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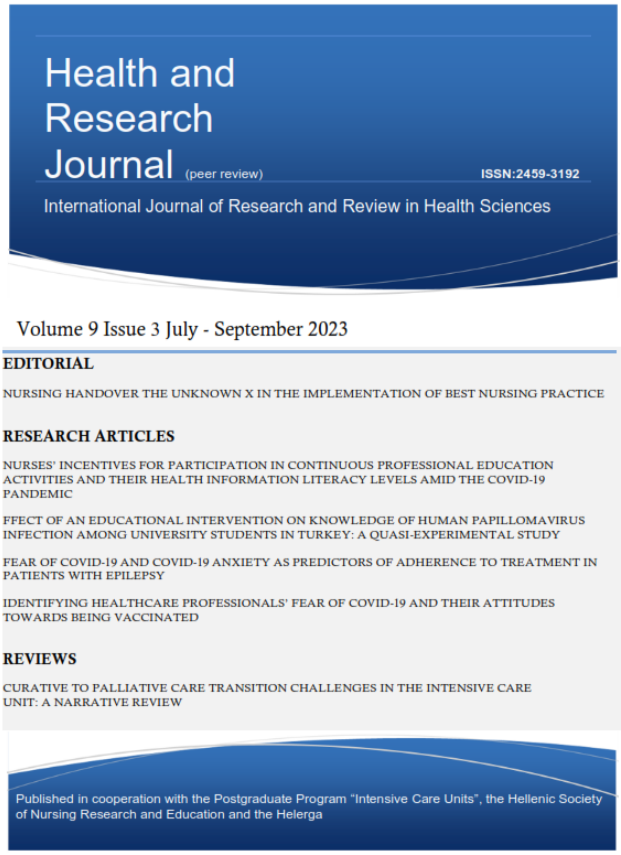

Effect of an educational intervention on knowledge of human papillomavirus infection among university students in Turkey: A quasi-experimental study

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RESEARCH ARTICLE

EFFECT OF AN EDUCATIONAL INTERVENTION ON KNOWLEDGE OF HUMAN PAPILLOMAVIRUS INFECTION AMONG UNIVERSITY STUDENTS IN TURKEY: A QUASI-EXPERIMENTAL STUDY

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Abstract

Aim: This study aimed to determine the knowledge level of university students outside the health field on human papillomavirus (HPV) infection and evaluate the efficacy of educational interventions provided on HPV infection.

Method and Material: This was a quasi-experimental pre-test and post-test design. This study was conducted on undergraduate students outside the health field at a public university in Izmir. HPV education was provided to the students in classes with a PowerPoint presentation, and the "Fall in Love, Not in HPV" brochure was distributed.

Results: Of 873 students participating in the pretest, 48.7% and 42.5% heard of HPV infection and vaccine, respectively. While the response rates of the students participating in the pretest of the 16-question HPV knowledge survey ranged from 13.9% to 58.8%, a significant (51.4%–91.6%) increase was observed in the percentage of answers to the posttest HPV questions after the educational intervention ($p < 0.001$). The total HPV knowledge score was 5.17±4.33in the pre-test, and the post-test was 13.37±2.66 ($p<0.001$). The biggest barriers to those who did not want to be vaccinated were the cost of the vaccine and the lack of information about HPV infection.

Conclusion: The educational intervention has greatly increased the knowledge of HPV infection among university students. Continuing education programs are needed to bridge the knowledge gap on HPV infection and HPV-related diseases among young adults.

Keywords: Human papillomavirus; knowledge; cancer; prevention; reproductive health.

