Gender Differences in HIV-Related Perceptions, Sexual Risk Behaviors, and History of Sexually Transmitted Diseases Among Chinese Migrants Visiting Public Sexually Transmitted Disease Clinics

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Abstract

The goal of this study was to explore gender difference in HIV-related perceptions according to a social cognitive theory and sexual risk behaviors and to examine associations between mobility, sexual risk, and history of sexually transmitted diseases (STDs) among male and female migrants visiting STD clinics. A cross-sectional study among migrants visiting STD clinics in three large cities in China assessed HIV-related perceptions, sexual activity, condom use, and history of STDs was used. Among participants, 20% of women had ever sold sex and 33% of men had paid for sex. Women and men were similar in multiple partnerships in the last month (23% versus 22%), consistent condom use during last three sexual encounters (14% versus 15%), and a history of STDs (57% versus 53%). However, more women who reported a history of STD had contracted at least two STDs than men (55% versus 36%, $p < 0.001$). Increased sexual risk was associated with increased perception of extrinsic rewards for both genders, but was associated with increased perceptions of intrinsic rewards and response cost in women only, and with decreased perceptions of vulnerability and response efficacy in men only. High mobility was associated with increased sexual risk in women. Self-reported history of STD was associated with a high rate of past multiple partnership and low education among both genders, but was associated with high mobility and commercial sex in women only. Fifty-four percent of women with a history of STDs informed their partners about their infections, compared to 36% of men ($p < 0.001$). Married women, both women and men who did not engage in commercial sex, and women and men who used condoms were more likely to inform their partners about their STD infections. Gender differences in HIV-related perceptions and sexual behaviors underscore the importance of gender-specific intervention efforts to prevent the spread of HIV/STD in China.

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INTRODUCTION

After two decades of virtual eradication of sexually transmitted diseases (STDs), China has witnessed an explosion of STDs since the economic reforms in the 1980s.[1,2] STDs have increased more rapidly for females than males during the period of 1989 to 1998, which reflects the fact that gender is an emerging issue for STD studies in China.[3] The reemergence and rapid spread of STDs in China has been partly attributed to the loosening of government control over population movement.[4,5] Millions of young migrants, frequently with limited education and job skills, leave their villages in search of work in China's large urban areas.[6] Away from the social constraints of home, migrant women who are unable to find jobs in urban areas frequently engage in commercial sex work.[7,8] Migrant men, relatively wealthier than their village peers, have increased opportunities to engage in high-risk behaviors such as commercial sex.[6,9] Although little is known about the extent of HIV/AIDS epidemic among internal migrants in China, there is concern that this population is at increased risk for HIV infection.[10]

Limited studies of HIV risk behaviors have been conducted among Chinese migrants and fewer have examined gender differences. A recent study in eastern China among market stall vendors, most of whom were migrants, found that the prevalence of STDs was higher for females than males, including chlamydia (13.1% versus 5.4%), and herpes (12.0% versus 6.4%).[11] An investigation among over 4000 migrants in two large Chinese cities suggests that a higher proportion of male migrants engage in sexual risk behaviors including having multiple sexual partners and buying sex.[12] Yang and colleagues[13] compared temporary migrants with nonmigrants and found that migrants had significantly higher prevalence rates of HIV risk behaviors (including commercial sex, casual sex, unprotected sex, multiple sex partners, and drug use), and males were more than twice likely to have had unprotected casual sex than females. Although these studies have established that male Chinese migrants engage in more high-risk sexual activities than females, there is no study looking at HIV-related perceptions, in particular among the subgroup of migrants who are at a higher risk, such as migrants who visit STD clinics.

Given the rapid increase in the number of women infected with HIV in China,[6] it is important to understand gender differences in HIV-related perceptions, risk behaviors, and history of STDs in combating the rapid spread of HIV epidemic in China. Migrants visiting STD clinics represent a high-risk subgroup of HIV/STD infection. Using data from a cross-sectional study of migrants visiting STD clinics in three large cities in China, the current study attempted to answer three primary research questions: (1) What is the general pattern of HIV/STD risk behaviors and perceptions among male and female migrants visiting STD clinics? (2) Are their sexual risks and STD history related to geographic mobility? (3) Are there any gender differences in STD history and partner notification among this high-risk population?

