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RESEARCH ARTICLE

Investigating the Knowledge of Sexually Transmitted Diseases in University Students of Iran

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Abstract:

Background:

Unprotected sex, multi partnership, no or inconsistent use of the condom can be mentioned as risk behaviors putting youth at high risk to Sexually Transmitted Diseases (STDs). The present study aimed to investigate the knowledge of sexually transmitted diseases in the university students of Shahroud in Iran.

Methods:

This cross-sectional study was conducted in Shahroud city of Iran. 1500 female and male students in the age bracket of 18-24 were included in the study. Multistage sampling was employed. After stating the objective of the study, the questionnaire was distributed to students during the end of lecture time upon the agreement of the education officials and collected after 15 minutes. To ensure that the information provided will be kept confidential, the students were asked not to write down their names and fields of study. Data were described using descriptive statistics by SPSS software, version 20.

Results:

The answers showed that the female and male students have heard more about HIV (94.9% vs. 93.1%), gonorrhea (47.2% vs. 50.2%), genital herpes (45.6% vs. 33.1%), and genital warts (31.4% vs. 18.1%), in the order of frequency. 35.9% of females had no knowledge about the symptoms of diseases in women and 53% of males had no knowledge about the symptoms of the diseases in men. 26.6% of female students and 16% of male students knew regarding at least three symptoms of diseases.

Conclusion:

The present study showed that the university students' knowledge is far distant from the desired situation. This study succeeded in identifying the educational needs of the youth.

Keywords: HIV, Sexually transmitted diseases, Iran, Reproductive health, Adolescents, Youth.

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1. INTRODUCTION

12.7% of youth in the age range of 15-17 years old experience sexual behaviors [1]. Unprotected sex, multi partnership, no or inconsistent use of the condom and drug abuse can be mentioned as risk behaviors putting adolescents and young adults at high risk to HIV/AIDS and other Sexually Transmitted Diseases (STDs) [2].

Sexually transmitted diseases (STDs) include a variety of clinical syndromes and infections that are caused by pathogens. These pathogens can be acquired and transmitted through sexual activity [3]. The majority of young people under the age 25 years old in the US suffer from sexually transmitted diseases especially HIV/AIDS [2]. According to CDC, 0.44 and 0.55 per 100 females at the age range of 14 to 19 years old and 20 to 24 years old are infected by gonorrhea, respectively. It was also found that the chlamydia rate among 15-19 years old females was 3.0 cases per 100 and among 20-24-year-old females, it was 3.7 cases per 100 females [4]. Concerning the prevalence rate of infection with HPV from 2009–2012, the estimations showed that 29.0% of females aged 14–19 years old and 58.7% of females aged 20–24 years old suffered from HPV [5].

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Studies in Iran have shown that 40% of 18-24-year-old youth have sexual relations [6], of which 16% of females and 27% of males use condoms [7]. Moreover, the adolescent reproductive health indicators show that their knowledge about reproductive and sexual health is not sufficient and all of these factors can put them at risk for sexually transmitted diseases [8].

Since most STDs can occur with no symptoms, they are likely to be passed on during unprotected sexual intercourse.

Insufficient knowledge regarding the consequences of unprotected premarital sex can put the youth at risk for unwanted pregnancies, unsafe abortion and its complications, as well as sexually transmitted diseases [9]. According to the results of numerous studies, young people in developing countries have low awareness about STDs and how to prevent infection with HIV [2, 10].

On the other hand, factors such as lack of teen-friendly clinics, the taboo of talking about sexual issues with health workers, inconsistent use of condom in sexual intercourses, lack of education by families, drug use and smoking, as well as the cost of treatment are barriers that expose adolescents to the complications of sexually transmitted diseases [7, 11 - 14]. In this context, the present study aimed to investigate the knowledge of sexually transmitted diseases in university students of Shahroud, Iran.

2. METHODS

This crosssectional study was conducted in Shahroud city of Iran. 1500 female and male students in the age bracket of 18-24 were included in the study. Multistage sampling was employed. Each university and class was initially considered a single stratum and cluster, respectively. After obtaining written informed consent from the students and stating the objective of the study, the questionnaires were distributed to students during the end of lecture time upon the agreement of the education officials and collected after 15 minutes. To ensure that the information provided will be kept confidential, the students were asked not to write down their names and fields of study. Data were analyzed using SPSS software version 20, and descriptive-analytical statistics such as percentage, mean scores, t-test Spearman, and chi-squared test. The questionnaire was administered in one of the universities in Shahroud, Iran, by one of the researchers. This questionnaire, consisting of demographic characteristics and the CDC questionnaire, was used to collect data regarding the knowledge of sexually transmitted diseases and the signs and symptoms ("yes" option was used for the answer "I Know" and "no" option was used for the wrong answer or "I don't know"). Also, the part of the questionnaire that students were asked to number the sign and symptoms of STIs they have experienced during life was in the form of self-report [15]. The validity and reliability of the questionnaire had been previously determined by Mousavi et al. [16]. Data were described using descriptive statistics by SPSS software, version 20.

