

Severity of drug dependence, economic pressure and HIV-related risk behaviors among non-institutionalized female injecting drug users who are also sex workers in China

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Abstract

Background: Female injecting drug users (IDUs) who are also sex workers (FSW-IDUs) is an important bridge population transmitting HIV from the IDU population to clients of FSWs. Little is known about the relationships between severity of drug dependence, economic pressure and relevant HIV-related risk behaviors.

Methods: 281 non-institutionalized participants were recruited using snowball sampling methods. Anonymous face-to-face interviews were administered by trained doctors.

Results: 64.1% of participants used condoms inconsistently with their clients in the past 6 months; 28.5% served at least 2 clients per day and 48.4% practiced at least one of the three studied needle sharing behaviors. Severity of drug dependence (adjusted OR = 1.05, $p < 0.01$) and economic pressure (adjusted OR = 1.07 to 2.52, $p < 0.05$) were significantly associated with inconsistent condom use with clients in the last 6 months. Severity of drug dependence (adjusted OR = 1.15, $p < 0.01$) and variables related to perceived economic pressure (adjusted OR = 1.09–3.05, $p < 0.05$) were significantly associated with higher frequency of commercial sex transaction. Severity of drug dependence (adjusted OR = 1.07, $p < 0.01$) were also associated with needle sharing behaviors. In summary models, severity of drug dependence (OR = 1.17, $p < 0.001$), economic pressure (OR = 1.39, $p < 0.001$) and their interaction term (OR = 0.98, $p < 0.001$) were all associated with inconsistent condom use with clients in the last 6 months.

Conclusions: Prevalence of unprotected commercial sex was high and was independently associated with severity of drug dependence and economic pressure; severity of drug dependence was also associated with needle sharing behaviors. Such issues need to be fully considered when planning research studies and interventions.

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Keywords: Injecting drug use; Commercial sex; Condom use; Drug dependence; HIV; China

1. Introduction

Female injecting drug users (IDUs) who are sex workers (FSW-IDUs) occupy a strategic position in the HIV epidemic as HIV can both be transmitted via their needle sharing behav-

iors and their unprotected sexual behaviors (The Monitoring the AIDS Pandemic Network, 2005). In China, over half of the female IDUs have ever been involved in sex work (Yang et al., 2005) and HIV prevalence among female IDUs (6.7–81.2%) (Yin et al., 2007; Zhang et al., 2002) are much higher than those among female sex workers (FSWs) (0–6.7%) (State Council AIDS Working Committee Office, China, 2004; Yang et al., 2005) and their clients (0.5%) (Zhao et al., 2005). The ‘bridging’ effects of transmitting HIV from the IDUs to the FSWs and then to the clients of FSWs may hence determine the future HIV prevalence in China (Lau et al., 2007b). Such bridging effects

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have also been reported in other countries (Strathdee et al., 2008; United Nations & AIDS, 2006).

FSW-IDUs, as compared to female IDUs who are not FSWs and FSWs who are not IDUs, have different socioeconomic status (Paone et al., 1999), prevalence of psychosocial problems (Paone et al., 1999; Somlai et al., 2002) and prevalence of STD/HIV (Nguyen et al., 2004; Platt et al., 2005). FSW-IDUs are more likely than FSWs who are not IDUs to have had multiple sex partners and to have practiced unprotected sex (Paone et al., 1999); they are also more likely than IDUs who are not FSWs to have practiced needle sharing behaviors (Platt et al., 2005).

Some recent studies highlighted the importance of contextual factors in understanding HIV-related risk behaviors (Yang and Xia, 2006). The financial need to support their drug use may push them into sex trade (Baseman et al., 1999; Weeks et al., 1998) and compromise their ability to practice safe sex (Sherman et al., 2006). Lower socioeconomic status and lower income are significantly associated with the number of commercial sex transactions per day and inconsistent condom use with clients in the FSW population (Dandona et al., 2005; Hagan and Dulmaa, 2007; Lurie et al., 1995; Wong et al., 2003a,b). One study among FSWs in Mexico showed that injecting drug use was associated with being earning less for sex without condoms and FSWs' drug use was associated with having unprotected sex with clients in exchange for more money, compared to FSWs who did not inject drugs (Strathdee et al., 2008). Very few studies investigate the relationships between economic pressure and condom use or needle sharing behaviors in the FSW-IDU population.

