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Original Research

Knowledge and attitudes of Turkish young adult men regarding HPV and HPV related diseases

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Abstract

Background: Cervical cancer is the second most common cancer in women worldwide and majority of cervical cancers are attributed to HPV. Men's sexual behavior plays a large role in the transmission of HPV and consequently cervical cancer. Awareness among men of HPV and the risks it poses for their female partners is therefore crucial especially because HPV is asymptomatic, and men are unlikely to know if they have been infected. In this study, it is aimed to identify the knowledge and attitudes of young male adults about HPV.

Methods: The research was conducted in Gulhane Military Medical Academy in Ankara during April 2010-May 2011. Research group consisted of 874 private participants who agreed to participate. Data were collected with a form developed by the researchers including socio-demographic characteristics and knowledge level about HPV. In statistical analysis; frequencies and chi-square tests were utilized. For all the analysis, 0.05 was considered to be statistically significant.

Results: Participants had an average age of 23.4±2.9 and the average age of first sexual intercourse was 17.6±2.2. Three quarters of the participants (70.8%) didn't hear HPV, 71.3% didn't know that sexual partner can spread HPV without warts and 70.9% didn't know that HPV causes cervical cancer in women and penile cancer in men. However, 6.1% of the respondents stated to have genital warts at any one time. 57.6% of the respondents stated that HPV spread through sexual intercourse. 17.3% of the respondents stated that they did not know whether they had HPV suspected sexual partners.

Conclusions: As a result, knowledge level of the respondents was found to be quite low and three of every four respondents were found to have no idea about HPV. In this context, nurses are believed to have an important role in informing young male adults about HPV.

INTRODUCTION

Cervical cancer is the second most common cancer in women worldwide. It is estimated that every year 493,000 women are diagnosed with cervical cancer and 273,000 die from the disease. About 10.0% of women in the general population are estimated to harbor cervical HPV (Human Papillomavirus) infection at a given time, and 70.1% of invasive cervical cancers in the World are attributed to HPVs 16 or 18 [1]. Cervical cancer incidence is estimated as 4.4 in Turkey; however there is no data available on the HPV burden in the general population [2].

Although nearly all cervical cancers are caused by HPV, in general, HPV is thought to be responsible for about 90% of anal cancers, 65% of vaginal cancers, 50% of vulvar cancers and 35% of penile cancers. Recent studies show that about 60% of oropharyngeal cancers are linked to HPV [3]. Most HPV infections are asymptomatic, and it is estimated that more than 50% of sexually active persons become infected at least once in their lifetime [4].

The highest rates of infection are found among sexually active young adults under age of 25. Risk factors include early age at first intercourse, smoking, previous history of sexually transmitted infections (STIs),

multiple sexual partners and using condoms infrequently [5-7]. However, young adult males are considered high-risk populations for STIs because of their risky sexual behaviors, including unprotected sex, having multiple sex partners, and having sexual partners with a history of STIs [8].

Because HPV poses a greater threat to women's health than men's, research has focused primarily on women's awareness and knowledge of HPV. A systematic review of 39 studies worldwide found women's knowledge to be poor ranging from 15-31% [9].

Researches among males suggest that HPV infection is viewed as a relatively minor health threat. A recent study of male college students found that HPV was rated as the least severe STI after human immunodeficiency virus (HIV), syphilis, gonorrhea, chlamydia, and genital herpes. Risk perceptions tend to be higher among sexually active individuals [10]. Studies of knowledge of HPV among males also have shown a low level of awareness of the existence of HPV including poor knowledge about HPV infection and mode of transmission. Dahlström et al reported that besides having poorer knowledge; young men were not aware that they can be the host for HPV, thereby affecting the female population, or that themselves are at risk of some HPV-related cancers [11]. Greater knowledge of HPV is typically observed among older, female, and sexually active individuals [5,11-14].

There have been several studies conducted to assess the awareness and the knowledge related to HPV in Turkey; but most of them focused on females, health sciences students or health professionals [15-19]. WHO suggests that men can play a key role in the prevention of cervical cancer in women, by reducing the number of their sexual partners, using condoms, and encouraging their partners to be screened if they are over 25 years of age [20]. In our knowledge; there is no study evaluating the men's awareness and knowledge in our country. We believe that assessing the awareness and knowledge of male population about this concern is important to develop more effective health strategies and education.

