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GENDER DIFFERENCES IN SOCIODEMOGRAPHIC CHARACTERISTICS AND RISK FACTORS AMONG CONDYLOMA ACUMINATA PATIENTS IN DR. MOEWARDI GENERAL HOSPITAL SURAKARTA

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ABSTRACT

Condyloma acuminata (CA), also known as the anogenital wart, is the most frequent sexually transmitted infection worldwide. This highly infectious disease is caused by the human papillomavirus virus, whose high reccurence rates contribute to direct medical costs, productivity loss, and increased psychosocial impact. Thus, the prevention of this viral disease is more important than focusing on its treatment. This cross-sectional study assessed the gender differences in sociodemographic characteristics and sexual risk factors of CA patients. There were 94 newly diagnosed CA patients, 47 males (50%) and 47 females (50%) during the period of January 2013-December 2017. The demographic data were taken from the patient's medical record, and the additional data about the risk factors were from the questionnaires. Chi-square test was performed to compare between genders, and $p < 0.05$ was considered statistically significant. There was a significant difference between genders on all sociodemographic characteristics (age, occupation, education, marital status) and risk factors (HIV/AIDS infection, condom use, age at the first sexual intercourse, and the number of lifetime sexual partners, type of intercourse) among CA patients. Our study revealed that male CA patients were mostly single, employed, and multi-partner, while CA female patients were mainly married, housewives, and single partners.

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Keywords: Condyloma acuminata; Gender difference; Sexual behavior; The risk factor

INTRODUCTION

Condyloma acuminata (CA), also known as an anogenital wart, is common among sexually active people. It is caused by the human papillomavirus (HPV), a sexually transmitted virus. Two low-risk HPV genotypes, HPV 6 and 11, are believed to cause 90% of all CA cases.[1] The prevalence of CA is increasing over time in the adult population. Data from the Center for Disease Control and Prevention showed that in the United States, there are more than 19.7 million new cases of STI annually, and 14.1 million of them are CA.[2]

Gender differences in norms for sexual behavior exist, and factors associated with sexual relations may differ by sex. Studies by Faílde et al. [three] and Teva et al. [4] reported that generally, males tend to have more sexual partners and to use condoms less frequently than female do. In other words, risky sexual behavior is more likely among males than among females at any given adolescent age. However, only a few studies have been conducted regarding sociodemographic factors or the effect of addictive substances on sexual behavior, especially concerning gender. Therefore, it is essential to consider sexual risk factors, sociodemographic characteristics, and gender when making and implementing an intervention.

Condyloma acuminata is highly infectious. Although it is a benign neoplasm and not life-threatening, its high recurrence rate contributes to direct medical costs, productivity loss, and increased psychosocial

impact.[5,6] Therefore, the prevention of this disease is important and should investigate its epidemiological characteristics and sexual risk factors. Some studies have been performed about CA infection in the Indonesian population. However, the data about the pattern of sexual behaviors and risk factors among CA patients are still limited, especially studies that evaluate and compare male to female CA patients. Our study analyzed the gender differences in sociodemographic characteristics and sexual risk factors of CA patients to plan future health interventions.

MATERIAL AND METHODS

This cross-sectional study used a purposive random sampling technique. We evaluated 94 newly diagnosed CA patients visiting the outpatient clinic of Dr. Moewardi General Hospital, Surakarta, from January 2013 to December 2017. Sociodemographic data included sex, age, educational status, occupation, and marital status taken from patients' medical records. At the same time, the sexual risk factors including HIV/AIDS infection, age at the first sexual intercourse, condom use, and type of intercourse, and several lifetime sexual partners were taken from questionnaires. This information was routinely asked the patients on their first visit and recorded in medical files. The data were analyzed using Predictive Analysis Software, version 22.0 (SPSS Inc, US). Chi-square test was performed to determine the association between gender and behavior and risk factors of CA patients. *P*-value of < 0.05 was considered to be statistically significant.

