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Violence Against Chinese Female Sex Workers From Their Stable Partners: A Hierarchical Multiple Regression Analysis

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Abstract

Limited data are available regarding risk factors that are related to intimate partner violence (IPV) against female sex workers (FSWs) in the context of stable partnerships. Out of the 1,022 FSWs, 743 reported ever having a stable partnership and 430 (more than half) of those reported experiencing IPV. Hierarchical multivariate regression revealed that some characteristics of stable partners (e.g., low education, alcohol use) and relationship stressors (e.g., frequent friction, concurrent partnerships) were independently predictive of IPV against FSWs. Public health professionals who design future violence prevention interventions targeting FSWs need to consider the influence of their stable partners.

Researchers suggest that female sex workers (FSWs) are a vulnerable group subject to a high risk of violence perpetrated by their sexual partners (El-Bassel, Witte, Wada, Gilbert, & Wallace, 2001; Ratinthorn, Meleis, & Sindhu, 2009). For instance, Shannon and colleagues

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(2009) reported that 57% of FSWs in Vancouver experienced gender-based violence at least once during their work in the past 18 months. Most researchers only focused on violence perpetrated by their clients, however, with only a few scholars indicating that violence perpetrated by their stable partners (e.g., husbands, boyfriends) might be even more prevalent (El-Bassel et al., 2001; Karandikar & Prospero, 2010). El-Bassel and colleagues (2001) conducted a study in New York City and reported that more than 70% of the FSWs experienced violence perpetuated by their stable partners, compared with 50% of those who had violence perpetuated by their clients. Given the alarming statistics of violence against FSWs perpetrated by their stable partners, the exploration of associated risk factors has become significant.

Some scholars have suggested a number of demographic, behavioral, or relationship factors that are associated with intimate partner violence (IPV) against FSWs. These factors include younger age of FSW (Ruiz–Pérez et al., 2006), HIV-related behaviors among FSWs (e.g., inconsistent condom use and a history of STI; Parish, Wang, Laumann, Pan, & Luo, 2004; Zhang, Li, Hong, Chen, Liu, & Zhou, 2012), substance use/abuse problems (e.g., use of alcohol and illicit drugs; DeMaris, Benson, Fox, Hill, & Wyk, 2003; Panchanadeswaran et al., 2008; Xu et al., 2005), and relationship stressors with their intimate partners (Karandikar & Prospero, 2010). We defined “relationship stressors” as factors that may promote tensions between partners, such as stable partners’ concurrent partnerships (Ulibarri et al., 2010), frequent friction with partners (Demaris et al., 2003; Panchanadeswaran et al., 2008), lower socioeconomic status of male partners (Parish et al., 2004), and uneven contribution to financial spending (Demaris et al., 2003; Macmillan & Gartner, 1999; Parish et al., 2004). Based upon the Theory of Gender and Power (Wingood & DiClemente, 2000), women who lack the perceived control to avoid unhealthy behaviors (e.g., inconsistent condom use), who have more vulnerable socioeconomic risk factors (e.g., being younger), and who disobey traditional social norms (e.g., arguing with males) are more vulnerable to partner violence. These above-mentioned relationship stressors may posit gender-based inequities in sexual power between women and their male stable partners, which increase women’s vulnerability of violence victimization (Ulibarri et al., 2010).

Scholars have further identified both short-term and long-term negative health sequelae of IPV such as mental health problems (e.g., depression, substance abuse), physical health problems (e.g., injuries, gastrointestinal symptoms), gynecological problems (e.g., genital irritation, unexpected pregnancies), and STI including HIV infection (Campbell, 2002; Xu et al., 2005). In addition to measures of general violence, researchers had identified three specific types of violence: physical (e.g., physical assaults), sexual (e.g., rape, sexual coercion), and emotional (e.g., emotional abuse or verbal assaults) in previous studies (Farley & Barkan, 1998; Plumridge & Abel, 2001).

Despite a growing interest in studying IPV against FSWs, few scholars have examined the association of IPV with characteristics of partners and relationship stressors in the context of stable partnerships in developing countries. One such country is China, where commercial sex has been flourishing in the past three decades (Gil, Wang, Andeson, Lin, & Wu, 1996; Hong & Li, 2008). Our study was designed to examine how characteristics of stable partners and relationship stressors are associated with IPV against FSWs in China. Our hypothesis is

that women who have more frequent friction with stable partners and whose stable partner is having concurrent sexual relationships, is using alcohol more frequently, is financially dependent on women, and is less educated are more likely to experience partner violence perpetrated by their stable partners.

