Condom use and self-efficacy among female sex workers with steady partners in China

R. Zhao, B. Wang, X. Fang, X. Li, and B. Stanton

Institute of Departmental Psychology, Beijing Normal University, Beijing, China; Department of Pediatrics, Wayne State University, Detroit, US

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This study attempted to determine the association of self-efficacy with condom-use practice and to explore reasons of not using condoms among female sex workers (FSWs) with steady partners in China. Data from 309 establishment-based FSWs with steady partners in one Chinese county were collected through a cross-sectional study. Consistent condom use with steady partners was lower than with clients in entertainment establishments. Condom-use self-efficacy was positively associated with condom-use communication and condom-use frequency with clients but not with steady partners. It was positively associated with condom-use intention and skill with clients and steady partners. However, it was not associated with appropriate use of condoms. Significant differences of reasons about not using condom were also observed between the two partner types. The results may represent an important challenge to STD and HIV intervention programs aimed at achieving consistent condom use in FSWs. Health workers should focus on psychosocial factors affecting inconsistent condom use among FSWs with steady partners in China. In addition, intervention programs that can promote FSWs’ self-efficacy through condom-use skill training will still be necessary.

Keywords: China; self-efficacy; female sex workers; steady partner; HIV/STI

Introduction

Female sex workers (FSWs) play an important role in the transmission of HIV and STIs in China. Although commercial sex is illegal in China, prostitution has developed into a widespread industry since the early 1980s (Pan, 1999; Sweat & Denison, 1995). In 2003, there were an estimated 4–10 million women engaging in commercial sex (Schafer, 2003). There is emerging evidence that sexually transmitted HIV infection is increasing and the proportion of female HIV-infected cases has increased considerably in recent years in China (State Council AIDS Working Committee Office and UN Theme Group on HIV/AIDS in China, 2004). The average serological prevalence rate among FSWs across China is about 2% and the percentage of consistent condom use among this group is about 20% (World Health Organisation, 2001). Research on FSWs is of critical importance for AIDS intervention. Female sex workers are a high-risk group for STD and HIV. They are considered as a bridge population, transmitting STD and HIV from/to clients and then to general population (Morris, Podhisita, Wawer, & Handcock, 1996). The danger of HIV/STD infection among FSWs is closely connected with high-risk sexual behavior. The effective method of curbing the spread of STD/HIV is promoting consistent and correct condom use among FSWs (Feldblum & Fortney, 1988). Recently, an increasing number of researchers have begun to explore the relationship between condom use and contextual factors. They have found that condom-use strategy is not always affected by different types of sexual partnership (Macaluso, Demand, Artz, & Hook, 2000; Norris & Ford, 1999).

Although consistent condom use has become the main means to protect FSW from HIV/STD infection, previous research indicates that the rate of condom use with steady partners is consistently and significantly lower than that with clients (Alary, Worm, & Kvinesdal, 1994; Gilchrist et al., 2001; Johnson, von Haeften, Fishbein, Kasprzyk, & Montano, 2001). In China, Chen, Cheung, Gray, and Lee (2004) reported that 64% of FSWs never use condoms while engaging in sex with their regular partners. Lau and Siah (2002) found that consistent condom use among FSWs was 10.9% with partners in contrast to 80.7% with clients. In other countries, the high rate of steady partners among FSWs and the low rate of condom use with them have been reported by some studies (Albert, Warner, & Hatcher, 1998; Thorpe, Ford, Fajans, & Wirawan, 1997). Steady partners (e.g. boyfriends, husbands, fiancés, lovers or long-term clients), as distinct from clients, have different sociocultural meanings to FSWs. Significantly, other studies have found that this population subgroup with multiple partners is more likely to be
infected with STIs and HIV. Female sex workers’ steady partners belong to this group. Many FSWs with multiple partners fail to consistently use condoms and thus are at increased risk for HIV and other STIs (Albert et al., 1998). However, little research has been done to examine whether factors affecting FSWs condom-use practice are also different across the two types of partners. To our knowledge, only one study has investigated consistent condom use among FSWs with steady partners in China, utilizing behavior changing psychological theory (Chen et al., 2004). The current study focuses on this vulnerable population – FSWs with steady partners in China.