3. RESULTS

The results showed that 919 (61.2%) university students were females and 539 (36.1%) were males. The mean age of females and males was 20.26 ± 91.49 and 20.32±1.57 years old, respectively (P=0.437).

Regarding the item "Which of the following diseases have you heard of?", the answers showed that the female and male students have heard more about HIV (94.9% vs. 93.1%), hepatitis (56.7% vs. 44.1%), gonorrhea (47.2% vs. 50.2%), genital herpes (45.6% vs. 33.1%), and genital warts (31.4% vs. 18.1%), in order of frequency.

Table 1. Knowledge of male and female students regarding STIs.

-	-	-	Boys		Girls	
-	-	-	N	%	N	%
Which STIs disease do you know?	HIV	Yes	483	93.1	861	94.9
		No	36	6.9	46	5.1
	Syphilis	Yes	106	20.1	301	32.9
		No	422	79.9	615	67.1
	Gonorrhea	Yes	267	50.2	433	47.2
		No	265	49.8	485	52.8
	Hepatitis B	Yes	235	44.1	521	56.7
		No	298	55.9	398	43.3
	Chlamydia	Yes	21	3.9	103	11.2
		No	513	96.1	816	88.8
	Human papilloma vinous	Yes	96	18.1	288	31.4
		No	435	81.9	630	68.6
	Trichomonas vaginitis	Yes	21	3.9	108	11.8
		No	513	96.1	808	88.2
	Herpes simplex virus	Yes	174	33.1	414	45.6
			352	66.9	494	54.4

(Table 1) contd.....

-	-	-	Boys		Girls	
-	-	-	**N**	**%**	**N**	**%**
Knowledge of STIs Signs in Men.		Discharge	39	7.3	47	5.1
		Pain during urination	44	8.2	41	4.5
		Sore	20	3.7	38	4.1
		I don’t know any sign	175	32.7	379	41.2
		Other sign	4	0.7	2	0.2
		2 signs	166	31.0	284	30.9
		3 signs	87	16.3	129	14.0
Knowledge of STIs Signs in Women.	-	Discharge	33	7.7	73	8.9
		Pain during urination	12	2.8	20	2.4
		Sore	31	7.2	40	4.9
		I don’t know any sign	230	53.5	295	35.9
		Other signs	4	0.9	4	0.5
		2 signs	51	11.9	171	20.8
		3 signs	69	16.0	218	26.6

Table 2. Frequency of signs and symptoms of STIs in male and female students.

-	-	Boys		Girls	
		N	**%**	**N**	**%**
Discharge	Yes	105	20.5	379	42.4
	No	369	72.1	417	46.6
	Don't remember	38	7.4	98	11.0
Dysuria	Yes	135	26.6	186	20.9
	No	338	66.5	647	72.7
	Don't remember	35	6.9	57	6.4
Itching	Yes	181	35.8	511	57.1
	No	283	56.0	326	36.4
	Don't remember	41	8.1%	58	6.5%
Edema in genitalia	Yes	52	10.3	59	6.7
	No	423	83.8	772	87.1
	Don't remember	30	5.9	55	6.2
Bleeding	Yes	22	4.4	81	9.2
	No	444	89.7	759	86.2
	Don't remember	29	5.9	40	4.5
Sore or papilloma	Yes	39	7.8%	51	5.9%
	No	434	86.5	758	87.6
	Don't remember	29	5.8	56	6.5

However, they have heard less about chlamydia and trichomonas vaginalization. Concerning knowledge of signs and symptoms of sexually transmitted diseases in men, 41.2% of females and 32.7% of males had no information about the symptoms. 30.9% of females and 30% of males had knowledge about at least two symptoms of diseases. 35.9% of females had no knowledge about the symptoms of diseases in women and 53% of males had no knowledge about the symptoms of the diseases in men. 26.6% of female students and 16% of male students knew at least three symptoms of diseases (Table **1**). The results showed that the most common symptoms of sexually transmitted diseases in males were, in order, itching (35.8% (181 students)), dysuria (26.6% (135 students)), and discharge (20.5% (105 students)). These symptoms in females were itching (57.1% (511 students)) and discharge (42.4% (379 students)). Warts and sores were the least common reported symptoms (Table **2**).