METHODS

Study Site

The current study was conducted in 2008–2009 in Guangxi Zhuang Autonomous Region (Guangxi) in southwest China. The prevalence of HIV in Guangxi has increased rapidly since the first case of HIV infection was diagnosed in 1996. By June 2011, a total of 69,548 HIV/AIDS cases were reported, which placed Guangxi second in terms of HIV seropositive cases among all provinces in China. Heterosexual transmission increased from 42.8% in 2007 to 78.2% in 2010 and became the primary route of HIV infection (Guangxi Center for Disease Control and Prevention [CDC], 2011). Two cities in Guangxi, City A and City B, were selected as research sites for the current study. City A is situated in northeast Guangxi, with a population of 1.34 million including an urban population of 620,000. City B is located in the southern coast of Guangxi, with a population of 1.36 million including 550,000 urban residents. Both cities are famous tourist spots, attracting 4–10 million tourists to each city every year. An estimate of 2,000 FSWs work in more than 150 commercial sex venues in each city (Guangxi CDC, 2009, 2011).

Recruitment and Data Collection Procedure

The research team conducted an ethnographic mapping to identify commercial sex venues in the sampling areas. Owners/managers or other gatekeepers of these venues were contacted for their permission to conduct research in their premises. Once we obtained permission, trained outreach health workers from the local CDC approached the women in these establishments to ask for their participation. Eligible participants were female workers in these establishments who were involved in commercial sex and were willing to provide written informed consent to participate in the study. An estimate of 25% of the venues and 30% of the women who were approached refused to participate. A final sample of 1,022 women was recruited from 60 entertainment establishments/locations (506 from 31 venues in City A and 516 from 29 venues in City B) and completed a self-administered questionnaire. Among the participants, 743 women reported having at least one stable partner. The survey was conducted in separate rooms or private spaces in the establishments where participants were recruited. No one was allowed to stay with the participant during the survey except the interviewer, who provided the participant with assistance when necessary. For those women with low literacy (among all FSW participants, only less than 5% of them had low literacy), interviewers read questions to them. Each participant received a small gift with a cash value equivalent to U.S.$4.50 upon the completion of the survey. The study protocol was approved by the Institutional Review Boards at Wayne State University in the United States and Beijing Normal University in China.

Measures

Sample characteristics—Participants were asked to provide information on their age, ethnicity, residency (rural or urban household registration), education (e.g., illiterate, elementary school, middle school, high school, college or above), marital status (e.g., never married, married, divorced, or widowed), length of working in the city (in months), types of working venues, whether living with their current stable partner, and monthly income (in Chinese currency yuan; one yuan = U.S.$0.14 at the time of survey). For the purpose of data analysis in the current study, we categorized ethnicity into Han or non-Han, educational attainment into less than middle school versus at least middle school, and marital status into ever married versus never married. Because of the substantial differences between FSWs in different venues in terms of their age and income (Fang et al., 2007; Hong & Li, 2008; Huang, Henderson, Pan, & Cohen, 2004; Zhang, Li, Hong, Zhou, Liu, & Stanton, 2013), venues were categorized into four levels based on FSWs' average monthly incomes (AMIs) at each venue: level one were those venues with AMIs less than 1,000 yuan (e.g., roadside restaurants, mini hotels, and streets), level two were those venues with AMI between 1,000 and 2,000 yuan (e.g., massage parlors and hair salons), level three were those venues with AMIs between 2,000 and 3,000 yuan (e.g., nightclubs, karaokes [KTV], bars, and dancing halls), and level four were those venues with AMIs higher than 3,000 yuan (in this study, only FSWs working at sauna houses had AMIs higher than 3,000 yuan).

HIV-related risk behaviors—HIV-related risk behaviors among FSWs were measured by frequency of condom use with stable partners, history of STI, HIV testing, and behaviors of substance use and abuse. Three items pertaining to condom use with stable partners were used: overall frequency of condom use during their lifetime (e.g., never, occasionally, sometimes, often, and always), frequency of condom use in the last three sex acts (e.g., none, once, twice, and all three times), and intention of condom use in the future (e.g., never, occasionally, sometimes, often, and always). Those respondents who did not answer "always" or "all three times" were considered having used condoms inconsistently or having inconsistent condom use intention with their stable partners. Participants were also asked whether they had a history of STI (yes/no) and whether they had ever been tested for HIV (yes/no).

In addition, FSWs were further assessed by questions pertaining to their alcohol and drug use behaviors. FSWs' alcohol use behaviors were measured using a single question regarding the frequency of alcohol intoxication (e.g., almost every day, once every 2 to 3 days, once a week, once every 2 to 3 weeks, and never). For the purpose of data analysis in the current study, responses to alcohol intoxication were dichotomized into "never" vs. "ever." FSWs' drug use behaviors were assessed using a dichotomous question regarding their overall history of illicit drug use (e.g., "have you ever used illicit drugs" [yes/no]).

Stable partners' characteristics—Stable partner was defined as the person who has a sexual relationship with the FSW for at least 6 months. The FSWs were asked to identify all their stable partners (e.g., boyfriends, spouses, lovers, long-term clients, and others). Subsequently, FSWs were asked to provide specific information on their stable partners (or the one with the closest relationship if an FSW had more than one stable partner) regarding

educational attainment (e.g., illiterate, elementary school, middle school, high school, college or above) and frequency of alcohol use (e.g., 5 = almost every day, 4 = 1–2 times per week, 3 = 1–3 times per month, 2 = less than once per month, and 1 = never).

