14$ ,  $P=0.006$ ). The present study found that the general knowledge about HPV infection and vaccination was low. Although most of the respondents had a positive attitude, actual uptake was low. Factors associated with HPV vaccine uptake were; urban residence, being a medical student, 5<sup>th</sup> year of study and awareness about HPVs

**Keywords:** knowledge, attitude, cervical cancer vaccination, female

## INTRODUCTION

Globally, it is reported that cervical cancer is the fourth most frequent cancer in women with an estimated 570,000 new cases in 2018 representing 6.6% of all female cancers [1]. Although approximately 90% of deaths from cervical cancer occurred in low- and middle-income countries, the mortality varies by a factor of 18 across the world [2], with rates ranging from less than 2 per 100,000 in Western Asia, Western Europe and Australia/New Zealand to more than 20 per 100,000 in Melanesia (20.6), Middle Africa (22.2) and Eastern (27.6) Africa [3]. In Uganda, cervical cancer is the leading cause of cancer deaths in women. The Uganda Ministry of Health report has shown that in 2018, 48/100,000 women in Uganda had cervical cancer [4]. This is among the highest prevalence rates in the world. The Uganda cancer institute (UCI) reports that majority of women (over 80%) are diagnosed with cervical cancer at a late stage when no cure can be achieved [5]. However, there are many more women who die of it but are not documented. Recently, increasing evidence has shown a significant rise in cervical cancer incidence among Ugandan women aged below 35 years. Nearly a third of new cases are now found in women aged 35 and younger [6]. The introduction of the human papillomavirus (HPV) vaccine in many countries has resulted in major decreases in the specific HPV infection rates. More than 10 years after the licensure of the first HPV vaccines, 99 countries and territories worldwide have introduced HPV vaccination programs [7]. A recently published systematic review and meta-analysis that included data from 60 million individuals and up to eight years of post-vaccination follow-up showed compelling evidence of the substantial impact of HPV vaccination programs on HPV infections and the incidence of associated diseases [8]. This encouraging finding suggests promising future prospects of HPV

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vaccination reducing cervical cancer incidence and mortality. It is also anticipated that the HPV vaccine should benefit Uganda, especially as the country is facing challenges regarding cervical screening. Several studies have examined uptake of HPV vaccines among Ugandan university female students [9-10] and it has been found to be low [11]. Lack of knowledge and negative attitude have been reported to be among the factors responsible for this low uptake [12]. It is well established that university-aged students represent an important catch-up population of young adult women for HPV vaccination. In addition, the university environment presents new opportunities for exposure to STIs. In Uganda, and indeed across the world, evidence is mounting that STIs are on the rise among university students [13-14].

#### **Study design**

This study was cross-sectional and descriptive in design.

#### **Study Area**

The study was done in Kampala International University Western campus which is one of the private universities in Uganda.

#### **Study population**

The study involved undergraduate female students at KIU-WC.

#### **Inclusion criteria**

Female undergraduate medical students who consented for the study.

#### **Exclusion criteria**

Those who were not willing to participate in the study with no consent signed. Non-medical female students

#### **Sample size determination**

This was determined by using Kish's formula which states that,

$$N = \frac{Z^2(p(1-p))}{\epsilon^2}$$

Where;

N = the required sample size

p = Proportion of students with knowledge about vaccination against cervical cancer. A recent study in Nigeria reported 11%. So, p will be 0.11.

$\epsilon$  = margin of error on p (set at 5%)

z = standard normal deviate corresponding to 95% confidence level (=1.96)

$$N = \frac{1.96^2(0.11(1-0.11))}{0.05^2} = 150.$$

#### **Sampling Procedures**

The study used consecutive sampling where each student who met inclusion criteria and agreed to participate were enrolled until the required number was reached.

#### **Data collection methods and management**

The questionnaire consisted of sections that assessed demographic characteristics, knowledge, attitude toward HPV vaccination and vaccination status.

#### **Data Analysis**

The data entry and analysis were done using SPSS version 25 software. In the analysis, the descriptive statistics with appropriate frequencies were developed and descriptive results were presented and grouped under socio-demographic characteristics, knowledge and attitude. The data were presented in tables and charts.

#### **Ethical consideration**

Ethical approval was sought from dean faculty of clinical medicine and dentistry in form of introduction letter after approval of the proposal. Permission to collect data was sought from dean student affairs. A written and verbal consent were obtained from the respondents before they participated in the study.

#### **RESULTS**

Results from the study show that the participants' age ranged from 19 to 30 years, with a mean of  $24.1 \pm 2.5$  (std. deviation) years. Majority of the participants were medical students 108 (72%), were from rural background 102 (68%) and were in 5<sup>th</sup> year of the study 81 (54%). More than half of the respondents 90 (60%) had history of sexual contact. Table 1.

