

RESEARCH ARTICLE

Parental Knowledge and Attitudes about Human Papilloma Virus in Iran

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Abstract

Infection by human papillomavirus (HPV) is one of common sexually transmitted diseases leading to cervical cancer. Evaluation of parental knowledge and attitudes toward HPV were aims of present study to provide an appropriate method to decrease burden of this infection on society. During this study, 358 parents were assessed for knowledge about HPV and its related disorders. Some 76% of parents had no information about HPV infection and among the informed parents 36% had obtained their information via internet and others from studying medical resources. The average score of mothers information about HPV infection was higher than that of fathers, and also educational level and age had significant impact on knowledge of parents about HPV. Parent knowledge about the hazards of HPV was higher than their knowledge about modes of transmission. Lack of awareness about HPV infection was high in this study, underlining the urgency of education among all adult people in our society.

Keywords: Human papillomavirus - sexually transmitted diseases - parental knowledge - Iran

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Introduction

Human papillomavirus (HPV) is one of the most common sexually transmitted diseases (STD) in the world and associated with significant complications and medical expenses (Parkin and Bray 2006; Zou et al., 2011). Also, HPV is the leading cause of cervical cancer in women resulting in 233,000 deaths per year (Parkin et al., 2001). Investigators found that a total of 26.8 percent of women overall tested positive for one or more strains of HPV (Dunne et al., 2007), although HPV infection often clears over without treatment but HPV types 16 and 18 can be a hazard to change precancerous lesions to cancerous ones (Parkin and Bray, 2006; Watson et al., 2008).

Some studies in Iran reported a high prevalence of high-risk HPV, 4.5% in younger ages with increased to 20% in the 4th decade (Safaei et al., 2010; Ghotbi and Anai, 2012). Based on the report of Centers for Disease Control and Prevention in Iran there were 19,044 STD (HPV) cases (without considering HIV) in 1995 which reached to 150,429 in 2004. These statistics show a rising trend in STD in Iran while there is no routine screening program to identify the infected cases. It seems that proper and continuous education will improve the public knowledge about this important health matter which may potentially affect their attitudes.

Besides the high prevalence and catastrophic consequences of HPV infection, research indicates the unawareness of people about this problem (Merzouk et al., 2011). In the studies were conducted to evaluate the knowledge of females, results showed, even the highly educated women know very little about HPV infection as a STD (Vail-Smith and White, 1992; Yacobi et al., 1999; Johnson et al., 2012). A study about the knowledge of women in metropolitan a rural areas aspect to HPV, reported that only 15% of all women enrolled in evaluation have ever heard about HPV (Li et al., 2009).

Due to the increasing rate of HIV and STD, studies about these diseases are becoming fundamental issues in Iranian health system. Also infected patients demand a high degree of attention to increase the quality of life and forthcoming of these attentions. Success of knowledge improvement programs about HPV infection demands setting proper educational programs, not only for the target group but also for their parents and health care providers (Francis et al., 2010).

As there is a little information about the knowledge base and attitude of Iranian teenagers and their parents to HPV infection and prevention, this study aims to assess the knowledge and attitude of parents of Iranian high and guidance schools' students to promote the health level of society.

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Materials and Methods

In a cross-sectional multi center study, in the summer 2011, knowledge and attitude base of 358 parents of high and middle school students about HPV and its related diseases were assessed. The study took place in 4 big cities of Iran including Tehran, Tabriz, Mashhad and Kermanshah. Inclusion criteria were having a student in guidance and/or high public schools and being able to read and write. The ones who didn't have tendency to fill in the questionnaire were excluded from the study. Considering the extent of statistical society multistage random sampling method was preferred.

In each city 3 educational regions were chosen and in each region 6 high schools (3 female high schools and 3 male high schools) and 6 guidance schools (3 male and 3 female guidance schools) were selected. 30 samples were recruited from each school, using the numbers manufactured by computer.

Data were collected by a researcher-made questionnaire with 2 parts. The first part was about socio-demographic characteristics of parents including their age, marital status, educational level, occupation and number of children. The second part had 24 questions on knowledge of studied population about HPV infection and related diseases. The questionnaire was valid in terms of content validity and construct validity and its reliability was assessed by Cronbach's alpha coefficient. The questionnaires were given to the selected students and completed questionnaires by parents were collected by one of the researchers in two days with Cronbach's alpha coefficient of 80%. Written consent was obtained from all of the patients and this study was approved by Ethnic Committee of Tabriz University of Medical Science.