Relationship stressors—Information for relationship stressors between FSWs and their stable partners were measured with three questions, including "how often do you have friction with your stable partners" (e.g., 5 = almost every day, 4 = 1–2 times per week; 3 = 1–3 times per month, 2 = less than once per month, and 1 = never); "do you spend more money during your relationship" (yes/no); and "does your stable partner concurrently have other sexual partners" (yes/no).

Violence perpetrated by stable partners—The scale measuring violence from stable partners was adapted from the World Health Organization (WHO)'s Women's Health and Life Experience Questionnaire (WHO, 2003), and the scale was used in several Chinese studies (Zhao, Guo, Wang, Wu, & Wang, 2006; Zhang et al., 2012). The scale (20 items with Cronbach's alpha of .85) included three subscales: (a) physical violence (e.g., slapped you or thrown something at you that could hurt you; pushed you or shoved you or pulled your hair, kicked you); (b) sexual violence (e.g., had sexual intercourse when you did not want; put something into your genitals); and (c) emotional violence (e.g., belittled or humiliated you in front of others; threatened to hurt you or someone you cared about). All items were assessed using a 4-point response option (e.g., 0 = never, 1 = occasionally, 2 = sometimes, and 3 = frequently). Followed an existing analytical procedure (Zhang et al., 2012), respondents who answered "never" to all items in a subscale were assigned into the "never" group; otherwise, they were assigned into the "ever" group. Likewise, we created a dichotomous indicator ("never/ever") for overall partner violence based on the responses to all 20 items in the IPV scale.

Data Analysis

First, we employed chi-square (for categorical variables) and independent *t*-tests (for continuous variables) to assess bivariate associations of different types of IPV with all demographic, behavioral, and relationship measures.

Second, we further employed a hierarchical multiple regression analysis including three sequential multivariate logistic regression models to examine the correlates of IPV from stable partners while controlling for FSWs' demographics. The first regression model (Model I) included FSWs' HIV-related behavioral risk factors as independent variables. The second regression model (Model II) included characteristics of stable partners as additional independent variables. The measures of relationship stressors were added into the final regression model (Model III). Adjusted odds ratios (aORs) from the logistic regression models and their 95% confidence intervals (95% CIs) were used to depict relationships between independent variables and different types of IPV. The pseudo R^2 statistic was reported for each regression model. Pseudo R^2, analogous to R^2 in ordinary least squares (OLS) regression, reflects the proportion of the variance in the dependent variable that is explained by the independent variables in each regression model (Menard, 2002). All statistical analyses were performed using SPSS 18.0 for Windows.

RESULTS

Sample Characteristics and IPV

As shown in Table 1, among participants who reported having stable partners, 57.9% (430/743) had experienced at least one type of IPV, with 20.1% (148/735) experiencing physical IPV, 55.5% (411/740) experiencing emotional IPV, and 16.2% (120/739) experiencing sexual IPV. Participants' mean age was 25.3 (SD = 6.8). The majority of them (86.3%) were of Han ethnicity. Less than half of the women (44.3%) came from urban areas. The majority (67.8%) were never married, and most of them had less than middle school education (64.7%). The average length of working in the city was 45.7 months (SD = 36.7). The AMI was 2,560 yuan (SD = 2,260). Women who used condoms inconsistently with stable partners were more likely to experience partner violence ($p < .05$). Women who reported ever having alcohol intoxication had higher rates of victimization of overall violence (74.3% vs. 60.6%, $p < .0001$), as well as physical (78.0% vs. 65.8%, $p < .01$), emotional (74.1% vs. 61.4%, $p < .0001$), and sexual IPV (77.1% vs. 67.0%, $p < .05$) violence. The rates of three types of IPV were also significantly higher among women reporting illicit drug use ($p < .05$).

Partners' Characteristics, Relationship Stressors, and IPV

As shown in Table 2, the majority of FSWs identified their stable partners as their boyfriends (65.1%), followed by husbands (20.4%), lovers (15.7%), and long-term clients or others (3.6%). Nearly one-half of the FSWs reported a stable partner with less than middle school education (44.7%). Women who reported lower educational attainment among their stable partners were more likely to report experience of physical (59.9% vs. 40.9%, $p < .0001$) and emotional (50.4% vs. 37.6%, $p < .005$) IPV. Those FSWs with stable partners who used alcohol frequently (e.g., almost every day) were more likely to report emotional (22.9% vs. 15.2%, $p < .05$) and sexual (35.0% vs. 16.4%, $p < .0001$) IPV than women with partners who used alcohol less frequently (e.g., 1–2 times per week, 1–3 times per month, less than once per month, and never). Overall, 22.6% of the FSWs whose stable partners drank alcohol almost every day reported at least one type of violence compared with 15.1% who did not report partners with such a drinking pattern ($p < .05$).