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INTRODUCTION

Human papillomavirus (HPV) is the most common sexually transmitted infection worldwide and negatively impacts individual social life.[1, 2] More than 150 subtypes of HPV exist, and sexually active men and women are expected to get infected at least once in their lifetime without developing any pathology. Most HPV infections (70%–90%) do not lead to symptoms, and infected individuals spontaneously recover within two years. [2-4] While low-risk HPVs (LR-HPVs) can lead to the development of anogenital and cutaneous warts, high-risk HPVs (HR-HPVs) can lead to the development of precancerous lesions, oropharyngeal cancers (mouth, tonsil, larynx, and throat) and cervical cancer especially from anogenital cancers (vulva, vagina, penis, and anus).[1,4,5] More than 90% of anogenital cancers, especially cervical cancer (99.7%), are associated with HPV.[1,2,5,6]

Globally, most HPV-related diseases and approximately 85% of cervical cancer, the third most common type of cancer among women, occur in underdeveloped areas.[1,5,6] According to the 2020 data from the Global Cancer Observatory, the prevalence rate of cervical cancer worldwide was found to be 6.5%, with a 7.7% mortality rate, whereas according to the 2018 data in Turkey, HPV-related cervical cancer prevalence rate was found to be 4.8%, with a 2.2% mortality rate.[3,7] According to the Cancer Statistics of Turkey data, women are estimated to be more affected by HPV-related cancers; specifically, women have approximately five times more HPV-related cancers than men. In Turkey, the HPV positivity rate was 4.2% in the cervical cancer screening program conducted by the Ministry of Health for five years in the 30–65-year-old age group.[8]

Seventeen types of HR-HPV responsible for cervical and other cancers (16/18/31/33/35/39/45/51/52/53/56/58/59/66/68/73/82) have been identified. While types 16 and 18 have the highest carcinogenic capacity and are responsible for nearly 70% of cervical cancer cases, 6 and 11 are responsible for >90% of anogenital warts. [1, 3-5] Although genital warts are not life-threatening, they are relatively common lesions. The disease's high contagiousness and relapse rate increase the psychosocial and economic burden due to the need for more than one-time treatment.[4, 6]

With HPV vaccines, the incidence and burden of HPV disease can be reduced. Currently, there are three types of approved HPV vaccines, such as bivalent, quadrivalent, and 9-valent, which effectively reduce the incidence of HPV-related diseases. Their effectiveness has been improved against the types of HPV responsible for genital warts and cancers. [1, 3, 4] Bivalent (Cervarix-16/18) and quadrivalent HPV vaccines (Gardasil-6/11/16/18) are available in Turkey, and the Turkish Gynecological Oncology Association recommends vaccination; however, it is not included in the national immunization program. [9] For a high level of HPV vaccine efficacy, immunization is recommended for females and males between the age of 9 and 26 years before sexual activity begins. [10, 11] The World Health Organization (WHO) recommends that the HPV vaccine be included in the national immunization programs of developing countries, especially where the incidence of cervical cancer is high. [3, 6]

The prevalence of HPV infections peaks in adolescence in both sexes, and approximately a quarter of these infections are estimated to occur in adolescents. [12] Adolescent university students are a significant part of society at risk regarding reproductive and sexual health. [13] In adolescents, the prevalence of HPV in the sexually active group varies between 10% and 80% in the first 2–3 years after the start of sexual intercourse. [14] İncreasing the knowledge of young individuals about HPV infection is extremely significant in primary prevention. University students must receive accessible, adequate, and accurate information about HPV infection and vaccines to protect them and improve public health. The knowledge of HPV infection is a significant issue concerning public health, especially for young individuals at a high risk of transmission to continue their lives as healthy adults in the future and raise healthy children. [15]

Healthcare professionals play a crucial role in preventing HPV infection and the health risks it causes. With educational interventions about HPV infection and vaccination, young individuals can avoid risky behaviors and take preventive measures by improving their knowledge and attitudes. This study aimed to determine the level of understanding of university students outside the health field on HPV infection and vaccine and evaluate the effectiveness of the educational interventions provid-

ed on HPV infection and vaccine.

