Original Article

Journal of Occupational Health and Epidemiology
Journal homepage: http://johe.rums.ac.ir

Care-seeking Pattern in the General Iranian Population with Sexually Transmitted Infection Syndromes: A Population-Based Survey

Masoumeh Sadat Mousavi[1], Mohammad Fararouei[2]*, Parvin Afsar Kazerooni[3], Maryam Nasirian[4], Haleh Ghaem[5]

1. Assistant Prof., Dept. of Epidemiology and Biostatistics, School of Public Health, Shahrekord University of Medical Sciences, Shahrekord, Iran.
2. Professor, HIV/AIDs Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.
3. MD, Center for Communicable Disease Control, Ministry of Health and Medical Education, Tehran, Iran.
4. Associate Prof., Infectious Diseases and Tropical Medicine Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.
5. Associate Prof., Research Center for Health Sciences, Institute of Health School of Health, Shiraz University of Medical Sciences ,Shiraz, Iran.

Citation: Mousavi MS, Fararouei M, Afsar Kazerooni P, Nasirian M, Ghaem H. Care-seeking Pattern in the General Iranian Population with Sexually Transmitted Infection Syndromes: A Population-Based Survey. J Occup Health Epidemiol. 2022;11(4):275-80.

Article Info

*** Corresponding author:**
Mohammad Fararouei,
E-mail:
fararooei@gmail.com

Article history
Received: Jun 2021
Accepted: Oct 2022

10.61186/johe.11.4.275

Print ISSN: 2251-8096
Online ISSN: 2252-0902

Peer review under responsibility of Journal of Occupational Health and Epidemiology

Abstract

Background: Sexually transmitted infections (STIs) have a high prevalence in developing and least developed countries. Delays in seeking health care are among the main obstacles to the prevention and control of STIs. This study aimed to investigate the care-seeking pattern in the general Iranian population with sexually transmitted infection syndromes.

Materials and Methods: This population-based survey was conducted in 2016 among the population of Marvdasht County, who aged 18-50. The random cluster sampling method was used to select the sample. A checklist was used to collect information, and SPSS V.16.0 was used for data analysis. In addition, linear and logistic regressions were used to model the association between contributing factors and the behavioral pattern.

Results: A total of 3,879 people with the mean age of 33.85 ± 8.85 participated in this study. The results showed that 31.83 and 3.3% of the males and females, respectively, took no action when experiencing common symptoms of STIs. In addition, the time interval between the onset of symptoms and visiting a medical center was 10.26±2.74 and 7.10±1.45 days in males and females, respectively ($P \leq 0.05$).

Conclusions: The care-seeking frequency in males with sexually transmitted infection syndromes was low. Furthermore, the time interval between the onset of the syndrome and visiting a medical center was longer in males than in females.

Keywords: Sexually Transmitted Infections, STIs, Syndrome, Epidemiology, Iran

Introduction

Control and prevention of sexually transmitted diseases (STDs) are a major global health problem, especially in developing countries [1]. Sexually transmitted diseases exert public health effects on individuals' sexual and reproductive health [2]. In addition, it is reported that STIs and their complications are the major reasons for seeking health care [3].

Under-ascertainment is the major cause of failures in the surveillance and control of common infectious diseases [4-6]. Several secondary consequences of STIs in people not seeking health care or being late in doing so include pelvic inflammatory disease, ectopic pregnancies, infertility, cancer, and impaired neonatal health [3]. There are some reasons for under-ascertainment and delays in diagnosis of STIs. Accordingly, it

seems that delays in seeking health care are influenced by sociocultural factors, including high-risk behaviors, self-medication, as well as individuals' knowledge of the symptoms and consequences of these diseases, and the way they are transmitted. On the other hand, due to the social stigma to these diseases in most societies [7], people may be ashamed of seeking health care, which may encourage arbitrary use of drugs and self-medication in people with STIs [7, 8].