MATERIALS AND METHODS

Research sites and participants

Participants were recruited from 19 public STD clinics in Nanjing, Shanghai, and Beijing from November 2002 to January 2003. The clinics vary by annual patient flow (range, 50–30,000), location (from metropolitan to suburban), and the percent of migrants in the patient population (10%–70%). Detailed recruitment procedure has been described elsewhere.[14] A total of 1189 migrant patients were approached in waiting rooms for participation in the survey. Ninety percent (*n* = 1072) of the patients consented to participate. Thirty-nine (3.6%) of them were removed from the data file because of substantial missing data. The final dataset contains 1033 participants (48% females and 52% males).

Data collection

After obtaining permission from the clinic director or administrator, trained interviewers approached migrants in the waiting rooms before they were seen by a clinician. A structured anonymous questionnaire was administrated to migrants who provided written informed consent. The survey was conducted in a private room and no personal identifiable information was recorded on the questionnaire. Interviewers provided explanations and instructions for completing the surveys, and were available to read part of questionnaire to a few migrants with limited literacy. The questionnaire collected information about demographic characteristics, geographic mobility, sexual activity and condom use, HIV-related perceptions, history of STDs, and treatment and notification of their infections. It took approximately 45 minutes to complete the questionnaire. The study protocol was approved by the Institutional Review Boards at West Virginia University in the United States and Beijing Normal University and the National Center for STD and Leprosy Control in China.

Measures

Demographic characteristics—Age, ethnicity (i.e., Han, Hui, Man, Mongolia, and others), education level (i.e., illiterate, primary school, junior high school, senior high/technical school, college or above), and marital status (i.e., never married, married, divorced, remarried, and widowed) were collected. Information was also collected regarding monthly income, work place (i.e., entertainment establishments, service sectors, industrial sectors; construction sites, and others), and living arrangement (i.e., alone, with spouse, coworker, village fellow, or friend). In bivariate or multivariate analysis, responses were grouped into two categories for education (no more than junior high school and at least senior high school) and marital status (never married and ever married).

Mobility—Participants were queried about the total years of their migratory experience and the number of cities where they had lived during their migration. The ratio of the number of migratory cities to years of total migration was used as an index of mobility.[12] The mobility index ranged from 0.05 to 10 with bigger values indicating higher levels of mobility. Information was also collected regarding the number of jobs that they had taken, and the frequency of home visit during their migration.

Sexual risk behaviors—Participants were asked whether they had engaged in specific sexual risk behaviors, including having multiple sexual partners (both lifetime and in the last month), and participating in commercial sex (both selling and buying sex). Participants were also asked about their overall frequency of condom use (never, occasionally, sometimes, often, always), number of times (0–3) they used a condom during their last three sexual encounters, and the age at their sexual debut. In addition, participants were asked whether their sexual partners had sex with other people, whether they had discussed condom use with their sexual partners, whether they (or their sexual partners) knew how to use a condom. A composite risk score[12] was created by indexing those who had multiple sexual partners, had first engaged in sexual intercourse at a age younger than 18 years, were involved in commercial sex (either selling or buying sex), never or rarely used a condom, used a condom no more than once during previous three sex episodes, knew their sexual partners had sex with other people, did not discuss condom use with their partners, and did not know how to use a condom. The possible sexual risk composite scores ranged from 0 to 10, with a higher score indicating a higher sexual risk.

