

# Knowledge and Risk Factors Associated to Human Papilloma Virus in University Men

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## Abstract

**Objective:** This study was carried out in order to know the risk factors and the level of knowledge that university men have about the Human Papilloma Virus (HPV). **Methods/Statistical Analysis:** The study was carried out in male university students living in Sincelejo, Sucre, Colombia. The study participants were brushed the body of the penis and testicles to determine the presence of HPV DNA. In turn, they completed a self-administered questionnaire as an instrument to measure risk factors and the level of knowledge about the infection. The sample was selected probabilistically in a total of 185 students. **Findings:** The results were as follows: 11 of the students participating in the study were positive; 83.7% of men have heard about the virus; the average age of onset of sexual relations is between 15 and 18 years; the number of sexual partners was an average of 1 to 10 couples; concluding that students are aware of risk factors that predispose them to the spread of the virus, while the knowledge that students have is medium. **Application:** Awareness and knowledge of HPV was very low in this group of men. Interventions to increase knowledge and awareness in this group are necessary to promote preventive practices for HPV-related cancers in high-risk groups.

**Keywords:** Human Papilloma Virus, Knowledge, Risk Factors, University Men

## 1. Introduction

Every day, more than 1 million people contract a Sexually Transmitted Infection (STI). It is estimated that, annually, some 500 million people contract it. The contagion occurs through sexual contact (vaginal, anal or oral). More than 530 million people are carriers of the virus that causes Genital Herpes Type 2 (HSV2); 290 million women are infected with the Human Papilloma Virus (HPV); most of the STIs are asymptomatic<sup>1</sup>. In a period of 12 months, the probability that a man will acquire a new infection is estimated at 0.29-0.39, similar figures with what happens in women<sup>2,3</sup>.

University students are a group composed mostly of young people from 18 to 25 years of age and, generally, in this stage of life, sexual relations and the exposure of Sexually Transmitted Infections such as the Papilloma Virus begin. Human (HPV) in this stage there is promiscuity, caused by emotional instability. In modern society,

university students have more open attitudes towards sexual activities and every day this risk tends to increase<sup>4</sup>.

HPV infection in man has been considered a minor problem of little relevance<sup>5</sup>. The most common anogenital HPV in the male population are similar to those reported in women. The main types of low-risk HPV are 6, 11, 42, 52 and 84, associated with genital warts and mild cervical dysplasia. The most commonly reported high-risk viruses are 16, 18, 31, 33, 52, 53 and 59 and are associated with high-risk dysplasia and carcinoma of the cervix, vagina, vulva, anus and penis<sup>6</sup>.

In general, man has been classified as a silent vector of this microorganism, since- despite playing an important role in the transmission of the virus- only 1% of them experience any sign or clinical symptom. Penile cancer, although rare, has been identified and associated with HPV types with a high risk of causing anal, perianal and penile cancer, both of intraepithelial neoplasms and invasive cancer<sup>7</sup>. In a study conducted in Mexico, it was

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proved that smoking and the presence of HPV increase morbidity and mortality in patients with penile cancer<sup>8</sup>.

Infection occurs in women with the onset of sexual intercourse, each time at younger ages of life. Unlike what happens in women, in men many aspects of the characteristics of HPV infection are unknown, which refer, among others, to latency times and to the manifestation of the disease<sup>9</sup>. Due to the degree of complexity and the importance of this disease, it is necessary to promote knowledge about it, both through promotion and prevention, and through research that progressively clarify its mechanisms and characteristics in general<sup>10</sup>.

The risk factors related to sexually transmitted infections are closely related to the sexual behavior of the population. Among the most relevant risk factors to acquire them are: the age of onset of sexual life, the change of sexual partners on a frequent basis, multiple sexual partners, commercial sex associated with factors such as migration and drug use, low schooling, poor culture of prevention, lack of circumcision, and the synergy and synchronism of sexually transmitted infections<sup>11</sup> as factors that promote thoughtless sexual behavior<sup>12</sup>, a situation that is associated with ignorance about the HPV infection and that may contribute to malpractice in health or have risky activities.

The time of university student is a preparation for the period of adulthood, being a stage of development and socialization of the sexual role that becomes evident in this period. Therefore, university students need to be accustomed to an appropriate sexual identity, sexual culture and to be able to lead a more stable sexual life<sup>13</sup>.

The vulnerable population to acquire the infection is young people between 15 and 24 years of age, due to the initiation of sexual intercourse usually without methods of protection against HPV, as well as the ignorance about the consequences of the infection<sup>14</sup>. Increasing knowledge and providing practical and concrete educational material can encourage college students to practice safe sex<sup>4</sup>.

Therefore, this study aims to determine the knowledge and risk factors associated with Human Papilloma Virus in university men.

## 2. Method

### 2.1 Design of the Study

This study used a descriptive cross-sectional design to analyze the risk factors and knowledge that Colombian

university men have about the infection of the Human Papilloma Virus.