METHODS

Design and setting

This study is a quasi-experimental study with pretest and post-test. The study was conducted on undergraduate students outside the health field at a public university in Izmir, in the western region of Turkey, between December 2018 and April 2019. The research universe consisted of 18 faculties and approximately 55 thousand students, each of which has sub-departments, except for the field of health at the university. As a result of the official correspondence with the faculty directors, seven faculties granted research permission, and these faculties (Faculty of Literature, Science, Economic and Administrative Sciences, Communication, Engineering, Fisheries, and Agriculture) were included in the study.

Volunteer Turkish students over 18 studying outside the health field were included in the study. The sample size was calculated as 763 with 50% expected frequency, 2% deviation margin, and 95% confidence percentage with the sample calculation of the known universe. A total of 950 students attended the HPV training conducted in randomly selected classrooms or training halls where the volunteers participated. Moreover, 873 and 826 students completed the pre-and post-test questions, respectively. According to Cohen, an effect size value between 0.20 and 0.50, between 0.50 and 0.80, or greater than 0.80 is considered to be at a low, moderate, or largely effective level, respectively [16.] As a result of posthoc power analysis, including at least 826 students in each group in the pre-and post-test, the effect size was close to the largely effective level, with 0.74 in this study.

Instruments

Individual questionnaire form: The form was developed by researchers in line with the literature review and consisted of two parts. [13-15, 17] The first part included questions about the socio-demographic characteristics (gender, age, marital status, and place of residence) of the students, and the second part included questions about reproductive and sexual health behaviors (having a regular partner, sexual experience, age of first sexual experience, the use of contraceptive methods, having an infection related to the reproductive organs, and the status of examination about the disease) as well as HPV infection and its diagnosis (the status of hearing of HPV infection, HPV vaccine, cervical cancer, and penile cancer, and pap smear test).

HPV knowledge survey: Pre-/Posttest HPV knowledge questions, developed by the researchers after reviewing the relevant literature, consisted of 16 questions. The posttest questions also included questions about the HPV vaccine after the HPV training. [10, 13-15, 17, 18]

The answers to Pre-/Post-test HPV knowledge questions have three options, "True," "False," and "Don't know." In determining the frequency distribution of knowledge levels in the pretest-posttest questions, coding was performed as knowing and not knowing. While the "True" choice was coded as knowing, "False and Don't Know" were coded as not knowing. Percentages of those "Knowing" and "Not Knowing" were presented in pre-test-posttest evaluations. In the calculations of the pre-and post-test total HPV knowledge scores, the "True" choice was scored as "1" point, and the "False and Don't know" options were scored as "0" points. No reverse-scored question was noted. The HPV total knowledge score ranged from 0 to 16. Higher HPV score represents a better level of knowledge, while a lower score represents a poor level of knowledge. For HPV knowledge questions, the opinions of five experts from the Field of Women's Health and Diseases Nursing were obtained, and the final version of the forms was prepared in line with the recommendations after the pre-application was conducted with ten students.

HPV education content: The training included topics such as the means of transmission of HPV infection, symptoms, risk factors, health risks caused by HPV infection and cervical cancer, diagnosis and treatment, prevention methods, and HPV vaccine. In addition, brochures, such as "Fall in Love, Not in HPV," were prepared by the researchers in parallel to the educational content in line with the literature. [2, 3, 5] HPV training was conducted face-to-face before or after the lesson in the forms of a Power-

Point presentation, question-answer, and discussion in the training hall or classes where permission was obtained. One week before the training, HPV training posters (place and time) were displayed on the activity boards, canteen, and faculty entrances of the departments where the training will be conducted. The training was planned outside of the class timings of the students to increase participation.

Data collection

The introduction was performed before the pretest, and information was provided as regards the purpose of the study and the content and duration of the training. Individual questionnaire forms and pretest HPV knowledge survey were distributed and answered by self-report of students. After the pretest data were collected, the students underwent the HPV training, and the "Fall in Love, Not in HPV" brochure was distributed to the participants. After the HPV training, participants' self-reporting collected the post-test data. Each HPV training session lasted approximately 50–60 minutes, and an average of 30–40 students participated in each training.