Two-thirds of FSWs reported having friction with their stable partners at least once per month. Those FSWs who reported having frequent friction with stable partners were more likely to experience all types of IPV than those having less friction with stable partners ($p < .0001$). For instance, 23.6% of the FSWs had friction with their partners one to three times per month, compared with their counterparts who had friction with stable partners less than monthly. These FSWs reported higher rates of overall (28.9% vs. 16.2%, $p < .0001$), physical (30.6% vs. 21.8%, $p < .0001$), emotional (29.2% vs. 16.5%, $p < .0001$), and sexual (29.1% vs. 22.6%, $p < .0001$) IPV. Nearly 20% of FSWs reported that their stable partners had other concurrent sexual partners, and these women were more likely to report experience of all types of IPV ($p < .05$). No significant associations were observed between other relationship stressors (e.g., financial dependence on FSWs) and IPV in the bivariate analysis.

Results From Hierarchical Multiple Logistic Regression Models

Table 3 presented results from the hierarchical multiple regression analyses with three sequential logistic regression models. As shown in Model I, FSWs who reported having alcohol intoxication were more likely to experience overall IPV (aOR = 1.81, 95% CI = 1.25–2.62), as well as emotional IPV (aOR = 1.66, 95% CI = 1.15–2.40). Women who had a history of STI were two to four times more likely to experience all types of partner violence from their stable partners expect for physical violence. In addition, not having HIV testing was associated with the risk of experiencing sexual violence (aOR = 1.74, 95% CI = 1.08–2.77), and intention of inconsistent condom use with their stable partner in the future was positively related to the risk of physical violence victimization (aOR = 2.08, 95% CI = 1.12–3.88).

Model II showed that stable partners' educational attainment was negatively associated with overall (aOR = 0.64, 95% CI = 0.44–0.92) and physical (aOR = 0.52, 95% CI = 0.33–0.80) IPV. For FSWs who identified stable partners as their husbands, the aOR for reporting overall, physical, and emotional IPV were 4.64 (95% CI = 1.54–13.96), 3.66 (95% CI = 1.23–10.86), and 5.00 (95% CI = 1.67–14.91), respectively, compared with their counterparts who did not identify stable partners as their husbands. Frequent alcohol use among stable partners was significantly associated with physical (aOR = 1.21, 95% CI = 1.04–1.42), and sexual IPV (aOR = 1.21, 95% CI = 1.02–1.44) against FSWs.

The characteristics of stable partners identified in Model II remained significantly associated with IPV in Model III. Measures of relationship stressors were also predictive of IPV against women. Specifically, frequent friction is associated with women's risks of experiencing overall (aOR = 1.74, 95% CI = 1.46–2.07), physical (aOR = 1.57, 95% CI = 1.30–1.90), emotional (aOR = 1.75, 95% CI = 1.42–2.08), and sexual (aOR = 1.36, 95% CI = 1.11–1.66) IPV. Having a stable partner with multiple concurrent sexual partners increased the FSWs' odds of experiencing overall (aOR = 2.17, 95% CI = 1.32–3.56), physical (aOR = 1.83, 95% CI = 1.09–3.09), emotional (aOR = 2.49, 95% CI = 1.52–4.07), and sexual IPV (aOR = 2.39, 95% CI = 1.39–4.09) IPV after controlling for other confounders in the model.

Pseudo R^2 for each model as well as changes of the Pseudo R^2 (Δ Pseudo R^2) were reported in Table 3. The Pseudo R^2 indicated that Model I explained 6.50% of variance in overall IPV; stable partners' characteristics in Model II accounted for an additional 2.49% of the variability, and measures of relationship stressors in Model III explained another additional 6.48% of the variance in the dependent variable. The same pattern was observed among all types of IPV (Table 3).

DISCUSSION

We believe that the current study is one of the first efforts to examine violence against FSWs in the context of stable partnerships in China. Findings in the current study provided considerable support for our hypothesis that characteristics of stable partners and relationship stressors were associated with violence against FSWs perpetrated by their stable partners. Factors elevating risks of IPV included low educational attainment of stable partners, stable partners' frequent alcohol use behaviors, type of partners (e.g., boyfriends,

spouse, and lovers), stable partners' concurrent sexual partnerships, and frequent friction with stable partners. These factors remained as significant predictors of IPV against women after controlling for confounders including demographic and behavioral characteristics of FSWs.

As an important measure of socioeconomic status, low educational attainment of stable partners was independently predicative of IPV. Perhaps stable partners with less education were less likely to be employed or had less income; a male's unemployment coupled with an employed female has been confirmed as a risk factor for partner violence (Demaris et al., 2003; Wingood & DiClemente, 2000). It was also possible that stable partners with less education were less likely to employ appropriate problem-solving or coping tactics when conflicts arose within interpersonal relationships compared with their counterparts who had more education. Although "financial dependence" did not show any significant associations with IPV in the current study, the effect might have been already accounted for by the stable partners' low educational attainment.

