

# Reported Willingness and Associated Factors Related to Utilization of Voluntary Counseling and Testing Services by Female Sex Workers in Shandong Province, China<sup>1</sup>

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**Objective** To explore reported willingness and factors associated with utilization of voluntary counseling and testing services by female sex workers (FSWs) in China and to offer recommendations to optimize use of such services. **Methods** A questionnaire to explore willingness to use VCT was designed based on social ecological theory and formative qualitative research. A cross-sectional survey was conducted among FSWs from entertainment venues. Single and multiple logistic regression analyses were employed to examine factors associated with reported willingness to utilize VCT. **Results** A total of 970 FSWs provided valid questionnaires, with 69% (669) expressing willingness to utilize VCT. Factors at the interpersonal level associated with reported willingness included knowledge about VCT, desire to get help if diagnosed as HIV positive, ability to imagine life after an HIV positive diagnosis, and perceived support for VCT from peers, managers, and family members. Availability of free antiretroviral (ARV) treatment represented a factor at policy level. Other factors included intention to leave sex work in the near future, having had a previous HIV test, and lack of a suspected STD history. **Conclusions** The rate of reported willingness to use VCT among FSWs was substantially higher than that of actual VCT utilization (11%). The next step is to explore the connection between reported willingness and actual use. Based on these findings, peer education, VCT knowledge dissemination, and free ARV treatment should be emphasized to increase FSWs' willingness to use VCT.

**Key words:** female sex workers; VCT; willingness; utilization; associated factors

## INTRODUCTION

With the global spread of HIV/AIDS, voluntary counseling and testing (VCT) has become an integral part of HIV prevention and control efforts<sup>[1-5]</sup>. Female sex workers (FSWs) worldwide are at high risk. Therefore, HIV/AIDS VCT services for this population can play a major role in containing HIV infection spread through sexual contact and mother to child transmission<sup>[6]</sup>. Research in China and abroad shows that although VCT is an effective intervention, its use among FSWs is low. Furthermore, studies on willingness to use such services and factors associated with use in this population are rare<sup>[7-9]</sup>. This study explored FSWs' reported willingness to

attend VCT clinics and associated factors to provide evidence-based recommendations for the improvement of VCT utilization among FSWs.

## MATERIALS AND METHODS

### Study Population

FSWs working in entertainment venues in three districts of the city of Jinan, the provincial capital of Shandong, were interviewed between January and December 2007. Most of the FSWs were identified as such by their managers before the interview. This project was approved by the IRB of the National

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### Study Methods

Social ecological theory was adopted in this study to explore factors associated with FSWs' reported willingness to utilize VCT. This theory proposes that factors associated with health and behavior can be categorized using five levels: intrapersonal, interpersonal, institutional/organizational, community, and policy related. Each level interacts with the others, and together they influence health and behavior<sup>[10]</sup>. Intrapersonal factors in this study included HIV and knowledge of VCT, attitude toward testing, attitude toward people with HIV, individual evaluation of personal HIV infection risk, reported use of condoms, and evaluation of harms and benefits of seeking VCT. Interpersonal factors included the perceived attitudes of managers, peers, and family members toward FSWs seeking VCT. Institutional/organizational factors involved the importance of a confidential and non-discriminating environment in a VCT clinic. Community factors addressed the social support network for and

social cultural attitude toward FSWs and people with HIV. Policy factors were related to the importance of free antiretroviral treatment.

### Survey Process

The investigators were staff from district CDCs and the Shandong Institute for Dermatology and STD Prevention and Control who had previous experience with HIV/STD programs. Before the survey, standardized training was provided for project members that included questionnaire content, interview skills, and universal precautions used during HIV testing. During the survey, we first drew a map of all entertainment venues in the three districts and then contacted the venue managers until we reached our target sample size. After obtaining oral informed consent from interested managers and FSWs, face-to-face interviews were conducted with FSWs. Before the interviews, FSWs were educated about HIV/AIDS and VCT.