RESULTS

Forty-seven males (50%) and 47 females (50%) with condyloma acuminata were statistically analyzed. There were significant difference between genders in age (p=0.014), occupation (p=0.001), education (p=0.019) and marital status (p=0.036) of CA patients. In our study, the most common CA patients were between 21 and 30 years old. The male patients were mostly single and workers. Female patients who were affected by CA were mostly married and housewives. Both female and male patients with CA were mostly high school graduates. (**Table 1**)

Table 1. Gender differences in demographic and general information among patients with condyloma acuminata

PARAMETERS	Number of subjects (%)		
	Male (n = 47) n (%)	Female (n = 47) n (%)	p Value
Age			
<20	1 (2.1)	8 (17.0)	.014*
21-30	21	22	
31-40	(44.8)	(46.8)	
41-50	16	12	
>50	(34.0)	(25.5)	
	3 (6.4)	5 (10.6)	
	6 (12.8)	0 (0)	
Occupation			
Self-employed	11 (23.4)	7 (14.9)	.001*
University student	4 (8.5)	4 (8.5)	
Housewife/ Unemployed	3 (6.4)	19 (40.4)	
Employed	29 (61.7)	17 (36.2)	
Education			
Elementary school	0 (0)	3 (6.4)	.019*
Junior school	8 (17.0)	15 (31.9)	
High school	34 (72.3)	20 (42.6)	
University	5 (10.6)	9 (19.1)	
Marriage status			
Single	24 (51.1)	12 (25.5)	.036*
Married	22 (46.8)	34 (72.3)	
Divorced	1 (2.1)	0 (0)	
Widow	0 (0)	1 (2.1)	

There was a significant difference between genders in HIV infection status (p=0.035). Most patients did not have HIV infection. Their first sexual intercourse (p=0.039) was mostly at the age of 15-20 years old. There was also a significant difference between

genders in the number of lifetime sexual partners (p=0.000). Most male CA patients were multi partners with 2-4 sexual partners, while female CA patients were a single partner. The type of intercourse among male and female patients was significantly different (p=0.000). The male CA patients mostly liked oral intercourse, which differs from female patients who preferred genital intercourse. (Table 2)

Table 2. Gender differences in sexual risk factors among patients with condyloma acuminata

PARAMETERS	Number of subjects (%)		
	Male (n = 47) n (%)	Female (n = 47) n (%)	p Value
Condom Using			
Sometimes	15 (31.9)	5 (10.6)	.035*
Always	8 (17.0)	8 (17.0)	
Never	24 (51.1)	34 (72.3)	
HIV			
Yes	19 (40.4)	7 (14.9)	.006*
No	28 (59.6)	40 (85.1)	
Age at the first sexual intercourse			
<15	3 (6.4)	0 (0.0)	.039*
15-20	32 (68.1)	27 (57.4)	
21-25	9 (19.1)	14 (29.8)	
26-30	1 (2.1)	6 (12.8)	
>30	2 (4.3)	0 (0.0)	
Number of lifetime sexual partner			
1	9 (19.1)	33 (70.2)	.000*
2-4	28 (59.6)	14 (29.8)	
≥5	10 (21.3)	0 (0.0)	
Type of intercourse			
Genital	13 (27.7)	34 (72.3)	.000*
Anal	7 (14.9)	1 (2.1)	
Oral	20 (42.6)	11 (23.4)	
Anal oral genital	7 (14.9)	1 (2.1)	

DISCUSSION

The diagnosis of CA in our study was based on history taking, physical and supportive examinations. Application of 3-5% acetic acid causing whitened of the lesion (acetowhite) is used to detect HPV infection in genital mucous. Acetowhite test sensitivity is reliable detection in HPV infection. There are many previous studies in condyloma acuminata, only a few of them studied gender differences among CA patients.

There is a significant difference between gender in the group age of CA patients (p=0.014). The highest incidence is in the age of 21-30 years old in both genders. This is similar to that of a previous study by Patel et al., which reported that CA's incidence peaked before 24 years old in females and between 25 and 29 years old among males.[5] These correlate with the patient's sexual reproductive age since CA is a highly infectious, sexually transmitted disease.

