KNOWLEDGE OF NURSING STUDENTS ABOUT HUMAN PAPILLOMAVIRUS INFECTION AND VACCINATION

CONHECIMENTO DE ACADÊMICOS DE ENFERMAGEM EM RELAÇÃO À INFECÇÃO PELO PAPILOMAVÍRUS HUMANO E SUA VACINAÇÃO

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ABSTRACT

Introduction: Sexually transmitted diseases (STDs) are one of the major health problems in the world. Among STDs, the Human Papillomavirus (HPV) infection is the most prevalent one, since approximately five hundred thousand to one million people are infected with this virus each year. **Objective:** To evaluate the knowledge of nursing students about the HPV and vaccination. **Methods:** A descriptive study with quantitative approach performed in a private higher education institution in Fortaleza, Ceará, Brazil. The sample consisted of students from the 1st and the 7th semester of nursing. Data were collected through a semi-structured questionnaire and analyzed with the SPSS, version 14.0, and descriptive statistics. **Results:** By characterizing the students, it was observed that 50.8% are older than 25 years old, 52.5% of them study and live only with help from their parents, and 80.3% reported having an active sex life. When questioning about what HPV is, there was a significant association (p = 0.008), whereas 42.6% of freshmen and 57.4% of 7th semester students reported what an STD is, 93.3% of students in the first semester and 71.0 % in the 7th semester were unaware of the vaccine. **Conclusion:** Most nursing students at the research institution have not enough knowledge about the virus, its consequences, and preventive forms of treatment, which may negatively influence the vulnerability of this age group.

Keywords: sexually transmitted diseases, papillomavirus vaccines, disease prevention, therapeutics.

RESUMO

Introdução: As doenças sexualmente transmissíveis (DSTs) constituem um dos maiores problemas de saúde do mundo. Dentre as DSTs, o papiloma vírus humano (HPV) é a doença mais prevalente, pois cerca de 500 mil a 1 milhão de pessoas se infectam com o vírus anualmente. **Objetivo:** Avaliar o conhecimento de acadêmicos de enfermagem acerca do HPV e sua vacinação. **Métodos:** Estudo descritivo, de abordagem quantitativa, realizado em instituição de ensino superior, privada, de Fortaleza, Ceará. A amostra foi composta por acadêmicos do 1º e do 7º semestres de enfermagem. Os dados foram coletados por meio de questionário semiestruturado, sendo analisados com auxilio do programa estatístico SPSS Versão 14.0 e estatística descritiva. **Resultados:** Ao caracterizar os estudantes, foi observado que 50,8% tem mais de 25 anos; 52,5% apenas estudam e vivem com ajuda dos pais; e 80,3% referiram ter vida sexual ativa. Ao se questionar sobre o que é o HPV, foi verificada associação significativa (p = 0,008), visto que 42,6% dos alunos ingressantes e 57,4% dos alunos do 7º semestre referiram ser uma DST; 93,3% dos alunos do 1° semestre e 71,0% dos concludentes desconhecem a existência da vacina. **Conclusão:** A maioria dos acadêmicos de enfermagem da instituição pesquisada não possuem conhecimento suficiente sobre o vírus, suas consequências, formas preventivas e de tratamento, o que pode influenciar negativamente na vulnerabilidade deste grupo etário.

Palavras-chave: doenças sexualmente transmissíveis, vacinas contra papillomavírus, prevenção de doenças, terapêutica.

INTRODUCTION

Sexually transmitted diseases (STDs) currently constitute one of the major health problems in the world. Among the main STDs, the human immunodeficiency syndrome (AIDS), syphilis and the human papillomavirus (HPV) stand out. The latter should be especially analyzed due to its connection with the occurrence of uterine cancer, which is the second most prevalent cause of death by cancer among women[1].

The HPV infection is the most prevalent disease in the world, since around 500 thousand to 1 million people are annually infected by this virus. Only in Brazil there are from 3 to 6 million infected people, and 3 to 5% of the world population with an active sexual life developed the disease[2].

