Entertainment Work, Commercial Sex, and HIV/STD in China: Who Are at Risk and What Are the Risk Factors?

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Introduction

With 650,000 people officially estimated to be living with HIV/AIDS by 2005, China is experiencing a rapidly growing HIV epidemic, which has started to spread from high risk groups in isolated areas to the general population nationwide (MOH et al. 2006). Moreover, in 2005, the estimated sexual transmission of HIV, which accounted for 49.8% among the new HIV cases in the year, for the first time surpassed that attributable to needle sharing while injecting drugs (48.6%) and became the dominant route of HIV transmission in China. The widespread commercial sex and recent surges in sexually transmitted infections (STIs) indicate increasing risky sexual behavior in the Chinese population (van den Hoek et al. 2001; Parish et al. 2003; Pan et al. 2004; Yang et al. 2005) and will likely continue to fuel the heterosexual transmission of HIV in the country. The real danger that the AIDS epidemic could make a quick inroad to the general population through sexual transmission underscores the need to study the social and behavioral determinants of HIV risk sexual behaviors among women working as dancers, singers, massagers, or hairdressers in China's flourishing entertainment industry. The widely suspected involvement in commercial sex and elevated alcohol/drug abuse among female entertainment workers (Ding et al., 2005; Qu et al., 2002; Rogers, Ying, Xin, Fung, & Kaufman, 2002) make them not only at high risk of HIV, but also an important potential source of HIV transmission (Gil, Wang, Anderson, Lin, & Wu, 1996; Lau, Tsui, Siah, & Zhang, 2002).

Recent studies in China (Ding et al., 2005; Liao, Schensul, & Wolffers, 2003; Qu et al., 2002; Rogers et al., 2002; Wong & Yilin, 2003; Xia & Yang, 2005; Yang & Xia, 2006) revealed that the majority of female entertainment workers (FEWs) who engage in commercial sex fail to take protective measures and are at high risk of acquiring or transmitting HIV/STDs. Studies (Liao et al., 2003; Xia & Yang, 2005; Yang & Xia, 2006) have also found the importance of cultural norms and called for attention to social influences in understanding female entertainment workers' risky sexual behavior. However, research seeks to examine and quantify the impact of social influences on FEWs' involvement in commercial sex and use of protective measures in such transactional sex is still very limited.

Urgently needed is systematic research that examines context and group-specific risk factors and how they may affect risky commercial sex among FEWs in addition to or interaction with individual cognitive factors. In this paper, we try to integrate individual cognitive variables and social influence factors in studying FEWs' involvement in commercial sex and use of condoms in such transactional sex. Using appropriate statistical techniques for repeated measures and multilevel data, the analysis will focus on which female entertainment workers are at risk of commercial sex and what individual and social risk factors are in the failure to consistently use condoms in commercial sex. Findings will help to shed light on the importance of social influences in understanding FEWs' risky commercial sexual behavior and provide much needed inputs for developing HIV interventions targeting FEWs in China.

Background

A number of social cognitive theories, such as the health belief model (Rosenstock, 1990), theory of reasoned action (Ajzen & Fishbein, 1980), the theory of planned behavior (Ajzen, 1985), and social cognitive theory (Bandura, 1997), have been applied in studies of HIV risk behavior. However, there is growing interest in and effort to integrate key elements from multiple social cognitive theories into a single model of HIV risk behavior (Bryan, Aiken, & West, 1996; Fisher & Fisher, 1992; Kasprzyk, Montaño, & Fishbein, 1998; Maddux & DuCharme, 1997).

One of the recent approaches to integrate key features from various social cognitive theories in a single model of HIV risk behavior is the information-motivation-behavioral skills model (IMB) (Fisher & Fisher, 1992, 2000). According to the IMB model, HIV behavior results from the joint function of HIV information, prevention motivation, and behavioral skills necessary to take protective measures. Further, the model argues that HIV information and prevention motivation affect behavior mainly through behavioral skills, which help to translate information and motivation into preventive behavior. Deficits in any of the three components will likely lead to HIV risk behaviors.

