



*Full Length Research Paper*

# **Marital Factors and Husbands' Demographic Feature Associated with Human Papillomavirus Infection in the Iranian Women**

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**Human Papillomavirus (HPV) has been known as one of the sexually transmitted infections. HPV infection can cause serious health complications. The aim of this study was to determine the marital factors and husbands' demographic features associated with HPV infection among Iranian women. In this case-control study, 210 women were divided into two groups with and without the diagnosis of HPV infection. A standard questionnaire was used to obtain the marital and husbands' demographic history of each patient. Our findings showed that increasing marriage age ( $p=0.00$ ) and having a self-employed husband ( $p=0.00$ ) as two risk factors of HPV infection. Recognition of the marital factors and husbands' demographic features associated with genital HPV can help the health providers to find the high-risk women and developed the effective strategies for prevention.**

**Keywords:** Human Papillomavirus, Sexually Transmitted Infections, Genital wart

## **INTRODUCTION**

In recent years, genital human papillomaviruses (HPV) are among the most widespread type of sexually transmitted infections in majority of countries

(Montgomery and Bloch, 2010). More than 40 types of these viruses can be transmitted through vaginal, anal, and oral sex but HPV types 6,11,16,18 are responsible for genital disorders (National Cancer Institute, 2012). Cervical abnormalities and following complications are the terrible results of this infection (WHO, 2008). Nearly 232.9 million women of reproductive age worldwide, 32.03 million women in Asia and 3.71 million women in

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Iran were infected with HPV (Castlellsague et al., 2007). Lesions of this infection cause physical and psychological pain and worry the patients (Moscicki, 2005; Maggino et al., 2007). Moreover, some healthcare organization experience the severe financial distress due to the cost of prevention, diagnosis and treatment of genital HPV lesions (Insinga et al., 2004). The relationship between a greater number of the sexual partners are more prone to this infection has been supported in many studies (Risser et al., 2008). History of genital herpes, chlamydia and age less than 25 years old are the predisposing factors to this infection (Moscicki et al., 2001; Kyriakis et al., 2005; Stanley, 2010). In conjunction with other factors related to genital HPV infection is controversial (Professional Advisory Board of the Australia and New Zealand HPV Project, 2010). Literal knowledge, detailed information of the incidence and the affiliate agent of this infection are serious to utilize the effective prevention (Hager, 2009; Ammatuna et al., 2008). This study aimed to determine the marital factors and husbands' demographic features associated with HPV among the Iranian women.

## MATERIALS AND METHODS

After obtaining the approval from the Research Ethical Committee of Tehran University of Medical Sciences (TUMS) in 2012, 210 women from outpatient colposcopy clinic affiliated to a training gynecology hospital of TUMS were recruited into the study. Sampling was performed from 21 January to 25 April 2012. Women with an abnormal Pap Smear Test, abnormal vaginal bleeding, and persistent cervicitis had been referred to this clinic for the further investigation. Colposcopy and biopsy of cervical lesion were performed for specific diagnosis. The inclusion criteria of the study were being mentally healthy and being referred to the clinic due to abnormal Pap Smear Test. All the women received detailed information about the objectives of the study and signed a written informed consent. The case group included 70 women with the diagnosis of Condyloma Acuminata in biopsy specimen of cervix or positive HPV Typing test for types 6, 11, 16, 18, 31, 35, 50, and 60. The control group composed of 140 women without diagnosis of the Condyloma Acuminata in biopsy specimen of cervix or negative HPV Typing for types 6, 11, 16, 18, 31, 35, 50, and 60. The two groups were matched by being Iranian nationality, being in the reproductive ages (15-49 years

old), and report of LSIL/HPV results in their Pap Smear Test. The biopsy specimen of cervix was taken by three professors of gynecology who were in charge of the colposcopy clinic and was interpreted by the gynecological hospital pathology laboratory to HPV typing.

Then, they were asked to complete a self-administered questionnaire, which included the questions about the socio-demographic and reproductive characteristics as well as marital factors and husbands' demographic history. The validity of the questionnaire was determined by 12 members of the Faculty of Nursing and Midwifery at TUMS. Then, the test-retest method was used to determine the reliability of the questionnaire and  $r=0.85-1$  was obtained.

