

**NEWPORT INTERNATIONAL JOURNAL OF
RESEARCH IN MEDICAL SCIENCES (NIJRMS)
Volume 3 Issue 3 2023**

**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 ($X^2=6.48$, $P=0.011$), 5th 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, 5th year of study and awareness about HPV.

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

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

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 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.

ϵ = margin of error on p (set at 5%)

z = standard normal level 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 ± 2.5 (std. deviation) years. Majority of the participants were medical students 108 (72%), were from rural background 102 (68%) and were in 5th year of the study 81 (54%). More than half of the respondents 90 (60%) had history of sexual contact. Table 1.

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

Table 1: Socio-demographic characteristics of respondents

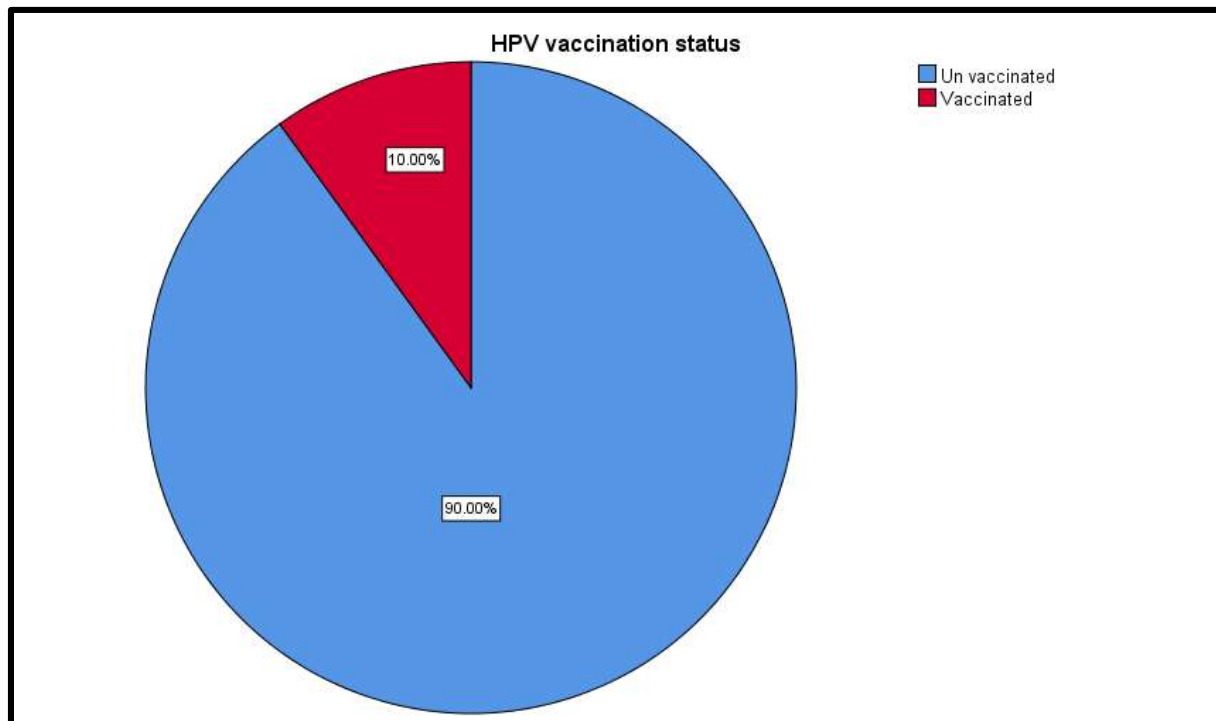
Variables	Frequency	Percent
Age (years)		
<20	21	14.0
20-20	126	84.0
≥30	3	2.0
Family residence		
Rural	102	68.0
Urban	48	32.0
Course category		
Medical	108	72.0
Non medical	42	28.0
Year of study		
1-2	30	20.0
3-4	39	26.0
5	81	54.0
Sexual history		
No	60	40.0
Yes	90	60.0

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.