**Table 1: Socio-demographic characteristics of respondents**

Variables	Frequency	Percent
<b>Age (years)</b>		
<20	21	14.0
20-29	126	84.0
≥30	3	2.0
<b>Family residence</b>		
Rural	102	68.0
Urban	48	32.0
<b>Course category</b>		
Medical	108	72.0
Non medical	42	28.0
<b>Year of study</b>		
1-2	30	20.0
3-4	39	26.0
5	81	54.0
<b>Sexual history</b>		
No	60	40.0
Yes	90	60.0

Respondents were asked about their HPV vaccination status and results were as shown in figure 2 below. It is shown the very few 15 (10%) had already been vaccinated against HPV while the majority 135 (90%) had not been vaccinated.

Figure 1: HPV vaccination uptake

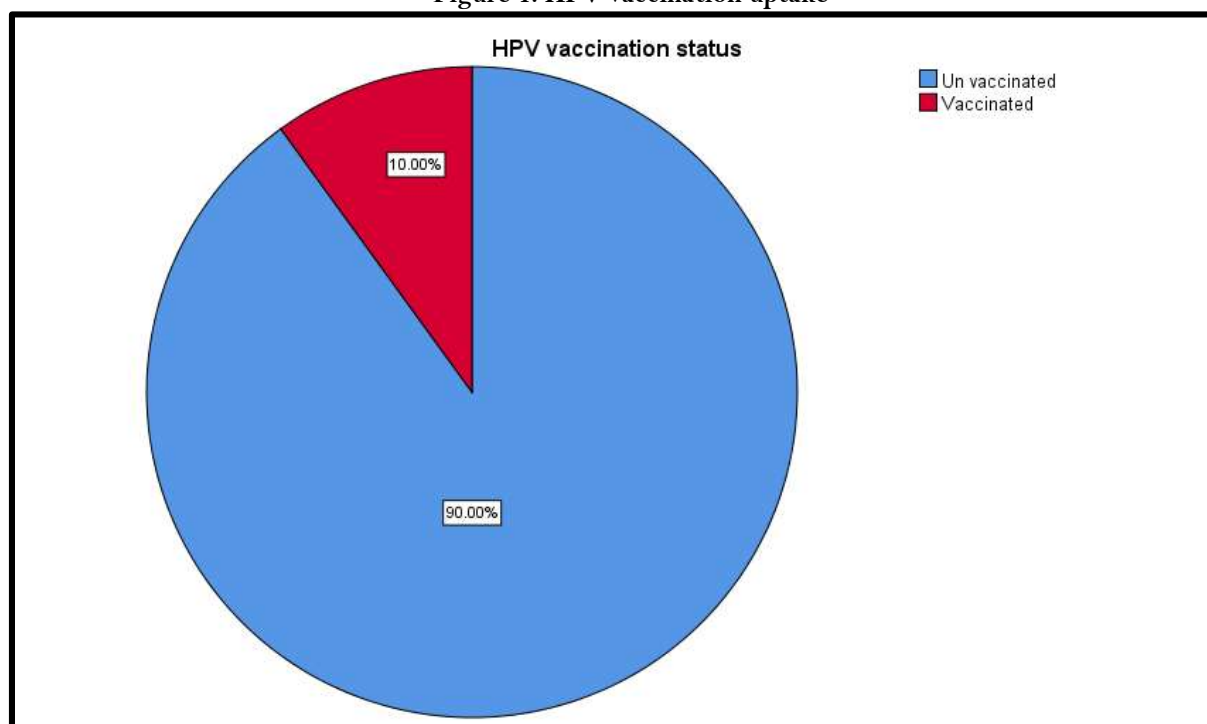


Table 2 below shows details about the knowledge of the respondents about HPV vaccination. The knowledge level was scored on a scale of 0 to 4 points. The mean score was 2.5 and a median score was 3. Scores of 3 and above were indicative of good knowledge while scores below 3 were tabulated as poor knowledge. Thus, 40.6% of the respondents exhibited good knowledge about HPV vaccination while the rest 59.4% exhibited poor knowledge. Table 2.

**Table 2: Knowledge regarding HPV vaccination**

Variables	Frequency	Percent
<b>It is best to receive vaccine before first intercourse</b>		
Strongly agree	48	32.0
Agree	42	28.0
Neither Agree nor Disagree	36	24.0
Disagree	18	12.0
Strongly disagree	6	4.0
<b>After HPV vaccine there is no need to screen to Ca cervix</b>		
Strongly agree	12	8.0
Agree	42	28.0
Neither Agree nor Disagree	42	28.0
Disagree	18	12.0
Strongly disagree	36	24.0
<b>You can get HPV infection after receiving the vaccine</b>		
Strongly agree	30	20.0
Agree	60	40.0
Neither Agree nor Disagree	30	20.0
Disagree	15	10.0
Strongly disagree	15	10.0
<b>HPV vaccine can prevent all types of HPV infection</b>		
Strongly agree	45	30.0
Agree	45	30.0
Neither Agree nor Disagree	30	20.0
Disagree	15	10.0
Strongly disagree	15	10.0

The attitude regarding HPV vaccination was analyzed by using the responses to four questions measured on a 4-point Likert scale, thus a scale of 4 to 16 scale was used. The mean value was 10.8 and a median score of 11. A score of 11 and above was considered as positive attitude and a score of less than 11 was tabulated as negative attitude. Seventy percent (70%) of the respondents exhibited a positive attitude while 30% exhibited a negative attitude. Table 3.