### 2.2 Study Sample

The research was conducted in 2016, as a descriptive-transversal study. The study was carried out in male university students living in Sincelejo, Sucre, Colombia. The participants in the study were brushed the body of the penis and testicles to determine the presence of HPV DNA. The DNA isolation of the samples obtained was carried out with the Minikit QIAGEN DNA viral kit. The purified DNA was quantified by spectrophotometry at 260/280 nm. The sample was amplified by the conventional PCR polymerase chain reaction technique, with the B-globin sequences; The MY09/MY11 consensus was standardized by the primers, which amplify the conserved area of 450 bp of the L1 gene of the Human Papilloma Virus.

In turn, they completed a self-administered questionnaire as an instrument to measure risk factors and the level of knowledge about the infection. The sample was selected probabilistically in a total of 185 male students. The criterion for inclusion in the study was that of being a university student, proving the legal majority of current age and participating voluntarily. The collected data were analyzed by descriptive analysis and frequency tables, and the correlation was made through cross-tabulation between the diagnostic variable against risk factors and level of knowledge. The statistical program used was stat graphics Version 15.2.06

### 2.3 Measurements

To identify risk factors as possible means of transmission of Human Papillomavirus<sup>15</sup>, the following variables were selected: age at onset of sexual intercourse; number of sexual partners; sexual behavior of the couple; homosexual sex; consumption of drugs, alcohol, tobacco; and maintain sexual contact without protection. The evaluation of the level of knowledge: the university students were asked if they had heard about the virus, the different forms of infection, the methods of prevention and the clinical manifestations. The instrument used was the questionnaire composed of closed questions; the validation was carried out through the Delphi Technique<sup>16</sup> and the reliability with the alpha Cronbach 9.6.

### 3. Research Results

The men participating in the study, 11 were positive for HPV. The general characteristics of the university students are shown in Table 1. Most of the subjects who were positive for HPV were from Stratuses 1 and 2; 82.7% of men who were negative did not undergo circumcision, this being a risk factor predisposing to HPV infection; The average age of onset of sexual intercourse in men is between 15 and 18 years; the number of sexual partners was an average of 1 to 10 couples; the tendency to promiscuity is observed; As for the use of condoms, 17.3% always use it in their sexual relations.

The risk factors that university students face against the Human Papilloma Virus are shown in Table 2 of the students participating in the study, 11 who were positive for HPV consumed alcohol, while the tobacco consumption among the students was very low, since 89.7% do not smoke. Likewise, with respect to the consumption of psychoactive substances, 88.1% is not a consumer. Homosexual sex is very rare among

them: only 11 students said they had had sex with people of the same gender. 92.9% of the men participating in the study have good hygiene habits. Only 2 cases of men who were positive for HPV had sex with prostitutes.

The knowledge that university men have about the Human Papilloma Virus (HPV) is shown in Table 3. 83.7% of men have heard about the virus; 71.4% know that warts in the reproductive organs are clinical manifestations of HPV; 16% of the population does not know that it can cause cancer of the penis; 82.1% know that both men and women can be infected with HPV, and that it is not a disease exclusive to women.

One of the strategies to prevent infection is the application of the HPV vaccine. However, with the entrance to the Colombian vaccination scheme, there has been concern among the general population about side effects, which is why university men were asked what knowledge they had about it. 50.2% of the population said they knew about the vaccine; In the question addressed to inquire about the population to whom it is addressed, 59.3% said

**Table 1.** Characteristics of students

Characteristics of Students		Human Papilloma Virus			
		Negativa		Positive	
		Count	% N Table	Count	%N Table
Socioeconomic Stratum	1	83	44,80%	6	3,20%
	2	70	37,80%	5	2,70%
	3	19	10,20%	0	0%
	4	2	1,00%	0	0%
Circumcision	Yes	21	11,35%	1	0,54%
	No	153	82,70%	10	5,41%
Age of Onset of Sex Life	7- 10	5	2,70%	2	1,08%
	11-14	65	36,21%	3	1,62%
	15-18	96	51,90%	6	3,24%
	More than 19	6	3,24%	0	0,00%
Number of Sex Partners	1- 5 Partners	100	54,1%	7	3,8%
	6-10 Partners	41	22,2%	3	1,6%
	11-15 Partners	18	9,7%	0	0,00%
	More than 16 Partners	15	8,1%	1	0,54%
Use of Condom	More than half times	75	40,54%	4	2,16%
	Less than half times	43	23,24%	0	0
	Never	24	12,97%	3	1,62%
	Always	32	17,30%	4	2,16%

**Table 2.** Risk factors

Risk Factors		Virus			
		Negative		Positive	
		Count	%N Table	Count	%N Table
Alcohol Consumption	Si	141	76,22%	11	5,95%
	No	33	17,84%	0	0%
Tobacco Consumption	Si	8	4,32%	0	0
	No	166	89,73%	11	5,40%
Psychoactive Consumption	Si	11	5,95%	1	0,54%
	No	163	88,11%	10	5,95%
Genitals Cleaning	Si	172	92,97%	11	5,95%
	No	2	1,08%	0	0,00%
Sex with Prostitutes	Si	32	17,30%	2	1,08%
	No	142	76,76%	9	4,86%