Data were analyzed using SPSS™ 17 for Windows and consisted of descriptive statistics, Chi-Square test or Fishers Exact test and One way ANOVA or Kruskal Wallis

test. Statistical significance was set at 0.05.

Results

Three hundred and twelve (87%) of the questionnaire out of 358 distributed ones were given back, (235 of which filled in by mothers and 123 filled by fathers). There was no significant difference in number of the collected questionnaire from different schools. As a results, 76% of parents said that they had no information about HPV. Among informed parents, 42% claimed that they had obtained such information by studying medical resources and 36% from Internet and friends. Table 1 shows the distribution of 351 parents participated in this survey due to their sociodemographic characteristics. Fathers' average age was higher than that of the mothers and majority of them were well educated. Table 2 shows parents knowledge about HPV infection and its related diseases. The average scores of mothers' knowledge (6.65 ± 3.2) was higher than fathers' (4.09 ± 2.8). There was a converse relation between the age and knowledge of parents; the older parents were, the lesser knowledge

Table 1. Some of Sociodemographic Characteristics of Participated Parents

Variables	Female (N=217)	Male (N=95)	All
Age (years):			P<0.001
<40	153 (71.80)	22 (25.9)	
40-50	54 (25.40)	43 (50.6)	
50-60	5 (2.30)	16 (18.8)	
> 60	1 (0.47)	4 (4.7)	
Mean±SD	43.24±5.16	46.17±6.25	
Parental Education (y):			P=0.032
< 5 years	19 (8.80)	6 (6.7)	
5-9 years	36 (16.60)	9 (10.1)	
9-12 years	122 (56.40)	42 (47.1)	
Higher diploma	39 (18.00)	32 (35.6)	
Age of Children:			
<15 years			175 (57)
>15 years			132 (43)
Children Sex:			
Male			140 (46)
Female			165 (54)

Table 2. Parents Knowledge about HPV Infection and its Related Disease

Knowledge items	TRUE	FALSE	Don't know
HPV infection can be transmitted through Kissing	54	60	175
HPV infection can spread through instruments and health services	85	83	132
HPV infection can lead to AIDS	72	86	142
HPV infection can be can cause herpes	66	24	210
HPV infection can cause serious health problems in women	93	69	138
Hand or foot warts to genital HPV infection can spread	56	36	197
HPV infection can cause genital warts	82	76	154
HPV infection can be transmitted through shared towels and underwear	33	53	226
Most women with HPV infection will be suffering cervical cancer in the future	68	92	152
HPV infection can be transmitted through sexual intercourse	96	80	136
Most people infected with HPV have no symptoms and signs	44	52	204
HPV infection is curable	72	25	202
HPV infection can lead to infertility	95	101	108
HPV infection can spread through skin to skin contact	63	90	149
HPV infection can be transmitted through oral sex	97	89	120
Using condoms during sexual intercourse can created full protection against HPV infection	76	101	121
HPV infection can cause serious male health problems	89	65	148
HPV infection can be transmitted through blood transfusion and body fluids (blood, semen)	61	109	130
In 50 percent of people who are sexually active, HPV infection is seen	65	95	137
A person may have HPV infection, however does not informed about it	144	32	176
Contamination with HPV infection is detected through a Pap smear test	68	24	210
Most women with HPV infection have abnormal periodic cycles	88	38	167
Antibiotic therapy is effective treatment for HPV infection	59	67	180
HPV infection is preventable	106	49	148

they possess $P < 0.05$.

Although there was a significant relation between the educational level of mothers and their base of knowledge but it was not the same for fathers. There was a direct statistical correlation between the number of children and the parents' base of knowledge. The results showed that 78% of parents had little information, 14% had moderate knowledge, and only 8% had a well awareness. Questions about awareness of studied parents could be divided into two groups, one part was about the hazards of HPV infection (7 questions) and the other part was about its transmission ways (10 questions). Evaluating the results showed that parent's knowledge about the hazards of HPV was higher than its transmission ways and also mothers had more awareness of both parts.

