

Sexual Attitudes and Knowledge on HIV/AIDS and Other Sexually Transmitted Infections in Registered Sex Workers in İzmir

İzmir Genelevinde Çalışan Seks İşçilerinin HIV/AIDS ve Diğer Cinsel Yolla Bulaşan Enfeksiyonlar Konusunda Bilgi Düzeyleri ile Tutum ve Davranış Modelleri

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ABSTRACT Objective: The aim of this study was to determine the frequency of condom use and the level of knowledge on human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and sexually transmitted infections (STIs) among registered sex workers in İzmir. **Material and Methods:** The questionnaire comprised 44 questions and 3 sections; questions assessed sociodemographic data, STIs and condom use. The first section involved 14 questions regarding daily working hours, contraceptive methods and condom use and sociodemographic characteristics. In the second part there were 18 correct-incorrect questions designed to measure the participants' level of knowledge on the transmission and prevention of AIDS and other STIs. The last part of the survey form comprised ten items on attitudes and two items on perceived self-assertiveness regarding AIDS and STIs. **Results:** A total of 219 out of 300 sex workers participated in the survey (coverage ratio 73%). The rate of condom use was high among participants (86.3%). Condom use was not associated with age, but increased with the level of education. The mean knowledge score of the participants on questions related to HIV/AIDS and STIs was 9.85 ± 5.48 (total score 18). Although there was no relationship between age or duration of working in the brothel and the knowledge scores ($p > 0.05$), a significant correlation was found between knowledge scores and the level of education (Spearman's $\rho = 0.007$). **Conclusion:** Although the rate of condom use was high, knowledge on HIV/AIDS and STIs was not adequate in this study. Effective training programs are required to protect this vulnerable group against STIs, which are expected to increase in the following years.

Key Words: HIV; sexually transmitted diseases; questionnaires; condoms

ÖZET Amaç: İzmir genelevinde çalışan seks işçilerinin insan immün yetmezlik/edinilmiş bulaşık yetmezlik sendromu (HIV/AIDS) ve cinsel yolla bulaşan hastalıklar (CYBH) hakkındaki bilgi düzeyinin ve kondom kullanma sıklığının saptanmasıdır. **Gereç ve Yöntemler:** Anket sosyodemografik verileri, CYBH ve kondom kullanma sıklığını sorgulayan toplam 44 soru içeren üç bölümden oluşmaktaydı. İlk bölüm yer alan 14 soru, günlük çalışma saatlerini, kontrasepsiyon yöntemlerini, kondom kullanım oranlarını ve sosyodemografik özellikleri sorgulamaktaydı. İkinci bölümde katılımcıların HIV/AIDS ve diğer CYBH'nin bulaşma ve korunma yolları ile ilgili bilgi düzeyini ölçmeye yönelik 18 adet doğru-yanlış tipinde soru içermekte idi. Son bölüm ise HIV/AIDS ve diğer CYBH ile ilgili 10 adet tutum ve 2 adet davranış sorusundan oluşmaktaydı. **Bulgular:** Bu çalışmaya, çalışma topluluğunu oluşturan 300 seks işçisinden 219 (kapsayıcılık oranı %73)'u katıldı. Katılımcılar arasında kondom kullanım oranı %86.3 olarak bulundu. Kondom kullanım oranının eğitim düzeyi ile arttığı, ancak yaştan etkilenmediği saptandı. Katılımcıların bilgi puanı ortalaması 18 tam puan üzerinden 9.85 ± 5.48 olarak saptandı. Bilgi skoru ile yaş ve genelevde çalışma süresi arasında istatistiksel olarak anlamlı bir ilişki saptanmazken ($p > 0.05$), eğitim düzeyi ile bilgi skoru arasındaki ilişki anlamlıydı (Spearman's $\rho = 0.007$). **Sonuç:** Bu çalışmada, seks işçilerinin kondom kullanma oranlarının yüksek olmasına rağmen, HIV/AIDS ve CYBH ile ilgili bilgi düzeylerinin yetersiz olduğu gözlemlendi. Sıklığı giderek artan CYBH açısından risk altında olan bu grubun etkin eğitim programları ile eğitilmesinin önemli olduğu sonucuna varıldı.

Anahtar Kelimeler: HIV, cinsel yolla bulaşan hastalıklar, anket, kondom

Acquired immune deficiency syndrome (AIDS) and other sexually transmitted infections (STIs) are among emerging problems in our country as well as globally.¹⁻⁵ Individuals making sex for money have critical roles in the transmission and prevention of these infections.