Data analysis

The analysis of data was performed using the SPSS Statistics 25.0 package program (IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp). Numerical data were presented with mean, standard deviation, median, minimum, and maximum values, and categorical data with frequency values. The distribution of normality was performed using the Kolmogorov-Smirnov test. The Mann-Whitney U test was used to analyze binary group quantitative variables. Pearson's chi-square or Fisher exact test (Fisher-Freeman-Halton accurate test for the RxC tables) was used to analyzing qualitative variables. McNemar and Wilcoxon signed-rank tests were used to compare two dependent groups. In all analyses, the significance level was accepted as .05.

Ethical considerations

For this study, ethical permission from the Health Sciences Scientific Research and Publication Ethics Committee (Approval number: 69586843-02 / 02/2018) of the University where the study was conducted and written informed consent of the students were obtained.

RESULTS

The mean age of 873 students participating in the pretest was 21.5 ± 3.25 years (min–max: 18–50 years), of which 92% (n = 803) were 24 years of age and below, 52.9% (n = 462) were females, and almost all of them (97.4%; n = 850) were single. Of the students, 55.9% (n = 488), 44.1% (n = 385), and 32.8% (n = 286) were students in science, social science, and Year 1, respectively. The longest period that 63.7% of the participants (n = 556) lived was in the cities. While 35.1% (n = 306) of the students lived with their families, a similar number of students (35.1%; n = 307) lived alone or with their housemates. It was found that 36.4% of the students (n = 318) were smokers. No statistically significant difference was found between the students' pretest HPV knowledge scores and their sociodemographic characteristics and field of education (p>0.05).

Sexual and reproductive health behaviors

Among the students who participated in the pretest, 29% and 66.7% of female and male students had sexual experience, respectively. While the mean age of first sexual experience was 18.10 ± 2.39 (min–max: 12–35) years, it was 19.57 ± 2.65 (min–max: 14–35) and 17.38 ± 1.86 (min–max: 12–25) years for female and male students, respectively. While 39.8% of female students had a gynecological examination, only 14.4% of male students had a urological examination. The pretest HPV knowledge scores of students who have regular partners (p <0.05), sexual experience (p<0.001), an infection related to reproductive organs (p<0.05), and gynecological or urological examinations (p <0.001) were found to be high (Table 1).

Pretest/posttest HPV knowledge levels, attitudes toward HPV vaccine

Of the students participating in the pretest, 75.6%, 43.1%, 26%, 48.7%, and 42.5% stated about hearing of cervical cancer, penile cancer, Pap smear test, HPV infection, and HPV vaccine, respectively. The internet accounted for most HPV vaccine information sources (71.1%) (Table 2). The "Knowing" percentage of students of the pretest-posttest 16-question HPV infec-

tion knowledge survey and their total HPV knowledge scores are presented in Table 3. A high level of significant difference was found in the rates of change from "Not Knowing" to "Knowing" in the pretest-posttest (p<0.001). While the total HPV knowledge score was 5.17 ± 4.33 in the pretest, it was 13.37 ± 2.66 in the posttest (p <0.001). It was found that 3.9% of the students had HPV infection, and 1.5% had the HPV vaccine. The rates of those who want to have the HPV vaccine, those who do not wish to, and those who are indecisive after the training and their reasons are presented in Table 4.

DISCUSSION

In the study, undergraduate students' knowledge levels outside the health field about HPV infection before the training were found to be low. The educational intervention has been effective in increasing the knowledge and knowledge of the students about HPV infection. In the pretest questions, while three-quarters of the students stated about cervical cancer, approximately half heard of penile cancer. Cervical and penile cancer knowledge in female and male students was found to be higher. Furthermore, the students' Pap smear screening knowledge is low. Cervical cancer is one of the most common cancers encountered by females. Their awareness of cervical cancer has increased with the widespread use of national cervical cancer screenings in Turkey. In previous studies, the understanding of cervical cancer was higher, especially in females. [15, 17, 19]