According to Bandura educating the public about health risk and benefits offers the best opportunity for change [21]. Promoting health at the personal and societal levels, by helping people to understand and reduce their personal risk of illness, avoid harmful behaviors and adopt healthier lifestyles, is a key role of health programs at all levels [20]. Public health nurses are dedicated to the health and wellness of all populations and perfectly positioned to act as a catalyst to improve awareness, knowledge and preventive practice to ensure optimal health promotion for everyone. In this context they are believed to play an important role in educating public and men about HPV, its health consequences and risk reduction. The purpose of the present study was to identify awareness, knowledge and attitudes of young male adults about HPV.

MATERIALS AND METHODS

Participants and procedure: In Turkey, every Turkish male citizen is obliged to do military service at the age of 20 for duration of 15 months, with the exception of certain groups such as university graduates and workers in foreign countries for whom it may be deferred until an older age. Depending on the need; some university graduates have the right to perform their service as military officers while some perform this duty as a private for a shorter period of 6 months. These young adult males who are ready to perform their duty are recruited and deployed to different military units located all across the country. At these units; besides military training, these soldiers may be educated for some specific social or health related issues. And also nurses can take place in these health related educations.

This research was conducted in Gulhane Military Medical Academy (GMMA) in Ankara/Turkey during April 2010-May 2011. Research group consisted of 874 private participants. The study was planned as a cross sectional study and in a total of 787 volunteered participants were included in the study.

Participants provided information about demographic characteristics (age, education, location, relationship status) and sexual history (whether they had ever had sexual intercourse, number of lifetime sexual partners, and frequency of using protection against sexually transmitted diseases during sex, history of sexually transmitted infections). Also HPV awareness (if they had ever heard of HPV, and if they ever had HPV suspected sexual partner) and HPV knowledge of the participants (transmission ways and the consequences of HPV) were examined.

The questionnaire on average was completed in 15 minutes. In statistical analysis; frequencies, chi-square tests and Cramer's V were utilized. For all the analysis, 0.05 was considered to be statistically significant. The study was approved by the Ethics Committee of GMMA. The participants were informed about the purpose of the study and informed consent was obtained on the day of data collection. They were also assured that the answers they shared would be strictly confidential.

RESULTS

With a response rate of 90%, a total of 787 complete questionnaires were collected.

Sexual history

Participants had an average age of 23,4±2,9 and the average age of first sexual intercourse was 17.6 ± 2.2 (Table 1). Of the participants, 77,6% (n =613) had engaged in sexual intercourse. The average number of lifetime sexual partners was six (SD = 6.2; median =4; range= 1–30). The mean response for frequency of using condoms among young male adults was 3.5 (5 always and 1 never) (SD =1.3), with 29.4% indicating that they "always" used condoms.

HPV awareness and knowledge

Of the participants, only 29.2% (n =230) had heard of HPV. A statistically significant difference was found between awareness of the participants about HPV according to their education status (p=0.001) (Table 2). 71.3% of the participants didn't know that sexual partner can spread HPV without warts and 70.9% didn't know that HPV causes cervical cancer in women and penile cancer in men. Knowledge of HPV as a cause of cervical or penile cancer was also found to be statistically different when compared according to the education status (p=0.001) (Table 3). However, 6.1% of the respondents stated to have genital warts at any one time. Almost one of every five respondents (17.3%) stated that they did not know whether they had HPV suspected sexual partners. A statistically significant difference was found between awareness of the participants about having a HPV suspected partner according to their education status (p=0.02). Although 57.6% of the respondents stated that HPV spread through sexual intercourse, 14.4% chose "contact" as the transmission way for HPV. On the other hand, more than a quarter of the participants (30.5%) marked "blood transmission" as the route of transmission for HPV which is in fact not a transmission way. There was a statistically significant difference between the answers of respondents for the transmission way according to their education status (p=0.01).

Table 1. Demographic Characteristics of the Participants

Characteristics n:787	**n (%)**	**$\bar{X}$+SD (Min-Max)**
EDUCATION		
Literate only or non literate	17 (2,2)	
Primary school	219 (27,8)	
High School	215 (27,3)	
University or higher	336 (42,7)	
AGE		23,4+2,9 (20-36)
MARITAL STATUS		
Single	700 (88,9)	
Married	84 (10,7)	
Widowed / divorced	3 (0,4)	
MONTHLY AMOUNT OF EXPENSE		
≤ 99 $	276 (35,0)	
100 $ - 275 $	276 (35,0)	
≥ 276 $	235 (30,0)	
ECONOMICAL STATUS		
Very good	21 (2,7)	
Good	193 (24,5)	
Moderate	436 (55,4)	
Worse	137 (17,4)	
LOCATION OF RESIDENCE		
Rural	115 (14,6)	
Urban	386 (49,1)	
Metropolitan	286 (36,3)	
AGE AT SEXUAL DEBUT n:604		17,6+2,2 (12-26)
LIFETIME NUMBER OF SEXUAL PARTNERS		
No sexual debut	183 (23,3)	
One Partner	144 (18,3)	
More than one partner	460 (58,4)	