However, the original IMB model, like other individually oriented approaches, tends to sidestep the importance of social and contextual factors of individual behavior. Research indicates that social and

cultural factors have important influences on HIV-related sexual behaviors. Research into condom use among Chinese women (Tang, Wong, & Lee, 2001) suggests that the Confucian concept of model womanhood, which commands the submission of women to men, could significantly constrain women's ability to insist on condom use in sexual relationships. Limited studies among female entertainment workers (Liao et al., 2003; Xia & Yang, 2005; Yang & Xia, 2006) had emphasized the importance of cultural norms about women and sex in understanding unprotected commercial sex. Studies in China have also indicated the link between community social and economic conditions and community prevalence of commercial sex and drug use (Smith & Yang, 2005; Yang, 2005).

Apparently, individual cognitive factors are important, as are social influences that facilitate or impede individuals' rational choices. Individual knowledge, motivation, and behavior skills may be necessary but not sufficient in understand FEWs' risky commercial sex. Social influences, which are beyond individuals' control and cognition, may play an important role in determining the women's sexual behavior. In this paper, we further extend the recent efforts to integrate individual cognitive and social influence factors in studying risky commercial sex among female entertainment workers. In addition to individual level cognitive and affective factors as delineated in the IMB model, we emphasize the important social influences of peer/group norms, relationship power, and working environment on individual risk behavior.

Peer/group norms. Peers are important sources of influence on behavior. Peers may influence each other's risk behaviors through a variety of mechanisms, including persuasion, information exchange, modeling and reinforcement of behavior, and social interactions (Fisher, 1988; Hall & Wellman, 1985). What peers do was found to have a particular powerful influence over condom use among female sex workers (Basu et al., 2004; Ford, Wirawan, & Muliawan, 2002; Morisky, Peña, Tiglao, & Liu, 2002). For example, results from the Horizons Project (Dadian, 2002) suggested female sex workers who felt a sense of peer approval and support for condom use were ten times more likely to report consistent condom use with clients. Studies in a number of countries have reported associations between peer/group norms and

HIV risk behaviors (Kelly et al., 1995; Latkin, Forman, Knowlton, & Sherman, 2003; Richard, Bell, & Montoya, 2000). Non-condom use among fellow workers was significantly related to inconsistent condom use among female sex workers (Wong, Chan, Chua, & Wee, 1999). Research in China has confirmed the importance of peer/group norms in understanding FEWs' risk behavior (Liao et al., 2003); FEWs who felt guilty for their role in commercial sex were less likely to take protective measures (Xia & Yang, 2005).

Relationship power. Gender-related unequal power in sexual relationships is increasingly recognized as important determinants of HIV risk behaviors among women (Amaro & Raj, 2000; Browning, Kessler, Hatfield, & Choo, 1999; Tang et al., 2001; Wingood & DiClemente, 1998). According to the theory of gender and power (Connell, 1987; Wingood & DiClemente, 2002), women's unequal power in sexual relationship is a function of gender inequalities in labor force participation, power, and behavioral norms. Gender inequality in labor force participation leads to women's economic dependence. The unequal power between men and women in society limits women's ability to make decisions on sexual matters. The gendered behavioral norms restrict women's sexual expressions, discourage open discussion within relationships, and limit women's access to HIV preventive information. Together, these gender inequalities reduced women's ability to initiate condom use and to resist the pressure for unprotected sex for fear of loss of economic support and sexual violence.

Working environment. A growing body of research has called for attention to the importance of contextual factors related to working environment in understanding HIV risk behavior (Kerrigan et al., 2003; Morisky et al., 2002; Tawil, Verster, & O'Reilly, 1995). Studying working environment in China, Wang and Gao (2000) found that lack of group activities related to employment was associated with risky sexual behaviors. Other studies have reported that management supports and establishment policies were important facilitators of consistent condom use among female sex workers (Kerrigan et al. 2003; Morisky et al., 2002; Xia & Yang, 2005).

