



ISSN (P): 2522-6614  
ISSN (E): 2522-6622  
© Gynaecology Journal  
[www.gynaecologyjournal.com](http://www.gynaecologyjournal.com)  
2022; 6(1): 01-04  
Received: 01-11-2021  
Accepted: 03-12-2021

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## A study on the knowledge and life style of health students towards the risk factors and prevention of human papilloma virus in Nigeria

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**DOI:** <https://doi.org/10.33545/gynae.2022.v6.i1a.1104>

### Abstract

**Aim:** The aim of this study was to evaluate the knowledge and life style of health students towards the risk factors and prevention of Human Papilloma Virus (HPV).

**Methodology:** It was a double-blinded cross-sectional study conducted amongst 81 participants. All participants were delegates present at the SRHR-session of the 2<sup>nd</sup> Nigerian Health Students summit. Data on variables were obtained using a validated data collection tool that was distributed via a google online form. Analysis was done using a google spread sheet analyzer. Written consent was sought from each participant on the questionnaire.

**Results:** The genders were male [43.2%], females [53.1%], non-conforming [1.2%] and agender [1.2%]. While 1.2% chose not to say. Of these, 97.5% had knowledge on HPV with majority of them (72.8%) acquiring this knowledge from class lectures. With as much as 88.9% having knowledge on its association to cervical cancer, and although 82.7% had heard about the HPV vaccine, only 4.9% of them had received it, of which 50% were males.

**Conclusion:** The good knowledge on HPV, its pathologies and preventive measures displayed was not accompanied by readiness to practice some of the preventive measures, especially as soon by very poor HPV vaccination uptake.

**Keywords:** HPV, human papilloma virus, Nigeria, health students, vaccination, life style

### Introduction

The Human Papilloma Virus (HPV) the most common sexually transmitted infection [1] It can be spread via contact. It is a disease of the sexual tract and can cause the abnormal growths of skin and mucus membranes to form warts. This condition does not have a cure, but the symptoms can be treated [2]. It can run chronic or life long course. The world health organization (WHO) has said that there are more than 100 different types [3]. Although some literatures say, more than 200 different types [4]. It is responsible for up to 70% of all cancerous and precancerous lesions of the cervix in women, as most women get infected with it just after becoming sexually active. A significant risk factor for development of cervical cancer is early sexual debut. That is, age at first sexual intercourse [3].

However, of all the pathologies caused by HPV, one of global attention is cervical cancer. Worldwide, it is the fourth most common cancer in women. Having an estimated burden of 570 000 new cases in 2018, representing about 7.5% of all cancer deaths amongst women. Amongst the estimated more than 311 000 deaths from cervical cancer every year, over 85% of these occur in low- and middle-income countries. That is, the developing countries. Furthermore, it was discovered that women living with HIV were six times more likely to come down with cervical cancer compared to women without HIV, and an estimated 5% of all cervical cancer cases are attributable to HIV [5].

Due to this burden, in high income countries, there are programmes are in place which enable the early vaccination of girls and regular screening of women. These screenings thus allow pre-cancerous lesions to be identified at stages when they can easily be treated. However, this practice of screening and vaccination are not so evident in the low- and middle-income country where the burden of cervical cancer is most prevalent [5, 3].

There are 3 different types of screening tests that are currently recommended by WHO [5]:

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- HPV DNA testing for high-risk HPV types
- Visual inspection with Acetic Acid (VIA)
- conventional (Pap) test and liquid-based cytology (LBC)

Furthermore, the oncologic pathology that is associated with HPV is not limited to women nor cervical cancers alone [4]. As men are a common source of virus to women, this can also be seen in men, especially Men who have Sex with Men (MSMs) [1]. These men are at risk of anal cancers and anal warts. Although its most commonly seen in HIV-positive men as it is associated with immunosuppression. Notwithstanding, when these MSMs are also Bisexuals, they serve as a bridge to the heterosexual community to infect women. So that even women who are vaccinated may get infected with resistant strains or strains they were not vaccinated against [6]. Being a disease of contact, this also goes vice-versa for WSW infecting men. Hence, it may also present as ano-genital warts in women who have anal sex and oral warts from oral sex. Thus said, oncologic wise, HPV can cause tongue, anal, oropharyngeal (throat), penile, vulva, vagina and cervical cancers. Due to the contact pathogenesis, it can still be spread even when using a condom or tongdom, via a scroto-vagina, scroto-anal and scroto-mental route. Hence, the most effective means of preventions is not having anal, vagina or oral sex at all [4].