**Table 3: Attitudes toward HPV vaccination**

Variables	Frequency	Percent
<b>HPV vaccines are effective in preventing ca cervix</b>		
Strongly agree	60	40.0
Agree	45	30.0
Neither Agree nor Disagree	15	10.0
Disagree	15	10.0
Strongly disagree	15	10.0
<b>HPV vaccines are very expensive so I can't afford them</b>		
Strongly agree	15	10.0
Agree	60	40.0
Neither Agree nor Disagree	45	30.0
Disagree	15	10.0
Strongly disagree	15	10.0
<b>I don't like HPV vaccines because their side effects</b>		
Strongly agree	15	10.0
Agree	30	20.0
Neither Agree nor Disagree	60	40.0
Disagree	30	20.0
Strongly disagree	15	10.0
<b>HPV vaccine is only for sexually active women</b>		
Strongly agree	6	4.0
Agree	12	8.0
Neither Agree nor Disagree	27	18.0
Disagree	66	44.0
Strongly disagree	39	26.0

Findings from the study show that HPV vaccination uptake was associated with urban residence ( $X^2=17.65$ ,  $P=0.001$ ), being a medical student ( $X^2=6.48$ ,  $P=0.011$ ), 5<sup>th</sup> year of study, awareness about HPV ( $X^2=7.14$ ,  $P=0.006$ ). Table 4. All these findings are statistically significant since  $p<0.05$ .

**Table 4: Predictors of HPV vaccine uptake**

Variables	HPV vaccination status		Chi square (X <sup>2</sup> )	P-value
	Un vaccinated	Vaccinated		
<b>Age group</b>			3.18	0.204
<20	21 (15.6%)	0 (0.0%)		
20-29	111 (82.2%)	15 (100%)		
≥30	3 (2.2%)	0 (0.0%)		
<b>Family residence</b>			17.65	0.001
Rural	99 (73.3%)	3 (20.0%)		
Urban	36 (26.7%)	12 (80.0%)		
<b>Course category</b>			6.48	0.011
Medical	93 (68.9%)	15 (100%)		
Non medical	42 (31.1%)	0 (0.0%)		
<b>Year of study</b>			5.65	0.059
1-2	30 (22.2%)	0 (0.0%)		
3-4	36 (26.7%)	3 (20.0%)		
5	69 (51.1%)	12 (80.0%)		
<b>Awareness of HPV vaccine</b>			7.14	0.006
Not aware	45 (33.3%)	0 (0.0%)		
Aware	90 (66.7%)	15 (100.0%)		
<b>Sexual history</b>			2.78	0.163
No	57 (42.2%)	3 (20.0%)		
Yes	78 (57.8%)	12 (80.0%)		

## DISCUSSION

This study found that most students (70%) had ever heard about HPV vaccine. However, the analysis of general knowledge found that more than half of the respondents (59.4%) had poor knowledge. This low knowledge regarding HPV vaccination in present study can influence negatively the attitude and the practices for cervical cancer prevention especially vaccination. The above findings concur with those of other previous studies. For instance, in a Vietnam study, it was discovered that only 43.2% of college students had sufficient knowledge about HPV vaccine [15]. Similarly, a study of level and factors associated with uptake of human papillomavirus infection vaccine among female adolescents in Lira District, Uganda found that most of the respondents (69.8%) had poor to moderate knowledge about the vaccine [12]. Other similar studies in Uganda have reflected inadequate knowledge about Cervical cancer among the population. In the present study, seventy percent (70%) of the respondents exhibited a positive attitude while 30% exhibited a negative attitude toward HPV vaccination. Positive attitude toward HPV vaccination was also reported by studies in Ghana [16], Nigeria [17] and Malaysia [18] which found 59%, 88.9%, and 89.6% respectively. However, a similar study in India found disagreeing results where by majority of the students surveyed (66.7%) had negative attitude toward HPV vaccine [19, 20]. The disagreement in the findings could have brought by the difference in demographic characteristics and years in which the study was done. Furthermore, in this study, it was discovered that students who were in higher classes (5<sup>th</sup> year) had 80% chance of being vaccinated. It is hoped that higher class of study is linked to better understanding and knowledge which is reflected in the results. This concurs with findings of a study in Bamako, Mali where higher education was associated with uptake of HPV vaccine [21].

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In addition, results from the study show that all the respondents who had been vaccinated (100%) were medical students. This may be contributed to the fact that medical students do study about the topic gives them extra knowledge about the advantages of vaccination. Similar findings were reported in China [22, 23].

### CONCLUSION

The knowledge of female undergraduates at Kampala International University-Western Campus about HPV infection and vaccination was found to be poor. The majority of the students had a positive attitude towards HPV vaccine. The uptake of HPV vaccination was low and was associated with urban residence, being a medical student, 5<sup>th</sup> year of study and awareness about HPV.

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**Diana Dawa (2023). Knowledge and Attitude Regarding Cervical Cancer Vaccination among Female Undergraduates at Kampala International University-Western Campus. *EURASIAN EXPERIMENTAL JOURNAL OF BIOLOGICAL SCIENCES*, 4(1):116-124**