Discussion

High-risk HPV types are the most common known precancerous types, resulting in various cancers affecting females such as cervical, vaginal, and vulvar but are also associated with cancers affecting males (Parkin and Bray, 2006; Watson et al., 2008). Also low-risk HPV types (type 6 and 11) appear as genital warts in both males and females leading to low quality of life (Lacey et al., 2006). Young women especially at the age of college are the most prone group to this STD, because of high trend to have sexual activity with different partners (Ho et al., 1998; Smith et al., 2008; D'Souza et al., 2012). In a study conducted in Malaysia, results showed an increasing rate of STD among the young comparing to old women (Ramachandran and Ngeow, 1990).

By now, various studies were conducted to evaluate the prevalence of HPV infection in different parts of Iran, and most of them have reported high prevalence of HPV among studied groups (Nadji et al., 2007; Safaei et al., 2010; Zandi et al., 2010). So we need basic and fundamental works to decrease this preventable disease. This is the first study to evaluate HPV knowledge and attitudes toward HPV related diseases among parents in Iran and the results seems to be useful to design further researches and policy makings.

Some findings of this study was similar to that of a study in China that reported a higher HPV knowledge among women with higher education and those in the metropolitan area (Li et al., 2009). This survey assesses the HPV knowledge base of high and middle school students' parents. Our aim was to evaluate the knowledge base of parents about HPV infection and its related diseases and its relationship with sociodemographic parameters including age, education, marital status, and number of children.

Most studies focused on females' knowledge (Brisson and Edmunds, 2003; Insinga et al., 2004; Mahdavi and Monk, 2005; Dasbach et al., 2006; Eltoum and Roberson, 2007; Zhao et al., 2012) and do not include comparisons of knowledge among men and women. However, men play an important role in transmitting HPV and some studies reported the role of men as an important part of transmission and major groups needed more education about HPV (Wendell, Cohen et al. 2003; Nash et al., 2006). This study showed that men have less information

about the HPV and more education may be helpful for our purpose regarding to increase information about HPV infection and its management.

A higher HPV awareness level was found in young mothers with higher education levels which was not the same case about fathers. As this study made it clear, the majority of parents had their knowledge from studying medical sources and also using internet, and considering the educational status of society, using the public media will be more useful to increase the knowledge base about HPV in our society. A recent study in Australia reported a relatively high rate of HPV awareness due to the increased media coverage, particularly in relation with the development of an HPV vaccination program (Lenselink et al., 2008).

It seems that the lack of knowledge about the HPV is not a regional problem; as the articles show the whole world faces this challenge. A European study reported that only 17.7% of university students had heard about HPV (Lenselink et al., 2008). Slightly higher rates of awareness of HPV, approximately one-third, were reported from university students in the United States and Malaysia (Dell et al., 2000; Philips et al., 2003; Rashwan et al., 2012).

In our study only 24% of questionnaires were aware of HPV infection. In study of Stefanie et al. (2010), they reported 13-93% of participant was heard about HPV infection (Klug et al., 2008). Moreover, a study among Mexican physicians showed that only 19% knew that HPV types 16, 18, 31, 38 and 45 do not cause genital warts. This study showed the importance of services leading to increase of knowledge about HPV infection (Aldrich et al., 2005). There was a converse relation between the age and knowledge of parents in our study; the older parents, had less knowledge, but in the study of Stefanie et al. (2010), age was not a predictor of knowledge about HPV infection (Klug et al., 2008).

Conaglen et al. (2001) and Stefanie et al. (2010) reported that women's knowledge was higher than men's knowledge that was in accordance with our study (Conaglen et al., 2001; Klug et al., 2008). Nevertheless the men are one of the large group in our study but knowledge of them were lower than women, this shows the important role of men in preventing and controlling HPV infection, that is highlighted in our study. The research findings revealed widespread lack of knowledge in all categories. Thus, the findings suggest an urgent need for public education that explicitly addresses such knowledge deficiency among women even in institutions of higher education. Since one of the four goals outlined in Healthy People 2020 is to achieve health equity, eliminate disparities, and improve the health of all groups (Riegelman and Garr, 2011), we should make an attempt to educate the young about the HPV and its related disease, and this study just shed a light on the depth of unawareness about the problem. We know that our study had some limitations making it difficult to generalize the findings to whole society but further studies can make the unanswered questions clear. Creating proper opportunities to improve health communication, decrease the rate of STIs, and improve health status are also the major goals in all societies (Ragin et al., 2009; Villar et al., 2011). Human Immunodeficiency Virus (HIV) education

campaigns and messages could be useful as models that we can create similar campaigns to release information about HPV infection in societies (Merchant, 2006).