Similarly, frequency and intensity of drug use and severity of drug dependence have been found to be associated with engagement in commercial sex (Hoffman et al., 2000; Spittal et al., 2003). However, little is known about the relationship between severity of drug dependence and condom use at sex work in the FSW-IDU population (Gossop et al., 1995), while mixed results have been reported on the associations between severity of drug dependence and needle sharing behaviors in the general IDU population (Evans et al., 2003; Gossop et al., 1993; Jenkins et al., 2001).

Cognitive-behavioral factors such as attitudes, norms and self-efficacy are shown to be associated with behaviors (Armitage and Conner, 2001; Lauby et al., 1998). The Theory of Planned Behaviors (Schifter and Ajzen, 1985) further prescribes actual control as a causal determinant of health-related behaviors (Ajzen and Madden, 1986). Economic pressure and severity of drug dependence can in fact, be conceptualized as reduced 'actual control' over condom use. The FSW-IDUs may be confronted by the urgent need to earn money to support their drug use behaviors, which may further be worsened by high severity of drug dependence. A qualitative study pointed out that economic deprivation was most frequently cited by FSWs who used drugs as the reason for their acceptance of non-condom transactional sex (Choi and Holroyd, 2007). Insistence on condom use will result in a lower number of commercial sex transactions and some clients provide extra money for unprotected sex (Gossop et al., 1994). Contextual factors such as economic pressure or severity of drug dependence are seldom taken into account when

explaining and intervening HIV-related behaviors, though there are relevant concerns about this direction (Somlai et al., 1998).

This study was conducted in Dazhou (DZ) of Sichuan province and Hengyang (HY) of Hunan province. The two urban sites respectively have population sizes of 6.5 and 7.2 million and are quite representative of the urban areas of the two provinces. By December 2005, there were respectively 745 and 1188 HIV cases reported in DZ and HY. Injecting drug use is the leading cause of HIV transmission in both places and there were over 5000 drug users registered in the local public security systems; the HIV prevalence among IDUs in DZ and HY were 38.5% and 13.9% (personal communication with the directors of Center for Disease Control and Prevention (CDC) in DZ and HY). These two sites were selected because of the relevance of HIV problems in the IDU population, as well as the experience and capacity of the CDCs in outreaching and conducting research in the IDU population.

The present study aimed at investigating the prevalence of HIV-related risk behaviors as well as the relationships between severity of drug dependence, perceived economic pressure and HIV-related risk behaviors in a non-institutionalized FSW-IDU population.

2. Subjects and methods

2.1. Study sites and data collection

Data were collected during March through August, 2007. Eligibility criteria included non-institutionalized females of age 18 years or above, who self-reported having injected heroin in the last 6 months (injection marks on their body were examined) and who self-reported having provided commercial sex services to men in exchange of money or drugs in the last 6 months. It is noted that 98.2% of IDUs in Sichuan province and 95.1% of IDUs in Hunan province mainly used heroin for injection (Liu et al., 2006; Su et al., 2007).

A few female peer IDU educators who worked for the free needle exchange program in these two cities served as the seeds of the snowballing process. They were briefed about the study and then referred the researchers to access some prospective participants, whom were initially interviewed by the researchers to confirm their eligibility. Further snowballing was performed. Similar snowballing processes were conducted by outreach workers of the two CDCs, who also identified some prospective eligible seed and study participants. Throughout the recruitment process, no personal identification was required. Prospective participants were interviewed by the researchers and their data were kept strictly confidential. A reimbursement fee of RMB 30–50 (about US\$ 4–6) was given to the participants as a compensation for their time. Altogether 301 eligible females (out of 325 recruited participants) were interviewed and 281 questionnaires were used for the analysis. A few questionnaires were voided due to large number of missing values ($n=3$); a few respondents did not complete the questionnaire due to the need to leave the venue in the middle of the interview ($n=11$) or due to the content of the questionnaire ($n=6$).

All interviewers were medical staff of the local CDC, who were experienced in outreaching and recruiting IDUs and FSWs study participants. Anonymous face-to-face interviews were implemented in settings where privacy was ensured (e.g., private rooms in the CDCs, methadone maintenance treatment (MMT) clinics or needle exchange centers). As drug use and sex work are both illegal in China, respondents were not required to give written consent to avoid the slightest possibility that such would be used as legal evidence against them. Instead, the interviewers signed a form pledging that they had explained the research details to the respondents, having answered all relevant questions clearly and have obtained verbal informed consent from participants before the interview commenced. Such informed consent process has been used in many studies targeting vulnerable groups (Lau et al., 2007a,b). Stringent quality control was enforced throughout the data collection process, including interviewer training,

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