**Table 3.** Knowledge about HPV

Knowledge about HPV		Human Papilloma Virus			
		Negative		Positive	
		Count	% N Table	Count	%N Table
Have you ever heard of HPV?	Yes	155	83,78%	10	5,41%
	No	19	0	1	0,54%
	Does not Know	0	0	0	
HPV can cause warts on the reproductive organs	Yes	132	71,4%	9	4,86%
	No	1	0,54%	0	0,00%
	Does not Know	41	22,16%	2	1,08%
HPV can cause cancer of the penis	Yes	132	71%	10	5,41%
	No	13	7%	0	0,00%
	Does not Know	29	16%	1	54,00%
Who can be infected with HPV	Woman	9	5%	0	0,00%
	Man	4	2%	0	0,00%
	Both Women & Men	152	82,16%	11	5,95%
	Does not Know	9	5%	0	0,00%

that men and women could be applied; 70% of the population does not know the vaccination age; 39% responded that they would never be placed and 35% said they were hesitant to put it on.

#### 4. Discussion

This study investigated the knowledge and risk factors associated with the Human Papilloma Virus among university men (Table 4). The detection of sexually trans-

mitted infection by HPV in humans should be considered as high priority, because the male population has a role as vector and reservoir of the virus, although in recent years HPV has been found in neoplasms of the human male reproductive system and other cancers (anal, oral, etc)<sup>5</sup>.

There are risk factors that predispose to the presence of Human Papilloma Virus infection. Among these is the socio-economic stratum: subjects who were positive for HPV were from Stratum 1 and 2. According to WHO, almost 60% of the deaths of the poorest 20% of the world's population are caused by communicable diseases<sup>17</sup>.

**Table 4.** Vaccine knowledge

Vaccine Knowledge		HumanPapilomaVirus			
		Negative		Positive	
		Count	% N Table	Count	%N Table
Do you know if there is any vaccine?	Yes	81	43,78%	4	2,16%
	No	93	50,27%	7	3,78%
Who should receive the vaccine?	Women	27	16%	1	1%
	Men	4	2,16%	0	0,00%
	Both Men & Women	110	59,46%	8	4,32%
	Does not Know	33	17,84%	2	1,08%
The Age of Vaccination	9-13	23	12%	1	0,54%
	14-20	13	7%	1	0,54%
	21-30	6	3%	0	0,00%
	30 and more	3	3%	0	0,00%
	Does not Know	129	70%	9	4,86%
Concern about receiving the vaccine	Yes	36	19%	1	0,54%
	No	72	39%	6	3,24%
	Undecided	64	35%	4	2,16%
	Does not Know	2	1%	0	0%

The average age at onset of sexual life among male participants of the study was between 15 to 18 years of age. Data similar to the world average of 19 years. The beginning of an active sexual life at an early age and having multiple sexual partners increases the risk of suffering from a sexually transmitted disease<sup>18</sup> of the men who were negative, 82.7% did not undergo circumcision, a figure that generates concern. The lack of this medical procedure is a risk factor to suffer from this infection, since it has been identified as a protective factor against the acquisition of sexually transmitted infections, given that circumcised men present negativity to the HPV DNA test<sup>2</sup>. As for the protection methods, 17.3% used condoms. Although the use of a condom is a protective factor for the covered area, but not for other parts of the genitals, it reduces the risk of contracting the disease<sup>19</sup>.

Among the risk factors that are related, although not exclusive, are the consumption of tobacco, alcohol and psychoactive substances, factors that in the population under study were very rare, although the presence of these alter the response capacity of the immune system<sup>20</sup>. Another of the risk factors to the predisposition of the infection is the cleaning of genitals: 97.7% had good hygiene. Smearing causes infections by the retention of smegma and phimosis, generating the accumulation of

bacteria and viruses in conditions of chronic irritation, which can easily harbor a pathogen and become embedded by means of the lesion<sup>21</sup>.

With respect to the knowledge of HPV as a risk factor for developing penile cancer, 71% of men answered that they were related stated that cancer of the penis particularly that of the anal region, is intimately linked to the presence of high-risk HPV (Type 16). Prolonged periods of untreated verrucous lesions in men increase the cost of care in a greater proportion than in women<sup>22</sup>. 39% of students said that they would not place the vaccine against HPV, a situation that may be due to misinformation and the few recruitment strategies aimed at the male population, because the national vaccination programs are dedicated exclusively to girls<sup>23</sup>.

## 5. Conclusion

Among the predisposing factors found in the population in this study is the age of the first sexual relationship associated with promiscuity, without the use of condoms as a barrier method. It was observed that circumcision is not a common procedure due to the macho culture of the region. Around the procedure myths are woven about the

adverse effects that man can suffer in his virile organ. It can be affirmed that the students have a half knowledge about the virus, because they know the clinical manifestations, but they expressed fear about the application of the vaccine against the HPV, being this one of the most effective prevention methods. Educational strategies should be implemented that help to raise students' knowledge and create a culture of self-care.

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