Consistent with literature in both China and other countries (Chan, 2009; Xu et al., 2005), stable partners' alcohol use was a risk factor of IPV against women in the current study. Alcohol use by stable partners was significantly associated with physical and sexual IPV. Alcohol use may interfere with cognitive abilities of perpetrators and cause them to lose control over their behavior and perpetrate physical assaults against women. In addition, stable partners' concurrent sexual relationships were predictive of physical, emotional, or sexual violence against women. Stable partners' concurrent partnerships might cause mistrust within their relationship, which often resulted in violence against women (Ulibarri et al., 2010). An alternative explanation could be that the concurrent partnership status fostered a male dominance role and encouraged them to exercise emotional or physical control over women through violence (Vandello & Cohen, 2003). Having husbands or boyfriends in their life was associated with experience of IPV among FSWs in the current study, which further reflected interpartner conflicts in the context of commercial sex involvement. As some of the male partners might be either aware of or suspicious about the nature of the FSWs' work, they might vent negative feelings (e.g., jealousy, hatred, and shame) in the form of violence again women.

In addition to characteristics of stable partners and relationship stressors, several factors of FSWs remained significant associations with violence against them. Our data revealed that women who were victims of IPV were more likely to report a history of STI. As indicated by previous studies, the presence of violence in an intimate relationship constrained the ability of abused women to practice safe sex acts and, therefore, increased their vulnerability of contracting an STI, including HIV (El-Bassel, Gilbert, Rajah, Foleno, & Frye, 2000; Zhang et al., 2012). We believe that HIV intervention efforts incorporating partners' abuse as well as empowerment components are essential to this vulnerable group. Victimized women were more likely to report alcohol use in the current study. Alcohol may either act as a trigger for IPV (Testa & Parks, 1996; Wojcicki & Malala, 2001) or be employed as a maladaptive coping strategy by FSWs for stressful or traumatic life events (e.g., partner violence; Kalichman, Simbayi, Jooste, & Cain, 2007; Li, Li, & Stanton, 2010).

There are several limitations in the current study. First, our study was conducted in Guangxi, a multiethnic region of China. The sample may not be representative of FSWs in other areas of China. Second, the cross-sectional data in the current study did not allow a causal inference on relationships between various factors and IPV. Future studies with longitudinal designs could prospectively confirm the observed association and establish temporal relationships. Third, data on several important attributes of stable partnerships that might be associated with FSWs' experience of violent victimization were not available in the current study because of space constraints of the survey. These factors include stable partners' employment status, illicit drug use behaviors (Demaris et al., 2003; Xu et al., 2005), and personality attributes (Stith & Straus, 1995), and whether they lived with children (Demaris et al., 2003; Vives-Cases et al., 2011). Fourth, data on demographic and behavioral characteristics of stable partners (e.g., alcohol use and educational attainment) were collected from FSWs on only one of their stable partners (e.g., the closest one). Therefore, these data might not accurately measure characteristics of stable partners who actually perpetrated violence since women might not consider these stable partners as the "closest one." Fifth, similar to other studies on vulnerable populations, our data were subject to socially desirable reporting. In addition, the data were based exclusively on women's self-reporting, which may not be as accurate as if they were collected from their stable partners directly. Sixth, FSWs in the current study might have underreported their IPV victimization experience. As various forms of violence against FSWs are prevalent in China, the participants might not consider themselves as victims of such violence until they were seriously injured (Xu et al., 2005). Respondents might also feel ashamed for disclosing issues pertaining to their intimate partnerships.

Despite these limitations, we have identified several important implications for future IPV prevention interventions based upon findings in the current study. First, we should incorporate routine screening protocols on violence victimization into existing health promotion and prevention programs targeting FSWs, especially for those who have stable partners. It is critical for health care professionals to provide health services and violence reduction interventions to both FSWs and their stable partners (Campbell et al., 2008). Health professionals may also consider developing couple-based prevention interventions, given the high rates of partner violence among this population, in future IPV reduction interventions (Ulibarri et al., 2010). Second, certain relationship stressors (e.g., frequent friction with stable partners) were amendable; we need to deliver training on behavioral skills in handling daily conflicts including financial problems as well as anger management to both parties in future health promotion and prevention efforts. Third, health professionals need to consider women's disempowered status in future IPV prevention programming. If women cannot afford to lose their abusive stable partners to support themselves or their families financially, they may have to tolerate the continuum of risks including IPV. A multifaceted intervention is urgently needed to address how strategies that were proven effective in Western settings (Bauermeister, Tross, & Ehrhardt, 2009; Ling, Wong, Holroyd, & Gray, 2007) could be adapted and tailored in the milieu of China to empower FSWs in China. It is compelling for stakeholders at all levels (e.g., policymakers, health care providers) to reconsider the economic and educational development opportunities for these

socioeconomically marginalized women and to increase the protection of their human rights in China.