T-test, Chi-square, and Fisher exact test were used to determine the relationship between the variables and compare them between the groups. In addition, logistic regression models were used to identify the Marital factors and husbands' demographic features independently associated with HPV infection.  $P\text{-value}<0.05$  was considered as statistically significant. All the statistical analyses were performed through the SPSS statistical software (v. 20).

## RESULTS

The present case-control study was conducted on results from cervical biopsy or HPV typing report. The mean age of patients was  $35\pm 8$  years. Then median age of the first marriage was  $21.8\pm 4.2$  and  $19.2\pm 3.8$  years in the case and the control group, respectively. The median number of marriages was about  $1\pm 0.3$  times in two groups. Most of the husbands in the case group were from the 35-44 years age group, while most of the husbands were from  $\geq 45$  years age group in the control group. Besides, most of the husbands in both groups had middle school and high school degrees. Also, none of the cases' husbands were illiterate or had elementary school degrees. Regarding occupation, most husbands in the case group were self-employed, while they were mostly employed, jobless, or retired in the control group.

The Marital factors and husbands' demographic features attached to this infection are presented in table 1.

According to the results, age at the first marriage ( $p=0.00$ ) and the husband's occupation ( $p=0.00$ ) were significantly associated with HPV infection.

**Table 1.** The relationship between HPV Infection and marital factors and husbands' demographic features in the women with HPV/ LSIL results on Pap test

Marital factors	Frequency in group		P-value
	Cases (n=70)	Controls (n=140)	
Age at first marriage (year)			0.00
< 20	20(32.3%)	85 (62.0%)	
20-25	25 (40.3%)	37 (27.0%)	
≥ 25	17 (27.4%)	15 (10.9%)	
Number of marriages (time)			0.19
0	4 (5.7%)	0 (0.0%)	
1	62 (88.6%)	126 (94.0%)	
2	4 (5.7%)	8 (6.0%)	
Marital status			0.21
Permanently married	50 (75.8%)	137 (93.6%)	
Temporarily married- divorced- single	16 (24.2%)	3 (6.4%)	
Husband's Age (year)			0.36
< 35	17 (34.0%)	37 (26.4%)	
35-44	29 (58.0%)	49 (35.0%)	
≥ 45	4 (8.0%)	54 (38.6%)	
Husband's education level			0.47
Illiterate- elementary	0 (0.0%)	49 (35.8%)	
Middle- high school	38 (82.6%)	56 (40.9%)	
University	8 (17.4%)	32 (23.4%)	
Husband's occupation			0.00
Self- employed	37 (74.0%)	31 (22.6%)	
Employee	9 (18.0%)	36 (26.3%)	
employed- jobless- retired	4 (8.0%)	70 (51.1%)	

## DISCUSSION

The marital factors include age at first marriage, number of marriages, marital status and husbands' demographic features associated with genital HPV infection have been investigated. Whereas this infection has been considered as the rampant type of sexually transmitted infection in the world, either many of the agents related to genital papiloma are pathless or controversial to obtain (Professional Advisory Board of the Australia and New Zealand HPV Project, 2010). Our findings showed a relationship between increasing marriage age and HPV infection (CI 99%, OR ~2 ). However, P. A et al. (P=0.01), S. F et al. (P=0.01), and Y- L. Q et al. revealed an association between the decreasing age of the first sexual intercourse and HPV infection (Franceschi et al., 2008; Qiao et al., 2008; Kahn et al., 2009). In addition, the women with self-employed husbands revealed a higher risk of HPV infection (CI 99%, OR ~4.5). However, due to the limited studies conducted on these issues, these findings are difficult to justify. The results of the present study did not show any significant relationship between the other marital factors and HPV infection. Nevertheless, contradictory results have been obtained in

other studies conducted in the United States, Warsaw, Poland, Govindpuri, and North India (Kahn et al., 2009; Dunne et al., 2007; Bhatla et al., 2010). The variations might result from the difference in the sampling methods as well as the limitations of the studies. Because of the HPV typing test is expensive, we didn't perform this study among general population. In conclusion, the genital HPV and its related cervical cancer have health hazards. So knowledge about the marital factors and husbands' demographic features that increasing the incidence of this infection helps to recognize prone women to infection and follow them consciously. Broader research is necessary for assessment of Marital factors and husbands' demographic features associated with genital HPV infection. Result from them will be applied to better understanding of this infection that can improve strategies for better public health.

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