

RESEARCH ARTICLE

Determination of Knowledge of Turkish Midwifery Students about Human Papilloma Virus Infection and its Vaccines

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Abstract

Human papilloma virus (HPV) is one of the most common sexually transmitted agents and its infection is the most established cause of cervical cancer. Midwives play a key position in the implementation of cervical cancer. This descriptive study aimed to determine the level of knowledge concerning HPV and HPV vaccination among 268 midwifery students. Data were collected between November 15 and 30, 2011, through a self-reported questionnaire. The mean age of participants was 20.75 ± 1.60 . Among all students, 44.4% had heard of HPV, while 40.4% had heard of HPV vaccination. The relationship between the midwifery student knowledge on HPV and HPV vaccine and their current educational year was significant ($p=0.001$). In conclusion midwifery students have moderate level of knowledge about HPV and its vaccine and relevant information should be included in their teaching curriculum.

Keywords: Human papilloma virus - vaccination - midwifery student knowledge - cervical cancer prevention

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Introduction

Cervical cancer is the second most common cancer in women all over the world (AWHONN, 2010). Annually more than 500,000 million new cases develop worldwide with more than half of cases dying of cervical cancer. In Turkey, cervical cancer is the night most common cancer among women and ranks 13th among cancer-related diseases. According to the GLOBACON (2008) data, the prevalence of age-related cervical cancer in our country was determined as 4.2/100,000, while the mortality rate was determined as 1.6/100,000 (Ferlay et al., 2010). National Health Ministry 2006 data, annually incidence of cancer among women is 165/100,000. Cervical cancer ranks among the most frequently observed type of female cancers, with an incidence of 4.6/100,000. It is estimated that the prevalence of cervical and other forms of cancer will double by the 2030s (National Health Ministry, 2006).

It is generally accepted that HPV is etiologically associated with cervical cancer. HPV infection types 16 and 18 account for approximately 70% of cervical cancers over the world (Munoz et al., 2004; Agius et al., 2010). HPV is one of the leading carcinogenic infections; however, it is difficult to report an exact prevalence for HPV in Turkey. In a study conducted by the Ministry of Health Department of Cancer Control, HPV prevalence was reported as 2.9% (NHDC, 2012).

Two prophylactic HPV vaccines have been developed and are available internationally. These are quadrivalent

vaccine (Gardasil) and bivalent vaccine (Cervarix). In June 2006, after the US Food and Drug Administration licensed, these vaccines have been recommended for girls between the ages of 9-26 in many European countries, in New Zealand, Australia, and in the USA within the context of various school immunization programs (Markowitz et al., 2007; Christian et al., 2009; Weisberg et al., 2009). Following the licensing of the vaccines in Turkey, the HPV vaccine has been provided for a fee to 11-26 year-old age group.

Considering the well-being of future generations, the protection of women from cancer is of great importance. For this reason, 2012 was designated as the year of female cancers in Turkey, and activities for raising awareness among women were conducted across the country National Health Ministry, (2012). Cervical cancer is endemic throughout the world, and deaths related to this cancer can be reduced with protection, early diagnosis, and treatment. Knowledge of HPV and on the effect of the HPV vaccine on cervical cancer is essential for effective protection against cervical cancer, and also for its early diagnosis. Midwives are among the health professionals that assume an important role in the preservation and development of public health. As Millennium Development Goals, midwives play key role in the protection against cancer. Midwives, nurses, and other health professionals with training on this subject can identify the risk factors of individuals, and play an important role in the protection against cancer by providing education and counseling to individuals.

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To our knowledge, no study has been previously conducted in Turkey with midwifery students. This study aimed to determine the level of knowledge concerning HPV and HPV vaccination among midwifery students.

Materials and Methods

This descriptive study was conducted among 268 midwifery students between November 15 and 30, 2011 at Ege University, Izmir Atatürk School of Health. The study was applied to first, second, third, and fourth year midwifery students. In the school, 391 midwifery students were attending all classes, but 123 did not participate in this study (did not volunteer, out of school, busy schedule). Data was collected through a self-administered anonymous questionnaire form. The questionnaire form included 27 questions about socio-demographic characteristics and medical history, and knowledge about HPV and the HPV vaccination. Prior to the collection of study data, a pilot application with 10 students was performed in order to test the comprehensibility of the questionnaire. This study was approved by the Ege University Ethics Committee.

Study data were analyzed using the Statistical Package for Social Sciences SPSS 15.0 software package. Data were expressed as “mean±standard deviation”, percentage, and comparing to the chi-square test where appropriate.

