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University Students Approach to Human Papilloma Virus and Vaccine, Knowledge Level Analysis

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ABSTRACT

Introduction: In this study, the aim was to evaluate the level of knowledge of university students about human papilloma virus (HPV) and HPV vaccine, to determine their attitudes towards HPV vaccination and the obstacles they face, and to emphasise what needs to be done to increase awareness.

Methods: In this descriptive study, participants were administered a structured questionnaire containing questions on HPV infection, types of vaccines, age ranges for vaccination and vaccine efficacy. In addition, the effect of factors such as attitudes towards vaccination, sources of information and the cost of vaccination was also evaluated.

Results: The results showed a lack of knowledge about HPV and HPV vaccines among university students. Most of the participants were not sufficiently familiar with the vaccine, and although they had information about HPV infection, they were hesitant about the vaccine's protective benefits. Cost, lack of information, and confidence in the vaccine were the main reasons for not getting vaccinated.

Conclusion: Our study revealed that awareness of HPV vaccination among university students is low and the cost of the vaccine is an important barrier. To implement an effective HPV vaccination programme, awareness-raising activities should be carried out, especially using peer networks and social media. In addition, awareness can be raised through educational programmes and curriculum arrangements.

Keywords: Human papilloma virus, vaccine, university student, social awareness, cost

Introduction

Human papilloma virus (HPV) and its vaccine, which is closely related to public health, are of critical importance, especially for the young population. HPV is a public health problem that is particularly prevalent in young people aged 15 to 24 years in the United States, with an estimated 4.5 million new cases reported each year. This constitutes almost half of the new infections reported in this age group (1). In addition to the high infection rates of HPV, the asymptomatic course of many strains may also cause this situation (2). In addition, it has been demonstrated in studies that those who have been infected may not disclose this situation because they are afraid of the social stigma, and therefore the prevalence of the disease may be higher than detected (3,4).

According to studies conducted to examine HPV and the effects of this virus on health, a lack of knowledge about this virus and its impact was found among university students and young adults (5). In a study, it was shown that male university students, who were found to lack information, could benefit greatly from health education (6). In addition, a study revealed that 80% of university students who were hesitant about vaccination were concerned about vaccine safety and therefore avoided it (7).

Studies have shown that educational planning will increase awareness, and acceptance of HPV and HPV vaccine among young people and the rest of society. This planning is expected to be an incentive for HPV vaccination (8,9).

Issues such as the approach of parents, hesitations about vaccine safety, and the effects of the disease on sexuality and health are factors that determine the approach to HPV vaccination. Studies have shown that parents' approach to vaccination affects young people's confidence in vaccination, and there is a positive correlation between the two approaches. Children of parents with a positive approach to vaccination were more willing to be vaccinated (10,11). Studies have shown that visits to regular healthcare services, friends, and communication through social media channels, and the use of reminder features of mobile applications increase awareness of infection and encourage vaccination (11-13).

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This study aimed to investigate the awareness of university students about HPV and the HPV vaccine, as well as to determine the level of knowledge.

Methods

Three hundred eighty-seven students studying at a private university in 2024 were included in the study. The study was prospectively designed, and the participants were randomly and voluntarily selected. The students were first informed about the study, their consent for participation was obtained, and then the questionnaire was applied. The results were recorded. There were no exclusion criteria in the study. The study was approved by the İstanbul Esenyurt University Ethics Committee (approval number: 03, date: 05.12.2023).

Statistical Analysis

In the study, descriptive statistics are at the forefront. Statistical analyses were performed using SPSS (IBM SPSS Statistics 27) package program. Frequency tables and descriptive statistics were used to interpret the findings.

Results

Three hundred fifty-five (91.7%) were in the 18-30 age group, 307 (79.3%) were female, and 382 (98.7%) lived in the city. Two hundred seven (53.5%) had a monthly income of <10,000 TL, 211 (54.5%) had health insurance, and 331 (85.5%) had not received the HPV vaccine (Table 1).

Level of Knowledge

58.7% of the students knew that cervical cancer was the most common gynaecological cancer. Additionally, 45.5% knew that smoking was a risk factor for this type of cancer. 51.4% of the students knew that HPV transmission could be prevented by barrier methods such as condoms. 67.2% did not know that oral contraceptives and monthly injections were not protective. 35.4% of the students knew that HPV was responsible for most of the cervical cancer cases in our country. Only 27% of the students knew that there is a screening programme for cervical cancer in our country. 26.6% of the students knew that the HPV vaccine provides close to 100% virus type-specific protection from HPV infection. 51.4% of the students knew that vaccination protects both men and women. 63% of the students did not know that there were three types of vaccines in our country (Table 2).

Willingness

In addition, the students' perspective on vaccination was evaluated. Only 14.5% of the students were vaccinated (Table 1). 52.5% of the students said that they would have the vaccine, 55.8% said that they would have it for their daughters, and 53.2% said that they would have it for their sons. While 30.5% of the students stated that they would have the vaccine even if they had to pay for it, this rate increased to 58.1% if the vaccine was covered by insurance reimbursement (Table 3).