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

Figure 1: HPV vaccination uptake



Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

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
It is best to receive vaccine before first intercourse		
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
After HPV vaccine there is no need to screen to Ca cervix		
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
You can get HPV infection after receiving the vaccine		
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
HPV vaccine can prevent all types of HPV infection		
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
HPV vaccines are effective in preventing ca cervix		
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
HPV vaccines are very expensive so I can't afford them		
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
I don't like HPV vaccines because their side effects		
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
HPV vaccine is only for sexually active women		
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 ($X^2=6.48$, $P=0.011$), 5th 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 ²)	P-value
	Un vaccinated	Vaccinated		
Age group			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%)		
Family residence			17.65	0.001
Rural	99 (73.3%)	3 (20.0%)		
Urban	36 (26.7%)	12 (80.0%)		
Course category			6.48	0.011
Medical	93 (68.9%)	15 (100%)		
Non medical	42 (31.1%)	0 (0.0%)		
Year of study			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%)		
Awareness of HPV vaccine			7.14	0.006
Not aware	45 (33.3%)	0 (0.0%)		
Aware	90 (66.7%)	15 (100.0%)		
Sexual history			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 (5th 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]. In addition, results from the study show that all the respondents who had been vaccinated (100%) were medical

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

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, 5th year of study and awareness about HPV.

REFERENCES

1. WHO. (2020). *WHO | Cervical cancer*. <https://www.who.int/cancer/prevention/diagnosis-screening/cervical-cancer/en/>
2. WHO. (2018). WHO | Cervical cancer. *WHO*.
3. WHO. (2019a). Cervical cancer common amongst African women. *AFRO Feature*.
4. Uganda Cancer Institute. (2019). *CERVICAL CANCER INFO BOOKLET UCI 2018*. <https://www.uci.or.ug/download/publications/>
5. Uganda cancer Institute. (2018). *Cervical cancer in Uganda*.
6. Nakisige, C., Schwartz, M., & Ndira, A. O. (2017a). Cervical cancer screening and treatment in Uganda. In *Gynecologic Oncology Reports*. <https://doi.org/10.1016/j.gore.2017.01.009>
7. Leung, J. T. C., & Law, C. kin. (2018). Revisiting knowledge, attitudes and practice (KAP) on human papillomavirus (HPV) vaccination among female university students in Hong Kong. *Human Vaccines and Immunotherapeutics*. <https://doi.org/10.1080/21645515.2017.1415685>
8. Drolet, M., Bénard, É., Pérez, N., Brisson, M., Ali, H., Boily, M. C., Baldo, V., Brassard, P., Brotherton, J. M. L., Callander, D., Checchi, M., Chow, E. P. F., Cocchio, S., Dalianis, T., Deeks, S. L., Dehlendorf, C., Donovan, B., Fairley, C. K., Flagg, E. W., ... Yu, B. N. (2019). Population-level impact and herd effects following the introduction of human papillomavirus vaccination programmes: updated systematic review and meta-analysis. *The Lancet*. [https://doi.org/10.1016/S0140-6736\(19\)30298-3](https://doi.org/10.1016/S0140-6736(19)30298-3)
9. Turiho, A. K., Okello, E. S., Muhwezi, W. W., & Katahoire, A. R. (2017). Perceptions of human papillomavirus vaccination of adolescent schoolgirls in western Uganda and their implications for acceptability of HPV vaccination: A qualitative study. *BMC Research Notes*. <https://doi.org/10.1186/s13104-017-2749-8>
10. Kumakech, E., Andersson, S., Wabinga, H., Musubika, C., Kirimunda, S., & Berggren, V. (2017). Cervical cancer risk perceptions, sexual risk behaviors and sexually transmitted infections among Bivalent Human Papillomavirus vaccinated and non-vaccinated young women in Uganda - 5 year follow up study. *BMC Women's Health*. <https://doi.org/10.1186/s12905-017-0394-y>
11. Kiatpongsan, S., & Kim, J. J. (2014). Costs and cost-effectiveness of 9-valent human papillomavirus (HPV) vaccination in two east african countries. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0106836>
12. Kisaakye, E., Namakula, J., Kihembo, C., Kisakye, A., Nsubuga, P., & Babirye, J. N. (2018). Level and factors associated with uptake of human papillomavirus infection vaccine among female adolescents in Lira District, Uganda. *Pan African Medical Journal*. <https://doi.org/10.11604/pamj.2018.31.184.14801>
13. Turiho, A. K., Muhwezi, W. W., Okello, E. S., Tumwesigye, N. M., Banura, C., & Katahoire, A. R. (2015). Human papillomavirus (HPV) vaccination and adolescent girls' knowledge and sexuality in Western Uganda: A comparative cross-sectional study. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0137094>
14. Hagher, E., Madampage, C., Mahmood, R., & Moraros, J. (2018). Risk factors associated with self-reported sexually transmitted infections among postsecondary students in Canada. *International Journal of Preventive Medicine*. https://doi.org/10.4103/ijpvm.IJPVM_444_17
15. Mai, D. (2015). Predictors of Cervical Cancer Screening Among Vietnamese American Women. *Journal of Immigrant and Minority Health*. <https://doi.org/10.1007/s10903-013-9925-2>
16. Ebu, N. I., Mupepi, S. C., Siakwa, M. P., & Sampelle, C. M. (2019). Knowledge, practice, and barriers toward cervical cancer screening in Elmina, Southern Ghana. *International Journal of Women's Health*. <https://doi.org/10.2147/IJWH.S71797>
17. Olubodun, T., Odukoya, O. O., & Balogun, M. R. (2019). Knowledge, attitude and practice of cervical cancer prevention, among women residing in an Urban slum in Lagos, South West, Nigeria. *Pan African Medical Journal*. <https://doi.org/10.11604/pamj.2019.32.130.14432>
18. Fairuz Fadhilah Mohd Jalani, M. (2016). Knowledge, Attitude and Practice of Human Papillomavirus (HPV) Vaccination among Secondary School Students in Rural Areas of Negeri Sembilan, Malaysia. *International Journal of Collaborative Research on Internal Medicine & Public Health*.