HIV-related perceptions—Protection motivation theory (PMT)[15] was used as a theoretical framework for measuring HIV-related perceptions. PMT is a social cognitive theory of behavioral change that attempts to explain the cognitive mediation process of behavioral change in terms of threat and coping appraisals. The questionnaire contained 31 items

measuring the seven PMT constructs. The detailed measurements of seven PMT constructs are as follows:

Extrinsic Rewards This PMT construct consisted of six items measuring external influences that may alter an individual's perceptions of and/or decision to engage in risky behaviors. Participants were asked to estimate how many (i.e., none, few, some, and most) of their peers (including those from their home village) had engaged in HIV/STD risk behaviors (e.g., had multiple sexual partners, did not use condom, involved in sex trade, had an STD, and sold blood illegally). The Cronbach α for this scale was 0.63. A composite score was obtained by summing responses to items in the scale with higher composite scores indicating higher levels of perceived extrinsic rewards.

Intrinsic Rewards The Intrinsic Rewards scale measures intrinsic factors (anticipated pleasure, personal advantages) for engaging in risk behavior. The Cronbach α for this four-item scale was 0.67. The four-point response choices ranged from "strongly disagree" to "strongly agree." A composite score was obtained by summing responses to items with higher composite scores indicating higher levels of perceived intrinsic rewards.

Severity This four-item scale (Cronbach $\alpha = 0.68$) assessed respondents' perception of the negative consequences resulting from risk behavior (e.g., "one will lose friends if he/she catches HIV or STD"). The four-point response choices ranged from "strongly disagree" to "strongly agree." A composite score was obtained by summing responses to items with higher composite scores indicating higher levels of perceived severity.

Vulnerability The vulnerability scale assessed perceived personal vulnerability to negative consequences resulting from risky behavior (e.g., likelihood to get HIV or STD in the future). This two-item scale had a Cronbach α of 0.52. A composite score was obtained by summing responses to the two items with higher scores indicating higher levels of perceived vulnerability.

Response Efficacy The Response Efficacy scale assessed perceptions regarding the effectiveness of various protective or health promoting behavior (e.g., "using a condom is an important way to prevent HIV and STD"). This scale consisted of seven items and had a Cronbach α of 0.60. A composite score was obtained by summing responses to the seven items with a higher composite score indicating a higher level of response efficacy.

Self-Efficacy The Self-Efficacy scale assessed belief about one's own ability to engage in a protective behavior (e.g., "I will refuse to have sex if my partner does not want to use a condom"). The scale consisted of two items with a Cronbach α of 0.58. A sum score was obtained as a composite score with higher scores indicating higher levels of self-efficacy.

Response Cost The Response Cost scale assessed the perceived personal costs associated with protective behaviors (e.g., "using a condom during sex will reduce sexual pleasure"). The scale consisted of six items with a Cronbach α of 0.71. A composite score was obtained by summing responses to items with higher composite scores indicating higher levels of perceived response cost.

History of STDs—Participants were asked whether they had ever been infected with a STD in their lifetime. Those with a history of one or more STDs were further asked about the type of STD, source of infection, and notification of their disease.

Analysis

First, frequency distribution was used to examine demographic characteristics, sexual risk behaviors (i.e., multiple sexual partners, selling and buying sex, condom use, etc.), and history, notification and treatment of STD. The gender differences of these variables were tested using chi-square (for categorical variables), Cochran-Mantel-Haenszel χ^2 (for ordinal variables) or analysis of variance (ANOVA; for continuous variables).

Second, the association of sexual risk with PMT constructs and mobility was examined for males and females using ANOVA. The sexual risk score was dichotomized using mean-split (low versus high) to serve as a between-subject's factor in ANOVA. The association of mobility with history of STDs was examined using logistic regression analysis controlling for potential confounders including age, ethnicity, education level, marital status, and sexual risk behaviors. Multivariate logistic regression analysis was also performed to identify factors associated with partner notification of STDs. The dependent variable of logistic regression indicated whether migrants reported a history of any STD (no/yes) or notified their partners about their infection (no/yes). Odds ratio (OR) and its 95% confidence interval (CI) were calculated. All statistical analyses were performed using the SAS 9.1 statistical software package (SAS Institute Inc., Cary, NC).

