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Health Care Professionals' Knowledge and Attitudes About Sexually Transmitted Diseases and Legal Aspects of Medical Services

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Abstract

Objective: This study aims to investigate healthcare professionals' (HCPs) general level of knowledge about sexually transmitted diseases, their attitudes towards these patients and legal aspects of medical services.

Materials and Methods: This was a multi-centered study. The participants were given 28 questions that mainly asked their level of knowledge on sexually transmitted diseases (STDs) patients, their attitudes towards such patients, and their legal as well as ethical views on them.

Results: A total of 234 HCPs, 124 (53%) female and 110 (47%) male, participated in the study. The majority of married HCPs have reported monogamy as the most reliable protection method, whereas single participants have marked "condoms." The most commonly known STD has been reported as AIDS in all groups. Even though HCPs find it medically unethical not to offer a medical intervention to patients with STDs, more than one-third of the participants believe that HCPs should have the right not to do so.

Conclusion: It has been concluded that HCPs need further education on STDs. Nevertheless, such high level of care and attention on HCPs' part does not necessarily decrease their need for proper medico legal regulations on such issues.

Keywords: HIV-positive persons, Sexually transmitted diseases, High-risk sexual behavior, Medical accidents, Medico-legal issues, Survey

Introduction

It has been recorded that sexually transmitted diseases (STDs) are caused by more than 30 viral, parasital and bacterial factors (1). In the contemporary era, the frequency of STD cases caused by such factors is constantly increasing due to modern social and economic conditions. In addition to new 340 million remediable STD cases every year, the picture annually continues to include recent chronic cases of HIV, hepatitis B virus (HBV) and human papilloma virus (HPV) (2). There is a massive upsurge in STD cases worldwide, and the overall capital spent on the treatment of these diseases accounts for an economic loss that equals to 17% of the annual health expenditure of developing countries (3).

According to recent statistics on HIV carriers, there are 34 million HIV positive people worldwide, 50% of whom are unaware of their disease (4). As to the latest data by the Turkish Ministry of Health, the number of HIV carriers in our country is totally 4303 despite the gradual increase in the recent years, and the number of AIDS cases is 921 (5).

Although STD cases are less frequently encountered in socially closed societies like ours, healthcare professionals (HCPs) are under additional risk both due to patients' discretion and because of their unawareness as a result of the societies closed character (6).

Many communicable agents threaten the lives of HCPs through non-sexual transmission ways such as contact, pinprick and inhalation. The risk of infection proves to be the most significant factor in the occupational complications of HCPs. Every year, many HCPs are exposed to both vital and psychological traumas owing to such risks. What is more, these incidents are also reflected in their familial and social lives (7). In spite of the fact that HCPs remain at the forefront in the war against STDs, they feel deep concerns while performing their jobs due to mentioned reasons (8).

Materials and Methods

This was a multi-centered study conducted using an attitude scale. The study turned into a project, approved

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by the Helsinki Declaration through general and ethical council. The participants of the study were the doctors, the allied health personnel (nurses, surgery technicians, lab technicians, anesthesia technicians, and other nursing staff) and other administrative staff of the following hospitals: Clinical Microbiology and Infectious Diseases Department of Ankara Gülhane Military Medical Academy – Faculty of Medicine Hospital, Clinical Microbiology and Infectious Diseases Department of İstanbul Gülhane Military Medical Academy – Haydarpaşa Education Hospital, and Otorhinolaryngology Department of Afyon Kocatepe Training Hospital.

For their informed consent, the participants were given information about the study in detail, and those who volunteered to participate were included in the study. The participants were divided into three groups according to their occupations: the first group includes doctors, the second group is the allied health personnel (nurses, surgery technicians, lab technicians, anesthesia technicians, and other nursing staff), and finally the administrative staff of the hospitals constitutes the third group.

The study was conducted on a total of 234 HCPs: 73 HCPs in the first group, 109 HCPs in the second group, and 52 HCPs in the third group. The participants were given 28 questions that investigated their level of knowledge on STD patients, their attitudes towards such patients, and their legal as well as ethical views on them. Only 2 of the 28 questions were open-ended. There were 5 questions about the socio-demographical information (age, gender, marital status, education, and occupation) of the participants. 4 items measured the participants' level of general knowledge on the subject. Thirteen items aimed at determining participants' attitudes towards STD patients, including family members and other acquaintances in their social network, by questioning their medical and ethical stance towards them. The last 6 items questioned the participants' rights in treating STD patients as well as their reluctance to treat them from a legal point of view. After the informed consents of the participants were taken, they were asked to answer the survey items on their own in a special room without specifying their IDs and related information.