Delays in treating STIs have many outcomes for other individuals and society; for instance, delays in treatment, in addition to spreading STIs, may increase the risk of contracting HIV by up to 10 times [9]. Besides, since many STIs are often asymptomatic or their syndromes can be self-treated with prompt access to different types of medicine, they may stay undiagnosed [10]. Due to the importance of health as well as social side effects of not visiting medical centers, it is highly recommended that the health system and the community provide medical and consultation services to patients to improve diagnosis and treatment of STIs [11]. In Iran and many other Muslim countries, people's knowledge and attitude towards STIs are still unknown. This stems from the fact that many factors, such as social stigma and taboos, exist [7,12]. In addition, people's care-seeking behavior is influenced by variables, such as age, sex, type of disease, socio-economic status, and trust in the health care system [10]. Against this backdrop, this study aims to investigate the seeking-care pattern and preference of the Iranian population when referring to private and public centers for experiencing STI-related syndromes. The results of this study can help understand and improve willingness to seek care and treatment among patients with STI syndromes.

Materials and Methods

This cross-sectional study was conducted on a population of sexually active ages (18-50 years) in Marvdasht County, Iran.

Since Marvdasht County has a multicultural and multi-ethnic population, it can be considered as a good sample of the Iranian cultural and social behavior [13-14].

The first 260 clusters (130 urban and 130 rural clusters) were selected randomly, with each cluster consisting of 15 households. The selected households were interviewed at their house doors to complete the first questionnaire (the family questionnaire). To this end, the families' mothers were questioned to complete the general questionnaire (name, gender, age, and occupation of the members of each household). Besides, all household members' mobile phone numbers, who were within the age range of 18-50, were received. If the housewives were not able to remember the phone numbers, they could get help from other members at home.

As the second phase of data collection, the names and telephone numbers of householders aged 18-50 were obtained via door-to-door interviews. Next, an invitation card with a brief introduction to the study objectives and the research team was delivered to the housewives to be submitted to an eligible person. The card was meant to inform the receivers within two days when they received a phone call from a defined landline phone belonging to the study office at Shiraz University of Medical Sciences.

The phone interview was conducted by the same-sex trained interviewer (male or female), starting with a brief explanation to the objectives of the study and giving the participants the further assurance of information confidentiality. After the brief introduction, they were assured that the interview would be stopped at any time the interviewee wished. In addition, verbal consent was obtained from the participants on the phone. Furthermore, the participants were asked questions about some information items, including age, marital status, education, occupation, presence of STI syndromes, and their reaction to STI syndromes if they were experiencing them.

All males and females aged 18-50, who lived in Marvdasht County and agreed to participate in the study were included in the sampling process. In contrast, individuals with incorrect phone numbers, those giving no response after receiving calls in three consecutive days, and those reluctant to participate in the study were excluded from the study.

The general questionnaire (household members' name, gender, age, and occupation) was completed at house doors. In addition, a specialized questionnaire (syndromes and health care seeking behavior), which contained two sections of demographic (residency, marital status, education, age, and sex) factors and behavior in case experiencing sexually transmitted infection syndromes, was completed by every participant aged 18-50 in the phone interview.

Statistical tests (a chi-square test and a t-test) were used to measure possible associations among behavioral patterns, syndromes, and demographic characteristics. Besides, linear and logistic regressions were used to model

associations between contributing factors and behavioral patterns.

The protocol of this study was approved by Shiraz University of Medical Sciences under reference code IR.SUMS.REC.131096.

Results

A total of 3,879 individuals aged 18-50 participated in this study. The participants' mean age was 33.85 ± 8.85. In addition, 53.70% were living in the city, and 70.24% were married (Table 1).

Table 1. The participants' demographic characteristics

Variable	Total	Total	Male	Female	P-value
Residency	Urban	2080(53.69)	1119(49.9)	961(58.7)	< .00001
	Rural	1799(46.37)	1124(50.1)	675(41.3)	
Marital status	Single	1071(27.85)	737(32.9)	334(20.8	< .00001
	Married	2701(70.24)	1493(66.7)	1208(75.2)	
	Widowed and divorced	73(1.89)	9 (0.4)	64(4)	
Education	Literate	124(3.30)	39 (1.8)	85(5.2)	< 0.00001
	Primary	782(20.84)	372 (17.5)	410(25.2)	
	Secondary	845(22.52)	555 (26.1)	290(17.8)	
	High school	1209(32.22)	698 (32.8)	511(31.4)	
	Higher education	792(21.10)	461 (21.7)	331(20.3)	
Age	< 20	212(5.61)	116(5.36)	96(5.95)	< 0.00001
	21 – 30	1288(34.11)	738(34.10)	550 (34.14)	
	31 – 40	1337(35.41)	756(34.93)	581(36.06)	
	41 – 50	938(24.84)	554(25.60)	384(23.83)	