RESULTS

Sample characteristics

As shown in Table 1, 52% of the participants were male. Participants were predominantly ethnic Han (ethnic majority in China, accounting for 94% of the nation's population). Mean age was approximately 27 years, with a range of 17 to 50. The majority of the participants (94%) were 18–35 years of age. Nearly half of the participants had never been married. Approximately two thirds had received no more than a junior high school education. Approximately 93% of the participants were currently employed or self-employed with an average monthly income of 1421 Yuan (an equivalent of U.S. $175). The majority of the participants worked in the entertainment establishments (i.e., barbershop/beauty salon, bathhouse/message parlor, dance hall/nightclub/karaoke hall), service and construction sectors, and had an average of 5 years of migratory experience. One third of participants lived with their spouse, 40% lived with their coworker or village fellow, and about 15% lived alone. Forty percent of the participants had changed their jobs at least once per year. On average, participants moved to and worked in a different city every 2 years. Most (80%) of them visited their hometown at least once per year. Compared to men, women were younger ($p < 0.001$) and had a shorter migratory history ($p < 0.001$), but were more mobile and changed their jobs more frequently. A higher proportion (41.8%) of women worked at entertainment sectors while nearly one third of men worked at construction sectors. A smaller proportion of women than men lived with their coworkers (20% versus 28.5%, $p = 0.0014$). Women's average monthly income was significantly lower than that of men (1184 versus 1648, $p < 0.001$).

HIV-related behaviors

Approximately 87% of the participants reported being sexually experienced; 78% reported premarital sex; and 19% had had their first sexual intercourse at an age younger than 18 years. More than half of the participants had had more than one sexual partner in their lifetime with 22% having had more than one partner during the previous month. Nineteen percent reported having bought sex and 11% reported having sold sex. More than one quarter knew that their sexual partners also had sex with other people. Half of them discussed condom use with their partners. Whereas 73% of the participants said that they or their sexual partners knew how to use a condom, relatively few often (9%) or always (7%) used a condom during sex. Similarly, only 15% reported that they used a condom during each of previous three sexual episodes,

whereas 50% did not use one at all. On average, the participants engaged in about 4 of the 10 sexual risk activities identified in the current study.

A higher percentage of women (24%) than men (15%) reported that their sexual debut occurred when they were younger than 18 years ($p = 0.0007$). One fifth of women reported having ever sold sex while one third of men having bought sex. A larger proportion of men (62%) than women (51%) reported having had more than one sexual partner in their lifetime ($p = 0.0007$). Although more women than men reported having discussed condom use with their sexual partners ($p = 0.002$), there were no gender differences in condom use behaviors. Men had relatively higher sexual risk scores than women ($p = 0.0064$).

PMT constructs, mobility, and sexual risk

Table 3 depicts the association between the PMT constructs and sexual risk for each gender and overall. Compared to the lower risk group, the higher sexual risk group of women reported higher perceptions of rewards (both extrinsic and intrinsic rewards) and response cost; males exhibiting higher sexual risk reported higher perceptions of extrinsic rewards for sexual risk activities, and decreased perceptions of vulnerability and response efficacy. Severity and self-efficacy were not associated with sexual risk for either men or women. The mobility index was associated with increased sexual risk for women (Table 3). The mobility index was significantly higher among women who reported commercial sex involvement than those who did not (0.84 versus 0.67, $p < 0.05$).

Mobility, gender, and history of STD

Multivariate logistic regression analysis found that history of STD was associated with low educational attainment and a high rate of multiple sexual partners for both genders, but was associated with high mobility and engagement in commercial sex for women only. The variable most strongly associated with history of STD was commercial sex. Women who had engaged in commercial sex were 3.3 times, and women with high mobility were 1.6 times as likely to have contracted an STD as others. In addition, the likelihood of history of STD was reduced for male and female migrants with at least a college education and was elevated for migrants who had multiple sexual partners. Age, ethnicity, marital status, condom use, and partner having sex with other were not related to history of STD (Table 4).