### Methods of Analysis

EpiData software was adopted for double entry of the questionnaire responses. Based on responses to

TABLE 1

Social Demographic Characteristics of FSWs and Their Willingness to Utilize VCT

Characteristics	Willing to Have VCT(%)	Unwilling to Have VCT(%)	Simple Logistic Regression	
			Unadjusted OR (95% CI)	P Value
Age	669(100.00)	301(100.00)	1.01(0.87-1.18)	0.95
<20	142(21.23)	62(20.60)	1.00	-
20-	320 (47.83)	144(47.84)	0.97(0.68-1.39)	0.87
25-	160(23.92)	76(25.25)	0.92 (0.61-1.38)	0.68
30-	32(4.78)	15(4.98)	0.93 (0.47-1.84)	0.84
35-	13 (1.94)	4(1.33)	1.42(0.45-4.53)	0.55
40 and over	2(0.30)	0(0.00)	1.74(0.12-247.56)	0.98
Educational Background	668(100.00)	300(100.00)	1.02(0.86-1.23)	0.83
< Junior High Schooling	75(11.23)	36(12.00)	1.00	-
Junior High Schooling	355(53.14)	145(48.33)	1.18(0.75-1.82)	0.54
High Schooling	187(27.99)	110(36.67)	0.82 (0.51-1.29)	0.46
> High Schooling	51(7.63)	9(3.00)	2.72(1.25-6.45)	0.02
Marital Status	668(100.00)	300(100.00)	1.30 (1.13-1.51)	0.00 <sup>#</sup>
Co-inhabit/Married	343(51.35)	115(38.33)	1.70(1.28-2.27)	0.00
Divorced/Live Separately	45(6.74)	25(8.33)	1.03(0.61-1.76)	1.00
Unmarried	280(41.92)	160(53.33)	1.00	-
Type of Entertainment Establishments				
Mid to high class	556(83.36)	247(82.33)	1.06(0.73-1.52)	0.76
Low class	111(16.64)	53(17.67)		
Length of Engagement in Sex				
Work				
Work	669(100.00)	301(100.00)	1.21(1.07-1.38)	0.00 <sup>#</sup>
SexTime in FSW Work				
<4	104(15.55)	69(22.92)	1.00	-
4-	195(29.15)	93(30.90)	1.39(0.94-2.06)	0.12
12-	185(27.65)	71(23.59)	1.73(1.15-2.61)	0.01
24-	185(27.65)	68(22.59)	1.81(1.20-2.73)	0.01
Birth Place				
Other Province	296(44.38)	152(50.67)	1.29(0.98-1.69)	0.08

Jinan City or Shandong Province

371(55.62)

148(49.33)

1.00

the question "Are you willing to visit our VCT clinic?", the surveyed FSWs were divided into "reported willingness to be tested" and "reported unwillingness to be tested". The latter group included those who reported an unwillingness to be tested, those who were undecided, and those who did not know. This question was asked after basic information about the VCT clinic had been provided and was followed by questions about why respondents were willing or unwilling to visit the clinic. FSWs were also asked when they anticipated attending the clinic (i.e., in how many days) to increase the accuracy of responses regarding willingness to seek testing.

After verification of the data, SAS 9.1 software was used for statistical analysis. Valuation of factors associated with FSWs use of VCT were made before the analysis. Single logistic regression was conducted on the willing and unwilling groups, including the demographic and social ecological theory variables. Social demographic characteristics related to FSWs' willingness to utilize VCT are listed in Table 1. The independent variable for the multiple logistic regression was whether FSWs reported willingness to utilize VCT (yes = 1, no = 0). To have more variables and to control potential confounders, variables with  $P < 0.20$  in simple logistic regression (Table 2) were selected for multiple logistic regression with  $P < 0.15$  for entry and exclusion of variables. The coefficients of predictors were standardized to compare the relative strength of each factor with the outcome (Table 3).

## RESULTS

### *Socio-Demographic Characteristics of FSWs Interviewed*

A total of 1 050 people were surveyed between January and December 2007. Valid questionnaires were obtained from 970 FSWs. The average age of respondents was 23 years, over half had junior high schooling (51.7 %), over half were from other provinces (53.7 %), nearly half were unmarried (44.5 %), and the majority were of Han ethnicity (96.4%). Respondents reported working as a FSW, on average, for 12 months.

The surveyed FSWs were mainly working in saunas, night clubs, and karaoke bars, accounting for 41.4%, 21.0%, and 15.7%, respectively. Fewer were working in hair salons, hotels, rented houses, and tea houses or were employed as call girls.

### *FSWs Reported Willingness to Utilize VCT*

Of the 970 FSWs interviewed, 69.0% ( $n=669$ ) expressed willingness to visit the VCT clinic and be tested, 17.2% ( $n = 167$ ) did not know, 7.0% ( $n = 68$ ) were unwilling, and 6.8% ( $n=66$ ) had not yet decided whether they would visit the clinic. The latter three categories were combined for research purposes and represented reported unwillingness to visit the VCT clinic, accounting for 31.0% ( $n=301$ ).