Bandura (1990: 9–17) has proposed a self-efficacy theory of safer sex behavior that examines HIV prevention from the perspective of social-cognitive theory (Bandura, 1986; Bandura & Adamas, 1997). In the past, this theory has led to thoughtful analyses of wide range of health behaviors that are notoriously difficult to change, such as alcohol abuse or smoking (Marlatt & Gordon, 1985; Perry, Klepp, & Shultz, 1988). In the context of sexual risk behavior, Bandura (1990: 9–17) suggested that when sexual risk reduction is analyzed from a social-cognitive perspective, knowledge and skill to exercise self-protective behavior are necessary but not sufficient. According to Bandura, behavior is not directly a result of knowledge or skills, rather, it is mediated by a process of cognitive appraisal by which people integrate knowledge and outcome expectancies from a judgment of their ability to master a difficult situation. This judgment of self-efficacy (SE) mediates behavior and determines whether people initiate an action, how much effort they expend and how long they persist in the face of difficulty. Understandingly, many previous studies have utilized the SE model and found that condom use SE is a prominent factor to affect the frequency of condom use and identified it as a robust predictor of consistent condom use (Ao, Sam, Manongi, Seage, & Kapiga, 2003; Gabler, Kropp, Silvera, & Lavack, 2004; Ma et al., 2002; O’Leary, Maibach, Ambrose, Jemott, & Celentano, 2000; Zak-Place & Stern, 2004; Zhang et al., 2004).

Given the scarcity of research examining the association between SE and consistent condom use among FSWs in China, assessing the power of condom use SE to consistent condom use is the main focus of this study. Therefore, the current study was designed to: (1) describe condom use, communication, intention and knowledge of correct use among FSWs in China, (2) explore reasons of inconsistent condom use among FSWs with clients and steady partners, (3) ascertain association between condom use SE of FSWs’ and condom-use practice, communication, intention, proper use and knowledge of correct use. We hypothesized that FSWs’ condom use SE would be associated with increased condom use and condom-use communication with both clients and steady partners. In addition, we hypothesized that it would be associated with increased condom-use intention and knowledge of correct condom use.

Methods

Study site

Data used for this study were derived from the baseline assessment of a longitudinal HIV/STD prevention project, which was conducted in H County, Guangxi Zhuang Autonomous Region (Guangxi). There were approximately 200 entertainment establishments in the county hosting more than 2000 women who provide sexual services. Three geographic locations (i.e. the county seat, the development zone and one rural township) in H County were selected as study sites. The sampling was described elsewhere (Yang et al., 2005).

Participants

Four-hundred-and-fifty-four FSWs from the selected establishments were approached and 309 (68.1%) who had steady sexual partners (e.g. a husband, boyfriend, lover, fiance, long-term commercial partner) were selected. Participants were female attendants who worked in entertainment establishments or service sectors (e.g. restaurants, barbershops, shampoo salons and massage parlors) where commercial sex service was believed to be available.

Sampling and survey procedure

Fieldwork was conducted in March through May 2004. The workplace was employed as the sampling unit. A total of 85 establishments were identified in the three target areas (53 in the county seat, 12 in the development zone and 20 in the township) with an estimated 800 FSWs working in them. Among the 85 establishments identified and approached, 25 refused to participate in the study. Those women who expressed interest in the study (n = 454) were asked to provide written informed consent and were assured of confidentiality and privacy. Each participant was given a self-administered questionnaire, which contained four main components: demographic information; living and working conditions; health behaviors, including sexual experience, and history of sex work; and HIV/AIDS-related knowledge and attitudes. The total procedure took about 45–60 minutes.
Measures

Self-efficacy of condom use. Self-efficacy of condom use was measured using five items: “You know where to get condoms”; “If your client/partner was unwilling to use a condom, you could persuade him to use it”; “If your client/partner was unwilling to use a condom, you would refuse to have sex with him”; “You know how to correctly use a condom”; and “You use condoms during sexual intercourse to prevent you from infection with AIDS or STD”. The Cronbach alpha was 0.58. A composite score was created by summing positive responses across the five items. The composite score ranged from 0 to 5 with a higher score indicating a higher level of condom-use SE.