However, another reliable means of primary prevention is vaccination. There are currently 3 different types of vaccines (bivalent, trivalent and quadrivalent), with some still in clinical trial. This vaccines help prevent the oncotoc HPV types (16 and 18). However, some even go further to prevent many more oncogenic strains [3]. There are vaccines that have even been seen to prevent the warts causing strains, and hence anogenital warts preventing vaccines [1]. For effectiveness, these vaccines are best given within the ages of 9 and 14 up to the age of 26, or before one becomes sexually active [1, 3]. That is, probably come in contact with the virus.

In addition to vaccinations, the most effective means of prevention still remains abstinence. This does not in any way diminish the effectiveness or potency of the vaccine. As seen in a Swedish study carried out between 2006 and 2017 where 1,672,983 girls and women between 10 and 30 years of age were monitored for cancers. The results showed that 19 women who had received the quadrivalent vaccine and 538 women who had not received the vaccine developed cervical cancers. With a per 100,000 prevalence being 47/100 000 amongst those who had received the vaccine and 94/100 000 amongst those who had not. Hence, the vaccine is associated with a substantially reduced risk of cervical cancers [7].

The World Health Assembly (WHA), the highest decision-making body in health, adopted a global strategy to help accelerate the elimination of cervical cancer as a public health problem. In achieving this, its associated goals and targets are set for the period 2020–2030 (WHA 73.2) [8]. These targets set to accelerate the elimination are:

- A threshold of 4 per 100,000 women-year for elimination as a public health problem
- 90–70–90 targets that need to be met by 2030 for countries to be on the path towards cervical cancer elimination
- 90% of girls fully vaccinated with the HPV vaccine by age 15.
- 70% of women are screened with a high-performance test by 35, and again by 45 years of age.
- 90% of women identified with cervical disease receive treatment (90% of women with pre-cancer treated; 90% of women with invasive cancer managed)

One will often wonder why the burden is higher amongst low- and middle-income countries; if it were our way of life, sexual habits Vaccine uptake Age of sexual debut or availability of screening tests?

Hence, the aim of this study was to evaluate the knowledge and life style of health students towards the risk factors and prevention of Human Papilloma Virus (HPV).

### Methodology

It was a double-blinded cross-sectional study conducted amongst 81 participants. All participants were delegates present at the SRHR-session of the 2<sup>nd</sup> Nigerian Health Students summit. Data on variables were obtained using a validated data collection tool that was distributed via a google online form. Analysis was done using a google spread sheet analyzer. Written consent was sought from each participant on the questionnaire.

Data set was gotten from medical, nursing, pharmacy, microbiology, veterinary medical, medical laboratory science and basic medical science students. Respondents were between 18 and 31 years of age. The genders were male [43.2%], females [53.1%], non-conforming [1.2%] and agender [1.2%]. While 1.2% chose not to say.

### Result

#### Knowledge ON HPV

- 97.5% of the respondents had heard about Human papilloma Virus
- 72.8% heard about it from class lectures, 9.9% heard about it from social media, 9.9% heard about it from campaigns, 4.9% from friends or colleagues, 1.2% from family and 1.2% had not heard about it (figure 1).

#### Knowledge on HPV Pathologies

Amongst the cancers they were aware HPV caused 88.9% cervical cancers, 23.5% knew about penile cancers, 23.5% knew about vagina cancers, 16% knew about anorectal cancers and 17.3% knew about oropharyngeal cancers. However, while 3.7% were aware it was oncogenic but had no idea which organs where affected, 6.3% were not aware and 2.5% felt it caused liver cancers.

#### Knowledge On HPV Vaccines

- 82.7% were aware of the existence of HPV vaccines

#### Attitude Towards HPV Prevention

- Only 4.9% had received the vaccination. 95.1% had not received it.
- Of those who had received the vaccines, 50% were men, 25% women and 25% preferred not to say.
- 48% use abstinence as a means of preventing STDs
- Amongst those who used condoms as a means of prevention, they varied in frequency of use (Table 1);

**Table 1:** A table showing the frequency of condom utilization as a means of safe sex amongst the sexually active respondents in this study.

