



# Socio-ecological factors associated with depression, suicidal ideation and suicidal attempt among female injection drug users who are sex workers in China



Jing Gu<sup>a,b,\*,1</sup>, Joseph T.F. Lau<sup>b,c,1</sup>, Mingqiang Li<sup>d</sup>, Haochu Li<sup>e</sup>, Qi Gao<sup>b</sup>, Xianxiang Feng<sup>d</sup>, Yu Bai<sup>d</sup>, Chun Hao<sup>a</sup>, Yuantao Hao<sup>a</sup>

<sup>a</sup> School of Public Health, Sun Yat-sen University, Guangzhou, Guangdong 510080, China

<sup>b</sup> Centre for Medical Anthropology and Behavioral Health, Sun Yat-sen University, Guangzhou, Guangdong 510275, China

<sup>c</sup> Center for Health Behaviours Research, School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, China

<sup>d</sup> Center for Disease Prevention and Control, Liuzhou, Guangxi 545007, China

<sup>e</sup> Pediatric Prevention Research Center, Wayne State University, Detroit, MI 48201, USA

## ARTICLE INFO

### Article history:

Received 14 April 2014

Received in revised form 17 August 2014

Accepted 17 August 2014

Available online 4 September 2014

### Keywords:

Injection drug users

Sex workers

Depression

Suicide

China

## ABSTRACT

**Objective:** Female injection drug users who are also sex workers (FSW-IDUs) occupy a pivotal population in HIV transmission, whereas their mental health problems are largely overlooked. We aimed to investigate prevalence and associated socio-ecological factors of depression, suicidal ideation and suicidal attempts among FSW-IDUs in China.

**Methods:** Using snowball sampling methods, 200 FSW-IDUs were recruited from communities in Liuzhou, China. Anonymous face-to-face interviews were administered by trained doctors.

**Results:** Thirty-nine percent of participants had severe or extremely severe depression, 44.7% had suicidal ideation in the last six months and 26.8% had suicidal attempts in the last six months. After adjusting for background variables, self-stigma was significantly associated with severe or extremely severe depression (OR = 1.18, 95% CI: 1.07–1.31). Self-stigma (OR = 1.08, 95% CI: 1.01–1.15), depression (OR = 1.11, 95% CI: 1.05–1.18), having completely broken up with family (OR = 2.60, 95% CI: 1.35–5.02) and having been abused by clients or gatekeepers (OR = 2.15, 95% CI: 1.32–3.50) were associated with suicidal ideation in the last six months, while self-stigma (OR = 1.03, 95% CI: 1.10–1.16), depression (OR = 1.12, 95% CI: 1.04–1.20) and being abused by clients or gatekeepers (OR = 2.15, 95% CI: 1.09–4.24) were associated with suicidal attempt in the last six months. In mediation analyses, the associations between self-stigma and the two suicidal outcomes were fully mediated by depression.

**Conclusions:** There are unmet mental health needs of FSW-IDUs. Screening of mental health problems should be integrated into current HIV-related services. Psychological intervention efforts should include components such as self-stigma, family support and abuse.

© 2014 Elsevier Ireland Ltd. All rights reserved.

## 1. Introduction

High proportions of HIV infection in China have been attributed to heterosexual transmission (46.5%) and injection drug use (28.4%; [China Ministry of Health, 2012](#)). It was estimated that there were respectively 4–10 million female sex workers (FSWs) and about

10 million drug users in China ([Hu, 2014](#); [Yang et al., 2005](#)). Female injecting drug users who are sex workers (FSW-IDUs) may contact HIV through syringe sharing or unprotected heterosexual sex with injection drug users (IDUs; [Gu et al., 2011](#); [Lau et al., 2011](#)). HIV prevalence among IDUs is high and ranged from 17.8% to 71.9% ([Yin et al., 2007](#); [Zhang et al., 2002](#)). Through unprotected sex, infected FSW-IDUs may transmit HIV to male clients of sex work, a group of low HIV prevalence in China (0–0.5%; [Zhao et al., 2005](#)). Previous studies have reported high prevalence of such risk behaviors among FSW-IDUs ([Gu et al., 2008a,b, 2011](#)).

HIV prevention tends to overlook the mental health problems (e.g., depression and suicidal ideation), which are significantly associated with HIV-related risk behaviors, including unprotected

\* Corresponding author at: Department of Medical Statistics and Epidemiology, School of Public Health, Sun Yat-sen University 309, No. 74 Zhongshan Road II, Guangzhou, Guangdong, China. Tel.: +86 20 87335413; fax: +86 20 87330446.