For the purpose of data analysis in the current study, participants were assigned to three groups according to the distribution of the SE composite score: (1) low level of SE (composite score = 0–2; 23.3%), (2) medium level of SE (composite score = 3–4; 53.7%) and (3) high level of SE (composite score = 5; 23.0%).

Consistent condom use. Consistent condom use with clients and with steady partners was measured separately by two variables: (1) overall frequencies of condom use (never, occasionally, sometimes, often, always) and (2) number of times using a condom during the past one week. For the purpose of data analysis, participants were assigned into two groups in each of these measures: inconsistent use (i.e. never to sometimes) and consistent use (i.e. often to always).

Condom use intention. Condom use intention was measured using a single item asking participants how often they plan to use a condom in the future (never, occasionally, sometimes, often, always). For the purpose of data analysis, participants were assigned into two groups in each of these measures: inconsistent use in the future (i.e. never to sometimes) and consistent use in the future (i.e. often to every time).

Proper use of condoms. Among the participants who reported any use of condoms, proper use of condoms was measured using two variables asking how often they put on a condom before penetration (never, occasionally, sometimes, often, always) when having sex with a client and having sex with a steady partner. For the purpose of data analysis, all responses other than ‘always’ were combined into ‘inappropriate use’.

Knowledge of correct use. Knowledge of correct use of condoms was measured by asking participants to sort six printed pictorial cards describing major steps of condom use. Only those who arranged all the six cards in a correct order were considered to know how to correctly use a condom.

Analysis

First, responses to individual items of condom use SE were presented in a contingency frequency table. Data were presented by education level (e.g. 0–5; 6–9; 9–12) and by monthly income of FSWs (e.g. <399; 400–799; ≥800 Renminbi (RMB)). Chi-square or Fisher’s exact tests were used for significance testing. Second, differences in condom-use practice and reasons of not using condoms between two types of partners were assessed by Chi-square test. Third, the relationships between SE and condom use among FSWs were further measured by binary (for dichotomous response) logistic regression, adjusting for FSWs’ sociodemographic characteristics, the length of time as a sex worker and income per month. Adjusted odds ratio (aOR) and its 95% confidence interval (95%CI) were calculated.

Results

Characteristics of the study sample

A total of 309 FSWs were interviewed. Data on sociodemographic characteristics and sex work experience are presented by Han and non-Han ethnicity in Table 1. The women averaged 24.5 (SD = 5.0) years of age. Sixty percent of the FSWs were of Han ethnicity, Zhuang ethnicity constituted one-third of the sample. Fifty-two percent of FSWs had had no more than six years of formal schooling and 39% had had seven to nine years of schooling. Fifty percent had ever been married. The majority (81%) earned less than 800 RMB (or about $100) per month, with 35% having a monthly income less than 400 RMB. Female sex workers of Han ethnicity had a high level education and tended to report having been married, in contrast to FSWs of non-Han ethnicity. The sample had had a relatively short time as sex workers. Forty-four percent (44%) had engaged in commercial sex for no more than one year and about 79% had no more than two clients per week. More than half of the FSWs were not sure whether their steady partner had other sex partners.

Self-efficacy of condom use

The distribution of FSWs’ SE of condom use is presented in Table 2. Eighty percent of FSWs reported that if they had known their sex partners (clients) were infected with HIV, they would have refused to have sexual intercourse with him. Only
52% of FSWs would refuse to have sex with a partner (client) if their sex partner was unwilling to use condoms and 62% reported that when their sex partner (client) refused to use a condom they could persuade him to use one. Seventy-three percent of FSWs reported that they knew where to get condoms and 71% knew how to use condoms correctly. Female sex workers with a high level education tended to have a high level condom use SE. Low-income FSWs tended to report lower levels of SE.

Condom-use practice among FSWs was significantly different between steady partners and clients (Table 3). More FSWs reported consistently using condoms during the last three commercial encounters and over their sexual life with clients than with steady partners \((p < 0.001)\). Female sex workers were more likely to communicate condom use with clients than with partners \((p < 0.001)\).

Results of Chi-Square tests revealed that there were significant differences in reasons for not using condoms between steady partners and clients among FSWs. More than 47% of FSWs reported that the main reason for not using condoms with steady partners was “they appeared to have no STDs.” About 39% of FSWs affirmed that clients’ refusal to use condoms was the main reason. Other reasons for not using condoms include “have had other contraceptive measures” with steady partners; “too shy to ask them” and “did not have a condom at hand” with clients. More FSWs never thought of using a condom with a partner than with clients \((p < 0.001)\). Only for the reason: “Worried they would think I have an STD” there was not a significant difference between the two types.