Motivators

52.2% of the patients stated that they learnt about the vaccine from social media, 6.5% from doctors or health workers. Among the students, 7.2% stated that the vaccine was protective against condyloma, 18.6% against cancer, and 64.9% against both (Table 4).

Discussion

In this study, the level of knowledge of university students about HPV and their attitudes towards vaccination was evaluated. In the results obtained, university students demonstrated a serious lack of information. In addition, it was observed that vaccination rates remained low due to the cost of the vaccine. Considering that infection in the young population can spread rapidly and become a public health problem, we think that vaccines should be included in the scope of social security, and that awareness should be raised through social media, friends, and planned health education.

HPV, which is of critical importance for the young population and adults in the reproductive period, is also a public health problem. The asymptomatic progression of HPV in many individuals makes this virus particularly concerning (2). The association of some types of the virus with cervical cancer is extremely important, especially. In a study conducted in the USA, the aim was to increase the level of knowledge of medical and dental students about HPV (14). In the same country, a survey conducted among women of reproductive age revealed that both the level of knowledge about HPV was low and that vaccination rates were inadequate (15). In a study conducted by Akçaoğlu et al. (16) in Türkiye, it was found that vaccination rates were quite low even in adults. Similarly, studies conducted in Algeria, Romania, and Morocco revealed that the level of knowledge of university students, high school students, parents, and healthcare professionals about HPV and the HPV vaccine was inadequate; it was emphasised that national vaccination programmes should target the young population and should be supported by educational policies (17-19). In our study, only 35.4% of university students were aware of the relationship between cervical

Table 1. Demografic data

Variables (n=387)	n	%
Age (years)		
Under 18	4	1.0
18-30	355	91.7
31-40	25	6.5
41-50	3	0.8
Gender		
Female	307	79.3
Male	80	20.7
Region of residence		
City	382	98.7
Rural	5	1.3
Monthly income level		
Less than 10,000 TL	207	53.5
10,000-20,000 TL	83	21.4
More than 60,000 TL	97	25.1
Health insurance		
Yes	211	54.5
No	176	45.5
HPV vaccination		
Yes	56	14.5
No	331	85.5

HPV: Human papilloma virus, TL: Turkish liras

Table 2. HPV awareness levels

Variables	Yes	No	I don't know
Cervical cancer is the most common gynaecological cancer worldwide.	227 (58.7%)	48 (12.4%)	112 (28.9%)
The prevalence of cervical cancer in Türkiye is lower than the world average.	112 (28.9%)	110 (28.4%)	165 (42.7%)
The majority of cervical cancer cases are seen in developed regions.	137 (35.4%)	96 (24.8%)	154 (39.8%)
A history of sexually transmitted diseases is a risk factor for cervical cancer.	289 (74.7%)	29 (7.5%)	69 (17.8%)
Smoking is not a risk factor for cervical cancer.	95 (24.5%)	176 (45.5%)	116 (30.0%)
Oral contraceptive use (birth control pill) is a risk factor for cervical cancer.	135 (34.9%)	90 (23.2%)	162 (41.9%)
Having many births is protective against cervical cancer.	102 (26.4%)	136 (35.1%)	149 (38.5%)
HPV transmission can be reduced by using barrier methods such as condoms.	199 (51.4%)	70 (18.1%)	118 (30.5%)
HPV cannot be prevented by birth control methods such as birth control pills and monthly injections.	127 (32.8%)	111 (28.7%)	149 (38.5%)
HPV has been detected in most of the cervical cancer cases.	137 (35.4%)	48 (12.4%)	202 (52.2%)
HPV is a sexually transmitted infectious agent.	237 (61.2%)	73 (18.9%)	77 (19.9%)
HPV can cause genital and extragenital (mouth. throat) warts.	225 (58.1%)	46 (11.9%)	116 (30.0%)
There is no screening programme for cervical cancer in our country.	99 (25.6%)	105 (27.1%)	183 (47.3%)
Pap-smear test and detection of high-risk HPV types are used in screening.	148 (38.2%)	69 (17.8%)	170 (44.0%)
Screening reduces the incidence and mortality of cervical cancer.	132 (34.1%)	74 (19.1%)	181 (46.8%)
HPV is not a serious enough infection to require vaccination.	80 (20.7%)	218 (56.3%)	89 (23.0%)
The HPV vaccines are protective against some types of cancer in both men and women.	199 (51.4%)	65 (16.8%)	123 (31.8%)
The virus type-specific protection of HPV vaccine in HPV infection is close to 100%.	103 (26.6%)	79 (20.4%)	205 (53.0%)
The protection offered by the HPV vaccine against cervical cancer is around 70%.	151 (39.0%)	54 (14.0%)	182 (47.0%)
The ideal age group recommended for HPV vaccination is 11-12 years.	120 (31.0%)	79 (20.4%)	188 (48.6%)
HPV vaccine is included in the routine vaccination programme of the Ministry of Health.	132 (34.1%)	90 (23.3%)	165 (42.6%)
HPV vaccines in Türkiye are of three types: 2, 4, 9-valent, and these vaccines are administered in 3 doses.	143 (37.0%)	26 (6.7%)	218 (56.3%)
There is no need for screening with Pap smear in people who have received the HPV vaccine.	79 (10.4%)	107 (27.6%)	201 (52.0%)
There is a reduced need for people who have been vaccinated against HPV to use condoms during sexual intercourse.	93 (24.0%)	124 (32.0%)	170 (44.0%)
The price of a dose of HPV vaccine is around 1,000 TL.	106 (27.4%)	78 (20.2%)	203 (52.4%)