E-mail addresses: [gujing5@mail.sysu.edu.cn](mailto:gujing5@mail.sysu.edu.cn), [gujing0828@hotmail.com](mailto:gujing0828@hotmail.com) (J. Gu).

<sup>1</sup> These two authors contributed equally in this paper.

sex among FSWs and syringe sharing among IDUs (Armstrong et al., 2013; Hong et al., 2007b). Previous studies conducted in China reported high prevalence of depressive symptoms among IDUs (57.5%) and FSWs (50%; Liang et al., 2008; Hong et al., 2010, 2007b). The prevalence of suicidal ideation was also high (40% among IDUs and 18% among FSWs; Jin et al., 2013; Hong et al., 2007a, 2013). Such prevalence is expected to be even higher among FSW-IDUs as they encounter layered stigma arising both from their IDU and FSW status, and stressors related to financial difficulties, poor family support and abuse. The three studies located by us, one of which was conducted in China, reported very high prevalence of depression (ranged from 70% to 86%) and suicidal attempt (53%) among FSW-IDUs (Gilchrist et al., 2005; Gu et al., 2010; Ulibarri et al., 2013).

Recently, socio-ecological models have been widely used to understand health-related risk factors at individual, interpersonal and social/structural levels (Sallis et al., 2008). Among IDUs, individual-level factors of depression included gender, drug use history and self-stigma (Evans et al., 2003; Latkin et al., 2003; Plotzker et al., 2007; Rusch et al., 2009); interpersonal-level factors included social support and family relationships (Risser et al., 2010; Wang et al., 2012); social-level factors included social stigma and unstable living status (Daniulaityte et al., 2010; Semple et al., 2005). Among FSWs, individual-level factors of depression included HIV infection status and drug use behaviors (Alegria et al., 1994); interpersonal-level factors included partner relationship and social support (Hong et al., 2007a; Sagtani et al., 2013); social-level factors included abuse and perceived stigma (Alegria et al., 1994; Hong et al., 2010, 2013). As depression is strongly associated with suicidal ideation and suicidal attempt (Wild et al., 2004), suicidal ideation and attempt share many risk factors of depression among IDUs and FSWs, such as abuse history, social support and perceived stigma (Alegria et al., 1994; Hong et al., 2007a; Jin et al., 2013; Kwon et al., 2013). There is only one study which investigated the risk factors of depression among FSW-IDUs and this study, which was conducted in Mexico, reported that abuse arising from partners and clients was associated with depression (Ulibarri et al., 2013). Since depression and suicidal ideation are strongly correlated with each other, it is also important to understand whether the risk factors' effect on suicidal ideation/attempt is fully mediated by depression. So far no study has tested this mediation hypothesis.

To fill the identified knowledge gaps, we investigated the prevalence of depression, suicidal ideation and suicidal attempt in a community-based sample of FSW-IDUs in China. We tested separately the significance of associations between four groups of independent variables of three dependent variables (depression, suicidal ideation and suicidal attempt), which included: (1) individual-level factors (perceived economic pressure and self-stigma), (2) interpersonal-level factors (relationship with regular partner and whether broken up with family), (3) organizational-level factors (level of sex work venue and charge per sex transaction), and (4) social-level factors (being abused and perceived social stigma). In addition, we hypothesized that depression would mediate the associations between the aforementioned socio-ecological factors and suicidal ideation/attempt.

## 2. Methods

### 2.1. Study site and population

This cross-sectional study was conducted in Liuzhou of the Guangxi Zhuang Autonomous Region (Guangxi), China. Liuzhou has a population of 3.6 million and has the largest number of registered drug users (over 10,000) and reported HIV cases (3084 in 2009) in Guangxi. This study was a part of a survey on psychosocial factors, HIV-related risks and mental health of FSW-IDUs. Inclusion criteria were: (1) at least 18 years old, (2) at least one episode of injecting drug use in the last six months and (3) at least one episode of trading sex for money or drugs in the last six months. Participants who showed obvious withdrawal symptoms during the

interview process were invited to complete the interview at another time. Those who could not be interviewed later were excluded from the study.