Utilization Parameters	Percentage Equivalent	Prevalence of Use
All The Time	100%	25%
Most Times	75%	22%
Some Times	50%	25%
Few Times	25%	6.2%
Hardly	<5%	15.6%
Never	0%	6.2%

### Risky Behaviours Towards HPV

- 52% were sexually active
- Amongst those who were sexually active, 71.15 were sexually active in a mutual relationship, while 28.9% were not.
- On number of life time sexual partners majority (40%) have had only one sexual partner;

**Table 2:** Showing the number of sexual partners sexually active respondents have had in their life time so far.

No Of Sexual Partners	Percentage Prevalence
1 Partner	40.0%
2 Partners	20.0%
3 Partners	3.3%
4 Partners	13.3%
5 Partners	10.0%
6 Partners	3.3%
8 Partners	3.3%
10 Partners	3.3%
11 or more Partners	3.3%

- 29% of the respondents had their first sexual intercourse before or at the age of 15 years.
- Amongst those who had more than 3 sexual partners so far, their age of sexual debut varied, showing not specific pattern. 8.3% had their sexual debut at 21-25 years, 58.3% at 16-20 years, 16.7% at 11-15 years and 16.7% at 6-10 years of age. A more detailed description of number of sexual partners per age of sexual debut can be found below (table 2);

**Table 3:** A table of number of sexual partners against age of sexual debut.

No of Sexual Partners	21-25 YRS	16-20 YRS	11-15YRS	6-10YRS
11 or more				100% of them
10		100% of them		
8	50% of them	50% of them		
6			100% of them	
5		66.7% of them	33.3% of them	
4		75% of them		25% of them

- 6.2% weren't sure if they have had sex with someone with anogenital warts before, while 3.7% had.
- While 4.6% were not sure if they have had sex with a partner who had vagina or penile discharge, 2.5% had.

### Symptoms Of Hpv Infection And Treatment

- 11.1% have had genital warts before
- Of these 66.7% sought for one form of help or the other, with the hospital being the most frequented source for help (Table 3).

**Table 4:** Table showing the sources which respondents who had genital warts consulted for care

Source Of Help For Genital Warts	Percentage Prevalence
Hospital Care	33.3%
Pharmacy Or Medicine Store	0.0%
Self Medicated	22.2%
Ask A Friend	11.1%
Too Embarrassed To Seek Help	33.3%

- 37% have had symptoms of genital itching with discharge. Of these, 0% were males and 0% were female. (While we

may have to brain storm as to whether those of the females were sexual or non-sexual vaginosis, those of the males were most definitely infectious and maybe sexually transmitted.

- Of these 73.4% fought for help, while 26.6% did not.

### Discussion

The aim of the study was to evaluate the knowledge and life style of health students towards the risk factors and prevention of Human Papilloma Virus (HPV). This was done via a validated questionnaire that looked into their knowledge of HPV and its pathology, their knowledge on the methods of its prevention (vaccination), their attitude towards its prevention (vaccination, abstinence and condoms), risky life styles such as multiple sexual partners and early age of sexual debut, and finally their life style towards treatments of some possible STDs and HPV related pathologies.

In terms of knowledge, the respondents displayed a high percentage of positive knowledge on HPV. Majority of which was obtained from class lectures or clinical activities. However, the next group in line obtained theirs from social media and from campaigns and outdoor rallies done by health students, workers and Non-Government Organizations (NGOs). Although a small percentage obtained their knowledge from conversations with friends/peers, the least got theirs from family. While these findings point to the very low prevalence of family in comprehensive sexual education and acquiring knowledge on HPV, it highlights the very important role social media advocacies, campaigns and rallies have on helping the non-medically inclined individuals acquire knowledge on Human Papilloma Virus.

Apparently, the main reason HPV is taught or spoken about is due to its implication in cervical cancer. As this was the most common cancer or HPV related pathology that most of the respondents had heard about. With a few more of them hearing about its implication in causing vagina, penile and oropharyngeal cancers which most likely may have been from class lectures. Hence, more work needs to be done in educating the public and non-medically inclined populace on the other oncogenic effects of HPV.

However, even with high knowledge index on the virus and existence of the vaccine, the vaccine uptake was very poor. Although 82.7% about the existence, use and importance of the HPV vaccine, only 4.9% had received it. Surprisingly, majority of those who had received it were males, as against the female vaccination predominance [3]. Other forms of prevention practiced were abstinence and condom use (table 1).