### *Single Logistic Regression of Factors Associated with FSWs' Reported Willingness to Use VCT Socio-Demographic Characteristics ( $P < 0.05$ )*

Socio-demographic indicators in this study included age, educational background, marital status, type of entertainment venue, length of time as a sex worker, and birth place. Of these indicators, only marital status and length of time as a sex worker were statistically significant. The proportion of those co-inhabiting or married in the group that reported willingness to be tested (51.4%) was significantly higher than in the group that reported an unwillingness (38.3%). Length of time as a sex worker in the group that reported willingness to be tested (18.7 months) was longer than in the group that reported unwillingness (15.6 months).

### *Social Ecological Variables ( $P < 0.05$ )*

At the intrapersonal level, the statistically significant variables were knowledge of VCT, perceived risk of HIV infection, reported condom use, and the evaluation of outcomes related to seeking VCT. The VCT knowledge score in the group that reported willingness to be tested (1.8) was slightly higher than in the group that reported unwillingness to be tested (1.5). Regarding the two groups, there was a higher proportion of FSWs who reported willingness to be tested compared with FSWs who reported unwillingness to be tested for the following factors: belief that there is a health benefit from learning of HIV serostatus (78.3% vs. 63.8%), desire to get help if diagnosed as HIV positive (51.2% vs. 32.2%), ability to imagine life after an HIV positive diagnosis (38.0% vs. 22.9%), and concern about positive HIV test results (38.4% vs. 28.9%). Variables with  $P > 0.20$  are listed below Table 2.

At the interpersonal level, the proportion of FSWs reporting that the opinions of their managers, family members, and peers about VCT were important to them in the group reporting willingness was statistically higher than in the group reporting unwillingness (68.8% vs. 21.7%, 58.2% vs. 29.2%,

and 77.7% vs. 26.1%, respectively). In addition, among those reporting willingness to be tested, the proportion of FSWs (73.6%) who would be more

likely to visit the VCT clinic if accompanied by their peers was higher than in those reporting unwillingness to be tested (26.4%).

TABLE 2

Single Logistic Regression on the Willingness of FSWs to Utilize VCT, with  $P < 0.20$ 

Variables	Willing to Have VCT	Unwilling to Have VCT	OR (95% CI)	P Value
	Number (%)	Number (%)		
<b>Social Demographic Indicators</b>				
Marital Status	668(100.00)	300(100.00)	1.30 (1.31-1.51)	0.00#
Co-inhabit/Married	343( 51.35)	115(38.33)	1.70(1.28-2.27)	0.00
Divorced/Live Separately	45( 6.74)	25( 8.33)	1.03(0.61-1.76)	1.00
Unmarried	280(41.92)	160(53.33)	1.00	-
<b>Length of Engagement in Sex Work (month)</b>	669(100.00)	301(100.00)	1.21(1.07-1.38)	0.00#
<4	104(15.55 )	69(22.92)	1.00	-
4-	195(29.15 )	93(30.90)	1.39(0.94-2.06)	0.12
12-	185(27.65 )	71(23.59)	1.73(1.15-2.61)	0.01
24-	185(27.65 )	68(22.59)	1.81(1.20-2.73)	0.01
<b>Birth Place</b>				
Other Provinces	296(44.38 )	152(50.67)	1.29(0.98-1.69)	0.08
In the Surveyed Place or Other Cities in Shandong Province	371(55.62 )	148(49.33)		-
<b>Social Ecological Model</b>				
<b>Intrapersonal</b>				
VCT Knowledge (0-3 marks)	669(1.81)*	301(1.53)*	1.75(1.42-2.18)	0.00#
<b>Perceived Risk of HIV Infection</b>				
Yes	176(26.51 )	62(20.88)	1.37(1.00-1.91)	0.07
No	488(73.49 )	235(79.12)		
<b>Risk Behavior</b>				
Reported Condom Use	658(100.00)	299(100.00)	1.23(1.06-1.42)	0.01#
Every Time	388(58.97)	148(49.50)	1.46(0.44-4.29)	0.69
Frequently	150(22.80)	70(23.41)	1.19(0.36-3.58)	0.97
Sometimes or Refuse to Answer	98(14.89)	73(24.41)	0.75(0.22-2.25)	0.83
Occasionally	13(1.98)	3(1.00)	2.41(0.47-14.30)	0.53
Never	9(1.37)	5(1.67)	1.00	-
<b>Evaluation of Outcomes of Seeking VCT</b>				
<b>Benefits of VCT</b>				
<b>Believing in health Benefits from Learning of Their Serostatus</b>				
Yes	523(78.29)	192(63.79)	2.05(1.52-2.76)	0.00#
No	145(21.71)	109(36.21)		
<b>Trying to Get Help if They were Diagnosed as HIV positive</b>				
Yes	342(51.20)	97(32.23)	2.21(1.66-2.94)	0.00#
No	326(48.80)	204(67.77)		
<b>Getting the Ability to Imagine What Life would be Like after An HIV Positive Diagnosis</b>				
Yes	254(38.02)	69(22.92)	2.06(1.52-2.83)	0.00#
No	414(61.98)	232(77.08)		
<b>Losses of VCT</b>				
<b>Worrying about Positive HIV Test Result</b>				
Yes	252(38.36)	86(28.86)	1.53(1.14-2.07)	0.01
No	405(61.64)	212(71.14)		
<b>Interpersonal Influences from Peers</b>				
<b>Getting Tested if Another FSW Goes?</b>				
Yes	668(100.00)	299(100.00)	4.18(3.33-5.31)	0.00#
Uncertain/Don't Know	519(77.69)	78(26.09)	7.13(4.40-11.60)	0.00
No	107(16.02)	176(58.86)	0.65 (0.40-1.06)	0.11
No	42 ( 6.29)	45(15.05)	1.00	-