Papillomaviruses are DNA viruses from the *Papillomaviridae* family, and they infect the epithelial tissue of human beings and other animals. There are about 500 types of HPV, and about 100 of them have been identified as being able to infect humans[3]. Among high risk HPVs, subtype 16 can be mentioned, since it represents the most prevalent HPV in genital infections, accounting for 66% of the cases, and because it is the most prevalent for the invasive cervical cancer, followed by subtypes 18 (15% of the cases), 45 (9%) and 31 (6%). These four types of high risk HPVs are responsible for up to 80% of the cases[3].

Due to this epidemiological picture, vaccines have been developed in the past years with the objective of reducing the rates of infection by the virus, and, consequently, of reducing the number of cervical intraepithelial neoplasia (CIN) and cervical cancer. Despite the great expectations related to the vaccine against HPV, the efficacy of such an immunization to prevent cervical cancer has not been proved, since the real result should only be revealed in the next decades[4].

In Brazil, two types of vaccines against HPV are commercialized. One is quadrivalent and prevents types 16 and 18 (most common ones for invasive cancer), 6 and 11 (low risk, and mostly

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found in condylomata). The other one is specific for the high risk types, 16 and 18[5].

Health professionals, especially in the nursing field, should be able to give proper advice on HPV, its risks, pathology and vaccination, since their contact with the patients is very close. Therefore, this study aims at contributing with scientific literature related to this subject, especially in the state of Ceará, where the scientific production in this field is still scarce.

OBJECTIVE

To assess the knowledge of nursing students concerning HPV and vaccination and to describe the socioeconomic profile of the participants.

METHODS

This is a descriptive and quantitative study performed in a private higher education institution located in the city of Fortaleza, Ceará. The sample was composed of all of the nursing students who studied in the selected institution for this analysis; thirty of them attended the 1st semester, and 31 of them attended the 7th semester, accounting for 61 students. Inclusion criteria were: being nursing students of both sexes, attending the 1st or the 7th semester in the selected institution, enrolled in the morning period, and being at the institution from February to July, 2011.

Data collection began after the approval by the Research Ethics Committee. Sixty-one students were approached, in a reserved location, and the motives of the study were explained. Afterwards, they signed the informed consent form.

Data were collected with a semi-structured questionnaire. In the questionnaire, there were quantitative and qualitative variables, such as age, socioeconomic situation and semester of attendance. The variables in the questionnaire were: knowledge about HPV, forms of contamination, prevention and anti-HPV vaccine.

Questionnaires were filled out during meetings scheduled according to the availability of the researcher and the participants of study. Data were filled out by the researcher, and there was no need to record them, in a structured questionnaire.

Data analysis and tabulation were performed with the statistical software SPSS, version 14.0, and descriptive statistics was used with absolute and relative frequencies identified by means of graphs and tables.

For the analysis of open questions, the theoretical framework by Minayo was adopted, which defends the idea that the analysis and interpretation of the obtained contents can be adapted to the condition of steps or processes to be followed[6]. The three stages are: pre-analysis, exploration of the material and treatment of obtained results and interpretation. With this information, the investigator proposes his or her inferences and interprets data according to the theoretical framework and the proposed objectives, or by identifying new theoretical dimensions suggested by reading the material.

In order to conduct the study, the project was sent to the selected institution so it could be authorized by the signature of the Consent Form. All of the participants were asked to sign the informed consent form, based on resolution 196/96, of the National Health Council, which established guidelines about studies on human beings.

All of the participants were informed about the objectives of the study and the type of participation, and they were free to choose whether or not to participate. Anonymity was ensured and participants were exempt from any damage for participating. Afterwards, they signed two copies of the informed consent form.

RESULTS

The research involved 61 nursing students; 30 of them (49.2%) were aged between 18 and 25 years old, and 31 (50.8%) were older than 25 years old. Thirty students (49.2%) attending the 1st semester and 31 (50.8%) attending the 7th semester were selected. Among them, 25 (41.0%) lived with their parents, while 19 (31.1%) live with other relatives, 10 (16.4%) live by themselves and 1 (1.6%) did not answer.

Considering the age group of the participants, it was observed that 31 of them were more than 25 years old, and 30 of them were between 18 and 25 years old, which characterized major proportion of non-traditional students.

By analyzing the characterization of nursing students who participated in the study as to socioeconomic aspects, it was possible to observe that, among the interviewees, 29 students (47.5%) already occupy paid positions, due to the need to maintain themselves financially and with the objective of gaining professional experience; at the same time, 32 (52.2%) only study and live with their parents' resources.

As to the income declared by the participants, 5 of them (8.2%) survive with less than 1 minimum wage, while 13 (21.3%) receive 1 to 2 wages; 5 of them (8.2%) dispose of 3 or more minimum wages; 32 (52.5%) claimed they did not have a defined income.

Out of the students, 18 (29.5%) have worked in the health field; however, 4 (6.6%) work in the administrative sector; 1 (1.6%) works with education; 32 (52.5%) do not work; 3 (4.9%) work in other fields; 3 (4.9%) did not mention the field of work.

According to the characterization of the analyzed nursing students as to sexual history, 49 of them (80.3%) referred having an active sexual life, while 12 (19.7%) have not had sexual intercourse yet.

Among those with an active sexual life, 22 (36.1%) initiated sexual activities when they were younger than 18 years old, while 26 (42.6%) initiated it between the ages of 18 and 25 years old; 1 (1.6%) reported having initiated in sexual life after the age of 25. Three of the interviewees (4.9%) still have not had sexual intercourse, and 9 (14.8%) did mention it. Out of the interviewees with an active sexual life, 48 (78.8%) claimed to have a single partner, while 11 (18%) do not have a partner; 2 (3.3%) did not mention it.

About the use of contraceptives, 39 interviewees (63.9%) claimed to use some method. However, 22 of them (36.1%) did not use any contraceptive method. From the ones who use it, 15 students (24.6%) use the oral contraceptive pill; 14 (23%) use a male condom; 4 (6.6%) use more than one method simultaneously; 2 (3.3%) use an intrauterine device. Even though 12 interviewees claimed not to have an active sexual life, 23 of them (37.7%) reported not using any contraceptive method, which means that,

out of these, 11 (18%) had intercourse using no kind of prevention. It was observed that women prefer to use the oral contraceptive pill (24.6%), or other methods apart from the male condom.

When they were questioned about what HPV was, a significant association was observed (p = 0.008). Out of the 47 participants who mentioned it was an STD, 42.6% were in the 1st semester and 57.4% attend the 7th semester. Empirically, 6 of them showed that HPV is 'something that causes cancer', and 66.6% of these are students in the 7th semester. This shows that students attending the 7th semester of the nursing course are more aware about this disease. These data are statistically significant (p = 0.008).

With regard to forms of treatment, which also had significant results (p < 0.001), two (100.0%) responses that referred to the vaccine were given by the students in the 1st semester, who also mentioned the intake of antibiotics. Cauterization was mentioned by 15 students, being 6.7% from the 1st semester and 93.3% from the 7th semester, which shows that the latter are more aware of the disease. This was also observed when they mentioned the application of trichloroacetic acid (TCA), being mentioned by only 8 students in the 7th semester (100.0%). Surgical treatment was mentioned by one student in the 7th semester, who also mentioned HPV is incurable. It is worth to mention that the response "is not aware of treatment forms' was prevalent in both semesters (1st semester – 74.1% and 7th semester – 25.9%).

As to the form of preventing HPV, 47 interviewees mentioned the use of a male condom (rubber), and, from these, 66.0% attended the 7th semester and 34% studied in the 1st semester. Only three participants said that prevention should be made by means of the Pap test, and all of them attended the 1st semester in the nursing course. Vaccination was mentioned by two participants, and 100.0% of them attended the 1st semester. However, it was observed that only students in the 1st semester (100.0%) did not know how to avoid contamination.