Care-seeking patterns of STIs: The results showed that 31.83 and 3.3% of the males and females, respectively, took no action when experiencing the symptoms (P < 0.05). In addition, 17.40 and 9.29% of the male and female participants, respectively, visited a general practitioner (P < 0.005). Besides, 56.58 and 36.30% of the males and females, respectively, referred to a public medical center (P < 0.05). Additionally, the means of the interval between the onset of the symptoms and seeking medical care was 10 and 7 days in the males and females, respectively (P < 0.05) (Table 2).

Table 2. Behavioral patterns of the participants with sexually transmitted disease syndromes

Variable		Total	Male	Female	P-value
Type of behavior	Doing nothing	128(9.27)	92(31.83)	36(3.30)	≤. 0001
	Traditional treatment, using home remedies, going to a pharmacy, and taking over-the-counter medicine	63(4.56)	17(5.90)	46(4.20)	
	Seeking care and treatment from health service providers	1189(86.15)	180(62.30)	1009(92.50)	
Type of physician	General practitioner	96(11.46)	39(17.40)	57(9.29)	.005
	Family doctor	163(19.47)	39(17.40)	124(20.22)	
	Specialist	578(69.05)	146(65.17)	432(70.47)	
Health provider	Governmental	443(38.28)	103(38.28)	340(38.28)	.09
	Private	696(60.15)	158(58.73)	538(60.58)	
	Both	18(1.50)	8(2.97)	10(1.12)	
Laboratory test	Yes	671(59.69)	174(70.16)	497(56.73)	≤. 0001
	No	453(40.30)	74(29.83)	379(43.26)	
Delays in seeking treatment (day)	M ± SD	7.76 ± 1.45	10.26±2.74	7.10 ± 6.89	≤. 0001

The investigation of associations between the study factors and delays in seeking health care suggested that no association existed between education, marital status, place of residence, and age of the participants with delays in seeking treatment. However, females (OR=-10.52, 95%CI: (17.64 - 3.57) p = 0.002) reported a lower rate of delays in seeking health care (Table 3).

Table 3. Demographic characteristics and delays in seeking medical services

Variable	Uppercase	B/Crude (95%cl)	P-value	B / Adjusted	P-value
Gender	Male(Ref)	1	0.03	-10.52(-17.64 -3.57)	0.002
	Female	-16.18(-23.04-9.31)			
Marital status	Single(Ref)	1	0.27	-7.47(-15.23-0.28)	0.07
	Married	-11.20(-18.82-3.58)			
Education	Under high school diploma	1	0.32	-5.83(-13.13-1.37)	0.54
	Over high school diploma	-2.08(-8.64-4.47)			
Age	30 < (Ref)	1	0.15	-2.65(-8.51-3.19)	0.11
	> 30	-2.63(-8.35–3.08)			
Residency	Urban	1	0.04	3.43(-2.84- 9.70)	0.23
	Rural	4.02(02.57-10.61)			

The results of the multivariate analysis of the effects of demographic variables and the probability of referring to medical centers showed that females (OR = 15.74, 95%CI: (7.13- 30.45), p = 0.001) and married participants (OR = 2.01, 95%CI: (1.52 - 4.50), p = 0.021) were more likely to seek medical care (Table 4).