Results

The socio-demographic characteristics of the students included in the study are shown in Table 1. Among volunteer midwifery students participating in the study, 67.2% were in the 20-24 age groups, and the mean age was 20.75±1.60. Among the students, 59.7% were of rural origins, and 73% had a moderate level of income. According to their educational year, the student’s awareness on HPV increased in the upper classes (1.3%, 19.2%, 47.1%, and 78.6%, respectively). Similarly, their awareness regarding the HPV vaccination also increased in the upper classes (1%, 10.2%, 37.5%, and 58.7%, respectively). Among all students, 44.4% had heard HPV, while 40.4% had heard HPV vaccine. The relationship between the midwifery students’ knowledge on HPV and HPV vaccine and their current educational year was significant (p<0.01). Among the students, 71.3% described that HPV is sexually transmitted, and 58.6% described that HPV causes cervical cancer (Table 2). The

Table 1. Demographic Characteristics of the Midwifery Students

Characteristics	n	%
Mean age	20.7±1.6	
Attending year of school		
1 st	76	28.4
2 nd	73	27.2
3 rd	68	25.4
4 th	51	19
Income		
High	-	-
Moderate	195	73
Low	73	27
Residence		
Rural	160	59.7
Urban	108	40.3

Table 2. Answers of Midwifery Students about HPV and HPV Vaccine

Characteristics	n	%
How is HPV transmitted		
Sexual contact	191	71.3
I don’t know	77	28.7
Does HPV infection lead to servical cancer		
Yes	157	58.6
No	111	41.4
Does HPV vaccine protection against HPV infection		
Yes	144	53.7
No	124	46.3
Has heard about the HPV vaccine		
Yes	108	40.4
No	160	59.6
Has heard about the HPV infection		
Yes	119	44.4
No	149	55.6
Ever had sexual intercourse		
Yes	12	4.5
No	256	95.5
Genital cancer in the family		
Yes	15	5.6
No	253	94.4
Have you vaccinated HPV		
Yes	5	1.9
No	263	98.1
Have you visit gynecologist last three years		
Yes	44	16.4
No	224	83.6

Table 3. Sources of Knowledge about HPV and HPV Vaccine

Sources of knowledge	HPV n	HPV %	HPV Vaccine n	HPV Vaccine %
School	114	42.5	86	32.1
Health workers	49	18.3	50	18.7
Hospital	15	5.6	22	8.2
Journals and magazines	14	5.2	12	4.5
Television	11	4.1	14	5.2

Table 4. Circumstances Under which Midwifery Students Would Be Vaccinated

	n	%
Doctor’s recommendation	204	76.1
My family recommendation	6	2.2
If my friends recommendation	4	1.5
I would be vaccinated in any case	38	14.2
Definitely I would not be vaccinated in any case	5	1.9
I have no idea	10	3.7
Before marriage	1	0.4

relationship between the students’ current educational year and their knowledge that HPV causes cervical cancer was significant (p<0.01). Among the students, 42.5% described that they acquired knowledge of HPV at school, while 32.1% described that they acquired knowledge on the HPV vaccine at school. The relationship between the current educational year of the students and the acquisition of knowledge on HPV and the HPV vaccine from school was significant (p=0.00) (Table 3). Of the students, 76.1% described that they would receive the HPV vaccine if recommended by their physician (Table 4). The prevalence of a history of genital cancer within the family was 5.6% among the students, while the rate of HPV vaccination among all of the students was 1.9% (Table 1).

Discussion

Midwives have a key position role to counsel and educate women about HPV infections and the HPV vaccination. For this reason, it is important for midwives