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

19. Swarnapriya, K., Kavitha, D., & Mohan Reddy, G. M. (2016). Knowledge, attitude and practices regarding HPV vaccination among medical and para medical in students, India a cross sectional study. *Asian Pacific Journal of Cancer Prevention*. <https://doi.org/10.7314/APJCP.2015.16.18.8473>
20. De Groot, A. S., Tounkara, K., Rochas, M., Beseme, S., Yekta, S., Diallo, F. S., Tracy, J. K., Teguede, I., & Koita, O. A. (2017). Knowledge, attitudes, practices and willingness to vaccinate in preparation for the introduction of HPV vaccines in Bamako, Mali. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0171631>
21. Liu, A., Ho, F. K., Chan, L. K. L., Ng, J. Y. W., Li, S. L., Chan, G. C. F., Leung, T. F., & Ip, P. (2018). Chinese medical students' knowledge, attitude and practice towards human papillomavirus vaccination and their intention to recommend the vaccine. *Journal of Paediatrics and Child Health*. <https://doi.org/10.1111/jpc.13693>
22. Emmanuel Ifeanyi Obeagu, Abdi Ahmed Yahye, Getrude Uzoma Obeagu, Omar Bunu Umi, P.C. Okechukwu Ugwu, Esther U. Alum. (2023). Biomarkers of breast cancer: Overview. *International Journal of Current Research in Biology and Medicine*. 8 (1), 8-16.
23. Franca O. Hyacinth. (2023). The Influence of Social Support on the Mental Health Outcomes of Cancer Patients. *INOSR Arts and Humanities*. 9 (1), 24-29.

Diana Dawa (2023). Knowledge and Attitude Regarding Cervical Cancer Vaccination among Female Undergraduates at Kampala International University-Western Campus. NEWPORT INTERNATIONAL JOURNAL OF RESEARCH IN MEDICAL SCIENCES (NIJRMS) 3(3): 131-139.

Dawa, 2023

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited