

Evaluation of knowledge, attitude and awareness of medical faculty students about human papilloma virus

Medical faculty students HPV; Knowledge level; Awareness; Vaccine

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Abstract

Aim: In this study, we aimed to evaluate the knowledge levels and awareness of medical students about the diagnosis, transmission routes and prevention methods of Human Papilloma Virus (HPV), which is very common worldwide.

Materials and Methods: This cross-sectional study was carried out on 4th grade medical faculty students in the 2019-2020 academic year. A brief socio-demographic information form, an information form on general knowledge, diagnosis, contamination routes, and methods of HPV prevention, and a questionnaire on HPV awareness levels were applied to the students.

Results: The average age of the students was 22.31 ± 1.3 (19-30) years; 44.5% (n = 89) of the students were female and 55.5% (n = 111) were male. Among the students, 84% had information about the diseases caused by the virus, transmission routes, prevention and diagnostic methods. The correct response rate of students to knowledge questions was 84.4% for women and 82.7% for men (p = 0.042). It was found that students' levels of knowledge about HPV protection methods and especially vaccines were lower than their knowledge about diagnosis and transmission.

Discussion: In this study, it was found that the general knowledge level of medical school students about HPV was high, but their knowledge about prevention and vaccination was low. Medical school students should be encouraged to increase their knowledge and get vaccinated, and importance should be given to HPV vaccination training.

Keywords

HPV; Knowledge level; Awareness; Vaccine

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Introduction

Human Papilloma Virus (HPV) infection is the most common sexually transmitted disease that causes urogenital system diseases and cancers in both women and men [1]. The risk of HPV transmission increases with early sexual intercourse. The lifetime risk of encountering HPV is at least 50% for both sexes [2]. Cervical cancer causes death of a woman every two minutes in the world, and it is the second most common cancer in women after breast cancer [3]. According to Cancer Statistics in Turkey, when the incidence of cancer in women according by age groups is considered, it ranks 4th among women aged 25-49 with the ratio of 3.6% and 8th among women aged 50-69 with the ratio of 2.7%. National screening programs positively affect the incidence of cancers and associated mortality rates. Good implementation of cancer screening and prevention programs, healthcare professionals having adequate knowledge are very important for the success of a screening program [4].

To prevent cervical cancer, first of all, HPV, which is one of the most important factors, should be well known by the society, timely screening should be done, protective measures should be taken and girls should be vaccinated early. Today, vaccines developed against HPV infections are available. In order to protect against cervical cancer, in 2006, the quadrivalent HPV vaccine which is effective against types 6, 11, 16, 18, and in 2009, the bivalent HPV vaccine which is effective against types 16, 18 were developed [5]. Despite being widely used in many western countries, the HPV vaccine is not in the national immunization program and not covered by social security payments in Turkey.

While the level of awareness about HPV increases in the Western world, the level of awareness is lower in other regions where the disease is more common [6]. Although the level of awareness is higher in groups with high levels of education and income, undoubtedly, every country, even different regions of the same country, has created its own awareness patterns depending on the characteristics of the region, such as conservatism and the age of onset of sexual intercourse [7,8]. Determining the level of regional key features and basic information related to HPV-related diseases will provide important data for future awareness-raising initiatives. Health professionals should have the highest levels of knowledge and awareness about HPV. In this regard, raising public awareness and reducing anxiety should be the primary duty of healthcare professionals. In order for healthcare professionals, nurses, physicians and medical school students who become physicians in the future to guide the society, they must first have information about HPV infection and vaccinate themselves and then counsel individuals on this issue. In this context, the aim of our study is to measure the awareness and knowledge levels of medical students about HPV, HPV related diseases, cervical cancer and HPV vaccines, and to evaluate their attitudes towards people with HPV.

Material and Methods

The type, place, and universe of the research

This study, which is cross-sectional analytical research, was carried out with 4th grade students studying at Necmettin Erbakan University Meram Medical Faculty during the 2019-2020 academic year.

Ethical Permit of the Study

Ethical approval was received from Necmettin Erbakan University, Meram Medical Faculty, Ethics Committee (Number: 2019/2171) before the study started. All participants provided electronic informed consent. All participants provided verbal informed consent.

Data collection

The students participating in the study were administered a short sociodemographic information form and two different questionnaires measuring the level of knowledge and awareness about HPV. The information form prepared by the researchers based on the previous studies contains 25 questions about HPV, HPV-cancer connection, diagnosis, transmission and prevention ways. Again, a questionnaire with 15 questions was applied in order to learn the approach and personal awareness of patients with HPV.

In order to make a more accurate assessment, the questions were evaluated as closed-ended, and the answers were true/false and 3-point Likert (disagree-undecided-agree). Knowledge questions were divided into general knowledge (8 questions), diagnosis (4 questions), transmission (7 questions), and prevention (6 questions). If the rate of the correct answer to the questions was 80-100%, it was accepted as a good level of knowledge, 60-80% as a medium level of knowledge, and below 60% as a low level of knowledge.

A sample group was not selected for the study, and it was planned to reach all the 4th grade students of our faculty. Those who did not want to participate in the study, who did not complete the questionnaire completely, who did not have the mental capacity to answer the questions, or who could not communicate due to language differences were excluded from the study. The study involved 200 out of 235 students studying in the 4th -grade in the 2019-2020 academic year at our faculty (85.1%).

Statistical analysis

SPSS (Statistical Package for Social Sciences) for Windows 20.0 program was used to evaluate the study results. Frequencies, mean, standard deviation, median, minimum and maximum values were calculated. The Chi-square test was used to compare qualitative data. Compatibility with normal distribution was evaluated with the Kolmogorov-Smirnov test. Accordingly, the differences between the averages were determined by Student's t-test or One-way ANOVA variance analysis. The significance level was accepted as $p < 0.05$.

Results

The mean age of the students in our study was 22.31 ± 1.3 (19-30) years; 44.5% (n=89) were female and 55.5% (n=111) were male. Among the students, 37.0% (n=74) were staying alone, 59.5% had income equal to their expenses, 66.5% lived in urban areas and 60.0% had a nuclear family structure. When students were asked about their school success, 54.5% stated that they were at a medium level. Participants' level of knowledge about HPV was generally high; 84% of the students knew about the diseases caused by the virus, transmission routes, prevention, and diagnostic methods. The correct response rate given by students to knowledge questions was found to be 84.4% for women and 82.7% for men ($p=0.042$).

Table 1. General Level of Knowledge about HPV by Gender[17]

Questions	Correct answers						p
	Female		Male		Total		
	n	%	n	%	n	%	
HPV is a sexually transmitted virus disease	89	100.0	108	97.3	197	98.5	0.059
People infected with HPV have a higher risk of cervical cancer than the normal population	86	96.6	104	93.7	191	95.0	0.344
HPV can cause cervical cancer	89	100.0	109	98.2	198	99.0	0.203
HPV is a genetic disease	81	91.0	95	85.6	176	88.0	0.241
HPV virus only causes cervical cancer	78	87.6	107	96.4	185	92.5	0.019
HPV Type 16 and Type 18 are the most common types that cause cervical cancer	89	100.0	102	91.9	191	95.5	0.006
Some types of HPV cause genital warts	86	96.6	108	97.3	194	97.0	0.783
HPV can also cause genital warts and penile anal cancers in men	80	89.9	102	91.9	182	91.0	0.623

Table 2. Level of protection against HPV by gender

Questions	Correct answers						p
	Female		Male		Total		
	n	%	n	%	n	%	
HPV is a vaccine-preventable disease	77	86.5	92	82.9	169	84.5	0.480
HPV positive individuals can be sexually active	81	91.0	97	87.4	178	89.0	0.416
HPV vaccine can be given at any age	43	48.3	45	40.5	88	44.0	0.271
HPV vaccine can only be given to women	72	80.9	101	91.0	173	86.5	0.038
Vaccination should be done before the first sexual intercourse	81	91.0	95	85.6	176	88.0	0.241
A single dose of vaccine is sufficient	60	67.4	65	58.6	125	62.5	0.199
Total protection knowledge level	77.5		74.3		%75.7		0.029

Table 3. Participants' attitudes and behaviors towards HPV

		I do not agree		Undecided		I agree	
		n	%	n	%	n	%
		Common life	I share the same house with someone with HPV	80	40.0	63	31.5
I stay away from people if I know they have HPV	98		49.0	54	27.0	48	24.0
I don't want someone with HPV to touch me	88		44.0	41	20.5	71	35.5
I'm afraid of getting HPV	11		5.5	16	8.0	173	86.5
I prefer to have other diseases than HPV.	68		34.0	105	52.5	27	13.5
Acceptance	I would tell my relatives if I get HPV	29	14.5	41	20.5	130	65.0
	I would tell this to healthcare professionals who would operate me if I had HPV	3	1.5	9	4.5	188	94.0
	I don't think about pregnancy if I have HPV	40	20.0	105	52.5	55	27.5
	If I find out that my partner get HPV, I would leave him/her	106	53.0	61	30.5	33	16.5
	People with HPV probably have a sexually comfortable life	89	44.5	69	34.5	42	21.0
Prevention	I know ways to be protected from HPV.	43	21.5	44	22.0	113	56.5
	I think I can protect myself from HPV.	20	10.0	70	35.0	110	55.0
	The course on protection from sexually transmitted diseases should be included in the curriculum.	7	3.5	15	7.5	178	89.0
	More information should be given about protection from HPV in mass media.	8	4.0	15	7.5	177	88.5
	HPV doesn't concern me at all	158	79.0	27	13.5	15	7.5

The correct response rate given to general knowledge questions about HPV was 94.5%, 95.2% for women, and 94.0% for men (Table 1). While male students (96.4%) knew better than female students (87.6%) that HPV causes diseases other than cervical CA (p=0.019), all female students knew that HPV Type 16 and Type 18 are the most common types of cervical cancer (p=0.006).

An average of 82.1% of all students (Female: 82.1% Male: 82.0%) answered correctly the questions about diagnosis, and an average of 83.0% of all students (Female: 84.9%, Male: 81.4%) answered the questions about transmission correctly. A statistically significant relationship was found between gender and HPV contamination knowledge level (p=0.038). However, it was found that students' knowledge levels about HPV protection ways and especially vaccines were lower. The correct answer rate in this section was 75.7%, 77.5% for women, and 74.3% for men (Table 2). A statistically significant relationship was found between the knowledge levels of female students and male students (p = 0.029). While 88% of the participants correctly knew that vaccination should be done before the first sexual intercourse, 44.0% of them stated that it could be done at all ages and 62.5% of them stated that a single dose of vaccine is sufficient. The rate of men who answered correctly by saying "HPV vaccine can only be given to women" was 91.0%, the rate of women who answered correctly was 80.9%, and a statistically significant relationship was found between the genders (p=0.038).

A statistically significant correlation was found between the students' general HPV knowledge levels and protection knowledge levels and school success. General knowledge levels and protection knowledge levels of students with good school success were higher than those with moderate and bad success (p=0.002, p<0.001). Participants' attitudes and behaviors towards HPV are shown in Table 3.

Discussion

Human Papilloma Virus (HPV) infection is the most common sexually transmitted disease and causes cancers (cervical cancer, anogenital cancers, penile cancers) in both men and women. According to CDC, the risk of both sexes encountering HPV is at least 50% throughout their lives. When we look at the literature, although there are many studies on HPV, related diseases and prevention ways, the results of our study are important since it is one of the few studies about the level of knowledge of medical students. In our study, we observed that medical students' general level of knowledge about HPV, transmission and diagnostic methods were high, while both male and female students did not have sufficient knowledge about prevention and HPV vaccines.

According to CDC, approximately half of the diagnosed HPV infections occur in young people aged 15-24. According to a population-based study on women in the US, the general prevalence of HPV was 26.8%, while the highest prevalence was reported to be 44.8% observed in women aged 20-24 years [5]. Approximately 70% of young women encounter HPV in the first 5 years after onset of sexual activity [9]. University students are also in the age group at risk for HPV. For this reason, the level of knowledge of university students about HPV is very important. In the present study, participants' level of knowledge about HPV was generally high. More than three-quarters of the students knew the virus-related diseases, transmission routes, prevention and diagnosis methods correctly. Knowledge levels of female students were higher than male students. In a study of university students, only 16.8% of students stated that they heard about HPV. In studies comparing gender and HPV knowledge level, the knowledge levels of women were found to be higher than men [10,11]. In our study, a significant relationship was found between HPV awareness and different variables such as age, gender, marital status, history of family cancer and talking about sexual issues [12]. In studies conducted, HPV awareness varied between 16-57% in our society [7,13,14].

Cervical cancer is a type of cancer that causes frequent deaths in women in our country but can be treated if diagnosed early. Regarding its development, HPV is accused of being the biggest risk factor [2]. In a study conducted on medical school students, 91% of students knew about HPV and 85.6 % knew about HPV vaccine [15]. In the present study, more male students knew that HPV caused cervical CA, while more female students knew that cervical CA is caused by HPV types 16 and 18. In another study, 89.8 % of medical students knew that HPV caused cervical CA. Knowledge of female students was higher than male students [16]. Güdücü et al. reported in their study that 64.2 % of the participants, who were healthcare professionals and medical students, knew that HPV caused cervical cancer [17]. Although many HPV infections are temporary and asymptomatic, HPV types 6 and 11 cause about 90% of types genital warts. Types 16, 18, 31, 33, 45, 52 and 58 are considered as high-risk oncogenic types [2].

The level of knowledge about transmission ways of HPV was higher among female students than male students. In a different study, 80% of the participants knew that HPV was sexually transmitted, but there was no statistically significant difference between the genders [17]. In a study carried out in

men and women aged 18-25 attending vocational schools in Germany, 50% of women and 42% of men thought that only women could be infected with HPV, and the majority did not know that HPV was sexually transmitted [11].

In the present study, the level of knowledge of students about the ways of protection from HPV was found to be 75.7%. Although 84.5% of the students have heard of HPV vaccine, especially the knowledge level of male students about the dose of the vaccine was found to be quite low. When we look at the studies in the literature, HPV vaccine knowledge level is low in the society [18,19]; moreover,, it is not at the expected level in studies conducted on health workers [20, 21]. In a study conducted among medical students, the HPV vaccine awareness rate was 75.7% [22]. In the studies conducted, female students knew about HPV vaccine more than male students [15,22]. This difference between genders may be related to the thought that HPV causes only cervical CA and that the vaccine is given to women. In a study about HPV conducted in various faculties of a university, it was found that only 62.5% of the medical students heard about HPV vaccination and that this rate was lower in other faculty students. Interestingly, however, the knowledge of vaccination among male students was higher than among female students [16]. HPV awareness and knowledge level increase as the level of education increases [23]. Studies have found an independent relationship between employees and non-workers, those with higher education levels, and those living in the city and those living in rural areas [8].

Prophylactic HPV vaccine is the most effective primary prevention method against cervical cancer. Therefore, the HPV vaccine should be given before the first sexual contact and before exposure to HPV. There are three vaccines used in primary prevention from HPV. Gardasil 4 was approved by the FDA in 2006 as a quadrivalent vaccine that prevents HPV 6, 11, 16 and 18 types. Cervarix was produced in 2009 as a bivalent vaccine that prevents HPV types 16 and 18, which can cause cervical cancer and precancerous lesions. Gardasil 9 is a vaccine, which provides additional protection in the prevention of diseases caused by 9 types of HPV, such as HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58, and was approved by the FDA in December 2014. Cervarix, Gardasil 4 and 9 are recommended for women. Gardasil 4 and 9 are recommended for men 29. The World Health Organization (WHO) recommended a vaccination program for girls aged 9-13 in 2014, where two doses of HPV vaccine were administered before exposure to sexual contact and HPV. The HPV vaccine is not part of the national immunization program, and implementation is entirely at the request of individuals/families and is paid. But in Germany, 67% of women were vaccinated because the vaccine was reimbursed among women aged 18-20 [11].

University-age men and women who have not previously vaccinated or completed the vaccine are still within the appropriate age range for the recommended vaccination. For these students, university period represents the opportunity to acquire or complete the HPV vaccine series, and university health centers are an excellent resource for HPV vaccination efforts. It is important for medical students to have a sufficient level of knowledge about HPV transmission and prevention ways, which will have an important place in the future.

In a previous study, only 8.2% of the participants stated that they received information about HPV and HPV vaccination from family physicians, 64.6% received information through TV and the internet. In a study conducted with physicians currently on duty, 85% of obstetricians and 78% of pediatric-family physicians stated that they recommended the vaccine when they were asked whether they recommend HPV vaccine to their relatives / patients [24].

Consequently, the level of knowledge of medical students about the diagnosis and transmission of HPV is high, but their knowledge about prevention routes and vaccination is low. Methods for early diagnosis of cervical cancer, screening for HPV, and HPV vaccine trainings in the medical school curriculum should be reviewed to improve students' level of knowledge and awareness. Doctors and medical school students are required to receive training to overcome barriers to vaccination and anti-screening behaviors in women and men. At the same time, the level of evidence-based knowledge about HPV and the HPV vaccine is important for providing counseling and training to the community it will serve.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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