STD history and partner notification

Fifty-seven percent of women and 53% of men reported that they had previously contracted an STD. Condyloma acuminata, syphilis, and gonorrhea were the most frequently reported infections by women; while gonorrhea, condyloma acuminata, and nongonococcal urethritis were most frequently reported by men. Two men and one woman reported infection with HIV. Approximately 41% of women reported that they were infected through sex with their regular partners, while 61% of men reported that they were infected by a casual partner. Sixty-two percent of women first contracted an STD at an age younger than 25 years, compared to 40% of men. Fifty-five percent of women reporting a history of STD said that they had contracted at least two STDs, compared to 36% of men. The most frequently given reason by men for repeated infections was engaging in high-risk behaviors (42%), while the main reason for women was the recurrence of previous infection (38%). Among participants who had a previous history of STDs, 46% of women and 64% of men informed their partners about their infections. The main reasons given for not informing their partner of their infections by men and women were "unwilling to tell" or "worried about being scolded by their partners." The majority (93%) received treatment at hospitals and formal clinics (Table 5).

The results of the logistic regression analysis suggest that a number of behavioral characteristics were associated with whether migrants notified their partners about their

infection (Table 6). Partner notification was associated with a high rate of condom use and noninvolvement in commercial sex for both males and females, and was associated with high mobility and marital status in women. Married women were 7.2 times, and women with high mobility were 5 times as likely to have notified their partners. In addition, the likelihood of notifying partner was reduced for male and female migrants who had engaged in commercial sex and was elevated for migrants who used condoms more frequently.

DISCUSSION

Data in the current study showed that one fifth of migrant women who visited public STD clinics reported having ever sold sex and one third of migrant men reported having paid for sex. These rates are 20 and 4 times as high as that of general women and men in China, respectively,[16] and more than 3 times as high as that of migrant female and male populations in China.[12] The percentages of having multiple sexual partners in the last month are nearly 5 and 2 times as high as that of migrant women and men, respectively,[12] and much higher than that of women and men in the general population.[16] While engaging in commercial sex and multiple partnerships, migrants attending STD clinics typically failed to use a condom. In addition, women contracted STD at a younger age and more likely to contact multiple STDs. Taken together, the high percentages of sexual risk behaviors among migrants attending STD clinics in our study support the perspective that migrants are at increased risk of HIV/STD infection,[13] and migrant women are especially vulnerable to HIV/STD infection. In addition, more than one quarter of migrants visiting STD clinics did not know how to use condoms correctly. Condom use skills acquisition should be an important component for future HIV preventive interventions among migrants.

Data in the current study have shown that high mobility is associated with increased sexual risk and a history of STDs among female migrants. However, no such associations were observed in male migrants. This gender difference may suggest that a high proportion of migrant women are involved in commercial sex. It is possible that these women need to move from city to city frequently to avoid being arrested by police due to the illegal nature of the sex trade in China.[17,18] The reason that high mobility is not associated with increased sexual risk among male migrants may be because they are more homogeneously high in mobility. Women with high mobility are at increased sexual risk suggesting that this subgroup constitutes an important population for HIV/STD interventions.

Consistent to the previous literature, women had a higher rate of partner notification compared to men.[19–21] The reason that women were more likely to inform their partners about their infection may be because their regular partners were the source of infection. Among those who notified their partners, the typical pattern was to notify a stable partner, which was consistent with the findings in a previous study.[22] The finding that commercial sex engagement and inconsistent condom use were negatively associated with partner notification suggests high-risk engagement among women or men who did not notify their partners about their STD infection.

Data in the current study also suggest gender differences in HIV perceptions, which imply that the HIV/STD risk reduction measures need to be sensitive to male and female migrants. For female migrants, an effective intervention may need to be focused on decreasing the anticipated pleasure and personal advantages for engaging in risk behaviors, and perceived personal costs associated with protective behaviors. For male migrants, improving their perceptions of perceived personal vulnerability and the effectiveness of various protective behaviors should be a focus of the intervention.