The aim of this study was to determine the rate of condom use among registered sex workers in İzmir brothel and their level of knowledge on AIDS and STIs.

MATERIAL AND METHODS

This study was carried out on registered sex workers in İzmir brothel affiliated with the İzmir Metropolitan Municipality, in May 2003. İzmir is the 3rd most populous city in Turkey with a population of 3.600.000 in 2006. The study group consisted of 300 female sex workers registered in the İzmir brothel. The Head Physician of the Venereal Diseases Clinic located in the brothel informed the sex workers about the research and those who volunteered were included in the study. The study was approved by the local research ethics committee and written informed consent was received from all study subjects.

Participants were asked to complete a questionnaire including 44 items on STIs and condom use. The survey form was designed by the authors considering the social and cultural structure of our community and previous studies carried out on this topic.^{6,7} The questionnaire was completed mostly by the participants. The Head Physician of the Venereal Diseases Clinic helped illiterate participants to complete the form. The survey form consisted of three sections; the first section involved 14 questions regarding daily working hours, contraceptive methods and condom use and sociodemographic characteristics. In the second part there were 18 correct-incorrect questions designed to measure the participants' level of knowledge on the transmission and prevention of AIDS and other STIs. Each correct answer scored 1 point and each incorrect answer scored 0 point; the maximum score in this section was 18. The last part of the survey form comprised ten items on attitudes and two items on

perceived self-assertiveness regarding AIDS and STIs. The distribution of results of the attitude and behavior questions was calculated as percentages.

Data were analyzed by using SPSS package program for Windows version 10.0 and was analyzed by Chi-square, Student's t test, Spearman's rho, and One-Way ANOVA tests. In case of significant difference between groups in variance analysis, double comparisons of the groups were performed by Bonferroni test.

RESULTS

A total of 219 out of 300 sex workers participated in the survey (coverage ratio 73%). The mean age was 38.71 ± 8.6 . Sociodemographic characteristics of the participants were summarized in Table 1.

When condom use was grouped into two categories (always vs. sometimes and never), reported rate of condom use to avoid pregnancy and STIs was high (86.3%). Condom use was not associated with age ($p < 0.05$), whereas there was a difference among levels of education where the rate of condom use increased as the level of education improved (Chi-square $p = 0.001$).

When the ways of prevention from AIDS and STIs were questioned on a scale of 18 points, the mean score was 9.85 ± 5.48 . While rates of correct answers to the questions related to condom use were higher, scores on STIs, except for AIDS were low (Table 2). Although there was no relationship between age and the knowledge scores (Spearman's rho $p = 0.098$), a significant difference in mean knowledge scores was found between different levels of education (One Way ANOVA $F = 4.131$ and $p = 0.007$). Especially, the difference between "high school and university graduates" and "illiterate" or "elementary graduates" was significant (Bonferroni $p = 0.08$ and $p = 0.019$ respectively). No relationship was present between knowledge scores and duration of working in the brothel (One-Way ANOVA $p = 0.267$).

Considering the questions on attitudes, the item underlining the importance of condom use for prevention from AIDS and the question "If you were working as an unregistered prostitute, would yo-

TABLE 1: Sociodemographic characteristics (n= 219), pregnancy prevention methods and prevalence of condom use.

Sociodemographic characteristics	%
Age (mean) 38.71 ± 8.6	
Educational status	
No education	20.1
Primary school	52.5
Secondary school or college	25.6
University	1.8
Marital status	
Widow/divorced	63.5
Single	35.5
Children	
Yes	71.2
No	28.8
Residence	
Separate house	68.9
Brothel	29.7
Other	1.4
Living with	
Children	35.6
Unofficial partner	13.2
Alone	30.1
Other	21.1
Social security	
Governmental social security	80.4
Private security	2.2
Governmental social security + private security	3.2
No social security	14.2
Dependency	
Tobacco	92.7
Alcohol	10.0
Illicit drugs	0
Working years	
>10 years	57.0
5-10 years	21.0
< 5 years	22.0
Daily working	
> 8 hours	87.2
4-8 hours	12.3
< 4 hours	0.5
Pregnancy prevention method	
Condom	51.1
Pills	24.2
No prevention (menopause)	11.4
Condom + pills	8.7
IUD	1.9
Condom + IUD	0.4
Other	2.3
Condom use	
Always	86.3
Sometimes	12.8
Never	3.0

IUD: Intrauterine device.

u be tested for HIV every six months?" had a positive correlation with the level of knowledge (One-Way ANOVA $p= 0.014$ and $p= 0.023$ respectively). Accordingly, those who received higher knowledge scores demonstrated an attitude toward not having sexual intercourse with HIV and hepatitis B virus (HBV) carriers, even while using condoms (One-Way ANOVA $p= 0.001$). The difference in knowledge scores was not related to other attitude questions.