Table 4. Effects of demographic characteristics on the participants' care-seeking pattern

Variable	Uppercase	B/Crude (95%cl)	P-value	B / Adjusted	P-value
Gender	Male(Ref)	1	0.0001	1	0.001
	Female	10.59(6.78-16.55)		15.74(7.13-30.45)	
Marital status	Single(Ref)	1	0.09	1	0.021
	Married	-1.08(0.74-1.59)		2.01(1.52-4.50)	
Education	Under high school diploma	1	0.27	1	0.63
	Over high school diploma	0.82(0.52-1.28)		0.76(0.41-1.41)	
Age	30 <(Ref)	1	0.19	1	0.21
	> 30	1.07(0.71-1.61)		0.84(0.50-1.40)	
Residency	Urban	1	0.04	1	0.07
	Rural	0.76(0.45-0.92)		0.51(0.27-1.97)	

Discussion

In this study, 13.83% of the study participants (37.73 and 7.5% of the males and females, respectively) did not refer to medical providers [14]. A study conducted in 2016 in Iran [12] showed that 34% of people took no treatment measure when symptoms occurred, and about 8% used self-medication. In a study conducted by Bhandari in 2010, 57% of women had at least one reproductive morbidity, of whom only one third (34%) sought health care [15].

Due to the nature of sexually transmitted diseases and the consequences of not treating them in time, delay in treating these diseases is one of the important public health issues [16]. In fact, self-medication for SITs appears to be globally prevalent [17]. In addition, the major reasons for not referring to health care centers for treating sexually transmitted diseases are the family's tradition and low socio-economic level [18]. In a study, patients who delayed seeking treatment, including those who performed self-treatment prior

to seeking health care, were female and held misconceptions about the cause of STIs; besides, they took STIs for granted, did not value personal autonomy in sexual behavior, and would expect to encounter problems in their relationships if they refused to have sex [19].

In this study, approximately 11.5 and 9.29% of the males and females, respectively, visited a general practitioner when syndromes occurred. Besides, 65 and 70% the males and females, respectively, visited a specialist practitioner. Nasirian's study (20015) reported that men first visited a general practitioner and a urologist, and women visited a gynecologist [12].

The results of this study showed that, on average, males sought treatment with more delays than females. A study in UK found that over 43 and 66% of men and women, respectively, sought treatment more than seven days after the onset of symptoms [20]. Given the fact that men spread more STIs than women and receive more delayed treatment of STIs, we need to better understand the factors contributing to care-seeking behaviors in men.

Effects of demographic characteristics on the delays and care-seeking behaviors suggested that except for gender, no association existed between education, marital status, place of residence, and age with delays in seeking treatment. In other words, females had a lower rate of delays in seeking treatment. The study carried out by Rejoice (2014) in India showed that younger women were much more likely to receive treatment for their STIs than older ones. Accordingly, the results showed that women within the age range of 18–20 were more likely to receive treatment for STIs (80.0%) than those aged 24 (75.0%) [18]. In Nasirian's study, delays in seeking care were not significantly associated with age, gender, marital status, and education of the women; in addition, married individuals were more likely to seek medical care [12].

In this study, mothers were asked to provide their eligible family members' phone number. However, the presented phone numbers were wrong in some cases, so the family member could not be contacted Few of the selected individuals had no mobile phone. Additionally, we could not reach few individuals in rural areas due the lack of coverage of the mobile phone network. Besides, few mothers did not give their daughters' numbers for cultural concerns.

Conclusion

The results showed that care-seeking behavior in people with STI syndromes needs to be better understood especially among men. According to the results of the present study, under ascertainment of STIs among males was worrisome. In addition, the results showed the need for health education as well as easily and privately accessible medical services to reduce under ascertainment among patients to control the spread of STIs among the general population, especially among at-risk groups.

Acknowledgement

We would like to extend our gratitude to the health center staff in Marvdasht County for their cooperation in data collection.

Conflict of interest: None declared.