There are several limitations in this study. First, despite the efforts to recruit participants from different types of STD clinics (e.g., with different annual patient flows and locations), the sample remains a convenience sample. In addition, our sample was recruited from public STD clinics in three major cities, generalization of findings from this study to migrants attending STD clinics in other areas (e.g., rural) or attending different types of STD clinic (e.g., private) is limited. Second, both sexual activity and a history of STDs were self-reported. Participants may incorrectly recall their past experience or give socially desirable responses. For example, 13% of migrants attending STD clinics reported not having had sexual intercourse, which is consistent with a recent study among market vendors in eastern China that found a STD prevalence rate of 5.5% among individuals who reported never having had sexual intercourse. [11] Third, some of the PMT sub-scales presented in this study have relatively low reliability estimates (e.g., 0.52 for vulnerability, 0.58 for self-efficacy). Although these reliability estimates are comparable with those based on other international samples,[23] further attention is needed to the development of more reliable and culturally appropriate assessment of the theoretical constructs. Findings of our study have several implications for HIV/STD intervention and prevention efforts in China. First, the gender difference in HIV-related perceptions and its association with sexual risk behaviors suggest that HIV/STD prevention efforts need to target different PMT constructs for male and female migrants and need to address gender-specific issues in HIV-related perceptions. Second, migrant women with high mobility are at higher risk for HIV/STD infection and represent an important target population for HIV/STD prevention. Third, policies are needed to reduce STD-related stigmatization and fears of abuse to promote partner notification of HIV/STD infection in order to prevent HIV/ STD transmission.

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Table 1

Demographic Characteristics of 1033 Young Chinese Migrants Visiting STD Clinics (%)

	Total	Female	Male
N	1033	496	537
Mean age in years (SD)	27.1 (5.6)	25.6 (5.3)	28.4 (5.5)[d]
Years of migration (SD)	5.3 (3.9)	4.1 (3.3)	6.4 (4.1)[d]
Ethnicity: Han Ethnicity	94.5	93.3	95.7
Education: ≤ 9 grades	59.1	60.0	58.3
Marital status: never married	47.0	49.5	44.7
Average monthly income in Yuan (SD)	1421 (1479)	1089 (1184)	1726 (1648)[d]
Working place[a]			
Unemployed	6.6	8.8	4.7[d]
Entertainment sectors	30.6	41.8	20.3
Service sectors	27.3	29.5	25.2
Industrial/construction sectors	20.9	8.4	32.3
Others	14.7	11.5	17.5
Living arrangement			
Alone	14.6	13.7	15.5
With spouse	32.7	34.5	31.1
With coworker	24.4	20.0	28.5[c]
With village fellow	15.5	16.7	14.3
With friend	6.6	7.3	6.0
Changing jobs ≥ 1 per year,	40.2	55.5	26.1[d]
Mean mobility index (SD)	0.6 (0.6)	0.7 (0.7)	0.5 (0.6)[d]
Frequency of home visit[b]			
Never	8.6	9.4	7.9
Once every 2–3 years	10.7	6.9	14.2
Once per year	51.1	53.4	49.1
2 or more per year	29.6	30.4	28.8

[a]Difference between males and females was significant ($p < 0.001$).

[b]Cochran-Mantel-Haenszel χ^2 was performed for significance test.

[c]$p < 0.01$.

[d]$p < 0.001$.

SD, standard deviation; STD, sexually transmitted disease.

Table 2

Sexual Practice of Sexually Experienced Young Chinese Migrants Visiting STD Clinics