Regarding perceived self-assertiveness, those who had higher knowledge scores were self-assertive for rejecting any kind of sexual intercourse with an HIV positive individual even while using a condom (One-Way ANOVA $p= 0.034$), whereas confidence to reject sex without a condom against high payment was not related to knowledge scores (One-Way ANOVA $p= 0.061$).

Participants' answers for attitude and perceived self-assertiveness questions regarding AIDS, STIs and condom use were shown in Table 3. While participants demonstrated a positive attitude toward issues such as condom use, regular testing and treatment for vaginal discharge, they also thought that HIV positive individuals should be isolated and HBV carriers and HIV positive individuals should not be contacted even though they used condoms.

Results of the attitude questions did not correlate with age, level of education and the duration of working in a brothel. Accordingly, while there was no significant relationship between perceived self-assertiveness and level of education (Chi-square $p > 0.05$), the association between perceived self-assertiveness and duration of working in a brothel was statistically significant (Chi-square $p < 0.05$). Women who had just started working in the brothel demonstrated a higher self-confidence in both skill questions and questions regarding refusal of risky behaviors (Chi-square $p= 0.032$ and $p= 0.011$ respectively).

DISCUSSION

Safe sex practices among sex workers are the mainstay of preventing the transmission of STIs and

TABLE 2: Knowledge questions and percentage of correct answers.

Total score:18 Mean score: 9.85 ± 5.48	
Questions related to AIDS and sexually transmitted diseases	Correct answers (%)
1. Some of the sexually transmitted diseases can be cured but AIDS cannot (T)	74.4
2. Syphilis is an example for sexually transmitted diseases (T)	74.0
3. AIDS microbe is transmitted through blood and genital organ fluids of men and women (T)	73.1
4. The more a person has sexual intercourse the likelihood to get infected by AIDS and other sexually transmitted diseases is higher (T)	71.2
5. Whether a person has AIDS or not can be determined by his/her appearance (F)	66.2
6. AIDS microbe can spread by touching or hugging a person with AIDS (F)	59.9
7. AIDS does not spread to the individuals having sexual intercourse with healthy persons (F)	59.8
8. AIDS microbe can be spread even after one sexual contact without a condom (T)	59.8
9. Sexually transmitted diseases are very rare in our country (F)	46.1
10. AIDS microbe can spread even by sharing a glass of an individual with AIDS (F)	42.0
11. There are drugs that prolong the life span of AIDS patients (T)	38.8
12. Jaundice cannot spread by routes other than sexual contact (F)	33.8
13. Sexually transmitted diseases can not spread by routes other than sexual intercourse (F)	24.7
14. In persons with gonorrhoea, symptoms may not be apparent (T)	19.6
15. A blood donor can be infected by the AIDS microbe (F)	19.6
Questions related to condom	Correct answers (%)
16. A condom can be reused (F).	78.1
17. "No condom, no sex" is a safe way of getting protection against AIDS and sexually transmitted diseases (T).	74.9
18. It is possible to get protection against AIDS and sexually transmitted diseases (gonorrhoea, chlamydia, hepatitis B and C virus) if condom is used properly in all kinds of sexual intercourse (T).	70.3

T: true; F: false.

HIV/AIDS. The results of this study suggest that although the reported rate of condom use in the brothel is high, which seems quite unreliable, the level of knowledge on STIs/HIV/AIDS is far from satisfactory.

Registered sex workers in brothels in Turkey are subject to mandatory testing for HIV, HBV, hepatitis C virus (HCV) and syphilis every three months and vaginal smear examinations twice a week.⁸ Condom use has been considered a legal requirement with sanction in the İzmir brothel since 2002. Thus, the high rate of declared constant condom use is not surprising but implausible. Informal interviews with some of the participants suggested that the real frequency of condom use was much lower, particularly with regular customers and boyfriends. Similarly, Wong et al reported that while 78% of sex workers used condom during regular working hours, the rate dropped to

20% during sexual intercourse with their boyfriends.⁹ In the same study, sex workers stated the reasons for not using a condom as being unable to convince their regular customers (66.7%) and being reluctant to use a condom because they "loved" their boyfriends (60%). Researchers should realize that determining the prevalence of condom use accurately in real life is challenging.

