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HPV KNOWLEDGE AMONG PHARMACY STUDENTS: A WARNING FOR ACADEMIC HEALTH TRAINING

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Abstract: Objective: To assess the knowledge of Pharmacy students at the Federal University of Rio de Janeiro Macaé campus about HPV. Methodology: Questionnaires were administered to students from all five years of the Pharmacy course at the Federal University of Rio de Janeiro Macaé campus. The students answered the 25-question questionnaire individually, without identification or consultation. The results were expressed as a percentage using the Excel® program. Results: 115 students were assessed. The majority of pharmacy students were Catholic, white, had a monthly family income of between one and six minimum wages and had parents with complete or incomplete higher education. The students' level of information on HPV is good, with most students answering the questions correctly. However, some students were still unaware of HPV transmission, HPV-related diseases, the importance of condom use and early detection tests for precursor lesions or cancer. Even in advanced periods, some students showed a lack of basic knowledge on the subject. The study revealed that the majority of students are familiar with the HPV virus, but several important pieces of knowledge relating to the transmission and pathogenesis of the disease are unknown to them. Conclusion: These results show that there is a great need for better work on these subjects in the different disciplines of the pharmacy course.
Keywords: HPV; Cervical Cancer; Pharmacy; Teaching; University, Preventive

INTRODUCTION

Human papillomaviruses (HPV) are a large and diverse group of viruses. This group includes around 200 described types detected in humans. HPVs are the etiological agents of various benign and malignant lesions of the mucous membranes and skin epithelium. It is important to note that persistent infection with certain types of HPV is one of the main causes of carcinoma of the cervix, penis, vulva, vagina, anus and face (including the base of the tongue and tonsils) (1). Thus, it is now known that HPV is a well-established causative agent of malignancy of the female genital tract and is a sexually transmitted infection (STI) (2).

In women, the prevalence of infection peaks between the ages of 18 and 24 and then declines. In contrast, in men, there is a higher prevalence of HPV, due to men having a less effective immune response against infection by the virus compared to women (3).

Cervical cancer is the second most frequent tumor in the female population, after breast cancer. It is also the fourth leading cause of cancer death among women in Brazil. The method of screening for cervical cancer and its precursor lesions is the Pap test, popularly known as the preventive exam. The procedure identifies lesions that precede cancer, allowing treatment before the disease develops (4).

It is very important to provide adolescents in health courses with the correct information so that they are more aware of the consequences of infection by the virus and can thus be better prepared to assist the population with regard to the risk of acquiring the virus (5).

Confirming the importance of this knowledge for students and professionals in the field of pharmacy, we can see that the Federal Council of Pharmacy provides various news items in relation to transmission, preventive examinations, a table of vaccines that SUS releases for girls, and information on the effectiveness of the vaccine, thus playing a very important role in Brazilian society.

The aim of this study was to assess the knowledge of pharmacy students at the Federal University of Rio de Janeiro Macaé campus about the Human Papillomavirus. Based on these results, future measures can be taken to expand the knowledge of these students, always favoring the health and well-being of the people who will be assisted by these professionals.

METHODOLOGY

This is a quantitative, descriptive and cross-sectional analysis. The research was carried out at the Federal University of Rio de Janeiro's UFRJ Macaé campus and approved by the Federal University of Rio de Janeiro's Human Research Ethics Committee.

The population analyzed included regularly enrolled students from all periods of the Pharmacy course at UFRJ Macaé. The inclusion criteria used were: being a student regularly enrolled in any semester of the UFRJ Macaé Pharmacy course. The exclusion criteria used were: not agreeing to take part in the research or not being present when the questionnaire was administered.

The questionnaire, made up of 25 multiple-choice questions, was designed based on the information that a health student should know about the subject. In addition, the questionnaire included socio-economic information relevant to the topic studied.

The questionnaires were administered to the students during class time and answered individually, without identification and without consulting any material, colleagues or the researcher. After the questionnaires had been administered, they were collected in envelopes for later analysis and tabulation of the data to create graphs and tables. The results were expressed as percentages using the Excel® program (Windows2013).

RESULTS

A total of 115 students aged between 18 and 26 were interviewed and the distribution of the number of students per term is shown in figure 1.