The collected data was analyzed using SPSS 15.0 software program. After the normal distribution level of the data was evaluated by one-sample Kolmogorov–Smirnov and variance homogeneity tests, non-parametrical Kruskal-Wallis test was used for non-discrete data, and chi-square test (and Fischer test when necessary) for the discrete data. Post-hoc and Tukey tests were employed among three groups. $P < 0.05$ was taken statistically significant.

Results

A total of 234 HCPs, 124 (53%) female and 110 (47%) male, participated in the study. Information on the age and marital status of the participants is summarized in Tables 1 and 2. The participants' responses to the item "As far as the STDs are concerned, which of the following is the first disease that comes to your mind?, which is one of the open-ended questions that assessed the HCPs' knowledge on STDs, are presented in Table 3. As to the item that asked the participants to "mark the most effective methods of protection against STDs" (the options were: condoms, personal hygiene, vaccination, sterilization and disinfection of medical tools, monogamy, medication, avoiding contact with the patients), Group 1 gave "monogamy" as the most frequent answer, whereas the most common answer was "condoms" for the participants of groups 2 and 3. When these results were further analyzed according to 148 (63.2%) married and 86 (36.8%) single participants, monogamy ranked the most frequent answer among married group with 48% participants, while "condoms" got the highest place among single participants with a percentage of 43%.

Table 3 demonstrates the results regarding the item "Are STDs transmitted also through non-sexual means?", As to the item "Can STDs be cured?, the percentage of participants who said "yes" was 91.8% in group 1, 93.6% in group 2, and 80.8% in group 3. To the item that asked "how did you mostly receive the knowledge about STDs?" (options being from school, from TV, from friends, from a doctor, from the family members), 78.1% of group 1 and 75.2% of group 2 participants marked "from school," whereas the most frequent answer was " from TV" with a percentage of 46.2% in group 3. Results reveals a significant difference between group 3 and groups 1 & 2 ($P < 0.01$).

One participant from group 1, 2 participants from group 2 and 1 participant from group 3 answered "yes" to the question "Have you ever been infected by a STD?" The responses given to the item "Does anyone from your relatives have a STD?" are presented in Table 3. When the question "Would you comfortably consult to a doctor in case of a STD suspicion?," participants responded affirmatively with more than 80% in all three groups. No significant different can be found between the groups in this regard ($P = 0.410$). The results pertaining to the item "Have you ever experienced any occupational accidents during a medical intervention or procedure?" are also given in Table 3. Only group 1 and group 2 participants answered the question "Have you ever made a medical intervention to a patient with STD?," and 67.1% of group 1 and 54.1% of group 2 said "yes."

When the participants were asked the question "Is it ap-

Table 1. Participants' Age

Groups	Group 1 (n=73)		Group 2 (n=109)		Group 3 (n=52)		*P* Value
	Mean±SD	Range	Mean±SD	Range	Mean±SD	Range	
Age	31±4.9	22-45	31±5.6	20-46	35±8.3	20-56	0.004

Table 2. Participants' Marital Status

Groups	Group 1 (n=73) %	Group 2 (n=109) %	Group 3 (n=52) %	*P* Value
Marital Status				0.78
Married	65.8	63.3	59.6	
Single	34.2	36.7	40.4	

propriate in medical ethics not offer a medical intervention to a patient with STD?," 89% of group 1, 90.8% of group 2, and 65.4% of group 3 answered "No" ($P<0.01$). As to the question "Should HCP have a legal right not to offer a medical intervention to a patient with STD?," 41.1% of the participants in group 1, 33% of the participants in group 2, and 32.7% of the participants in group 3 said "Yes, they should." The results are evaluated to have a tendency to significance ($P=0.057$).

Discussion

This study, conducted on 234 participants, has investigated the HCPs' level of knowledge on STDs, their attitudes towards such patients as well as their legal expectations. The relatively high number of female participants in our sample group mainly results from the female dominance in the field of allied health personnel. The average age is 31 and above. The reason behind the high accuracy in the responses given to the survey items is a result of the fact that HCPs' level of knowledge rises as their experience and education level increase (9). Sixty percent of the participants are married. This has made "monogamy" significantly high in frequency as an answer in items that questioned protection methods. Married couples readily abide by their wedding vows and act accordingly, which protects them against STDs (10,11). The second mostly preferred method is using condoms, the primary function of which is contraception, but few participants have reported using this method to prevent STDs although the are HCPs.