### 2.2. Recruitment of participants

As no sampling frame for FSW-IDUs exists, the snowball sampling method was used in this study. Participants were recruited by 10 paid peer IDUs of two syringe exchange programs (SEP) of the local Center for Disease Control and Prevention (CDC). The two programs each served about 200 IDUs, of whom about one-fourth were female. The peer educators approached prospective participants, who might or might not be SEP users, and invited them to participate in this study. All participants were in turn requested to refer other eligible peers to join the study. As both drug use and sex work were illegal in China, written informed consent was not used. Instead, the interviewers signed a form pledging that they had explained the study to the participants in detail and have obtained their verbal informed consent before the interview started (Gu et al., 2009). A reimbursement fee of 50 RMB (about 8 USD) was provided to the participants as a compensation for their time. The study was approved by the Institutional Review Board of the Renmin University.

### 2.3. Data collection

Anonymous face-to-face interviews were administered by the trained interviewers, using a structured questionnaire in a privacy-ensured consultation room at the SEP centers. The interviewers were clinicians of the local CDC and were experienced in outreaching and surveying IDUs and FSWs. Each interview took about 20 min to complete. Of all 234 prospective participants who were invited to join the study, 13 were either ineligible according to the inclusion criteria (e.g., not having injected drugs or traded sex in the last six months) ( $n = 10$ ) or refused to participate in the study ( $n = 3$ ). We excluded data that were obtained from 21 of the remaining 221 interviewees from data analyses, as 12 of them left the study site without completing the questionnaire for reasons unrelated to the study (e.g., someone was waiting for her) and nine refused to answer some key questions (e.g., those related to depression). The effective sample size was hence 200.

### 2.4. Measurements

Information on participants' background characteristics, including age, current marital status (single, married, cohabiting or divorced), residential status in Liuzhou (yes or no), ethnicity (Han, Zhuang, Miao, Yao and others), education level (primary or below, junior high, senior high or above), monthly personal income, duration of drug use and duration of sex work was collected. Continuous variables (e.g. age and income) were categorized according to literature of similar studies and the variables' frequency distribution (Gu et al., 2008a,b, 2014).

Probable depression was assessed by the 7-item Depression Subscale of the Chinese Depression Anxiety Stress Scale (DASS-21; Chan et al., 2012). Item ratings ranged from 0 ('did not apply to me at all') to 3 ('applied to me very much or most of the time'). Higher scores reflected more depressive symptoms. In order to yield equivalent scores to the full DASS-42, the total subscale score was multiplied by two (Tran et al., 2013). Scores of 10, 14, 21 and 28 were used as cut-off points for normal cases, mild depression, moderate depression, severe depression and extremely severe depression cases, respectively (Tran et al., 2013). In this study, the Cronbach's alpha of the subscale was 0.88 and the cut-off point of 21 was used (i.e., severe to extremely severe versus normal to moderate).

Suicidal ideation and suicidal attempt in the last six months were measured by two questions: 'Have you thought of committing suicide in the last six months?' and 'Have you attempted to commit suicide in the last six months?' The answers were binary ('Yes' and 'No'). Participants who answered 'yes' to the questions were considered to have had suicidal ideation and/or suicidal attempt (Hong et al., 2007a).

Four groups of socio-ecological risk factors were assessed:

**Individual-level factors:** Perceived economic pressure was assessed by the 6-item Perceived Economic Pressure Scale (e.g., economic pressure due to debt, due to the need to support one's drug use) which has been applied in our previous study targeting FSW-IDUs (Gu et al., 2008a,b). Response categories ranged from 0 to 3 (no, little, some and severe pressure). Higher scores reflecting higher economic pressure (Cronbach's alpha = 0.82 in this study).

The 9-item Self-Stigma Scale-Short (SSS-S) has been validated among Chinese (Mak and Cheung, 2010). Examples of items included: 'My identity as an FSW-IDU is a burden to me' and 'I estrange myself from others because I am an FSW-IDU'. Response categories ranged from 1 to 4 (extremely disagree to extremely agree). Higher scores reflected higher levels of self-stigma (Cronbach's alpha = 0.81 in this study).

**Interpersonal-level factors:** The 4-item Social Support Scale was validated in a study targeting FSW-IDUs (Gu et al., 2010). It assesses perceived instrumental and emotional support obtained from participants' family and friends (e.g., 'How much instrumental help could you obtain from your family members when you face difficulties in life?'). Each item was rated on a scale of 1 ('no support at all') to 4 ('a great deal of support'). Higher total scores indicated higher levels of social support (Cronbach's alpha = 0.74 in this study).

Participants were also asked whether they agreed with two statements with respect to their relationships with their regular partners and family members: "You

Download English Version:

<https://daneshyari.com/en/article/7505535>

Download Persian Version:

<https://daneshyari.com/article/7505535>

[Daneshyari.com](https://daneshyari.com)