Variables	Willing to Have VCT Number (%)	Unwilling to Have VCT Number (%)	OR (95% CI)	P Value
Getting Tested if Another FSW accompanies?	666(100.00)	299(100.00)	3.65(2.93-4.59)	0.00 <sup>#</sup>
Yes	490(73.57)	79(26.42)	6.63(4.13-10.69)	0.00
(continued)				
Uncertain/Don't Know	132(19.82)	173(57.86)	0.82(0.51-1.31)	0.46
No	44( 6.61)	47(15.72)	1.00	-
Influences from Manager				
Getting Tested if Your Manager Encourages You?	666(100.00)	299(100.00)	3.19 (2.56-3.94)	0.00 <sup>#</sup>
Yes	458(68.77)	65(21.74)	6.49(4.20-10.11)	0.00
Uncertain/Don't Know	144(21.62)	175(58.53)	0.76(0.50-1.15)	0.23
No	64( 9.61)	59(19.73)	1.00	-
Influences from Family Members				
Is Testing Important to Your Family?	665(100.00)	298(100.00)	5.78(4.38-7.71)	0.00 <sup>#</sup>
Important	387(58.20)	87(29.19)	7.33(3.88-14.23)	0.00
Don't Care	159(23.91)	61(20.47)	4.29(2.22-8.54)	0.00
Don't Know	102(15.34)	122(40.94)	1.38(0.72-2.70)	0.43
Unimportant	17( 2.56)	28( 9.40)	1.00	-
Institutional/Organizational				
Worrying about Disclosure of Their FSW Work in the Clinic?				
Yes	235(35.77)	78(26.17)	1.57(1.16-2.14)	0.00 <sup>#</sup>
No	422(64.23)	220(73.83)		
Worrying about Being Stigmatized by Physicians in the Clinic?				
Yes	181(27.55)	65(21.81)	1.36(0.99-1.89)	0.07
No	476(72.45)	233(78.19)		
Community Level				
Worrying about Being Stigmatized by Acquaintances if Tested?				
Yes	229(34.86)	77(25.84)	1.54(1.14-2.09)	0.01
No	428(65.14)	221(74.16)		
Policy Level				
Willing to Test if Antiretroviral Treatment is Free?	667(100.00)	299(100.00)	7.17(5.44-9.57)	0.00 <sup>#</sup>
Yes	502(75.26)	67(22.41)	27.09(14.32-54.63)	0.00
Uncertain/ Don't Know	152(22.79)	185(61.87)	2.97(1.59-5.91)	0.00
No	13( 1.95)	47(15.72)	1.00	-
Others				
Getting Tested if Leaving Sex Work?	667(100.00)	298(100.00)	2.17(1.87-2.54)	0.00 <sup>#</sup>
Yes	544(81.56)	114(38.26)	16.36(7.23-41.95)	0.00
Don't Care/ Don't Know	116(17.39)	160(53.69)	2.49(1.09-6.42)	0.05
No	7( 1.05)	24( 8.05)	1.00	-
Previous HIV Test				
Yes	129(19.28)	44(14.62)	1.40(0.97-2.04)	0.09
No	540(80.72)	257(85.38)		
Previous Suspected STDs				
Yes	199(29.97)	139(46.64)	0.49(0.37-0.65)	0.00 <sup>#</sup>
No	465(70.03)	159(53.36)		