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TABLE 1

Characteristics of FSWs by Types of Partner Violence Perpetrated by Stable Partners (N = 743)

		PV from stable partners							
		Any PV (*n* = 743)		Physical (*n* = 735)		Emotional (*n* = 740)		Sexual (*n* = 739)	
Item	**Total**	**Never (*n* = 313)**	**Ever (*n* = 430)**	**Never (*n* = 587)**	**Ever (*n* = 148)**	**Never (*n* = 329)**	**Ever (*n* = 411)**	**Never (*n* = 619)**	**Ever (*n* = 120)**
Demographic characteristics									
Age, Mean (*SD*)	25.25 (6.83)	25.81 (6.62)	24.84 (6.95)	25.64 (6.79)	23.93 (6.82) **	25.68 (6.54)	24.95 (7.04)	25.38 (6.75)	24.67 (7.29)
Han ethnicity	86.3%	89.5%	84.0% *	87.7%	81.1% *	89.1%	83.9%	86.9%	83.3%
Urban residency	44.3%	46.9%	42.3%	46.5%	36.2% *	46.9%	42.0%	44.1%	45.3%
Less than middle school education	64.7%	58.8%	69.1% ***	62.7%	71.6% *	58.1%	70.1% ***	64.5%	65.0%
Never married	67.8%	64.9%	70.0%	65.4%	76.4% *	66.0%	69.1%	66.6%	73.3%
Living with SP	76.5%	73.3%	78.9%	75.4%	81.5%	74.5%	78.2%	76.2%	78.4%
Length of working, Mean (*SD*)	45.72 (36.72)	47.19 (39.05)	44.65 (34.94)	46.68 (37.01)	43.05 (36.17)	47.06 (39.30)	44.79 (34.64)	45.49 (36.94)	47.21 (35.96)
Income (1,000RMB),[a] Mean (*SD*)	2.56 (2.26)	2.51 (2.38)	2.59 (2.17)	2.49 (2.21)	2.81 (2.51)	2.59 (2.45)	2.53 (2.11)	2.54 (2.26)	2.60 (2.25)
Venue level[b]									
>3,000RMB	24.5%	23.6%	25.1%	24.5%	22.3%	23.7%	25.3%	25.0%	20.8%
2,000~3,000	58.8%	58.5%	59.1%	57.2%	63.5%	59.3%	58.2%	58.0%	63.3%
1,000~2,000	6.9%	8.3%	5.8%	7.5%	4.7%	7.9%	6.1%	7.1%	5.8%
<1,000	9.8%	9.6%	10.0%	9.9%	9.5%	9.1%	10.5%	9.9%	10.0%
HIV-related behaviors									
Inconsistent condom use with SP lifetime	82.5%	78.0%	85.9% **	80.7%	89.8% *	78.9%	85.5% *	81.6%	88.0%
Inconsistent condom use with SP in the last three sex acts	66.3%	60.4%	70.4% **	63.8%	76.2% **	61.7%	69.9% *	64.8%	74.6% *
Inconsistent intention of condom use with SP in future	77.0%	72.3%	80.7% *	74.1%	88.5% ****	72.5%	80.7% *	76.1%	82.5%
Never having HIV testing	50.6%	48.2%	53.9%	49.9%	55.2%	47.7%	54.2%	49.4%	62.4% *
Ever having STD infection history	8.1%	2.9%	11.9% ****	6.8%	13.5% *	2.7%	12.4% ****	6.8%	15.0% **

		PV from stable partners							
		Any PV (*n* = 743)		Physical (*n* = 735)		Emotional (*n* = 740)		Sexual (*n* = 739)	
Item	**Total**	**Never (*n* = 313)**	**Ever (*n* = 430)**	**Never (*n* = 587)**	**Ever (*n* = 148)**	**Never (*n* = 329)**	**Ever (*n* = 411)**	**Never (*n* = 619)**	**Ever (*n* = 120)**
Ever use illicit drug	18.4%	15.3%	20.7%	16.9%	24.3% *	15.5%	20.9%	16.8%	25.8% *
Ever having alcohol intoxication	68.6%	60.6%	74.3% ****	65.8%	78.0% **	61.4%	74.1% ****	67.0%	77.1% *

Note:

[a]By the time of survey, the currency exchange rate 1 yuan = U.S.$0.14;

[b]Venues are classified into 4 levels by the mean monthly income of FSWs in each venue.

*$p < .05$,

**$p < .01$,

***$p < .001$,

****$p < .0001$.

TABLE 2

Stable Partners' Demographic Characteristics, Relationship Stressors, and IPV (N = 743)