Many male CA patients in our study are workers and self-employed (n=29, 61.7%). Perhaps they earn a lot of money, have their own flexible time, and are also good at socializing. This is supported by a study by Aprilianingrum, which reported that most female sex workers' clients are self-employed. This may demonstrate that there is a correlation between the high occurrence of CA in this community.[7] In contrast, most female CA patients in this study are housewives (n=19, 40.4%). This finding is similar to a study among women in Kermansyah Province, Iran, which showed that about 51.5% of female CA patients are housewives.[8]

Sexual behavior was found to be the strongest risk predictor for CA in both males and females. The age of the first sexual intercourse differs in various populations according to cultural and religious beliefs. For example, a cross-sectional study in male and female students in Cambodia was reported that the mean age of first sexual intercourse in males and females were 20.7 and 20.2, respectively.[9] In a study by Young et al. found that the most common age of the first sexual intercourse was 15 years old in both genders.[10] In our study, most of the patients started their first intercourse at the age of 15-20 (males 68.1% *vs.* females 57.4%). Given that most of our male patients were single, it

indicates that many male CA patients started their sexual activity before marriage and even in early adolescence. Thus, this should be emphasized that sexual health education in our country should be started for junior and high school students and premarital couples.

Moreover, just like a study by Jackson et al. [11] which reported that males were much likely to have more than 1-lifetime sexual partners and to have concurrent regular, as well as a casual partner than female do, 80.1% of male patients in our present study, are multi partners with more than two sexual partners in a lifetime and only 19.1% are single partners. This is significantly different from female CA patients who mostly only have one sexual partner in their lifetime (70.2%), and none of them have a sexual partner more than four. Wen et al. stated that more significant numbers of lifetime sexual partners were independently associated with increased risk of genital CA in men only. Men with ten or more lifetime partners are approximately twice as likely to acquire CA than men with no or one-lifetime sexual partners. But there is no such association found for women.[12]

Many studies have reported the role of condom use in the prevention of HPV infection.[12] In our study, most CA patients confessed that they never used condoms in their sexual activity (51.1% male *vs.* 72.3% female). Some adolescents believe that condoms are unnatural, they reduce pleasure or sensation, and their use indicates a general lack of respect for the female partner. The nonmonetary costs of condom use appear to be even higher among females than males. Some females feel that a partner's wish to use a condom suggests that females are not clean, commercial sex workers, or in extra-relationship sexual activity.[13] It seems that safe sex and the use of a condom in preventing CA should be considered and educated to all groups.

In this present study, 19 (40.4%) male CA patients and 7 (14.9%) of female CA patients had HIV infection. Human Immunodeficiency Virus is a predisposing factor for HPV infection, including CA. Many studies reported that the incidence of CA increasing in HIV/ AIDS patients. Systemic review by Banura et al. in Sub Saharan population showed a significantly high prevalence of CA in HIV/ AIDS patients.[15]

International Institute for Allergy and Infectious Diseases (a study titled HPV FACT SHEET) reported that CA could be transmitted by oral, vaginal, and anal sex. However, oral and anal sex behaviors are the most common routes.[23] Forty-three of all-male CA patients in this study were engaged in oral intercourse (64.2%), and 8 of them (11.9%) were male sex male patients who had anal intercourse.[15]

CONCLUSION

Our study showed that CA is more involved with younger patients of sexually active age, males who were singles, workers, multi-partners, and females who were married, housewives, and single partners. Further studies with a larger sample size are needed to achieve more information about various aspects of CA and sexual behaviors and risk factors to help policymakers make informed decisions about adopting effective treatment and preventative practices. Early sex education starting from junior high school, especially about STI and HIV, is necessary. Condyloma acuminta sexual partners are suggested to get routine STI examination, and also Voluntary Counselling and *Testing* (*VCT*) must be performed in CA patients.

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