Correlation of self-efficacy with condom use

Contingency frequency distribution of SE with FSWs’ condom communication and condom use is presented by type of sexual partners in Table 4.
When having sex with steady partners, approximately 59% of the FSWs had discussed condom use with their steady partners, while 27% had consistently used condoms during their most recent three episodes of sexual intercourse and only 17% had consistently used condoms over their entire sex life. Statistically significant differences in condom communication by condom-use SE were observed. Among FSWs who had high level of condom use SE, 72% reported having discussed condom use with steady partners. Thirty-five percent of FSWs with a high level of condom use SE reported consistently using condoms during the last three vaginal encounters with steady partners. When they had sexual encounters with steady partners, there were no significant differences in condom-use over their entire sex life and last three episodes of sexual intercourse across different levels of SE. After adjusting for FSWs' sociodemographic characteristics and factors of Protection Motivation Theory (PMT), condom use SE remained significantly related to condom communication (aOR = 1.4; 95%CI: 1.2–1.7) and proper use (aOR = 1.4; 95%CI: 1.1–1.8). No significant association was found between condom-use SE and condom-use frequency with steady partners.

When having sex with clients, 81% of the participants had discussed condom use, while 45% consistently used condoms during the most recent three sexual encounters and 37% consistently used condoms over their entire sexual life. Reported condom communication and condom-use frequency differed by level of condom-use SE. After adjusting for FSWs' sociodemographic characteristics and factors of Protection Motivation Theory (PMT), condom use SE remained significantly related to condom communication (aOR = 1.5; 95%CI: 1.2–1.9) and condom use frequency (aOR = 1.5; 95%CI: 1.2–1.8) for their entire sexual life and aOR = 1.4; 95%CI: 1.1–1.6 for last three occasions of sexual intercourse). No significant association was found between condom-use SE and condom-use frequency with steady partners.

Among the 309 participants interviewed, 60% arranged the six condom cards in the correct order. The higher the level of SE, the higher the rate of correct condom use. Fifty-three percent of the FSWs reported that they would like to always use a condom in the future. Higher percentages were observed in the high (68%) level of condom use SE group than low (33%) and medium (55%) level of SE groups (p < 0.001).

**Discussion**

In the context of HIV/STD intervention, FSWs with steady partners and their sexual risk behaviors are so far an under-researched area. The results of this
study, utilizing the theory of SE, revealed that greater condom use self-efficacy is related to more consistent condom use and more frequent communication about condom use. Condom use SE was not associated with condom-use frequency with steady partners. However, it (condom use self-efficacy) was not associated with FSWs’ proper use of condoms and knowledge of correct condom use. Interestingly, the reasons of not using condoms across the two partner types were very different.

Although high-level condom-use SE was associated with condom-use communication, it was not associated with consistent condom use with steady partners. A possible explanation for this is their misconceptions about their steady partner, such as trusting they were safe from HIV/STDs and fear of losing their partner’s trust if they asked him to use condoms, stopped FSWs from convincing their partner to practice safe vaginal intercourse. Perhaps, this is the reason why condom use SE could not significantly predict consistent condom use with steady partners. In terms of the nature of condom use with steady partners, our results suggest that appropriate prevention intervention programs to improve safe sexual practices among FSWs need to correct their misconceptions of a steady partner first, then promote condom-use skills (e.g., negotiation skills, proper condom use). Association between condom use SE and proper use of condoms and knowledge of correct use was observed in the current study. This finding also indicates that SE is associated with the individual skill level of condom use among FSWs. Bandura (1990: 9–17) suggests skill mastery as the most powerful method of increasing SE. There is a need for HIV/AIDS-prevention workers to reach the establishments and provide FSWs with condom-use skill training through appropriate behavioral intervention education and counseling.

