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HIV-related Behavioral Risk Factors among Older Female Sex Workers in Guangxi China

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Abstract

Objective—Previous literature suggests a high rate of HIV infections among older female sex workers (FSW) in China. However, limited data are available regarding HIV-related behavioral risk factors among this population. In the current study, we aim to examine the demographic and behavioral factors that place older FSW at a high risk of HIV infection.

Methods—We conducted secondary analysis of the 2010 National Sentinel Surveillance (NSS) data from Guangxi China. A self-administered, standard behavioral surveillance survey was completed by a total of 12,622 FSW in Guangxi, China.

Findings—The Guangxi 2010 NSS sample included 19.4% FSW aged 35 years or older (“older FSW”). The overall HIV prevalence was 1.0% for the entire sample with 2.0% among older FSW and 0.8% among younger ones. Older age was an independent predictor of unprotected sex, injection drug use, and a self-reported history of syphilis infection.

Conclusion—Future HIV prevention interventions targeting FSW should consider older FSW’s vulnerable status. Efforts are needed to address their financial needs and invest in skills for socio-economic empowerment.

Keywords

Older FSW; National Sentinel Surveillance; HIV risk; Condom use; STD; China

INTRODUCTION

In the past three decades, China has witnessed a rapid increase of heterosexual transmission of HIV (Li, Hong, & Poston, 2011). Female sex workers (FSW) play a significant role in the HIV epidemic (Hong & Li, 2008). Depending on different definitions and sampling strategies, an estimated four to six million female sex workers work in China (Schafer, 2003; Tucker et al., 2010). A prevalence of HIV (0.3%) has been observed among FSW in

China at the beginning of the Millennium, which is about 1000 times higher compared to Chinese population in general (UNAIDS & MoH, 2012; Yang, Su, Peng, & Wu, 2013). Meanwhile, a nationwide survey revealed that 6.9% of men 20 to 49 years old have patronized FSW at least once in their lifetime (Pan, Parish, & Huang, 2011). Therefore, high prevalence of HIV infection among FSW coupled with prevailing commercial sex transactions fuels a rapid increase of the heterosexual transmission of HIV in China (Chen, Peeling, Yin, & Mabey, 2011; Cohen, Ping, Fox, & Henderson, 2000). Existing studies have documented unprotected sex (Zhang, Li, Hong, Zhou, et al., 2012), injection drug use (Yao et al., 2012), partner violence (Zhang, Li, Hong, Chen, et al., 2012), infections of other STD (Parish et al., 2003), and no HIV testing (Hong et al., 2012) as risk factors for HIV infection and transmission among this at-risk population.

Available evidence suggested varied behavioral patterns among FSW at different age groups (Dunkle et al., 2004; Mbonye et al., 2013). The subgroup of older FSW (i.e., those 35 years of age) might be at a particularly high risk of HIV infection (Baral et al., 2012; Buzdugan, Halli, & Cowan, 2009). A recent study based on a National Sentinel Surveillance (NSS) data suggested a significantly higher rate of HIV among older FSW in Guangxi, China, compared to their younger peers (Zhou et al., 2013). However, HIV associated behavioral risk factors among older FSW remained understudied. Older FSW are usually socially disadvantaged compared to their younger peers in the competitive sex industry where youth and beauty is the essential asset for business. They might be more likely to work in a less protected environment (e.g., on the street or at low-paying sex venues) where HIV risk is much higher (Huang, Henderson, Pan, & Cohen, 2004; Zhang, Li, Hong, Zhou, et al., 2012). In addition, older FSW usually have children and families to support but with limited means to do so, which further increase their financial needs. As a result of the socially disadvantaged status and increased financial pressure, older FSW may be more likely to accept clients who are at a high risk of HIV infection or transmission or be willing to have unprotected sex for more money (Zhang, Li, Hong, Zhou, et al., 2012). Despite these speculations, few existing studies have specifically examined HIV-related behavioral risk factors among this subgroup. Therefore, we analyzed the 2010 NSS data collected from FSW in Guangxi, China to examine the demographic and behavioral factors that place older FSW to a high risk of HIV infection.

METHOD

The information on the Chinese NSS system and study design was provided in details elsewhere (Zhou et al., 2013). FSW in Guangxi usually work in establishment-based venues (e.g., bars, nightclubs, hotels, massage parlors and hair salons) with a small portion seeking clients on the street (Fang et al., 2007). The rate of heterosexual transmission of HIV in Guangxi increased from 42.8% in 2007 to 78.2% in 2010 (GuangxiCDC, 2011).

