

## Original Article

# Genital Warts in 250 Iranian Patients and Their High- Risk Sexual Behaviors

Tahereh Soori MD MPH<sup>1</sup>, Zahra Hallaji MD<sup>2</sup>, Esmat Noroozi-Nejad MD<sup>2</sup>

## Abstract

**Background and Objective:** Genital wart is the most common sexually transmitted disease worldwide. Sexual risk factors and sexual behavior pattern may be different in various countries. In this study, we tried to evaluate demographic information and some sexual behaviors and risk factors in Iranian patients with genital warts.

**Methods:** In this cross-sectional study, 250 patients with anogenital warts were evaluated. They had been referred to the Sexually Transmitted Diseases Clinic of Razi Hospital. Demographic information and sexual risk factors and pattern of sexual behaviors were recorded in the questionnaires.

**Results:** One hundred twenty-five men and 125 women with genital warts were evaluated. The most common age group was 20 – 30 years old; 24.8 % were single; 29.6 % had academic education; 35 (14 %) of the patients had started sexual activity before 15 years of age; 92 % reported unsafe sex; seven (2.8 %) of them were HIV infected; two cases (0.8 %) were homosexual; and seven cases (2.8 %) were bisexual. Genital herpes simplex type 2 was the most common coincident sexually transmitted disease (6.4 %).

**Conclusion:** Genital wart in men may be as common as women, married and singles, and mostly involves younger people. Sexual high-risk behaviors and unsafe sex make them at risk for HIV infection. Sexual health education should be considered in high-risk groups.

**Keywords:** Genital wart, HPV, human papillomavirus, sexual behavior, sexual risk factors

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## Introduction

Genital wart is the most common sexually transmitted infection (STI) worldwide.<sup>1</sup> This disease is caused by human papillomavirus (HPV) that has approximately 100 types, among them about 40 types are known to cause genital infection.<sup>2-3</sup> The prevalence of HPV infection is estimated as 10 % – 24.4 % among women in different studies.<sup>4-5</sup>

HPV infection may result in genital warts that are benign tumors that can influence on patients' quality of life and has economical burden on the society.<sup>6-7</sup> In addition, some types of this virus are associated with anogenital and cervical cancers.<sup>8-10</sup> Types 16 and 18 are contributed in about 70 % of cervical cancers; whereas, more than 90 % of genital warts are caused by types 6 and 11 that are low risk for malignancies. Recent studies show that condom may significantly reduce HPV infection.<sup>11-12</sup>

Demographic information about genital warts as a sexually transmitted disease (STD) and sexual behaviors and risk factors may differ among different geographic, ethnic, racial, and cultural populations.<sup>7-8,13-15</sup> Although some studies have been performed about HPV infection in Iranian population, but data about pattern of sexual behaviors and risk factors among Iranian patients are limited.<sup>9-10,16</sup> Especially, studies that evaluated males with genital warts are actually few in Iranian population. So, we designed this

study to determine demographic information and high- risk sexual behaviors in Iranian male and female patients with genital warts who had been referred to a sexually transmitted diseases clinic in Tehran.

## Materials and Methods

In this cross-sectional study, 250 patients with anogenital warts were evaluated. They had been referred to the Sexually Transmitted Diseases Clinic in Razi Hospital from March 2011 through April 2012. Demographic and general information of the patients with genital warts including gender, age groups, marital and educational status, age of marriage, alcohol and cigarette smoking, pattern of sexual behavior and risk factors, and other STDs were recorded in the questionnaires. These information are routinely asked from the patients and recorded in medical files in STD clinics. These files are anonymous and only have a code. However, consent was taken from the patients after explaining the method and objectives of this study. We used SPSS software version 13 for data analysis. We calculated frequency for qualitative data, and also the mean and median for quantitative variables. We used chi-square test for comparing qualitative variables and t-test for quantitative ones. A P-value less than 0.05 was considered as significant.

## Results

We evaluated 250 patients with anogenital warts. Demographic and general information of these patients including gender, age groups, marital and educational status, age of marriage, alcohol,

**Authors' affiliations:** <sup>1</sup>Department of Infectious Diseases, Razi Hospital, Tehran University of Medical Sciences, Tehran, Iran, <sup>2</sup>Department of Dermatology, Razi Hospital, Tehran University of Medical Sciences, Tehran, Iran.

**•Corresponding author and reprints:** Tahereh Soori MD MPH, Department of Infectious Diseases, Razi Hospital, Tehran University of Medical Sciences, Vahdat-e-Eslami Square, Tehran, Iran. Tel: +9821-55633728, Fax: +9821-55620300, E-mail: tara\_soori@yahoo.com.

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and cigarette smoking have been summarized in Table 1.