About the knowledge of the vaccine to prevent agains the HPV infection, 11 students claimed to know it, and 18.2% of them attended the 1st semester (81.8% attended the 7th semester). Fifty students claimed to not know the vaccination, out of whom 56.0% were in the 1st semester, while 44.0% already attended the 7th semester, and this was also statistically significant (p = 0.023).

DISCUSSION

With the findings in this study, it is observed that the analyzed institution has more students aged more than 25 years old. Studies show that in private universities, many nursing students (about 70.3%) are older than those in public institutions, where the percentage of younger students is high[7].

The fact that most students in this research only studied and lived with the assistance of family resources is in accordance with the results in another research, according to which most students in a private nursing school (48.8%) works and lives by their own wage, while 48.4% of students attending the public school receives an allowance from their parents, and 20.7% of those in private schools have education credit. Students who work do so due to the need for payment and experience, which is also in accordance with the findings of a study conducted with nursing students[7].

Therefore, based on this reality, these students cannot always find jobs or internships in the health field. So, they are forced to take positions that are completely different from their field of study. Young adults need to work to survive and wish to study to progress, so they need to sacrifice other things they are interested in, such as leisure, outings and, sometimes, the graduation itself[8].

The high number of young students with an active sexual life observed in this study is a result of the current tendency that has been transforming the sexual behavior of adolescents. The early initiation in sexual life, which was mainly observed among boys at first, is now a reality also among girls.

According to data from the Ministry of Health, in 1984 the mean age of sexual initiation among adolescents was of 16 years old among women and 14 years old among men, which accounts for 35.2%. In 1998, the age range decreased to 15 years old among women, and the percentage of adolescents who had their first sexual intercourse before the age of 14 was of 32.3%. In 1984, this percentage was of 13.6%[9].

Fortunately, young people usually have one partner, and the number of people who have sexual intercourse promiscuously is lower. This certainly is a result of the influence of the media, since sexual education and information about contraceptive methods are not transmitted properly, which favors the multiplicity of partners[10].

In this research, it was demonstrated there is still a significant number of young people who are not concerned about contraceptive methods (37.7%), which is in accordance with what has been found by other authors, according to whom adolescents of both sexes tend to use less contraceptive methods when sexual initiation takes place before the age of 15[11].

As observed in this study, the oral contraceptive pill is prevalent among women, which leads to the risk of STD infections, and this is in accordance with the opinion of other authors[12]. It is noticed that young people who use contraceptives have turned to methods that prevent pregnancy, but they forget about the need to prevent against STDs. Despite the numberless AIDS prevention campaigns, and the broad diffusion of knowledge about the use of male condoms, most sexual encounters between young people occur with no sort of protection. It is recommended that intervention strategies with these population groups promote the integration of contents and actions to prevent STDs and be related to sexual and reproductive health care.

By comparing the data in this study, it is observed that all of the approached items were statistically significant, since there was a difference between the level of knowledge between students attending the 1st and the 7th semesters. Because of more advanced studies in the health field, students from the 7th semester are more aware that HPV is an STD, in comparison to the ones who are beginning the nursing course and who have not been prepared by the family and by elementary school with regard to STDs.

The unawareness of young people with relation to STDs, especially AIDS and HPV, is a major public health issue, since some studies have shown that they are little informed in terms of reproductive health[13].

The participants in the 1st semester demonstrated having precarious knowledge about the theme, which leads us to believe that some aspects of the subject are not clear for young people, for instance, the definition of HPV and STD. Therefore, from

the obtained data, it was possible to notice some difficulties with regard to the definition of HPV and some mistakes related to transmission, symptomatology, places of injuries and HPV prevention. It is worth to mention that due to inhibitory factors, such as embarrassment or lack of interest from the participants, some results may have been underestimated.