In conclusion, unawareness of HPV infection is high in this study, which denotes the urgency of spreading knowledge among all adult people in our society. In this study we reported men as the major group in transmission of HPV infection with a low knowledge about this STD and ways of transmission. As this study made it clear, the majority of parents obtained their knowledge from studying medical sources and also using internet, and considering the educational status of society using the public media will be more useful to increase the knowledge base about HPV in our society.

References

- Aldrich T, D. Becker, et al. (2005). "Mexican physicians' knowledge and attitudes about the human papillomavirus and cervical cancer: a national survey." *Sex Transm Infect* 81(2): 135-141.
- Brisson, M. and W. J. Edmunds (2003). "Economic evaluation of vaccination programs: the impact of herd-immunity." *Med Decis Making* 23(1): 76-82.
- Conaglen, H. M., R. Hughes, et al. (2001). "A prospective study of the psychological impact on patients of first diagnosis of human papillomavirus." *Int J STD AIDS* 12(10): 651-658.
- D'Souza, G., R. D. Burk, et al. (2012). "Cervicovaginal human papillomavirus (HPV)-infection before and after hysterectomy: evidence of different tissue tropism for oncogenic and nononcogenic HPV types in a cohort of HIV-positive and HIV-negative women." *Int J Cancer* 131(6): 1472-1478.
- Dasbach, E. J., E. H. Elbasha, et al. (2006). "Mathematical models for predicting the epidemiologic and economic impact of vaccination against human papillomavirus infection and disease." *Epidemiol Rev* 28: 88-100.
- Dell, D. L., H. Chen, et al. (2000). "Knowledge about human papillomavirus among adolescents." *Obstet Gynecol* 96(5 Pt 1): 653-656.
- Dunne, E. F., E. R. Unger, et al. (2007). "Prevalence of HPV infection among females in the United States." *JAMA* 297(8): 813-819.
- Eltoum, I. A. and J. Roberson (2007). "Impact of HPV testing, HPV vaccine development, and changing screening frequency on national Pap test volume: projections from the National Health Interview Survey (NHIS)." *Cancer* 111(1): 34-40.
- Francis, S. A., J. Nelson, et al. (2010). "Examining attitudes and knowledge about HPV and cervical cancer risk among female clinic attendees in Johannesburg, South Africa." *Vaccine* 28(50): 8026-8032.
- Ghotbi, N. and A. Anai (2012). "Assessment of the knowledge and attitude of female students towards cervical cancer prevention at an international university in Japan." *Asian Pac J Cancer Prev* 13(3): 897-900.
- Ho, G. Y., R. Bierman, et al. (1998). "Natural history of cervicovaginal papillomavirus infection in young women." *N Engl J Med* 338(7): 423-428.
- Insinga, R. P., A. G. Glass, et al. (2004). "The health care costs of cervical human papillomavirus-related disease." *Am J Obstet Gynecol* 191(1): 114-120.
- Johnson, A. M., C. H. Mercer, et al. (2012). "Epidemiology of, and behavioural risk factors for, sexually transmitted human papillomavirus infection in men and women in Britain." *Sex Transm Infect* 88(3): 212-217.
- Klug, S. J., M. Hukelmann, et al. (2008). "Knowledge about infection with human papillomavirus: a systematic review." *Prev Med* 46(2): 87-98.
- Lacey, C. J., C. M. Lowndes, et al. (2006). "Chapter 4: Burden and management of non-cancerous HPV-related conditions: HPV-6/11 disease." *Vaccine* 24 Suppl 3: S3/35-41.
- Lenselink, C. H., C. E. Schmeink, et al. (2008). "Young adults and acceptance of the human papillomavirus vaccine." *Public Health* 122(12): 1295-1301.
- Li, J., L. K. Li, et al. (2009). "Knowledge and attitudes about human papillomavirus (HPV) and HPV vaccines among women living in metropolitan and rural regions of China." *Vaccine* 27(8): 1210-1215.
- Mahdavi, A. and B. J. Monk (2005). "Vaccines against human papillomavirus and cervical cancer: promises and challenges." *Oncologist* 10(7): 528-538.