**Table 1.** Demographic and general information of the patients with genital warts

Parameters	No (N %)
<b>Sex</b>	
Male	125 (50 %)
Female	125 (50 %)
<b>Age (years)</b>	
< 20	16 (5.9 %)
21–30	115 (47.3 %)
31–40	61 (24.7 %)
41–50	38 (15.1 %)
> 50	18 (7.1 %)
<b>Marital condition</b>	
Single	62 (24.8 %)
Married	171 (68.4 %)
Divorced	9 (3.6 %)
Widow/Widower	8 (3.2 %)
<b>Educational level</b>	
Illiterate or preliminary school	19 (7.6 %)
Guidance school	48 (19.2 %)
High school	109 (43.6 %)
University	74 (29.6 %)
<b>Habits</b>	
Alcohol	14 (5.6 %)
Cigarette smoking	30 (12 %)
<b>Marriage age (years)</b>	
< 20	73 (39 %)
21–25	73 (39 %)
26–30	29 (15.4 %)
> 30	13 (6.6 %)

Sexual behaviors and risk factors, as well as other STDs in the patients with warts are presented in Table 2. In addition, according to the present study, the mean age of the first sexual intercourse was 20 years; 74 % of the patients had started sexual activity between the ages of 15 – 25 years. Among married patients, the mean age of marriage was 22 years.

**Table 2.** Sexual behaviors and risk factors in the patients with genital warts behaviors

Parameters	No (N %)
<b>Age at the first sexual intercourse (years)</b>	
< 15	35 (14 %)
15–20	114 (45.2 %)
21–25	71 (28.6 %)
26–30	21 (8.6 %)
> 30	9 (3.6 %)
<b>Type of intercourse</b>	
Vaginal	211 (84.4 %)
Anal	84 (33.6 %)
Oral	52 (20 %)
Genital skin contact	18 (7.2 %)
<b>Number of partners</b>	
1	57 (23.3 %)
2–4	119 (48.3 %)
≥ 5	70 (28.3 %)
<b>Gender of partner</b>	
Heterosexual	241 (96.4 %)
Homosexual	2 (0.8 %)
Bisexual	7 (2.8 %)
<b>Condom using</b>	
20 (8 %)	
<b>Accompanied sexually transmitted diseases</b>	
Herpes	16 (6.4 %)
Molluscum	3 (1.2 %)
HIV/AIDS	7 (2.8 %)
Hepatitis C	3 (1.2 %)

We found a statistically significant association between male gender and number of partners ( $P = 0.001$ ). According to our study, all of the cases with five or more than five sexual partners were men. Using condom was slightly higher in educated pa-

tients; however, this difference was not statistically significant ( $P = 0.967$ ). Although men had started sexual activity in younger age, but we cannot show statistically significant difference between gender of patients and age at the time of first intercourse ( $P = 0.117$ ).

## Discussion

This study represents general information and some high risk behaviors in the patients with genital warts. According to our results, the number of male and female patients was equal.

In our study, the highest frequency was belonged to age groups 20 – 30 (47.3 %) and then 31 – 40 (24.7 %) years old. Similarly, in the other studies these age groups have the highest prevalence. For example, in a study by Ralph, et al. the prevalence was highest among women aged 20 – 24 years and rates for both sexes decreased gradually with age thereafter.<sup>7</sup>

Various studies have been designed for determining the prevalence and risk factors of HPV infection and psychologic and economic burden.<sup>2,4-8,11-13,17-26</sup> For instance, in a survey on genital warts in the age groups of 18- to 59-year-olds in the United States, 11.4 % of the patients reported educational level of high school and university education, and 7.3 % reported the first sex younger than 17 years of age, 17.9 % reported more than five sexual partners lifetime;<sup>27</sup> whereas, in our study that was among 250 males and females attending to a STD clinic, 73.2 % of the patients reported high school or university education, 14 % reported the first sexual intercourse at younger than 15 years of age, and 28.3 % had five or more than five partners, so far. The reason for this difference in the American and Iranian populations may be that the American survey was performed in a general population and our study was among the patients attending the STD clinic.

However, the median age at the first sexual experience differs in various populations according to the cultural and religious beliefs. For instance, in an Indian study, the mean age of starting sexual activity was 13 years and in an American study it was reported as 17 years.<sup>7,28</sup> In our study, 14 % of our participants had started sexual intercourse before 15 years of age and the mean age for starting sex was 20 years; whereas, the mean age for marriage was 23 years. It indicates that many people start sexual activity before marriage and even in early adolescence. These findings show that sexual health education in our country should be started for guidance and high school students and several years before marriage.

There are some investigations about the association of smoking and HPV infection;<sup>2,21,23,25</sup> 12 % of our patients were cigarette smokers. In a British study on women, 9.9 % of the patients had ever smoked.<sup>13</sup>

Many researches have been carried out on prevention of HPV infection by using condom.<sup>2,11,24</sup> Only 8 % of our patients used condom in their all or most sexual intercourses. In a study in Hong Kong, 66.24 % of men with warts reported using condom in their intercourses.<sup>29</sup> It seems that safe sex should be considered and educated to high- risk groups.

In conclusion, in our studied population, genital wart in men is as common as women, married and singles, and mostly involves younger people. High-risk sexual behaviors and unsafe sex make them at risk for HIV infection. Sexual health education should be considered in high-risk groups. Further studies with larger sample size and surveys on general population are needed to achieve more information about various aspects of genital warts and sex-

ual behaviors and risk factors.

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