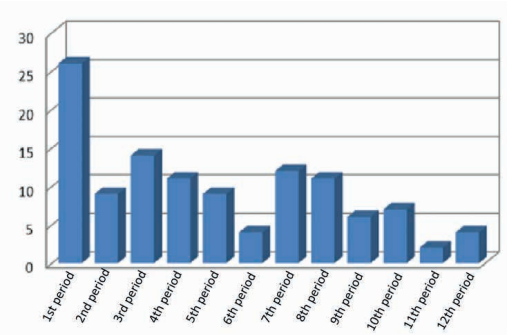

Figure 1. Distribution of the number of students per term

Table 1 shows the main socio-economic data of those interviewed. In addition, the profile of the parents' level of education showed that 5% have parents with incomplete primary education, 4% with complete primary education, 4% with incomplete secondary education, 34% with complete secondary education and the vast majority (52%) have parents with complete or incomplete higher education. With regard to religion, 42% are Catholic, 32% Evangelical, 4% Spiritist, 6% have another religion and 16% have no religion.

Socio-economic data	Percentage (%)
Gender	
female	85%
male	15%
Marital status	
single	98%
married or in a stable union	2%
Family income	
up to one minimum wage	4%
one to three minimum wages	38%
four to six minimum wages	38%
seven to eight minimum wages	8%
above eight minimum wages	8%
no answer	4%
Race	
white	64%
brown	25%
black	7%
yellow	3%
did not answer	1%

Table 1. Socio-economic profile of the students interviewed

With regard to the start of their sex life, 35% said they hadn't started yet, 9% had started their sex life less than a year ago and 56% had started more than a year ago. When asked how often they used condoms during sex, 26% of those interviewed said they always used condoms, 23% said they almost always used condoms, 9% said they almost never used condoms, 6% said they never used condoms and 2% didn't want to answer.

With regard to their knowledge of HPV, most of the students (89%) said they knew about HPV. Two students said they didn't know and 8% said they had heard of HPV but didn't know what it was, and one student didn't answer the question. The two students who said they didn't know about the HPV virus were female, one was 18 and in her first term at university and the other was 21 and in her fifth term. Of the 10 students who said they had heard of the virus but didn't know what it was, only one was male. The other nine students are female, aged between 18 and 23 and in their first to fourth semesters. These results show that the majority (91.6%) of the students who have little or no knowledge are female, old enough to see a gynecologist and often at an advanced stage of their course, yet they still don't know what the HPV virus is. Of these 12 students, eight (66.7%) had not yet started having sex.

Regarding the meaning of the acronym HPV, 76% said they knew what it meant, 23% said they didn't know and 1% didn't answer the question. Of the 26 students who don't know what HPV stands for, three are male. The other 23 students are female. It's worth noting that of these students, three are between the ninth and tenth terms, so they are finishing their pharmacy course and yet they still don't know anything about a subject that is often discussed in some subjects throughout the course.

Most of the students, 95%, correctly identified the etiological agent of HPV as a virus, but one student identified the etiological agent as a protozoan, and this student is female, 21 years old and in the second term of the course. Even though she misidentified the etiological agent, the student said in other questions that she knew HPV, that she knew what it meant and that she had already taken a course at university that dealt with the subject. Another 4% were unable to answer.

As for the means of communication through which they had heard the most about HPV, the university (28%), television (25%), the health system (20%), the internet (17%), friends (5%) and other means of communication (4%) were cited. 1% of students said they had never heard of HPV. 53% of the students said they had heard of HPV in some subject at university and 47% said they had not studied the subject in any subject so far.

When asked how HPV is transmitted, 91% answered that it is transmitted sexually, 4% said it is transmitted by blood transfusion, 3% said it is transmitted by living with infected people and 3% did not know how to answer. When asked if they thought the HPV virus could be dangerous, 2% said no, 2% said it could only be dangerous in connection with other diseases, 92% said it was dangerous and 4% couldn't answer.