	Total	Female	Male
n	903	438	465
Age at first sexual intercourse < 18 years	18.9	23.5	14.6[c]
Paying money or goods for sex	18.9	3.7	33.2[c]
Receiving money or goods for sex	11.4	20.3	2.9[c]
Having had premarital sex	77.9	79.2	76.7
Having multiple sex partners (lifetime)	56.9	51.2	62.4[c]
Having multiple sex partners (last month)	22.3	22.8	21.8
Number of sexual partners (last month)			
0	10.3	8.3	12.2
1	67.4	68.9	66.0
2	16.9	17.7	16.1
3 or more	5.4	5.1	5.7
Sexual partner has sex with others	26.6	26.1	27.1
Lifetime condom use[a]			
Never	26.7	24.4	28.8
Rarely	33.1	32.9	33.3
Sometimes	24.6	26.5	22.8
Often	9.1	10.3	8.0
Always	6.5	5.9	7.1
Condom use last three sexual encounters[a]			
Never	49.7	46.6	52.6
Once	20.0	19.9	20.2
Twice	15.6	19.6	11.8
All the three times	14.7	13.9	15.4
Discussed condom use with sexual partner	51.1	56.5	46.1[b]
Knowing how to use a condom	73.4	73.8	73.0
Sexual risk score (SD)	3.6 (1.8)	3.4 (1.8)	3.7 (1.7)[b]

[a] Cochran-Mantel-Haenszel χ^2 was performed for significance test.

[b] $p < 0.01$.

[c] $p < 0.001$.

STD, sexually transmitted disease; SD, standard deviation.

Table 3

Association Between PMT Constructs and Sexual Risk Among Chinese Migrants Visiting STD Clinics

Level of sexual risk	Overall		Female		Male	
	Low	**High**	**Low**	**High**	**Low**	**High**
n	504	399	255	183	249	216
PMT constructs						
Extrinsic reward	10.15 (2.51)	11.39 (2.83)[c]	9.74 (2.17)	11.22 (2.83)[c]	10.54 (2.74)	11.54 (2.83)[c]
Intrinsic reward	9.05 (2.24)	9.30 (2.12)	8.68 (2.10)	9.16 (2.24)[a]	9.42 (2.31)	9.41 (2.01)
Vulnerability	7.02 (1.15)	6.84 (1.16)[a]	7.16 (1.07)	7.10 (0.99)	6.89 (1.22)	6.62 (1.24)[a]
Severity	9.64 (1.45)	9.61 (1.48)	9.49 (1.31)	9.53 (1.35)	9.79 (1.57)	9.67 (1.58)
Response efficacy	13.76 (1.74)	13.56 (1.57)	13.62 (1.62)	13.68 (1.56)	13.90 (1.84)	13.45 (1.58)[b]
Self-efficacy	5.41 (1.23)	5.29 (1.16)	5.37 (1.17)	5.21 (1.18)	5.45 (1.28)	5.36 (1.14)
Response cost	15.93 (2.62)	16.14 (2.11)	15.76 (2.46)	16.18 (2.08)[a]	16.09 (2.77)	16.11 (2.13)
Mobility	0.59 (0.69)	0.60 (0.56)	0.65 (0.62)	0.79 (0.69)[a]	0.52 (0.75)	0.44 (0.37)

[a] $p < 0.05$.

[b] $p < 0.01$.

[c] $p < 0.001$.

Numbers in the table are mean (SD) unless indicated otherwise. PMT, protection Motivation Theory.

Table 4

Odds ratios from Logistic Regression Analysis Showing Factors associated with History of STD Among Chinese Migrants Visiting STD Clinics

Characteristics	Female (n = 438)		Male (n = 465)	
	OR	95% CI	OR	95% CI
Age (years)	0.96	0.91–1.02	1.03	0.98–1.08
Ethnicity				
Han	1.00		1.00	
Non-Han	0.87	0.38–2.01	0.40	0.15–1.05
Education				
High school or below	1.00		1.00	
College or above	0.66	0.43–0.99	0.63	0.42–0.95
Marital status				
Single	1.00		1.00	
Married	1.32	0.75–2.34	0.70	0.42–1.17
Mobility	1.58	1.16–2.20	0.71	0.49–1.12
Commercial sex				
No	1.00		1.00	
Yes	3.27	1.72–6.20	1.24	0.80–1.93
Multiple sexual partners				
No	1.00		1.00	
Yes	2.25	1.42–3.58	1.63	1.05–2.51
Partner had other sexual partners				
No	1.00		1.00	
Yes	1.42	0.84–2.41	1.40	0.88–2.22
Condom use				
Never	1.00		1.00	
Sometimes	1.14	0.68–1.91	0.76	0.49–1.20
Always	1.12	0.43–2.91	0.84	0.35–2.03

OR, odds ratio; CI, confidence interval.