- Merchant, R. C. (2006). "Update on emerging infections: news from the Centers for Disease Control and Prevention. Updated U.S. Public Health Service guidelines for the management of occupational exposures of HIV and recommendations for postexposure prophylaxis." *Ann Emerg Med* 47(5): 492-495.
- Merzouk, M. D., P. Courtney, et al. (2011). "Knowledge of HPV in West Virginia high school health students and the effects of an educational tool." *J Pediatr Adolesc Gynecol* 24(5): 278-281.
- Nadji, S. A., T. Mokhtari-Azad, et al. (2007). "Relationship between lung cancer and human papillomavirus in north of Iran, Mazandaran province." *Cancer Lett* 248(1): 41-46.
- Nash, D., S. Azeez, et al. (2006). "Evaluation of an intervention to increase screening colonoscopy in an urban public hospital setting." *J Urban Health* 83(2): 231-243.
- Parkin, D. M. and F. Bray (2006). "Chapter 2: The burden of HPV-related cancers." *Vaccine* 24 Suppl 3: S3/11-25.
- Parkin, D. M., F. Bray, et al. (2001). "Estimating the world cancer burden: Globocan 2000." *Int J Cancer* 94(2): 153-156.
- Philips, Z., S. Johnson, et al. (2003). "Human papillomavirus and the value of screening: young women's knowledge of cervical cancer." *Health Educ Res* 18(3): 318-328.
- Ragin, C. C., R. P. Edwards, et al. (2009). "Knowledge about human papillomavirus and the HPV vaccine—a survey of the general population." *Infect Agent Cancer* 4 Suppl 1: S10.
- Ramachandran, S. and Y. F. Ngeow (1990). "The prevalence of sexually transmitted diseases among prostitutes in Malaysia." *Genitourin Med* 66(5): 334-336.
- Rashwan, H. H., N. Z. Saat, et al. (2012). "Knowledge, attitude and practice of Malaysian medical and pharmacy students towards human papillomavirus vaccination." *Asian Pac J Cancer Prev* 13(5): 2279-2283.
- Riegelman, R. K. and D. R. Garr (2011). "Healthy People 2020 and Education for Health: what are the objectives?" *Am J Prev Med* 40(2): 203-206.
- Safaei, A., M. Khanlari, et al. (2010). "Prevalence of high-risk human papillomavirus types 16 and 18 in healthy women with cytologically negative pap smear in Iran." *Indian J Pathol Microbiol* 53(4): 681-685.
- Smith, J. S., A. Melendy, et al. (2008). "Age-specific prevalence of infection with human papillomavirus in females: a global review." *J Adolesc Health* 43(4 Suppl): S5-25, S25 e21-41.
- Vail-Smith, K. and D. M. White (1992). "Risk level, knowledge, and preventive behavior for human papillomaviruses among sexually active college women." *J Am Coll Health* 40(5): 227-230.
- Villar, L. M., A. D. Rabello, et al. (2011). "Evaluating knowledge about human papillomavirus infection among Brazilian health professionals." *Asian Pac J Cancer Prev* 12(12): 2279-2283.

3251-3256.

- Watson, M., M. Saraiya, et al. (2008). "Burden of cervical cancer in the United States, 1998-2003." *Cancer* 113(10 Suppl): 2855-2864.
- Wendell, D. A., D. A. Cohen, et al. (2003). "Street outreach for HIV prevention: effectiveness of a state-wide programme." *Int J STD AIDS* 14(5): 334-340.
- Yacobi, E., C. Tennant, et al. (1999). "University students' knowledge and awareness of HPV." *Prev Med* 28(6): 535-541.
- Zandi, K., S. S. Eghbali, et al. (2010). "Prevalence of various human papillomavirus (HPV) genotypes among women who subjected to routine Pap smear test in Bushehr city (south west of Iran) 2008-2009." *Virology* 7: 65.
- Zhao, F. H., S. M. Tiggelaar, et al. (2012). "A multi-center survey of HPV knowledge and attitudes toward HPV vaccination among women, government officials, and medical personnel in China." *Asian Pac J Cancer Prev* 13(5): 2369-2378.
- Zou, L., Y. P. Bao, et al. (2011). "Life-style and genital human papillomavirus in a cross-sectional survey in Shanxi Province, China." *Asian Pac J Cancer Prev* 12(3): 781-786.