Measurements

Participants were asked to provide information regarding their age, marital status, location of primary residence, ethnicity, educational attainment, length of working in the current location, and site of their previous work location. For the purpose of data analysis, the

sample was divided into two age groups (< 35 years versus ≥ 35 years) based on the general age criterion of “older FSW” in the literature (Baral et al., 2012; Baron & Kenny, 1986; Buzdugan et al., 2009; Zhang, Li, Hong, Zhou, et al., 2012; Zhou et al., 2013). Measures of participants’ HIV risk consisted of no condom use in the last sex act, inconsistent condom use in the past month, history of other sexual transmitted diseases (STD), HIV testing, and drug use. HIV knowledge was assessed with eight questions regarding possible transmission routes and preventive measures (Cronbach alpha=0.81).

Analytical procedure

First of all, Chi-square (for categorical variables) and ANOVA (for continuous variables) were employed to assess FSW’s demographic information, HIV risk, and HIV knowledge by age groups (<35yrs vs. ≥ 35yrs). Second, we employed multivariate logistic regression models to examine the effect of age on HIV risk by controlling demographics and HIV knowledge. Adjusted odd ratios (aOR) as well as their 95% confidence intervals (95% CI) were used to depict the independent relationship between predictors and dependent variables. All statistical analyses were performed using SPSS 17.0 for Windows.

RESULTS

About one-fifth (19.4%) of the NSS sample (n=12,622) was 35 years of age or older (“older FSW”). Older FSW were more likely to be married, work in low-paying venues with low educational attainment ($p<0.05$). Older FSW had been working in the current location for a longer time and had poorer HIV knowledge compared to their younger peers ($p<0.05$). The overall HIV prevalence is 1.0% for the entire sample with 2.0% among older FSW and 0.8% among FSW younger than 35 year old ($p<0.05$). The multivariate regression models indicated that age was an independent predictor for unprotected sex and injection drug use (aOR=1.12, 95%CI=1.05, 1.19). Older FSW were less likely to use illicit drug in general (aOR=0.90, 95%CI=0.88, 0.92), but they were more likely to have HIV testing (aOR=1.01, 95%CI=1.00, 1.01) and know results of their tests (aOR=1.03, 95%CI=1.01, 1.05).

DISCUSSION

The current study is one of the first efforts to explore HIV-related behavioral risk factors among older FSW in China. The prevalent unprotected sex, coupled with high prevalence of STD infection as well as injection drug use, placed older FSW at a much higher risk of HIV/STD transmission.

One noticeable finding of this study is that older FSW reported a relatively low rate of overall drug use but a high rate of injection drug use among those who used drugs. One possibility was that some of these women were involved in injection drug use first and then ended up with selling sex to support their drug use (i.e., “sex for drugs”). By further examining our data, we found older FSW were more likely to have HIV testing and know their testing results. One of the reasons could be that the self-awareness of their HIV risk (e.g., unprotected sex, injection drug use) promoted them to test for HIV. Another possible reason was that local health agencies (e.g., local CDC) might be more likely to target older FSW for routine HIV testing as most of these women worked in more “explicit” sex venues

(e.g., massage parlors, street) than their younger peers who work in venues where sex services are covered by other services (e.g., nightclubs) (Hong et al., 2012; Zhang, Li, Hong, Zhou, et al., 2012).

The strengths of the current study included a large representative sample of FSW and a standard protocol of behavioral surveillance and HIV/STD testing. However, the current study has some methodological limitations. First, the data were derived from a cross-sectional survey, which constrained our ability to establish a causal association between the HIV infection and FSW's demographic as well as behavioral risk factors. Second, participants were recruited from Guangxi, a multiethnic region of China, which might limited the generalizability of findings in the current study. Third, due to the illegal and highly stigmatized status of sex work in China (Hong, Li, Fang, & Zhao, 2007), our data were subject to socially desirable reporting (e.g., underreporting of drug use activities). Fourth, because of time constraints of the survey, some important behavioral factors (e.g., needle sharing) that might be associated with FSW's HIV risk are not available in the current study.

This study extends existing literature by examining demographic and behavioral risks among older FSW in China. Findings in our study provide preliminary data to inform health care practitioners and policy makers for future intervention efforts. Considering the particularly high HIV risk among older FSW, future HIV prevention programs need to address their special needs. Older FSW usually work in low-paying places, and have limited negotiating power but usually face high financial pressure. Programs need to address their financial needs and invest in skills for socio-economic empowerment (e.g., job-related skill training) of older FSW (Kerrigan, Fonner, Stromdahl, & Kennedy, 2013). Only when women support themselves financially, can they escape the vicious circle of "sex-for-money". Although only a small portion of FSW were injection drug users, the overlap between commercial sex and injection drug use posits this subgroup of FSW as the most significant group in the HIV transmission (Shannon et al., 2008). Improving access and utilization of drug addiction treatment (Deering, Shoveller, Tyndall, Montaner, & Shannon, 2011) could reduce FSW's dependence on sex work to support their drug use.

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