Table 5

History of STDs and Partner Notification Among Chinese Migrants Visiting STD Clinics

	Overall	Female	Male
Reported a history of STD	495	250	245
Type of STD infected			
Gonorrhea	32.1	21.6	42.9[e]
Nongonococcal urethritis	20.2	18.8	21.6
Herpes genitals	11.7	8.8	14.7[c]
Condyloma acuminata	37.6	48.8	26.1[e]
Syphilis	16.8	25.2	8.2[e]
Perceived transmitters/source of infection			
Regular partner	29.3	40.6	17.8[d]
Temporary partner	51.5	42.2	61.0
Contact with STD patients	7.6	6.3	8.9
Don't know	11.6	10.9	12.3
Age at the first STD infection			
20	6.9	12.0	1.7[e]
20	44.3	50.0	38.3
25	29.8	26.4	33.3
30	19.0	11.6	26.7
% Reported two or more STDs	45.9	55.2	36.5[d]
Reasons for two or more STDs[a]			
Recurring	26.6	37.8	9.2[d]
Did not cure	33.6	32.4	35.5
Had contact with STD patients	16.7	18.9	13.2
Had high risk behaviors	23.1	10.8	42.1
Notification of STD			
Did not tell my partner	54.9	46.0	64.1[d]
Told my stable partner only	32.7	39.7	25.5
Told my temporary partner only	9.0	11.1	6.9
Told both my stable and temporary partner	3.4	3.2	3.5
Reasons for not notifying sex partners[b]			
Unwilling to tell	57.1	47.2	64.5[c]
Worried about being scolded by partners	22.7	26.6	19.8
Couldn't find him/her	10.3	9.8	10.7
Other (i.e., violence of partner)	9.8	16.4	5.0
Places of receiving treatment			
Comprehensive hospital	19.6	20.3	18.8[c]
Specialized hospital	55.5	50.0	61.1
Formal clinic	17.5	20.3	14.6
Private clinic	4.3	7.8	0.7
Self-treated	3.2	1.6	4.9

[a]Data were available for 227 (138 females and 89 males) migrants who reported two or more STDs.

[b]Data were available for 272 (115 females and 157 males) migrants who did not notify their partner about their STD infection.

[c]$p < 0.05$.

[d]$p < 0.01$.

[e]$p < 0.001$.

STD, sexually transmitted diseases.

Table 6

Odds Ratios from Logistic Regression Analysis Showing Factors Associated with Partner Notification of STD Among Chinese Migrants Visiting STD Clinics

Characteristics	Females (n = 250)		Males (n = 245)	
	OR	95% CI	OR	95% CI
Age (years)	0.89	0.76–1.04	0.88	0.80–1.01
Ethnicity				
Han	1.00		1.00	
Non-Han	0.38	0.10–1.55	5.73	0.56–58.74
Education				
High school or below	1.00		1.00	
College or above	2.08	0.67–6.42	1.55	0.80–3.00
Marital status				
Single	1.00		1.00	
Married	7.22	1.70–30.60	1.01	0.96–1.05
Mobility	4.95	1.13–21.78	1.25	0.41–3.82
Commercial sex				
No	1.00		1.00	
Yes	0.26	0.08–0.77	0.30	0.15–0.60
Multiple sexual partners				
No	1.00		1.00	
Yes	2.25	0.69–7.35	0.99	0.47–2.06
Partner had other sexual partners				
No	1.00		1.00	
Yes	0.49	0.17–1.44	3.18	1.46–6.92
Condom use[a]				
Never	1.00		1.00	
Sometimes/always	7.25	2.58–20.43	2.34	1.17–4.67

[a]Condom use was combined into two categories due to low frequency in category always.

OR, odds ratio; CI, confidence interval; STD, sexually transmitted disease.