The treatment for HPV can be performed with several procedures, and each of them presents limitations and different levels of efficacy and acceptance from patients. They can be divided into chemical, chemotherapy, immunotherapy and surgical methods[14].

The most used chemical method is the application of 80–90% trichloroacetic acid, which was mentioned by eight students attending the 7th semester. Chemotherapy methods are conducted with fluorouracil and interleukin[15]. Immunotherapy uses interferon alpha and beta, imiquimod and retinoids. Among surgical methods, there are curettage, scissor excision, scalpel excision and more current ones, which are high frequency loop excision and laser[14].

This study showed that some participants who had just entered a health course knew about the Pap test and considered it was important, however, they were not aware of its real purpose. Therefore, the inadequate or incomplete knowledge of the Pap test may lead to a negative attitude in relation to the demand for this examination and the frequency with which it should be done[16].

Studies confirm the need to perform cervicovaginal cytology to screen for HPV-induced injuries and cervical cancer[17,18]. However, it is necessary to explain to young people that the male condom provides contact protection, since there might be lesions in regions that are not protected by it, thus enabling the contamination by the virus. On the other hand, the female condom may be more protective, one it covers a broader surface[19].

The Ministry of Health also indicates there is no form of prevention that is 100% safe, since HPV can even be transmitted by towels or other objects[20]. Besides, reducing the number of sexual partners decreases the risk of contracting and, consequently, transmitting any STD, including HPV and the virus that causes AIDS.

The vaccine is able to prevent the infection by the two most common types of HPV, 6 and 11, which are responsible for 90% of warts, besides the two most oncogenic types, 16 and 18, responsible for 70% of cervical cancer cases[20]. It is worrisome that most students in advanced semesters are not aware of the vaccine.

The genetic recombination technology enabled the development of prophylactic vaccines against HPV, formulated with viral capsid proteins (L1), which are highly immunogenic and able to rearrange spontaneously, thus forming particles that are similar to the virus, however, without its DNS (virus like particles – VLP). Several phase 1, 2 and 3 studies revealed that the intramuscular injection of VLP of HPVs 6, 11, 16 and 18 are able to stimulate the antibody response, usually superior to the one found after the natural infection, and that the use of vaccines formulated with these VLPs was safe among animals and humans. Therefore, two prophylactic vaccines were developed for HPV: a bivalent vaccine (HPV 16 and 18), produced by the Glaxo Smith Kline laboratory (GSK), and a quadrivalent vaccine (HPV 6, 11, 16 and 18), produced by Merck Sharp & Dohme (MSD)[21].

Data in this study are in accordance with results from other studies, according to which the unawareness of STDs exists because they are part of a set of very complex diseases, once there are more than 20 types[22].

In this sense, it is necessary to explain to adolescents and teenagers about HPV, the risks of contamination, forms of treatment and, especially, to tell them about the vaccine and when it can be efficient. Therefore, it is important that they know it is a genital disease caused by a sexually transmitted virus[23].

It is essential that health education activities be promoted and addressed to sensitize adolescents and teenagers as to the promotion of sexual and reproductive health, since they are more vulnerable when it comes to matters related to STDs.

For that, the school, the family and the society should broadly publicize information about sexual education. However, it demands permanent formation of teachers, so that they can feel safe to perform this task successfully. This action requires subsides about STDs, forms of infection, preventive means and, especially, the domain of more participative and innovative methodologies that involve also families. It is important to mention that the current vaccination campaign against HPV promoted by the Ministry of Health among adolescent girls is a great step when it comes to information and prevention of HPV in Brazil, and it can reverse the situation experienced by young people, including the ones in this study.

CONCLUSION

It was observed that young adults, nursing students of an institution in Fortaleza, Ceará, are still not sufficiently aware of the HPV virus, its consequences, preventive and treatment forms and about the risks affected women have of contracting cervical cancer.

Conflict of interests

The authors declare no conflict of interests.

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