Another important point was the symptoms of HPV infection in women. 16% answered that the infection is always symptomatic, 4% said it is always asymptomatic, 50% said it is sometimes symptomatic and 30% couldn't answer the question. With regard to infection in men, 7% answered that it is always symptomatic, 19% said that it is always asymptomatic, 30% answered that it is sometimes symptomatic, 6% said that men don't get infected by the HPV virus, 35% didn't know how to answer and three students didn't answer the question.

Regarding the relationship between cancer and HPV, the majority of the students said that cancer can only occur in the cervix (43%). 26% said that it can occur in the vagina, vulva, cervix, anus, penis, oropharynx and mouth. 3% said that it can occur in the penis and cervix, 8% answered vagina, vulva, cervix, anus and penis, 18% didn't know how to answer and two students didn't answer the question. As for the diagnosis of cervical cancer, eight students answered that the method of diagnosis is by blood test, 15 did not know how to answer and 79% said that it is by Pap test.

With regard to when information about HPV transmission should be given, 95% said that this information should take place before the start of sexual life, 2% said that it should take place after the start of sexual life, 2% did not know how to answer and one did not answer the question. With regard to the vaccine, the majority (89%) know that it exists, 2% said that it doesn't exist, 8% couldn't answer and 1% didn't answer the question.

When asked about the means of preventing cervical cancer, 81% of the students said that it is prevented through the use of condoms, one student said that it is through the use of oral contraceptives, 13% don't know how it is prevented and 3% said that there is no prevention of cervical cancer.

Figure 2 summarizes the main findings of this study.

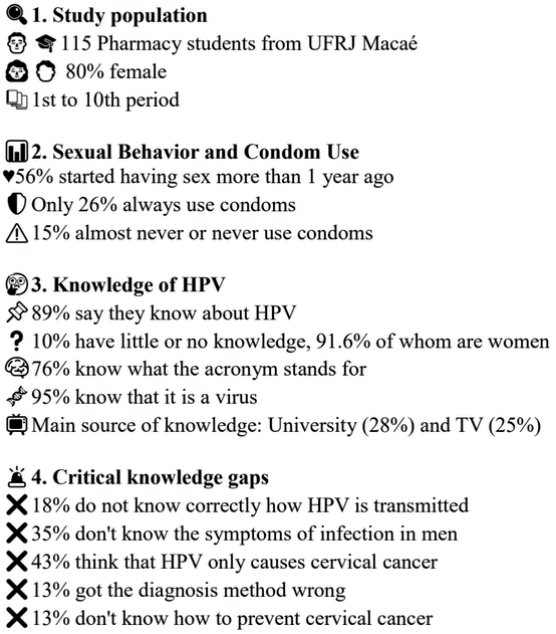

Figure 2. Knowledge of pharmacy students at a public university about the human papillomavirus

DISCUSSION

The social profile of the students studied shows that the majority are female, white, single and Catholic or evangelical. They also have a family income of one to three minimum wages and parents with complete or incomplete higher education. The majority have been sexually active for over a year and always or almost always use condoms. Other studies have shown similar results in which most of the interviewees in this age group have already started having sex (6,7). One study showed that the majority of those interviewed had not yet started having sex, but the age group was lower, at 17 (8). If we take into account the under-20 age group in our study, the number of students who had not yet started sexual activity was 15.6%.

Results from other studies show that the vast majority of respondents also use condoms always (8,9) or almost always (10), with one study in particular showing that there are still boys who don't think it's important to use condoms (6). The results show that students

are still concerned about using condoms to prevent sexually transmitted diseases. However, the percentage of students who almost always use condoms is still very high, which can increase the risk of contracting STIs, including HPV. It is also important to note that 15% of the interviewees in this study do not use condoms or almost never use them, which is quite alarming, as it corresponds to a high percentage if we take into account the level of information and awareness that these students should have, especially as they are studying a health course. In addition, in our study we observed a high family income and a high level of parental education and, according to studies, this high financial income could be a major factor in STI prevention (9).

With regard to specific knowledge about HPV, a study with university students showed that women knew more about HPV than men, with 3.6% and 24% not knowing what it was, respectively (6). Another study, on the other hand, showed that students from the health sector had greater knowledge than students from other areas (11). This difficulty about HPV has been recurring in research that seeks information from academic students in the health area, which may show a deficiency in teaching or in the attention that students are giving to the subjects covered in their courses (12).