Data and Methods

Data used in the analysis are from a prospective study, which included a baseline and a 6-month follow-up survey, conducted among women working in various entertainment establishments in Shanghai in 2004. Sample selection started with identifying 18 entertainment establishments in one of Shanghai's 19 administrative districts. Although not random, the selection of establishments paid close attention to representation by different size and type of entertainment establishments in the district. The research staff then visited the selected establishments, explained to the owners the purpose of the study and the procedures to protect their business privacy and identities, and requested their participation in the study. Owners of 15 of the 18 selected establishments agreed to participate. Of the 15 participating establishments, six were hair/beauty salons, three were bathing/massage centers, and six were karaoke TV bars.

To enroll study participants, research staff made a second visit to all participating establishments. With the cooperation of establishment owners, research staff approached individually all women working in the establishment, explained to them the purpose of the study, the institutions conducting the study, and how the information would be used. Potential study participants were informed of their roles in the study and compensation for their time. Participants were assured of absolute confidentiality and shown procedures to protect their privacy. They were informed of the right to refuse to participate, answer any particular questions, or withdraw from the study later with no adverse consequences. Of the 317 FEWs approached, 20 refused to participate. Verbal consent to participate was obtained from 297 FEWs who consented to participate and completed a face-to-face interview at the baseline. Of them, 259 completed a second interview at the 6-month follow up.

In the analysis, data from the baseline and the 6-month follow-up surveys are combined. Version 9 of the STATA software is used to conduct statistical analyses. Given the nature of repeated measures and nesting of individuals in establishment of the data, the "gllamm" multilevel modeling in STATA is used for the regression analysis, which takes into consideration of correlations between repeated measures

and among study participants from the same establishment. The dependent variables are the log odds of having commercial sex and consistent condom use in such transactional sex in the 30 days prior to the interview. The independent variables include socio-demographic characteristics, psychosocial wellbeing indictor, alcohol consumption, and individual cognitive/affective and social influence factors.

Except for individual socio-demographic characteristics, which are self-explanatory, all other measures are composite scales and indexes. All scales/indexes are constructed from multiple questions/statements in the survey questionnaire by first obtaining the mean item score using the "alpha" method in STATA and then multiplying the mean by the number of items included in the scale. For items/questions that appear negatively correlated with the scale, their original scores are reversed before they are used in the construction of scales. Further, to improve the internal reliability of composite scales, items/questions with low item-scale correlation are dropped in the final construction of scales. A brief summary of each scale and its statistical qualities is provided next.

Psychosocial wellbeing was indicated by a modified version of the UCLA Loneliness Scale (Russell and Cutrona, 1988). Respondents reported on a four-point scale (1 rarely to 4 most of the time) how lonely they felt on each of 20 statements (e.g., felt being rejected by others; felt lack of friendship; and felt lonely). Answers to the 20 statements were summed to form a "loneliness" scale. The higher the scales, the lonelier the respondent felt. Cronbach's alpha for the scale is 0.77.

Alcohol consumption was measured by an adapted version of the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). Respondents rated on a five-point scale (1 never/1-2 drinks daily to 5 almost daily/10 or more drinks daily) on 8 statements about the frequency and quantity of alcohol consumption (e.g., how often do you drink? how much do you drink daily? and how often are you drunk?). Answers were then summed to create the alcohol consumption scale (Cronbach's alpha = 0.81).

HIV information, prevention motivation, and behavioral skills measures modeled similar measures from a general version of the IMB protocol (Misovich, Fisher, & Fisher, 1998).

HIV information scale was based on respondents' answers (0 incorrect and 1 correct) to 24 statements about HIV and its transmission and prevention (e.g., HIV cannot be transmitted by coughing or sneezing; HIV can be transmitted by eating food prepared by people infected with HIV; and if used correctly, condom can greatly reduce the risk of HIV transmission). The higher the scale, the more knowledgeable was the respondent. Cronbach's alpha for the scale is 0.74.