		Any PV (n = 743)		Physical (n = 735)		Emotional (n = 740)		Sexual (n = 739)	
Characteristic	**Total**	**Never (n = 313)**	**Ever (n = 430)**	**Never (n = 587)**	**Ever (n = 148)**	**Never (n = 329)**	**Ever (n = 411)**	**Never (n = 619)**	**Ever(n = 120)**
Less than middle school education	44.7%	36.2%	50.8%****	40.9%	59.9%****	37.6%	50.4%***	43.9%	50.0%
Types of SP									
Boyfriends	65.1%	64.9%	65.2%	64.2%	31.3%	66.3%	64.1%	63.8%	71.8%
Spouse	20.4%	18.4%	21.9%	20.7%	19.7%	18.0%	22.4%	21.5%	14.5%
Lovers	15.7%	14.8%	16.9%	16.2%	15.6%	13.9%	17.7%	15.6%	18.8%
Clients	2.1%	2.6%	1.6%	2.1%	2.0%	2.5%	1.7%	2.0%	2.6%
Others	1.5%	1.4%	1.4%	1.9%	1.2%	1.5%	1.7%	2.0%	1.2%
Frequency of SP's alcohol use									
Almost every day	19.5%	15.1%	22.6%*	17.7%	26.5%	15.2%	22.9%*	16.4%	35.0%****
1–2 times per week	23.9%	23.0%	24.5%	23.8%	24.5%	23.3%	24.3%	25.0%	18.8%
1–3 time per month	21.5%	25.3%	18.8%	22.2%	18.4%	24.5%	19.2%	22.2%	17.9%
Less than once per month	15.8%	14.1%	16.9%	16.2%	14.3%	14.9%	16.5%	16.4%	12.8%
Never	19.3%	22.4%	17.2%	20.1%	16.3%	22.0%	17.2%	20.0%	15.4%
Frequency of having frictions with SP									
Almost every day	4.6%	3.3%	5.5%****	3.5%	8.8%****	3.4%	5.4%****	4.1%	6.8%****
1–2 times per week	13.0%	5.3%	18.5%	10.1	24.5	5.3%	19.1%	10.6%	24.8%
1–3 time per month	23.6%	16.2%	28.9%	21.8	30.6	16.5%	29.2%	22.6%	29.1%
Less than once per month	32.3%	32.7%	32.0%	34.0	25.2	34.0%	30.9%	34.2%	22.2%
Never	26.6%	42.6%	15.2%	30.7	10.9%	40.8%	15.3%	28.4%	17.1%
Financial dependence on FSWs	20.4%	17.8%	22.2%	19.0%	26.0%	18.7%	21.7%	19.4%	24.8%
Having concurrent stable partnership	19.2%	12.1%	24.2%****	17.5%	25.9%*	11.5%	25.2%****	17.0%	30.5%***

Note: FSW = female sex workers, IPV = intimate partner violence, SP = stable partner;

* $p < .05$,

** $p < .01$,

*** $p < .001$,

**** $p < .0001$.

TABLE 3

Multivariate Logistic Regression of Characteristics of Stable Partners and Female Sex Workers (FSWs) as Well as Relationship Stressors and Intimate Partner Violence (IPV; $N = 743$)[a]