Consistent with other findings (Lau & Siah, 2002; Thorpe et al., 1997), condom use was markedly lower with steady partners than with clients in this research. This finding highlights the urgent fact that FSWs undergo the risk of acquiring HIV/STD from their steady partners. In the current study, more than 11% of FSWs reported that their partners had multiple sexual partners and 53% didn’t know whether their partner had other sex behaviors. According to Thorpe and colleagues (1997), some FSWs’ sexual partners in Indonesia had other risk behaviors, including multiple sexual partners and drug use. High rates of HIV/STDs among FSWs may be partially due to low condom use with steady partners and the high-risk sexual behaviors of these persons (Albert et al, 1998; Thorpe et al., 1997). Furthermore, it can be seen that when FSWs have unprotected sex with these high risk groups, they experience other HIV/STD risks in addition to those they are exposed to in their occupation. So, it should be noted that the further interventions targeting increased condom use by FSWs in China should focus on FSWs who have steady partners and tailor the intervention strategy to promote consistent condom use by them.

Interestingly, the reasons of not using condoms with steady partners were very different from with clients. According to previous studies, condoms give a commercial nature to a relationship. One manner in which women differentiate between their steady partner and a client is by not using a condom with their steady partner. Albert and colleagues (1998) reported that decreased condom use with partners may result from sex workers’ attempts to separate their personal and professional worlds. Furthermore, in our study, the main reasons for not using condoms with partners were that FSWs trusted that their partner did not have HIV/STDs and that their partner did not want to use a condom. Inconsistent

### Table 3. Condom use practice and reasons for not using condom among female sex workers.

<table>
<thead>
<tr>
<th>Condom use practice</th>
<th>With steady partners n (%)</th>
<th>With clients n (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condom use, over sex life</td>
<td>53 (17.2)</td>
<td>113 (36.6)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condom use, last 3 sexual encounters</td>
<td>82 (26.5)</td>
<td>139 (45.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condom use communication</td>
<td>178 (58.6)</td>
<td>246 (80.9)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Reasons of not using condoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They looked as if having no STDs</td>
<td>145 (47.1)</td>
<td>90 (29.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>They refused to use a condom</td>
<td>64 (20.8)</td>
<td>120 (39.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Have had other contraceptive measures</td>
<td>61 (19.8)</td>
<td>56 (18.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Never thought of using a condom</td>
<td>56 (18.2)</td>
<td>32 (10.4)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Did not have a condom at hand</td>
<td>56 (18.2)</td>
<td>62 (20.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Too shy or dare not to ask them to use</td>
<td>32 (10.4)</td>
<td>40 (13.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Worried they would think I have an STD</td>
<td>27 (8.8)</td>
<td>20 (6.5)</td>
<td>.085</td>
</tr>
</tbody>
</table>
condom use with clients was mainly due to clients refusing to use condoms and the inconvenience of condom use. The intimate relationship with steady partners made FSWs ignore the risk of unprotected sexual behavior and reduce their negotiation of condom use. Almost all respondents know that it is good and wise to use condoms and are fully aware of the fact that condom use is a good way to protect themselves. However, inconsistent use appeared among FSWs with steady partners. Sex workers seemed to have difficulty translating their knowledge into action. Our results reveal an important aspect for health educators to consider. Additional research is needed to more adequately understand the psycho-social barriers to condom use by FSWs who have steady partners.

**Limitations**
First of all, our study sample was a convenience sample. Because commercial sex is illegal in China, it is impossible to obtain a random sample. Therefore, generalization of our findings to all sex workers in Guangxi and other areas of China might be limited by potential selection bias. Second, retrospective self-report was utilized to assess consistent condom use. Due to possible memory error and other factors, self-report bias may exist (Schroder, Carey, & Vanable, 2003). Third, the reliability of self-efficacy scale was a little small as a powerful predict factor to condom use in this study.

**Implications**
Given that there is a high rate of steady partners in FSWs in China, consistent condom use with steady partners becomes a more important issue. Due to previous research focused on clients, further STD/HIV-prevention programs, aimed at promoting consistent condom use among FSWs, need to address the meanings and behaviors associated with steady partners.

The discrepancy between awareness of condom-use benefit and actual inconsistent condom use with steady partners is not new but needs to be continually addressed. Health workers should tailor training...
programs to meet the needs of FSWs. Condom-use skill training through behavioral intervention education and counseling is effective at promoting SE and correcting the misconceptions about their steady partners.

References