Approximately half of the students were found to have HPV infection and vaccine knowledge, which was higher in female students. In studies conducted on university students outside the field of health in different regions of Turkey, the rate of those who heard of HPV infection ranged from 12% to 44%, and the rate of those who attended the HPV vaccine ranged from 8% to 34%. [10, 13, 15, 17] This study showed a slightly higher knowledge rate of HPV infection and vaccine than in the literature. The advertising banner "Fall in Love, Not in HPV" posted on faculties one week before the HPV training may have raised the knowledge of HPV infection. In this study and other studies conducted in Turkey, university students' main information resources about HPV infection and sexual health were shown to be the internet, media, and their friends. [11, 13, 15]

In studies conducted with students in the field of health, the rates of knowledge on HPV infection and vaccine are between 54% and 94.6%. [11, 18, 20-25] The rate of those who said HPV infection causes cervical cancer varied between 85% and 95%. [18, 20, 23, 26] While the response rates of the students participating in the pretest of the 16-question HPV knowledge survey ranged from 13.9% to 58.8% (low-risk HPV type infections can go away spontaneously; HPV infection causes warts in female and male genital organs), a significant (51.4%–91.6%) increase was observed in the percentage of answers to the posttest HPV questions after the educational intervention. "HPV infection causes warts in the genital organs" (94.5%) and "HPV infection causes cervical cancer" (93%) were the items with the highest rate of change from "Not Knowing" to "Knowing" (p<0.001). A statistically significant difference was found in the pretest/posttest total HPV knowledge scores (p <0.001).

In studies conducted similarly in the literature, pre-training HPV knowledge of students was observed to be insufficient, whereas educational intervention increased their HPV knowledge and positively affected their HPV vaccination attitudes. [12, 13, 27, 28] In this study, one-third of the female and approximately two-thirds of the male students had sexual experience. It is a fact that the sociocultural structure of Turkish society and value judgments related to sexuality reveal different approaches to sexuality among females and males in Turkey. In Turkey, which has a young population, an increase in premarital sexual experience over the years has been observed. [13] In the studies in the literature, the age of first sexual experience was observed to differ; however, in all studies, the age of first sexual experience was earlier in males than that of females; and as the years pass, the age of first sexual experience decreases. [13, 18, 20, 23]

In the study, the pretest total HPV knowledge scores of the students who had sexual experience, experienced infection related to the reproductive organs, and had gynecological or urological examinations were found to be significantly higher. In a study conducted with university students in Turkey, HPV knowledge scores of those who were married, who had a family member with a cancer diagnosis, who could talk about sexu-

al issues with their families, and who were older, were found to be higher. [15] In a study conducted by Villanueva et al. (2019) in Spain, the HPV knowledge level of young individuals with sexual experience and gynecological-urological examination was higher, consistent with the results of this study. [25]

In this study, the rate of students with the HPV vaccine was meager (1.5%). In Turkey, the rate of HPV vaccination among university students outside the health field was between 0.3% and 1.5%. [10, 15, 17] However, it was also found to be relatively low, between 0.6% and 1.9%, in healthcare students and professionals. [18, 20] After the HPV training, while one-third of the students stated that they wanted to have the HPV vaccine, two-thirds said they either did not wish to or were indecisive. The cost of the vaccine and the fact that the Social Security Institution did not cover the vaccine (48.3%), and the lack of information about the vaccine (32.4%) were the main reasons for not wanting to undergo vaccination and becoming indecisive. In Turkey, the HPV vaccine is not included in the national immunization program, and the Social Security Institution does not cover the cost of the vaccine. This consequently affects the vaccination rates.