References

1. Taylor M, Alonso-González M, Gómez B, Korenromp E, Broutet N. World health organization global health sector strategy on sexually transmitted infections: an evidence-to-action summary for Colombia. Rev Colomb Obstet Ginecol. 2017;68(3):193-201.
2. Workowski KA. Centers for Disease Control and Prevention Sexually Transmitted Diseases Treatment Guidelines. Clin Infect Dis. 2015;61(Suppl 8):S759-62
3. Tsadik M, Lam L, Hadush Z. Delayed health care seeking is high among patients presenting with sexually transmitted infections in HIV hotspot areas, Gambella town, Ethiopia. HIV AIDS (Auckl). 2019;11:201-9.
4. Kazerooni P, Nejat M, Akbarpoor M, Sedaghat Z, Fararouei M. Underascertainment, underreporting, representativeness and timeliness of the Iranian communicable disease surveillance system for tuberculosis. Public Health. 2019;171:50-6.
5. Gheibi Z, Dianatinasab M, Haghparast A, Mirzazadeh A, Fararouei M. Gender difference in all- cause mortality of people living with HIV in Iran: findings from a 20- year cohort study. HIV Med. 2020;21(10):659-67.
6. Kazerooni PA, Fararouei M, Nejat M, Akbarpoor M, Sedaghat Z. Under-ascertainment, under-reporting and timeliness of Iranian communicable disease surveillance system for zoonotic diseases. Public Health. 2018;154:130-5.
7. Zarei N, Joulaei H, Darabi E, Fararouei M. Stigmatized Attitude of Healthcare Providers: A Barrier for Delivering Health Services to HIV Positive Patients. Int J Community Based Nurs Midwifery. 2015;3(4):292-300.
8. Xu G, Xu J, Lu X, Yang L, Hu X, Shi R, et al. Influencing factors and characteristics of improper health seeking behaviors among

sexually transmitted diseases outpatients. Fudan Univ J Med Sci. 2014;41(1):66-73.
9. Govender I, Eche M. Health-seeking behaviour of people with sexually transmitted infections in the community of Nkomazi East, Mpumalanga. S Afr J Epidemiol Infect. 2012;27(4):195-8.
10. Butz AM, Gaydos C, Chung S-E, Johnson BH, Huettner S, Trent M. Care-seeking behavior after notification among young women with recurrent sexually transmitted infections after pelvic inflammatory disease. Clin Pediatr (Phila). 2016;55(12):1107-12.
11. Rietmeijer CA. Improving care for sexually transmitted infections. J Int AIDS Soc. 2019;22 Suppl(Suppl Suppl 6):e25349.
12. Nasirian M, Karamouzian M, Kamali K, Nabipour AR, Maghsoodi A, Nikaeen R, et al. Care Seeking Patterns of STIs-Associated Symptoms in Iran: Findings of a Population-Based Survey. Int J Health Policy Manag. 2015;5(1):5-11.
13. Mousavi MS, Fararooei M, Afsar-Kazerooni P, Nasirian M, Ghaem H. Evaluation of Conducting Phone Interviews on Sexual Behavior: An Iranian Population-Based Study. Shiraz E-Med J. 2022;23(6):e118708.
14. Mousavi M, Fararouei M, Kazerooni PA, Nasirian M, Ghaem H. Population based estimation of point and period prevalence of sexully transmitted infections based the iranian symptoms surveillance system. Rev Amazon Investig. 2019;8(18):29-42.
15. Bhanderi MN, Kannan S. Untreated reproductive morbidities among ever married women of slums of Rajkot City, Gujarat: the role of class, distance, provider attitudes, and perceived quality of care. J Urban Health. 2010;87(2):254-63.
16. Malek AM, Chang CC, Clark DB, Cook RL. Delay in seeking care for sexually transmitted diseases in young men and women attending a public STD clinic. Open AIDS J. 2013;7:7-13.
17. Singh A, Mahmood SE, Pandey S, Pandey A. A comparative study of health care seeking behaviour of women of reproductive age for sexually transmitted diseases/reproductive tract infections in the rural and urban areas of Bareilly district. Indian J Community Med. 2012;3(1):25-30
18. Puthuchira Ravi R, Athimulam Kulasekaran R. Care seeking behaviour and barriers to accessing services for sexual health problems among women in rural areas of Tamilnadu state in India. J Sex Transm Dis. 2014; 2014:292157.
19. Meyer-Weitz A, Reddy P, Van den Borne H, Kok G, Pietersen J. Health care seeking behaviour of patients with sexually transmitted diseases: determinants of delay behaviour. Patient Educ Couns. 2000;41(3):263-74
20. Gerressu M, Mercer CH, Cassell JA, Brook G, Dave S. The importance of distinguishing between black Caribbeans and Africans in understanding sexual risk and care-seeking behaviours for sexually transmitted infections: evidence from a large survey of people attending genitourinary medicine clinics in England. J Public Health (Oxf). 2012;34(3):411-20.