4. DISCUSSION

Youth is a period of life in which sexual behaviors can expose individuals to sexually transmitted diseases [17]. The results showed that less than half of the students have heard of common diseases such as chlamydia, genital herpes and warts. A random sample of 500 university students, regarding their knowledge of HPV, showed that only 37% of respondents had heard of HPV. They said they had the least knowledge about HPV and found that the training efforts for these diseases have been insufficient. Therefore, despite the high prevalence of HPV among young adults, the majority of students had low knowledge of this type of infection [18]. In the present study,

only 33% of male students and 45% of female students had heard of the disease. However, it is speading all over the world, especially among young people. A systematic review study in Iran has reported its prevalence as 6.5%, half the rate reported in 2012 in the world [19, 20]. The students who participated in this study had insufficient knowledge about genital warts and trichomonas; however, more than 90% were aware of AIDS. Dehqani et al. showed that the university students' knowledge about AIDS was sufficient but insufficient about HBV, which was in line with the results found in this study [21]. Considering the fact that some sexually transmitted diseases such as genital warts can be prevented with a vaccine, knowledge about sexually transmitted warts can protect people against the disease. A study in Iran showed that the awareness of young people, parents, and families about the HPV vaccine was very low, but they had a good attitude towards it. Thus, the training programs should focus on encouraging young people and parents to prevent the disease by taking the vaccine [22].

Another result of the present study showed that 32.7% of males and 41.2% of females had no knowledge about the symptoms of sexually transmitted diseases, and less than 20% of female and male university students had knowledge about three symptoms of the disease. A study in Nigeria on 550 adolescents studying in public and private high schools using a multi-stage sampling method showed that 499 (92.4%) of students had previously heard of sexually transmitted infections. 80% of respondents had knowledge about only one STI disease and the two diseases mostly mentioned by students were AIDS (78.0%) and gonorrhea (23.0%). The most important symptoms were weight loss (77.4%), painful abortion (68.9%), and genital sores (54.1%). Overall, only 6.9% of respondents had enough knowledge about STIs while others had moderate and low knowledge [23]. A study in Turkey on knowledge of 888 freshman university students about sexually transmitted diseases indicated that 55% of students had knowledge about “vaginal discharge”, 48.1% about genital warts/sores/genital sores”, and 28.9% of students were aware that the diseases may “be asymptomatic”, and 15.7% were aware of “pain in the abdomen” [24].

Other results of the present study showed that university students had experienced the symptoms of sexually transmitted diseases in their life and the most common symptoms in these students were itching and discharge.

Discharge is a common symptom of trichomonas. The present study showed that a small number of students had heard of the disease. The studies have revealed that the prevalence of trichomonas in Iran varies from 2.9% to 17%, whose most common symptom is discharge, though this symptom is observed in other sexually transmitted diseases as well [25, 26]. The studies on different age groups of females have indicated that it is more prevalent among 2.3 of adolescents, 4% of adults aged over 25 years old, and 3.1% of 14-49-year-old females [27]. The present study showed that 5.8% [7, 9] of male and female students had genital sores or warts, which could be a sign of diseases such as warts, genital herpes, canker, or syphilis. Studies in Iran have shown that the rate of genital warts is on the rise in this country like other developing countries [28, 29]. A study on 447 women showed a rate of 3.5% of genital warts in Iranian women [30]. Considering the fact that sexually transmitted diseases affect the quality of reproduction and male and females' life, the adolescents at the beginning of the reproductive period need to receive the required trainings [31]. Since adolescents are influenced by friends, the trainings should be performed in schools and learning centers such as universities [17].

CONCLUSION

The present study showed that the university students' knowledge is far distant from the desired situation. This study succeeded in identifying the educational needs, and in other words, the educational gaps of the respondents in this study, which should be considered in further studies in the future, i.e. designing the content and educational interventions. According to the results of the study, it is suggested to include the prevention methods of sexually transmitted diseases as a part of the educational programs. Training the university students not only increases their awareness, improves attitudes, and develops the skills required to prevent sexually transmitted diseases, but also transmits these abilities to other members of the society, reducing infection with these diseases and improving the reproductive health in the society through considering the students' social status and their role model in the society. This study has some limitations; it cannot be generalized to youth in other countries.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The present study has been conducted in Shahroud University of Medical Sciences, Iran, under the ethics code (code 890/08).

HUMAN AND ANIMAL RIGHTS

All procedures followed were in accordance with the ethical standards of the research committee responsible and with the 1964 Helsinki Declaration and its later amendments.

CONSENT FOR PUBLICATION

Informed consent was obtained from all the participants.

AVAILABILITY OF DATA AND MATERIALS

The datasets generated and/or analyzed during the current study are not publicly available due to the moral rules of Shahroud University of Medical Sciences, but are available from the corresponding author [K.V] on reasonable request.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest, financial or otherwise.

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