Abbreviations: $\bar{X}$, mean; SD, standart deviation

Table 2. Awareness of human papillomavirus (HPV)

n:787	≤ Primary School		≥ Middle School		Total		p
	n	%*	n	%*	n	%*	
Have you ever heard of HPV?							
Yes	25	10.6	205	37.2	230	29,2	**0.001**
No	211	89.4	346	62.8	557	70,8	
Have you ever had genital warts?							
Yes	10	4.2	38	6.9	48	6,1	0.153
No	226	95.8	513	93.1	739	93,9	
Have you ever had HPV suspected sexual partner?							
Yes	3	1,3	11	2,0	14	1,8	
No	179	75,8	458	83,1	637	80,9	**0.021**
Don't know	54	22,9	82	14,9	136	17,3	

* Column Percent

Table 3. Knowledge of human papillomavirus (HPV)

n:787	≤ Primary School		≥ Middle School		Total		p
	n	%*	n	%*	n	%*	
Did you know that even though your sexual partner doesn't have a wart she can infect you with HPV?							
Yes	60	25.4	166	30.1	226	28,7	0.181
No	176	74.6	385	69.9	561	71,3	
Did you know that HPV can cause cervical cancer in women and penile cancer in men?							
Yes	50	21.2	179	32.5	229	29,1	**0.001**
No	186	78.8	372	67.5	558	70,9	
What's the transmission way for HPV?							
Sexual intercourse	116	49.2	335	60.8	451	57.3	
Other (contact, kissing, blood, etc.)	26	11.0	49	8.9	75	9.5	**0.010**
Don't know	94	39.8	167	30.3	261	33.2	

* Column Percent

There wasn't a difference between the awareness and knowledge of the participants according to marital status, but the participants living in the metropolis were found to be more aware about HPV than the ones living in the urban or rural (p=0,02).

Participants who had sexual experience were more aware about HPV (p=0.009); besides, they knew in a higher proportion the transmission way for HPV (p=0.005) and that sexual partner can infect HPV even though she doesn't have a wart (p=0.008).

Condom use was also found to be associated with the HPV awareness (p=0.002), having a HPV suspected partner (p=0.012) and knowledge about HPV can cause cervical and penile cancer (p=0.024) and that sexual partner can infect HPV even though she doesn't have a wart (p=0.018). Participants using condoms "always" and "generally" were tending more to be aware of HPV, and know HPV can cause cancer and that sexual partner can infect HPV even though she doesn't have a wart. The ones using condoms "rarely" or "never" stated more that they didn't know if they had a HPV suspected sexual partner.

DISCUSSION

The present study is one of the first in our country to assess awareness, knowledge and attitudes about HPV in young male adults who are sexually active. Moreover this study is unique in that the study population represents a diverse sample of young male adults in Turkey. The study provides a framework of

participants' awareness and knowledge about HPV and sheds light on attitudes of them associated with HPV knowledge.

HPV is suspected to play causal roles in a variety of malignancies, but mainly in cervical cancer. HPV-related cervical cancer affects millions of women and is responsible for significant morbidity and mortality worldwide [22,23]. In order to effectively implement cervical and other genital cancer prevention strategies; it is important to understand the current knowledge in the population about the disease, risk factors and prevention.

While the majority of the studies conducted in our country focused on females, health sciences students or health professionals; even the health professionals were not found to have enough knowledge related to HPV [15-17]. However the risk of cancer from HPV is not confined to women but usually men has been excluded from this issue. Besides resulting with penile cancer; men's sexual behavior plays a large role in the transmission of HPV. Meanwhile, the risk of cervical cancer declines when a woman's male sexual partner has fewer relationships, uses a condom, and has been circumcised. Awareness among men of HPV and the risks it poses for themselves and their female partners is therefore crucial especially because HPV is rarely symptomatic, and men are unlikely to know if they have been infected [24].