Note. \*The average value for variables, <sup>#</sup> $P < 0.05$  variables in R\*2 tables. Variables with a  $P$ -value>0.20 in simple logistic regression included 1) age, 2) education, 3) type of entertainment venue, 4) HIV knowledge, 5) sharing a needle to inject drugs, 6) hearing of HIV+ people in the community, 7) "HIV is scary", 8) "telling other people if you are infected with HIV", 9) current health status, 10) attention to health, 11) having any plans to leave the city in the next 3 months.

At the institutional level, the proportion of FSWs worried that their sex service would be disclosed at the VCT clinic in the group reporting willingness to be tested (35.8%) was higher than in the group reporting unwillingness (26.2%).

At the community level, the proportion of FSWs in the group reporting willingness to be tested who were worried about being stigmatized by acquaintances (34.9%) was higher than in the group reporting unwillingness (25.8%).

At the policy level, FSWs who reported willingness were more likely to agree to utilize the government's free antiretroviral treatment program if diagnosed as HIV positive (75.3%) than those reporting unwillingness (22.4%).

#### Other Factors ( $P < 0.05$ )

The proportion of FSWs reporting willingness to be tested if they decided to leave sex work (81.6%) was higher than that of those reporting unwillingness (38.3%). The proportion of FSWs with a suspected STD who reported willingness (30.0%) was lower than in the unwilling group (46.6%).

#### Multiple Logistic Regression on FSWs' Willingness to Utilize VCT

The results of multiple logistic regression are shown in Table 3, which illustrates factors associated with FSWs reported willingness to utilize VCT. At the intrapersonal level, these factors included more knowledge of VCT (OR = 1.30, 95% CI 1.06–1.59), desire to get help if diagnosed as HIV positive (OR=1.47, 95% CI 1.00-2.17), and ability to imagine life after an HIV positive diagnosis (OR = 1.44, 95% CI 0.96-2.18). At the interpersonal level, influence was exerted by peers (OR=2.10, 95% CI 1.51-2.91), managers (OR=1.26, 95% CI 0.92-1.72), and family members (OR=1.44, 95% CI 1.18-1.74) who were supportive of the idea of HIV testing. The primary policy issue was free antiretroviral treatment for those who were diagnosed as HIV positive (OR=2.71, 95% CI 1.89-3.92; Table 3). Additional significant factors included willingness to get tested if planning to leave sex work (OR=1.95, 95% CI 1.38-2.75), having had a previous HIV test (OR=1.53, 95% CI 0.93-2.58), and lack of a suspected STD history (OR=0.61, 95% CI 0.42-0.90).

## DISCUSSION

Among 970 FSWs interviewed, 68.97% expressed willingness to utilize VCT services. This proportion was higher than expected and undoubtedly

influenced by social desirability. Actual VCT utilization in our study population was 11%. To address the issue of social desirability, we may attempt to design a lie scale to validate the reliability of a questionnaire, similar to those used in some psychological instruments. The reported willingness to utilize VCT among high-risk groups in China varies in the literature, ranging from 82.5% and 59.8% to 42.5%<sup>[11-13]</sup>. As indicated, a large gap exists between reported willingness to use VCT and its actual utilization. This gap may be caused by social desirability and other factors such as loss of interest over time, not having peers to accompany them to testing, and lack of time<sup>[9, 14]</sup>. Given that willingness is definitely a prerequisite for behavior, an intervention targeting willingness and attitude toward the benefit of VCT could promote a change in behavior.

This study found that the willingness of FSWs to utilize VCT is associated with a number of factors, including some at intrapersonal, interpersonal, and policy levels from social ecological theory as well as a few others that do not fit well into that theory. The availability of free antiretroviral treatment played the greatest role in multiple logistic regression, with the biggest standardized regression coefficient (Table 3). Regarding intrapersonal factors, increased knowledge about VCT, desire to get help if diagnosed as HIV positive, and ability to imagine life after an HIV positive diagnosis were associated with reported willingness to attend a VCT clinic. Increased VCT knowledge could translate into a higher comfort level for visiting the clinic. The ability to manage life after an HIV diagnosis may be associated with FSWs' ability to cope with HIV infection and to pursue needed resources in the community and healthcare system.