	Overall (n = 743)			Physical (n = 735)			Emotional (n = 740)			Sexual (n = 739)		
aOR 95% CI	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
HIV-related behavior												
Inconsistent condom use with SP	1.21 (0.70,2.09)	1.15 (0.65,2.01)	1.03 (0.57,1.86)	1.00 (0.47,2.13)	0.99 (0.50,2.13)	0.92 (0.42,2.01)	1.10 (0.64,1.90)	1.0310 (0.59,1.81)	0.9310 (0.51,1.68)	1.0710 (0.48,2.41)	1.1110 (0.49, 2.55)	1.1010 (0.47,2.53)
inconsistent condom use with SP in the last three sex acts	1.27 (0.81,1.93)	1.20 (0.77,1.87)	1.12 (0.70,1.78)	1.32 (0.76,2.29)	1.18 (0.67,2.08)	1.10 (0.62,1.97)	1.16 (0.75,1.78)	1.10 (0.71,1.72)	1.02 (0.64,1.63)	1.27 (0.70,2.33)	1.26 (0.67,2.37)	1.11 (0.59, 2.10)
Intention of inconsistent condom use with SP in future	1.17 (0.77,1.82)	1.22 (0.79,1.91)	1.12 (0.70,1.79)	2.08 (1.12, 3.88) *	2.12 (1.13, 3.97) *	2.01 (1.05, 3.83) *	1.28 (0.83,1.95)	1.33 (0.86, 2.07)	1.22 (0.77,1.95)	1.08 (0.59,1.99)	1.07 (0.58,1.99)	1.01 (0.54,1.89)
STD infection history	3.97 (1.78,8.85) ***	4.02 (1.77,9.14) ***	4.04 (1.70,9.61) ****	1.94 (1.01,3.72) *	1.70 (0.88,3.30)	1.46 (0.73,2.92)	4.57 (2.06,10.15) ****	4.70 (2.08,10.62) ****	4.86 (2.05,11.52) ****	2.09 (1.06,4.11) *	1.89 (0.95,3.75)	1.78 (0.87,3.64)
HIV testing	1.34 (0.95,1.90)	1.31 (0.92,1.86)	1.25 (0.86,1.81)	1.02 (0.67,1.56)	0.99 (0.64,1.52)	0.95 (0.60,1.50)	1.38 (0.98,1.94)	1.36 (0.96,1.94)	1.32 (0.91,1.92)	1.74 (1.08,2.79) *	1.71 (1.05,2.77) *	1.70 (1.03,2.81) *
FSWs' alcohol use	1.81 (1.25,2.62) ***	1.85 (1.26, 2.72) ***	1.85 (1.23,2.77) ***	1.54 (0.95,2.51)	1.50 (0.90,2.49)	1.47 (0.87, 2.48)	1.66 (1.15,2.40) **	1.69 (1.16,2.47) **	1.68 (1.12,2.51) *	1.28 (0.76,2.18)	1.16 (0.68, 2.00)	1.17 (0.67,2.03)
Drug abuse	0.89 (0.56,1.41)	0.85 (0.53,1.36)	0.81 (0.49,1.34)	0.66 (0.53,1.50)	0.86 (0.50,1.46)	0.88 (0.51,1.54)	0.92 (0.58,1.45)	0.88 (0.55,1.40)	0.85 (0.51,1.39)	1.19 (0.68,2.06)	1.09 (0.62,1.92)	1.05 (0.58,1.88)
Characteristics of stable partners												
Education of SP	—	0.64 (0.44,0.92) *	0.64 (0.43,0.94) *	—	0.52 (0.33,0.80) ***	0.50 (0.32,0.78) ***	—	0.72 (0.50,1.02)	0.72 (0.50,1.06)	—	0.74 (0.46,1.19)	0.72 (0.44,1.18)
Types of SP–Boyfriend	—	2.23 (0.78,6.38)	1.83 (0.59,5.64)	—	1.90 (0.70,5.19)	1.47 (0.51, 4.25)	—	2.22 (0.78,6.30)	1.80 (0.58,5.56)	—	3.99 (1.35,11.83 *	3.46 (1.12, 10.68) *
Types of SP–Spouse	—	4.64 (1.54,13.96) **	4.41 (1.37,14.17) *	—	3.66 (1.23,10.86) *	3.43 (1.09,10.84) *	—	5..00 (1.67,14.91) ***	4.75 (1.49,15.18) **	—	1.91 (0.60,6.06)	1.69 (0.52,5.53)
Types of SP–Lovers	—	3.26 (1.12,9.51) *	2.46 (0.78,7.79)	—	2.10 (0.78, 5.68)	1.57 (0.55,4.48)	—	3.82 (1.31, 11.09) *	2.83 (0.89,8.94)	—	3.64 (1.27,10.40) *	2.75 (0.93,8.10)
Types of SP–Long- term clients	—	0.84 (0.21,3.35)	0.83 (0.17,3.96)	—	2.87 (0.66,12.52)	2.60 (0.52,13.05)	—	0.95 (0.24, 3.79)	0.95 (0.20,4.53)	—	0.72 (0.08.6.63)	0.49 (0.04, 5.81)
Types of SP–Others	—	1.28 (0.25,6.54)	0.68 (0.12,4.08)	—	2.58 (0.41, 16.40)	1.54 (0.23, 10.49)	—	1.41 (0.28,7.15)	0.72 (0.12,4.28)	—	3.23 (0.51,20.43)	2.00 (0.31,12.9)
SP's alcohol use	—	1.12 (0.99,1.27)	1.09 (0.96,1.25)	—	1.21 (1.04, 1.42) *	1.21 (1.03,1.42) *	—	1.12 (0.99,1.27)	1.09 (0.95,1.24)	—	1.21 (1.02,1.44) *	1.18 (0.99,1.41)
Relationship stressors												
Having frictions with SP	—	—	1.74 (1.46,2.07) ****	—	—	1.57 (1.30, 1.90) ****	—	—	1.75 (1.47,2.08) ****	—	—	1.36 (1.11,1.66) ***
Financial dependence on FSWs	—	—	0.91 (0.58,1.43)	—	—	1.10 (0.67,1.83)	—	—	0.82 (0.52,1.27)	—	—	1.05 (0.60,1.85)
Concurrent partnership			2.17 (1.32,3.56) ***			1.83 (1.09,3.09) *			2.49 (1.52,4.07) ****			2.39 (1.39,4.09) ***
Model indicators												
Pseudo R^2 (%) [b]	6.50%	8.99%	15.47%	6.78%	10.12%	14.93%	6.14%	8.54%	15.57%	3.87%	6.81%	10.66%
Δ Pseudo R^2 (%) [c]	—	2.49%	6.48%	—	3.34%	4.81%	—	2.39%	7.04%	—	2.94%	3.85%

Note:

[a]All models are controlled for FSWs' demographics (i.e., age, ethnicity, residency, marriage, incomes, and venue level);

[b] Pseudo R^2 = Model L^2/ DEV0 = Model L^2/ (Model chi-square + the −2 Log likelihood for the model);

[c] Δ Pseudo R^2 = R^2model 2- R^2model 1 and R^2model 3- R^2model 2;

* $p < .05$,

** $p < .01$,

*** $p < .001$,

**** $p < .0001$.