Even though there were some wrong answers and students who didn't know the etiologic agent of the disease, our study showed good data, in which the majority of students knew about HPV. If we compare this with other data described, we can see that even though the majority have some knowledge of the subject, there is still a higher percentage of students answering, for example, another etiological agent as the cause of the disease or not knowing how to answer (10).

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In this case, we can see that the subject of HPV could be explored more on the internet and by the health system, with more debates on the subject, so that the information reaches young people who have not yet come across the subject at university more quickly. This is important, since television and the internet are still the means most used by young people to understand issues related to HPV (10).

Our results show that most students know how the virus is transmitted, but there is still a percentage of students who feel confused, and this lack of knowledge is a risk factor for future infection, since they don't know or aren't sure how transmission can occur. In similar studies, students said they were aware of the transmission of the virus, but some of those interviewed were unaware of this information (9,13). In other studies, students have shown that their knowledge of transmission is limited, even stating that the virus could be transmitted through the air. Even with the good results of this study, we can emphasize the need for special attention and a greater construction of these students' knowledge on the subject (12). In addition, the data from this study is in line with other data in the literature which shows that the interviewees are unaware of the symptoms of the disease, which in many cases can lead to a low level of demand for doctors and tests which can diagnose the presence or absence of the virus and its associations (8). It is important to note that it is extremely worrying that seven students answered in our study that men are not infected by HPV. It is known that men are the biggest transmitters of the disease, as they usually don't show any related symptoms. It is hoped that with the Ministry of Health's vaccination campaign for boys, the population will learn more about the dangers of HPV in men too.

Some of our students don't know where cancer can be seen as a result of HPV infection and many still think that only cervical

cancer can occur. This shows that students are unaware of the dangers of infection by the virus, especially with regard to cancers that can affect men, such as the penis and anus, for example. The same result has been observed in existing studies, in which most of the students interviewed related the virus to cervical cancer, but a significant proportion also related the virus to other diseases, such as warts, lesions in the uterus, cancer of the penis and anus (6,10). These data show once again the risk that some students are still not well informed about the transmission and complications of HPV, because with a disease as prevalent today as cancer (8), there are still students who are unaware of the seriousness that infection by the virus can bring, since it is responsible for the death of many women in the world (9).

According to INCA, the Pap test should be carried out by all sexually active women between the ages of 25 and 64. Due to the long evolution of the disease, the test can be carried out every three years after two normal annual examinations (4). This information is very important as the Pap test is very important for the prevention of cervical cancer and is the most widely used means of screening and controlling this neoplasm (9). For this reason, the students were asked about the method used to diagnose cervical cancer and its lesions. Even though many students knew the method used, there were still some who did not know how the diagnosis was made, showing a greater need for information on the Pap test. In a similar study, students were aware of the existence of the Pap test, but did not know for what purpose it is done, thus leading them not to carry out this test periodically (12).

Another important piece of information concerns vaccinations, and our students have good information about the distribution of vaccinations, which takes place in both the public and private networks. This was not the case in other studies, since the students were uninformed about the existence of the vaccine, even students who are studying in more advanced periods at university. This lack of knowledge may be due to factors such as the students' lack of interest in the subject or even inadequate information from the media, since the vaccine prevents four types of the HPV virus, the two main ones being related to the appearance of warts and the other two being related to cancer (10,12).

The study carried out with Pharmacy students revealed that most of them are familiar with the HPV virus, but several important pieces of knowledge relating mainly to the transmission and pathogenesis of the disease are unknown to them, which is extremely worrying in a health course. These results show that there is a great need to work better on these subjects in the course's disciplines, since knowledge was very superficial in relation to transmission, forms of manifestation, factors that increase the risk of cancer and other aspects directly related to HPV.

CONCLUSION

Based on our findings, we can see that there is a significant lack of knowledge on the part of Pharmacy students, even at advanced stages of the course. Therefore, there is a need to expand university actions related to topics of importance to public health, such as HPV. It is essential to improve the teaching-learning process in order to train professionals who are better prepared for the job market, especially in health-related courses.

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