Motivation to prevent HIV is measured by two composite scales: negative attitudes toward condom use and perceived vulnerability. Both were based on respondents' ratings on a five-point scale (1 strongly disagree to 5 strongly agree) on multiple statements. The negative attitude scale was based on answers to 10 negative statements about condom use (e.g., condom use is troublesome; condom use can destroy the natural feelings of sex; and you cannot give yourself completely to your partner if a condom is used). The vulnerability scale was based on 4 statements about perceived HIV risk (e.g., I may be infected with HIV; some of my partners may be already infected; and I feel I am at risk of HIV). The higher the scales, the more the respondents felt negatively about condom use and personal risk to HIV. Cronbach's alphas are 0.88 and 0.73 for the negative attitudes toward condom and perceived vulnerability, respectively.

Behavioral skills are measured by a perceived self-efficacy scale in condom use. The scale was constructed from respondents' ratings on a five-point scale (1 very difficult or unable to 5 very easy or completely able) on 21 statements about preventive behaviors related to condom use (e.g., I discuss condom use before sex; I convince my partner to only have safe sex; and I refuse to have sex if my partner refuses to use a condom). The higher the scores, the easier and more capable the respondents felt in taking protective measures in sex. Cronbach's alpha for the scale is 0.85.

Peer/group norms are measured by peer discussion of condom and an attitude toward commercial sex scale. Both were constructed from respondents' answers on a five-point scale (1 strongly agree to 5 strongly disagree) on multiple statements. The peer discussion of condom scale modeled a modified version of the norm subscale of the Sexual Risks Scale (DeHart & Birkimer, 1997). Respondents

answered on 6 statements about peer concerns and discussion about condom use (e.g., I frequently discuss condom use with peers; my peer and I encourage each other to use condoms; and if my peers have sex, I will ask if they used a condom). Answers were then summed to create the peer discussion of condom scale. For attitude toward commercial sex scale, respondents rated on 7 statements about commercial sex (e.g., sex worker is the dregs of society; commercial sex is immoral; and sex workers should be severely punished for prostitution). Answers were summed to create the attitude toward commercial sex scale. The higher the scales, the more discussions respondents had with peers about condom use and more negatively respondents felt about commercial sex. Cronbach's alphas are 0.78 and 0.77 for the peer discussion and attitude toward commercial sex scales, respectively.

Relationship power uses an adapted version of the Sexual Relationship Power Scale (Pulerwitz, Gortmaker, & DeJong, 2000). Respondents rated on a five-point scale (1 strongly disagree to 5 strongly agree) on 11 statements about sexual relationship control and dominance (e.g., if I ask for condom use, my partner will turn violent; we do what my partner likes most of the time; if my partner does not want to use condom, I will give in). Answers were summed to create the lack of relationship power scale (Cronback's alpha=0.80). The higher the scale, the less control the respondent felt in sexual relationship.

Working environment refers to establishment practice and management support for risk reduction behaviors. Respondents answered on a five-point scale (1 very untrue to 5 very true) on 6 statements about policies, attitudes, and management support for AIDS prevention and condom use in the establishment where respondents worked (e.g., my establishment always provides condoms; my establishment requires and supports my insisting on condom use; and my establishment will be on my side if client refuses to use a condom). The responses were summed to create the establishment support scale (Cronback's alpha=0.77). The higher the scale, the more supportive the establishment in HIV risk reduction and prevention.

Results

Results suggest that alcohol consumption is the most significant risk factor for commercial sex.

Neither individual cognitive nor social influence factors have much influence over the women's involvement in commercial sex. However, both are important for understanding condom use among female entertainment workers who reported commercial sex. Models contain both individual cognitive and social influence factors perform significantly better than models contain either alone. After controlling for demographic characteristics and individual cognitive and social influence factors, there is some intra-establishment correlation in the likelihood of commercial sex (0.04) but no correlation is found in the likelihood of consistent condom use in transactional sex among women from the same establishment.

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