to have current knowledge regarding HPV infection and HPV vaccines. According to our study findings, 44.4% of the midwifery students had heard of HPV infection, while 40.4% had heard on the HPV vaccine. Although the level of knowledge about HPV infection and the HPV vaccines was insufficient, these results are in accordance with the findings of other studies conducted with different student groups. In a study conducted by Philips et al. (2003) on university students the level of knowledge of HPV was reported as only 17.6% (Philips et al., 2003). The qualitative study in Malaysia conducted by Al-Naggar et al. (2010) with 30 female students studying in different university departments, 47.7% of the students were reported to have knowledge of HPV. Studies in Malaysia and Turkey, results of different group of students' knowledge showed that more than half of participants (55.4%) were aware of HPV infection (Medeiros and Ramada 2010; Onuz et al., 2011). In Juraskova and collegious study (2011) conducted with psychology students, 45% were reported to have knowledge of HPV infection. In contrast to these studies, Cirilo et al. (2010) found, in their study on nursing students, that 45% of first year students had knowledge of HPV infections, while 100% of the upper class students had knowledge of the disease (Cirilo et al., 2010; Juraskova et al., 2011). Similarly, in Greece study on midwives and midwifery students, a large percentage (90%) of the midwifery students were identified as having knowledge of HPV infection, while 58.6% were identified as having knowledge of the HPV vaccine (Dinas et al., 2009) According to the our and similar study findings (with a few exceptions), the level of knowledge among midwifery students HPV infection and HPV vaccination is insufficient. Healthcare providers, especially midwives are essential to improve access to and uptake of the HPV vaccine. In 2006, FDA (Food and Drug Administration) licensed HPV vaccine use in girls and women aged 9 to 26 years (Weisberg et al., 2009). Lack of knowledge about HPV may it difficult for midwifery make appropriate decisions. In current study, three quarters midwifery students known that HPV is sexually transmitted and fifty eight percent believed that HPV causes cervical cancer. The study by Guvenc et al. (2012) conducted on nursing students, 43.6% of the students described that HPV is sexually transmitted, with this ratio increasing to 87.3% among final year students (Guvenc et al., 2012). Duval et al. (2009) stated that 61% of nursing students in Canada HPV is sexually transmitted. In the same study, 81.6% of nursing students described that HPV causes cervical cancer.

Studies revealed that there are deficits in knowledge about HPV and HPV vaccine among healthcare providers' students (midwifery, nursing, physiology etc. In the study, 42.5% of participants claimed that they acquired their knowledge on HPV through their university education, while 32.1% claim that they acquired their knowledge on the HPV vaccine through their university education. The relationship between the current educational year of the students and the acquisition of knowledge on the HPV vaccine from school was significant. In Iranian study, a majority of participants claimed that they acquired their knowledge through their university courses (Ghojzadeh

et al., 2012). Research has shown that knowledge of HPV and recommended by physician is directly correlated to vaccine acceptance (Makwe et al., 2011; Al-Naggar et al., 2012). Our study showed that most of the students (76.1%) would accept to be vaccinated if it recommended by physician. The physician's opinion and knowledge has a particularly significant effect on the individuals' willingness and intention to receive HPV vaccination. Similar studies performed on different populations have identified that the rates of vaccination increased when recommended by physicians (Durusoy et al., 2010; Al-Naggar et al., 2012). The prevalence of a history of genital cancer within the family was 5.6% among the students, while the rate of HPV vaccination among all of the students was 1.9%. The intention to receive the vaccine in this study was low compared to other studies in different countries which range between 16.2-77.9% of 11-26 year-old girls. The low rates of vaccination may be due to a variety of reasons. Firstly, it is uncommon in Turkish culture and society for girls to have premarital sexual intercourse; and even if they have engaged in premarital sexual intercourse, they avoid discussing this openly. In fact, only 4.5% of the students in our study described that they had prior sexual intercourse. The very low rates of vaccination may be due to the fact that the students do not see themselves as being at risk, since they do not engage in sexual intercourse. Other reasons for the low vaccination rates may be listed as the vaccination costs, and the lack of knowledge regarding the vaccines (Durusoy et al., 2010; Juroskova et al., 2011; Al-Naggar et al., 2012). In Malaysia, where 13 year-old girls are vaccinated for free, the rate of vaccination has increased to 77.9%. In the same country, the vaccination rate was determined as 52% in a study conducted with medical and dentistry students. Unvaccinated students mentioned vaccine costs as the reason for not receiving the vaccine (Al-Naggar et al., 2010). In comparison to the income levels in our country, the vaccination fees are considerably high. It is believed that high vaccine prices also negatively affect the rate of vaccination in our country.

This study was conducted with a relatively small sample size, and hence cannot be generalized to all midwifery students. In addition, only self-reported data was obtained from students during the study. This might have affected the student's willingness or inclination to provide realistic answers to the questions.

In conclusion, it is possible to claim that in this study conducted with midwifery students, the students' level of knowledge on HPV and the HPV vaccine was level of moderate. Especially the rate of vaccination among midwifery students was extremely low level. This study also indicates that the decisions about vaccination may be affected by the physicians' opinion. Further studies that will reflect the status and level of knowledge of midwives and midwifery students can be planned for the future.