World Health Organization (WHO) has been recommending HPV vaccination since 2009 to prevent cervical cancer. The HPV vaccine is included in the national immunization program in most American and European countries and some Asian countries, such as Japan, the Philippines, and Korea. [3] In Italy, which has had the HPV vaccine in its national immunization program for ten years, the rate of HPV vaccination among university students was 23.9%. [23] The vaccine cost, lack of information about the vaccine, not believing in its necessity, and not trusting it have been observed to be the main obstacles to the HPV vaccine in the studies conducted. [3, 18, 23] Although the HPV vaccine has been available in the market for more than a decade and has been proven to be safe, negative perceptions of individuals and healthcare professionals, such as the potential to cause serious side effects and even death, and doubts regarding its effectiveness, still exist. [29, 30] Such negative perceptions of healthcare professionals may hinder the recommendation of vaccines. In a study conducted on medical students, it was reported that the medical students were observed to be reluctant to recommend the HPV vaccine before the pretest; however, the medical student's attitudes and behaviors toward the vaccine changed after the training. [29]

Some limitations should be acknowledged. The research was conducted only on students of a public university. An increase in the HPV knowledge levels of the students in the study does not mean an increase in HPV vaccination rates. For an increase in the HPV vaccination to be evident, it should be investigated at least six months later. Therefore, performing these types of studies is recommended.

CONCLUSION

Before the educational intervention, the HPV infection and vaccine knowledge levels of university students were found to be low. The educational intervention increased students' knowledge of HPV infection and vaccines. While one-third of the students stated that they sought to be vaccinated after the educational intervention, the main obstacles for those who did not want to be vaccinated were the cost of the vaccine and the lack of information on HPV infection.

Healthcare professionals should provide consultancy in reducing adverse health risks through primary prevention, early diagnosis, and treatment by providing HPV knowledge. They should be more active in educating young individuals, especially those with insufficient use and access to sexual and reproductive health services and in the risk group. Increased levels of HPV knowledge will be decisive in screening and prevention and will affect the acceptance and administration rates of the HPV vaccine. Besides, including the vaccine in the national immunization program and the Social Security Institution to cover the cost may increase vaccination rates.

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ANNEX

TABLE 1. Sexual and reproductive health behaviors of students and pretest HPV comparison with total scores.

Variables (N = 873)	Female		Male		Total		Pretest HPV total score		Test
	n	%	n	%	N	%	M	Min–Max	*p**
Having a regular partner									
Yes	153	33.1	113	27.5	266	30.5	6	0–14	.007
No	309	66.9	298	72.5	607	69.5	4	0–14	
Having sexual experience									
Yes	134	29.0	274	66.7	408	46.7	6	0–14	
No	328	71.0	137	33.3	465	53.3	4	0–14	<.001
Using the contraceptive methods (n = 408)									
Yes	120	89.6	259	94.5	379	92.9	6	0–14	.306
No	14	10.4	15	5.5	29	7.1	7	0–14	
Using condoms (n = 408)									
Yes	96	71.6	226	82.5	322	78.9	6.5	0–14	.917
No	38	28.4	48	17.5	86	21.1	6	0–14	
Experienced infection related to the reproductive organs									
Yes	38	8,2	14	3,4	52	6.0	7	0–14	
No	424	91.8	397	96.6	821	94.0	5	0–14	.027
Having gynecological or urological examination									
Yes	184	39,8	59	14.4	243	27.8	7	0–14	<.001
No	278	60,2	352	85.6	630	72.2	4	0–14	

** Mann-Whitney U Test, M:Median, Min–Max: Minimum–Maximum, Percentage of the column was taken.*

TABLE 2. Status of hearing about cervical and penile cancer, pap smear test, HPV infection and vaccine, and HPV information resources before the pretest.

Variables	Female		Male		Total	
(N = 873)	**n**	**%**	**n**	**%**	**n**	**%**
Heard of cervical cancer						
Yes	405	87.7	255	62.0	660	75.6
No	57	12.3	156	38.0	213	24.4
Heard of penile cancer						
Yes	204	44.2	172	41.8	376	43.1
No	258	55.8	239	58.2	497	56.9
Heard of the pap smear test						
Yes	164	35.5	63	15.3	227	26.0
No	298	64.5	348	84.7	646	74.0
Heard of HPV infection						
Yes	260	56.3	165	40.1	425	48.7
No	202	43.7	246	59.9	448	51.3
Heard of the HPV vaccine						
Yes	224	48.5	172	41.8	371	42.5
No	238	51.5	239	58.2	502	57.5
HPV vaccine information resources (n = 371)						
Written and visual media	76	33.9	47	27.3	123	33.2
Internet	146	65.1	118	68.6	264	71.1
Healthcare professional	64	28.5	18	10.4	82	22.1
Neighbor/spouse/friend	55	24.5	39	22.6	94	25.3
Other	9	4.0	5	2.9	14	3.8