According to the results, the most commonly known STD is AIDS. The fact that AIDS is not a very common disease in our community does not prevent it from being infamously fearsome among the people of our society (5). This results from extended efforts to raise awareness against the disease in this society (12). In particular, several studies conducted on nurses' knowledge on HIV/AIDS have reported an accuracy percentage of answers around 55%-75%. The most accurately known subjects on the topic are those about the transmission, whereas the least known are about patophysiology (13). Although the current study does not focus on patophysiology in detail, allied healthcare personnel has given relatively correct answers to questions on STD knowledge, if not more accurate than those of doctors. Doctors and allied healthcare personnel have received their knowledge from school, while the administrative staff from TVs. Considering that administrative personnel is a better reflection of the community as a whole, it can be maintained that our community tends to learn such knowledge primarily form TV broadcasts. In a related study conducted in Italy, which is a country that shows similar social characteristics to Turkey, 21.6% of the participant adolescents have pointed the TV as their primary source of information (14). Since it has scientifically been proven that education is an effective method to prevent STDs while raising awareness in individuals, there arises a necessity to educate the youth in schools before adolescence, during which their sexual lives begin, by proper experts using accurate sources (15). The inaccurate answers given by the administrative HCPs prove the point. Hepatitis types could not rank in the first two most recognized STDs although hepatitis cases are more frequent than HIV, which contrarily hold a certain degree of popularity through media. The reason why syphilis is among the HCPs' answers is their school education, during which it was underlined as a STD. Additionally, the popularity of HPV infections and HPV-related precancer-

Table 3. Participants' Responses to Survey Items

Groups	Group 1 (n=73) %	Group 2 (n=109) %	Group 3 (n=52) %	*P* Value
As far as the STDs are concerned, which of the following is the first disease that comes to your mind?				0.710
AIDS	65.8	62.4	67.3	
Syphilis	15.1	17.4		
Hepatitis types			13.5	
Are STDs transmitted also through non-sexual means?				0.002
Yes	93.2	79.8	69.2	
No	6.8	20.2	30.8	
Does anyone from your relatives have a STD?				0.001
Yes	31.5	16.5	13.5	
No	68.5	83.5	86.5	
Have you ever experienced any occupational accidents during a medical intervention or procedure?				0.002
Yes	47.9	69.7	25	
No	52.1	30.3	75	

ous and cancerous cases has recently increased, which has resulted in an increase in the number of diagnostic studies as well as prevalent prophylactic protection methods. In a survey study conducted by Tafuri et al, 74.5% of the participants emphasized the significance of preventive inoculation against HPV in the vaccination calendar. In the same study, 62.2% of the participants suggested that men should also be vaccinated against HPV (16). In our study, participants have not made any comments regarding HPV in the surveys, which might indicate a common lack of awareness on the subject in the society. In another study conducted Turkey, it has been concluded that even sex workers do not have the sufficient information on HPV infection and its complications (17). In fact, the lack of adequate sexual medical training is a widespread issue for our HCPs, which is also a common problem worldwide (18). There is a common misconception that such detailed information should be possessed by only professionals of certain branches.

Even though HCPs relatively have a better education on, thus a higher awareness about STDs, their percentage of having STDs is generally reported higher than expected. The fact that only 4 participants in our study admit having a STD in spite of careful discretion on participant identities has been interpreted as their reluctance to give truthful answers.

Participants have reported a high rate of percutaneous accidents during a medical intervention to STD patients. However, the percentage is significantly higher in allied HCPc group. It has been noted that percutaneous accidents amount up to 40 000 annually in hospital-based environments in the United States; nevertheless, research shows that 68% of such accidents are not reported (19,20). A great many of the transmitted agents are those of STDs. In a study that examined over 16 000 work-related injuries, obstetricians and nurses have been reported as the highest risk group (1). Thirty percent of those who were affected by the severe acute respiratory syndrome (SARS) epidemic in 2002 were either HCPs who made a medical intervention in the process or their relatives (22).

During times when AIDS and intervention ethics were under severe discussion, a group of HCPs, the majority of whom were allied healthcare personnel, were generally uncomfortable to be a part of the treatment (23,24). Ninety percent HCPs find it medically unethical not to offer an intervention to a STD patient. In contrary, administrative personnel finds this attitude relatively more acceptable, though those who think that way is not the majority of the group. More surprisingly, even though HCPs find it medically unethical not to intervene, 41.1% of the doctors and 33% of nurses say HCPs should have the right not to do so. HCPs ought to be acquainted with especially STDs and their mode of transmission both for themselves and for their patients. In a study conducted on sex workers in Iran, level of accurate knowledge in participants increased from 13.70% to 19.47% subsequent to a training on STDs and HIV (25). As to another study on adolescents, level of contentment regarding the training given was reported 93.14% (26).

Conclusion

It has been concluded that HCPs need further education on STDs. Those who determine the national medical policies should revise and enact medical and legal regulations between HCPs and patients.

Ethical Issues

Ethics of this research work was approved by Ethics Committee. Also, Written informed consent was obtained from all participants.

Conflict of interests

The authors declare that they have no conflict of interest. We certify that we had no relationship with companies that may have a financial interest.

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