Nevertheless, irrespective of vaccination status or condom use, the protection is never 100% [7]. Hence, the important role of lifestyle in acquiring and prevention of HPV can not be overlooked. With sexual activity in itself being one of the first risks to infection. In this study, we took a look at some risk factors that could promote acquiring and/or spread of the virus. we found that about half of the respondents were sexually active. With less than a third being active in a non-mutual relationship. Which could mean anything from forced to willful sexual intercourse, sexual transactions or even multiple sexual partners. Hence, the further study into sexual partners. We found out that while majority of the respondents have had only 1 or 2 sexual partners, a significant percentage also had about 4 or 5 sexual partners. We also got to discover that 36.5% of the respondents have had more than 3 sexual partners already (table 2).

A study by---- *et al.* had discovered that early sexual debut was associated with an increased chance of having multiple sexual

partners [9?]. With early sexual debut also being a risk factor for HPV infection and cervical cancer, we made inquiry in to the ages at sexual debut of the respondents. While we found varying ages, there were no significant patterns between those with multiple sexual partners and ages of sexual debut. Although we found out that majority of those with multiple sexual partners became sexually initiated within the ages of 16 and 20 years of age. There were also those who were initiated before they were 10 years old. However, we found out that some who became sexually active between the ages of 21 and 25 years of age have had as many as sexual partners as the 16-20 years debut age (table 3). Now, this will suggest that though early age at debut could be a predisposing factor to multiple sexual partners, the most predictive factor was the individual's sexual drive and self-control.

Furthermore, there may be some physical signs of HPV infections, especially when infected with the benign strains of the virus. Anogenital warts are some of the most common signs. The existence of these warts is almost a 100% indication that the individual is infected. Inquiry into sexual activity even after noticing these warts on their partners showed that there was a 9.9 percent culpability. With certainty to uncertainty varying between 3.7% to 6.3%, respectively. Being a disease of contact, we thus went ahead to ask about history of anogenital warts in respondents. We found out that about 11.1% of them have at some point in time have had warts before. With over 66.7% of them searching for one form of help or the other when it occurred (table 4).

Moreover, being a sexually transmitted infection, it is seldom transmitted alone. As it is commonly associated with infections such as HIV [5]. So, we asked about other common STI symptoms, such as itching and discharges. A third of the respondents who were sexually active have had these symptoms. With most of them seeking for professional help. While a minute percentage did not seek for help, thus serving as vector media of transmission.

The major short coming of this study was the small sample size, as this would have helped assert with more certainty some of the findings of this study. It is thus still an open research window and opportunity for intending researchers.

The recommendations from our study are thus;

1. Effective methods of prevention such as vaccination and abstinence should be thought as primary means of preventing HPV infections.
2. HPV infection and its endemic pathologies should be included in the curriculum of age appropriate Comprehensive Sexual/Sexuality Education (CSE).
3. Early age of sexual debut has a role to play in predisposition to multiple sexual partners. However, self-control and self-discipline has the highest role.
4. Health staff should be more receptive and non-judgmental to patients who present with signs of sexually transmitted infections, so as not to discourage others from presenting and thus breaking the transmission chain.
5. More social medial advocacies, physical rallies and campaigns are needed to further promote the knowledge of HPV, HPV vaccination and her prevention to non-medically inclined individuals.
6. More political will and multisectoral intervention is needed to promote nationwide HPV vaccination exercises in Nigeria.

## Conclusion

There is good knowledge on HPV, as well as the vaccination

amongst health students in Nigeria. however, there is a very low uptake of HPV vaccine amongst these health students. While we thus rely on other means of prevention, there are practices of risky behaviour such as early sexual debut, multiple sexual partners and unsafe sex amongst the health students in Nigeria. Hence, good knowledge, but poor attitude.

## Keywords

HPV, Health Student, Nigeria, Vaccination

## Abbreviations

STI – Sexually Transmitted Infection  
 STD – Sexually Transmitted Diseases  
 HPV – Human Papilloma Virus  
 LBC - Liquid Based Cytology  
 VIA - Visual Inspection Acetic-Acic  
 WHO - World Health Organization

## Declaration OF

### Financial Sponsorship

We received no financial sponsorship or aid from any governmental, charity or non-governmental organization for this paper.

### Authors Contribution

All parts of this paper were worked on by both authors.

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