Condom use was not associated with age but positively correlated with the level of education. It is likely that a higher level of intellect yields more concern over one's health. Similarly, the knowledge scores of the participants were not related to age but correlated with the level of education. Ford et al, from Indonesia suggested that while age was not related to the frequency of condom use, it was closely related to the rate of STIs with younger sex workers having a higher risk of acquiring STIs due to increased number of customers.⁶

TABLE 3: Attitudes and perceived self-assertiveness of participants related to AIDS/STIs and condom use.

	I don't agree	I am not sure	I agree
	%	%	%
1. Those who make sex for money must be regularly examined for sexually transmitted diseases	6.8	2.7	90.4
2. When I suspect that I have a sexually transmitted disease, I prefer not to tell anyone so that my income doesn't decrease	84.9	6.4	8.7
3. When I have vaginal discharge, I can eliminate the problem by washing the vagina	81.7	9.6	8.7
4. All humans are under the risk of being infected by the AIDS microbe	12.3	9.6	78.1
5. If I was working as an unregistered prostitute, I would not get tested for HIV every six months.	74.9	8.2	16.9
6. There is no drawback in having sexual intercourse without a condom, since the risk of being infected with HIV with one sexual contact is very low	67.6	12.3	20.1
7. Persons using intravenous narcotic drugs do not carry the risk of acquiring HIV infection.	63.9	26.0	10.0
8. AIDS patients should be urged to live isolated from other people	35.2	16.9	47.9
9. I never have sexual intercourse with a person that I know (or suspect) that carries HIV, even though he uses a condom	15.1	7.8	77.2
10. I never have sexual intercourse with a person that I know (or suspect) that carries hepatitis B virus even though he uses a condom	13.7	11.4	74.9
	Not at all	A little	Very much
	%	%	%
1. A customer tells you that he carries the AIDS microbe and asks for sexual intercourse with a condom. You do not want to have sexual intercourse with this person but he offers you a lot of money. How much self-confident are you to refuse this customer?	18.7	5.0	76.3
2. One of your customers refuses your offer to use condom because he does not have any kind of diseases. You need money very much. How much self-confident are you to convince this customer to use a condom?	11.4	13.7	74.9

Interestingly, the scores for questions on STIs excluding HIV/AIDS were lower and although the perceived risk of sex workers for HIV/AIDS was high, they did not perceive any risk for other STIs suggesting lack of knowledge rather than indifference. Almost 60% of sex workers thought that regular customers and healthy looking individuals did not have AIDS or other STIs similar to the findings of Basuki et al.¹⁰

Another significant finding was that the duration of working in the brothel was not related to the level of knowledge, similar to the results of the study by Özbakkaloğlu et al.¹¹ Training sessions in conference format are being held in the İzmir brothel once or twice a year. However, the low scores suggested that didactic training methods were inefficient in increasing knowledge. Besides, attitude and behavior change is also unlikely with such non-interactive training sessions. It is well established that interactive training is the most effective

approach for behavior change and increasing knowledge.¹² Skondhvat et al reported that monthly meetings attended by not only sex workers but also brothel managers could be useful in promoting condom use.¹³

Participants with higher knowledge scores stated that they would not have sexual contact with HIV and HBV carriers even with a condom. This may be attributed to the misbelief that HIV and HBV may be acquired by close contact like herpes or papillomavirus even when using a condom.¹⁴

It was encouraging but implausible to learn that participants were highly confident in avoiding risky behaviors and convincing customers to use condoms (76.3% and 74.9% respectively). Basuki et al, reported that the most important factor in convincing a customer to use a condom was the brothel profile with the rate of condom use being significantly higher in higher-waged brothels compared to lower-waged ones.¹⁰ This discrepancy may

be attributed to the likelihood of customers with a high level of concern for acquiring HIV and STIs attending higher waged brothels.

A statistically significant difference between the groups was present only for the duration of working in the brothel and refusal of being engaged in risky behaviors. This may apply to those who recently started working in the brothel, because they may be more advantageous in selecting their customers and refusing risky behaviors due to probable higher number of customers.

Our study has several limitations. Although this study was performed in the unique brothel

of Izmir, our results are not representative for the country. In addition, non-responders (27% of the target population) might have resulted in over or under representation of knowledge scores.

In conclusion, although the rate of condom use was high, knowledge on HIV/AIDS and STIs was not adequate. Education is the most effective method in prevention of STIs including HIV/AIDS.¹⁵ The results of this study suggest that specific training programs should be planned for sex workers working in the brothel to prevent the transmission of STIs and HIV/AIDS.

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