TABLE 3. Pretest/Posttest HPV knowledge levels of students and the change rate of unknowing to knowing after the educational intervention.

Questions	**Pretest Knowing**		**Posttest Knowing**		**Pretest-Posttest Change Rate Unknowing/Knowing**		
	(N = 873)		**(N = 826)**		**(N = 826)**		**Test**
	n	**%**	**n**	**%**	**n**	**%**	***p****
HPV infection is passed on through sexual intercourse.	376	43.1	711	81.4	362	78.7	<.001
HPV infection can be transmitted through sexual and skin contact without sexual intercourse.	347	39.7	754	86.4	430	87.9	<.001
HPV infection causes warts in the female and male genital organs (anus, penile, testicle, vulva, vagina, and cervix).	513	58.8	800	91.6	311	94.5	<.001
HPV infection causes cervical cancer in women.	426	48.8	794	91.0	383	93.0	<.001
HPV infection causes penile cancer in men.	377	43.2	777	89.0	417	91.2	<.001
HPV infection causes oral, throat, and laryngeal cancers in men and women.	173	19.8	622	71.2	459	69.9	<.001
HPV infection in women is diagnosed with a cervical Pap smear test and a DNA test.	342	39.2	744	85.2	420	85.9	<.001
HPV infection in men is diagnosed by penile Pap smear test.	281	32.2	660	75.6	412	75.2	<.001
There is no cure for HPV infection.	155	17.8	596	68.3	459	67.8	<.001
Low-risk types of HPV infection can spontaneously heal.	121	13.9	449	51.4	350	49.3	<.001
Using a condom protects you from HPV infection.	395	45.2	687	78.7	334	76.8	<.001
Monogamous life protects you from HPV infection.	343	39.3	690	79.0	377	76.9	<.001
Smoking increases the risk of HPV infection.	287	32.9	692	79.3	429	78.7	<.001
HPV vaccine protects against genital warts.	337	38.6	720	82.5	408	82.3	<.001
HPV vaccine protects against cervical cancer.	339	38.8	709	81.2	397	80.5	<.001
HPV vaccine is administered to men and women in the 9–26-year-old age group.	249	28.5	646	74	422	72.1	<.001
Total HPV knowledge score	***Mean ± SD***		***M***	***Min–max***	***Z***		***p****
Pretest total score (N = 873)	5.17 ± 4.33		5	0–14	−24.56		<.001
Posttest total score (N = 826)	13.37 ± 2.66		14	0–16			

**McNemar test, **Wilcoxon test, Arithmetic Mean ± Standard Deviation, M : Median*

TABLE 4. Attitudes toward HPV vaccine after the educational intervention.

Variables (N = 873)	**n**	**%**
Experienced the HPV infection		
Yes	34	3.9
No	812	93.0
Did not respond	27	3.1
Had the HPV vaccine (n = 873)		
Yes	13	1.5
No	828	94.8
Did not respond	32	3.7
Those who want to get the HPV vaccine after the training (n = 828)		
Yes	292	35,3
No	255	30,7
Indecisive	278	33,6
Did not respond	3	0,4
Reasons for not wanting to get the HPV vaccine or being indecisive (n = 533)		
The HPV vaccine is expensive and the Social Security Institution does not cover it	258	48.4
Lack of information on HPV vaccine	173	32.4
Do not need it	42	7.9
Not considering self in the risk group	39	7.3
Not trusting the vaccine	28	5.2