References

- Agius PA, Pitts MK, Simith MAA, et al (2010). Human papillomavirus and cervical cancer: gardasil vaccination status and knowledge amongst a nationally representative

- sample of Australian secondary school students. *Vaccine*, **28**, 4416-22.
- Al-Naggar RA, Al-Jashamy K, Chen R (2010). Perceptions and opinions regarding human papilloma virus vaccination among young women in Malaysia. *Asian Pac J Cancer Prev*, **11**, 1515-21.
- Al-Naggar RA, Bobryshev YV, Al-Jashamy K, et al (2012). Practice of HPV vaccine and associated factors among school girls in Melaka, Malaysia. *Asian Pac J Cancer Prev*, **13**, 3835-40.
- AWHONN (2010). HPV vaccination for the prevention of cervical cancer. *JOGNN*, **39**, 81-2.
- Christian WJ, Christian A, Hopenhayn C (2009). Acceptance of the HPV vaccine for adolescent girls: analysis of state-added questions from the BRFSS. *J Adolesc Health*, **44**, 437-45.
- Cirilo CA, Barbosa AAASA, Zambrano E (2010). Level of behavior and knowledge concerning human papillomavirus among university students of a nursing college. *Revista Da Soc Bra De Med*, **4**, 362-66.
- Dinas K, Nasioutziki M, Arvanitidou O, et al (2009). Awareness of human papillomavirus infection, testing and vaccination in midwives and midwifery students in Greece. *J Obstetrics and Gyna*, **29**, 542-6.
- Durusoy R, Yamazhan M, Taşbakan MI, et al (2010). HPV vaccine awareness and willingness of first-year students entering university in western Turkey. *Asian Pac J Cancer Prev*, **11**, 1-7.
- Duval B, Gilca V, Boulianne NV, et al (2009). Cervical cancer prevention by vaccination: nurses' knowledge, attitudes and intentions. *J Adv Nurs*, **65**, 499-508.
- Ferlay J, Shin HR, Bray F, et al (2008). GLOBOCAN, Cancer incidence and mortality worldwide: *IARC Cancer Base No. 10* [Internet]. Lyon, France International Agency for Research on Cancer; 2010.
- Ghojzadeh M, Azar ZF, Saleh P, et al (2012). Knowledge and attitude of Iranian University students toward Human Papilloma Virus. *Asian Pac J Cancer Prev*. **13**, 6115-9.
- Guvenc G, Akyuz A, Seven M (2012). Determination knowledge and attitudes concerning human papillomavirus and human papillomavirus vaccine students of nursing high school. *J Med Gulhane*, **54**, 104-10.
- Juraskova I, Bari AR, O'Brian TM, et al (2011). HPV vaccine promotion: does referring to both cervical cancer and genital warts affect intended and actual vaccination behavior? *Women's Health Iss*, **21**, 71-9.
- Makwe CC, Anorlu RI (2011). Knowledge of and attitude toward human papillomavirus infection and vaccines among female nurses at a tertiary hospital in Nigeria. *Int J Womens Health*, **3**, 313-7.
- Markowitz LE, Dunne EF, Saraiya M, et al (2007). Quadrivalent human papillomavirus vaccine: recommendations of the advisory committee on immunization practices (ACIP). *MMWR Recomm Rep*, **56**, 1-24.
- Medeiros R, Ramada D (2010). Knowledge differences between male and female university students about human papillomavirus (HPV) and cervical cancer: implications for health strategies and vaccination. *Vaccine*, **29**, 153-60.
- Munoz N, Bosch FX, Castellsagué X, et al (2004). Against which human papillomavirus types shall we vaccinate and screen? The international perspective. *Int J Cancer Aug*, **111**, 278-85.
- Onsüz MF, Topuzoglu A, Bilgi Z, et al (2011). The evaluation of the knowledge levels and attitudes of medical students who have accomplished obstetric and gynaecological diseases internship in a medical school about human papilloma virus vaccine. *TAF Prev Med Bull*, **5**, 557-64.
- Ozgül N (2007). The condition of cervix cancer in turkey and cervical cancer screening programs, editor: tuncer am, cancer control in Turkey, TC Ministry Health, 349-58.
- Philips Z, Johnson S, Avis M, et al (2003). Human papillomavirus and the value of screening: young women's knowledge of cervical cancer. *Health Ed Res*, **18**, 318-28
- Pinar G, Algier L Colak M, et al (2007). Determination of knowledge level of nurses about human papillomavirus vaccination and cervical cancer. *Turk Jyn Ong J*, **10**, 94-8.
- Rashwan HH, Saat MNZN, Manan AND (2012). Knowledge, attitude and Practice of Malaysian medical and Pharmacy students towards human papillomavirus vaccination. *Asian Pac J Cancer Prev*, **13**, 2279-83.
- Weisberg E, Bateson D, McCaffery K, et al (2009). HPV vaccination catch up program utilisation by young Australian women. *Aust Fam Physician*, **38**, 72-6.
- WHO/ICO Information Centre on HPV and Cervical Cancer (2010). Human papillomavirus and related cancers in Thailand summary report 2010.