HPV: Human papilloma virüs, TL: Turkish liras

Table 3. Willingness to be vaccinated

Variables	Yes	No	Ambivalent
I'll get the HPV vaccine	203 (52.5%)	43 (11.1%)	141 (36.4%)
If I had a daughter. I would have her vaccinated against HPV	216 (55.8%)	24 (6.2%)	147 (38.0%)
If I had a son. I would have him vaccinated against HPV	206 (53.2%)	29 (7.5%)	152 (39.3%)
I buy the HPV vaccine for a fee and get it done	118 (30.5%)	82 (21.2%)	187 (48.3%)
I will get the HPV vaccine if it is covered by social security	225 (58.1%)	19 (4.9%)	143 (37.0%)

HPV: Human papilloma virus

Table 4. Motivators

Motivators		n (%)
Where did you learn about the vaccine?	Social media Television Doctors Friend I didn't know about the vaccine	202 (52.2%) 13 (3.3%) 25 (6.5%) 85 (22%) 62 (16%)
Which lesions does the vaccine protect against?	Condyloma (wart) Cancer None of them All of them	28 (7.2%) 72 (18.6%) 36 (9.3%) 251 (64.9%)

cancer and HPV. In addition, the percentage of individuals aware of the cervical cancer screening programme was found to be only 25.6%. In addition, 61.2% of the participants knew that HPV infection could be sexually transmitted, and 58.1% were aware that the virus could cause condyloma. This information and studies inform us that the participants are aware that the HPV can cause visible discomfort, but they are uninformed about cervical cancer and screening programmes, which may cause a bigger health problem (5). In addition, even if the infection is not asymptomatic, those whose disease is detected or realise may cause the spread of the virus or delay in its treatment by concealing it because they are afraid of the societal judgment (3,4).

According to studies, a significant proportion of university students have low awareness of HPV infection and vaccination and limited knowledge about access to the vaccine (20). In our study, we found that only 26.6% of the participants knew about the protection offered by the HPV vaccine, and 63% did not know that there are three types of vaccines in our country. However, the rate of participants who said that vaccination should be administered to prevent HPV infection was 56.3%. A study conducted in Türkiye showed that 89% of university students wanted to be vaccinated against HPV. In our study, the rate of those who said that they would not get the vaccine even if it was included in the scope of social security was 4.9%.

Concerns about vaccine safety come to the fore in people who do not want to be vaccinated. Studies have shown that people with low levels of HPV knowledge, and those who have not received adequate health education in their educational background have a more negative view of vaccination (2,21,22). It has been shown that education programmes including accurate information about the transmission routes of HPV infection, its health effects, and the efficacy of the vaccine can increase vaccination rates (23). The importance of education in the fight against anti-vaccination is an indisputable fact. Zhang et al. (24) showed that many adolescents were willing to be vaccinated only after receiving sufficient information about the role of HPV vaccine in preventing various cancers. In our study, we found that 52.2% of the participants obtained information about the vaccine from social media, 22% from their friends, and 6.5% from doctors. Horio et al. (25) also stated in their study that brochures, videos and awareness messages for young people would increase acceptance of the vaccine. In addition, other studies have shown that the circle of friends and social media may increase the desire for HPV vaccination (26,27).

Study Limitations

Although our study is comprehensive and conducted at a university to reveal the awareness of the young population about HPV infection and vaccination, it was incomplete in comparing gender-related approaches among the participants and in evaluating the approach to vaccination between genders and among different level of education. Again, using groups with more pronounced socioeconomic differences compared to a similar reference group may also reveal different approaches. We think that more comprehensive approaches, which can also reveal the differences between genders, could provide greater insight into educational modelling.

Conclusion

University students have an important role in limiting HPV infection, which may be considered a public health issue. Informing young people with materials that attract young people's interest, integrating information on the subject in course curricula, and using correct education programmes can prevent the transmission routes of infection and increase vaccination rates.

Ethics

Ethics Committee Approval: The study was approved by the İstanbul Esenyurt University Ethics Committee (approval number: 03, date: 05.12.2023).

Informed Consent: The students were first informed about the study, their consent for participation was obtained, and then the questionnaire was applied.

Footnotes

Authorship Contributions: Surgical and Medical Practices - E.U., M.B.; Concept - E.U., M.B., S.A.; Design - E.U.; Data Collection or Processing - E.U., S.A.; Analysis or Interpretation – E.U., M.B.; Literature Search - E.U., M.B.; Writing – E.U., M.B., S.A.

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