TABLE 3

Multiple Logistic Regression on the Willingness of FSWs to Utilize VCT, with Standardized Regression Coefficients  
( $\alpha$  Entry = 0.15,  $\alpha$  Exclusion = 0.15)

Independent Variables	Regression Coefficient	Standardized Regression Coefficient	Wald Chi-Square	OR (95% CI)	P Value
Constant Items	-4.42	-	120.75	-	0.00
Willing to Test if Antiretroviral Treatment is Free?	1.00	0.34	28.83	2.71(1.89–3.92)	0.00
Getting Tested if Another FSW Goes?	0.74	0.27	19.84	2.10(1.51–2.91)	0.00
Getting Tested if Leaving FSW Work?	0.67	0.20	14.25	1.95(1.38–2.75)	0.00
Is Testing Important to Your Family?	0.36	0.19	13.46	1.44(1.18–1.74)	0.00
VCT Knowledge	0.26	0.13	6.54	1.30(1.06–1.59)	0.01

Previous Suspected STD	-0.49	-0.13	6.46	0.61(0.42–0.90)	0.01
Get Help if they were Diagnosed With HIV	0.39	0.11	3.83	1.47(1.00–2.17)	0.05
Getting Ability to Imagine What Life would be Like after An HIV Positive Diagnosis	0.37	0.10	3.08	1.44 (0.96–2.18)	0.08
Previous HIV Test	0.43	0.09	2.72	1.53(0.93–2.58)	0.10
Getting Tested if Your Manager Encourages You?	0.23	0.09	2.16	1.26(0.92–1.72)	0.14

Our study suggests that interpersonal relationships influence willingness to use VCT as well. FSWs whose FSW peers were perceived as supportive of VCT were more likely to report a willingness to be tested. This factor ranked second in multiple logistic regression. Manager's perceived support was also associated with reported willingness to be tested. Perceived familial support had an effect, although this factor might have been more hypothetical than the others, given that FSWs usually hide their actual jobs from their families. These findings suggest that continuous peer and community education and VCT promotion, including communication skills with FSW peers and increased knowledge of VCT and its potential benefits, could improve the reported willingness of FSWs in this region of China to use VCT.

A few factors outside social ecological theory were considered as well. FSWs were asked whether they would get an HIV test if they planned to leave sex work in the near future, if they had gotten an HIV test in the past, and whether they had ever been diagnosed with or were ever suspected of having an STD. Intention to leave sex work proved to be strongly associated with reported willingness to be tested, ranking third in multiple logistic regression. Perhaps having an HIV test would indicate a readiness to move on in their lives. FSWs who had taken an HIV test in the past were more likely to be willing to be tested to ensure that they were not infected. Having been through the process of testing once may familiarize FSWs with VCT and make it less intimidating and scary. Because one can be infected with HIV and be asymptomatic for years, repeated testing is necessary. However, to improve effective utilization of health resources, it is imperative to raise awareness and promote behavior change in high-risk individuals who have not yet been tested. Finally, FSWs with an STD history were less likely to report a willingness to be tested. They are considered an additional important target for intervention because STDs can increase the risk of HIV infection and transmission. We should provide VCT services to patients at STD clinics.

In single logistic regression, the proportion of FSWs reporting willingness to be tested was higher than that of those reporting unwillingness to be tested in three aspects: worry about FSW status being discovered, fear of a positive test result, and concern

over being stigmatized by acquaintances. Although FSWs may recognize the benefits of VCT, they are concerned with risks due to the dual social discrimination against HIV diagnosis and sex work, and thus with the consequences of a positive test. When the benefits are perceived to be greater than the risks, they will report willingness to attend a VCT clinic. None of these factors were selected in the multiple logistic regression in this study.

Sex work remains illegal in China. FSWs and their managers are reluctant to participate in activities that will reveal their occupations. Therefore, refusal to participate in this study by FSWs and their managers was not uncommon. Thus, despite our attempts to recruit a representative sample of FSWs, we cannot rule out unknown biases in our sample. In the surveyed location, mid- to high-class FSWs included those from night clubs, tea houses, Karaoke bars, restaurants, and bath centers. Lower-class FSWs included call girls and those in hair salons, for example. We cannot generalize the results of this study to lower-class FSWs. During the one year survey, repeated interviews of the same FSWs were excluded due to interviewers and FSWs remembering each other.

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