HPV awareness ranges from 33-88% according to the results of the studies conducted in different groups in our country [15-17,19]. We couldn't find any study evaluating the HPV awareness and knowledge of men in Turkey. Gerend and Magloire reported in their study performed with Florida State University students; 78% of the students had heard of HPV [5]. In the study by Vogtmann et al. carried out with the Mexican university students; it was found that only 16.9% of 1109 students hadn't heard HPV [13]. Contrary to findings from developed countries, awareness of HPV was quite low; with revealing that only a quarter of the participants (29.2%) had heard of HPV. This finding is similar to those of some other studies in which the majority of male participants showed low awareness [24-25].

Compatible with the previously shown association between HPV awareness, knowledge and formal education; educational status was identified to be the major determinant of awareness and knowledge level related to HPV infection in our present study [16-17]. The participants with education higher than primary school were found to be more aware about HPV than the participants with primary school or lower education. This finding also emphasizes the role of education in HPV awareness. Although it can be seen from the results that formal education increases HPV awareness; it is suggested in the literature that public educational efforts such as campaigns about HPV awareness, genital warts, cervical cancer and importance of pap testing supported by television, radio and magazines are found to be effective as they are referred as the source of information [5]. However, in most of the countries, limited information has been directed towards men regarding HPV as compared to the significant health education programs for women, though men play an important role in the transmission and acquisition of HPV [26]. Especially, our study group as they are military personnel who are in the age of the most sexually active stage, but also staying separate from their partners for a long time may drag them to some risky sexual behaviors related to HPV. On the other hand, it may be an opportunity to inform them about HPV, its health consequences and prevention strategies.

Although health care providers are encouraged to play a role in educating patients and the public about HPV, it has been shown that they do not always take the appropriate amount of time to instruct patients on this matter [27]. It has been suggested that education about HPV should focus more on risk reduction (rather than prevention) of persistent HPV, If people are unaware of the negative effects their behaviors may have on their life, they have no reason or motivation to change these behaviors that may shorten their life span [21].

McPartland et al. reported that the majority of men would use condoms and reduce their number of new sex partners if they were diagnosed with HPV. And it is emphasized that; men who perceived HPV to be a serious disease were intending to reduce the number of sex partners than the ones who didn't view HPV as a serious STI. It is suggested that educating men about HPV is important because screening in this population is not a standard clinical practice. Men typically do not know they are infected and men's sexual behavior; particularly the number of previous sexual partners, plays a substantial role in the transmission and acquisition of HPV infection especially for women [10-28].

In our study; the average age of first sexual intercourse was 17; and as a risk group these sexually experienced participants were found to be more aware and had more knowledge related to HPV. Our finding supports the study of Wang et al. who also reported that the students with a sexual intercourse history provided more accurate knowledge related to HPV than the ones without sexual experience [29].

However 6% of the respondents stated to have genital warts at any one time in their life. Genital warts are painless and do not lead to serious complications, and

certain types of HPV can cause genital warts. The removal of the lesion does not mean cure of the infection and no treatment is completely satisfactory. The use of condoms is recommended to help reduce transmission and sexual partners being examined for evidence of warts will benefit [4]. And still one of every five respondents stated that they did not know whether they had HPV suspected sexual partners.

In the systematic review of Shepherd et al. it is reported that more recent studies provide stronger evidence on the effectiveness of condoms to prevent HPV and cervical cancer though some argue that condoms may not necessarily prevent infection as HPV can be transmitted through skin - to - skin contact [7]. Despite this, consistent and correct condom use has been shown to provide important benefits in reducing the risk of developing HPV-related diseases [20]. Contrary to findings from Leval et.al.; condom use was also found to be associated with the HPV awareness and knowledge in our study [30]. Participants who were aware of HPV and had more knowledge related to HPV were using condoms more frequently.

As a result, knowledge level of the respondents was found to be low and three of every four respondents were found to have no idea about HPV. In addition to being unaware about HPV; deficits in knowledge and high level risk behavior persist in a sexually active population who is vulnerable to HPV. The current research has important implications for all healthcare professionals especially nurses who may provide educational interventions in order to promote better knowledge of HPV, risk reduction and prevention of HPV related cancers. As learned from other STI prevention programs, however, it is important to keep in mind that greater awareness and knowledge of HPV may not necessarily translate into HPV prevention behaviors but knowledge and attitudes are typically predictors of protective sexual behavior eventually.

During the evaluation of these findings, it should be considered that the participants were from different social, cultural and economic characteristics living in our country and there is need for some further studies.

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