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Organizational Policy Recommendations for Control of STI/HIV among Female Sex Workers in China: Regular Examination of Workers in Social Hygiene Clinics

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Abstract

This article aims to address female sex workers at high risk for contracting HIV in China by recommending evidence-based socio-structural interventions and policies at the national level that have yielded effective outcomes in other countries. National governments such as the Philippines and Hong Kong have utilized the Social Hygiene Clinic (SHC) model. A similar national policy can be highly effective in China. Evidence-based research study results indicate significant reductions in STI and consistent condom use among female sex workers in both China and the Philippines. Consistent condom use in both countries continues to be significantly associated with interpersonal- and venue-level factors. Individuals who had higher appointment-keeping ratios in the Philippines had higher rates of consistent condom use (OR 2.7 95% CI=1.6 – 3.7) and significantly lower rates of STI (OR= .43, 95% CI= .26 – .57). By beginning with provinces, which already have a good relationship between establishment venues and the local Health Department, China can develop city ordinances and establishment regulations that begin to require regular examinations of female sex workers and entertainers in the local STI clinic.

Keywords

China; female sex worker; HIV prevention; social hygiene clinic; national policy

Introduction

AIDS first became the leading deadly infectious disease in mainland China in 2008. Sexual contact accounted for 75% of all new infections (Ministry of Health, China, 2010; NCAIDS, 2009; UNAIDS, 2009), 45% through heterosexual transmission and two-thirds from non-spousal sexual partners (L. Wang et al., 2009b).

Therefore, structural HIV prevention strategies for female sex workers (FSWs) in China are urgently needed (Fang et al, 2008; Hong, Fang, Li, Liu, & Li, 2008; Hong & Li, 2009; B. Wang et al., 2009; Yang, Latkin, Luan, & Nelson, 2010; Yang, Xia, Li, Latkin, & Celentano, 2010). To date, China lacks a national policy mandating FSWs to attend government-run Social Hygiene Clinics (SHCs). However, a highly-correlated relationship

exists between condom use behavior and physiological health status such as STIs (Gallo et al., 2007). A major determinant of consistent condom use is if an establishment manager enforces a condom-use policy for their employees. Similarly, this study argues that when an establishment manager supports regular examination of workers in Social Hygiene Clinics, STIs decrease among FSWs.

Background and overview of the HIV/AIDS situation in China

Overall, China is a low HIV prevalence nation. However, 0.6 % of FSWs, 9.3% of injecting drug users (IDUs) and 5% of men who have sex with men (MSM) have HIV (Ministry of Health, China, 2010). Sentinel surveillance indicated condom use at last sexual intercourse as high as 85% among FSWs in China in 2009 (Ministry of Health, China, 2010), but condom use ranged from 12% (Li, Li, Stanton, Fang, & Zhao, 2010) to 50–66% in other studies (Y. Li et al., 2010).

Harm reduction policy

Initially, the Chinese government held a zero tolerance approach toward drug use following an HIV outbreak among IDUs in 1989. China launched a pilot needle exchange program (2000) and a methadone maintenance treatment program (2004) when HIV continued to increase among IDUs. As a result, injecting drug use and its associated crime decreased (State Council HIV/AIDS Working Committee, 2004). China scaled up efforts by opening 320 methadone maintenance and 93 needle exchange programs.

Existing HIV policies and programs targeting sex workers in Mainland China

Training and testing requirements—China's 100% condom use approach breaks away from China's reluctance in the 1990's to educate sex workers about HIV prevention (Davis, 2005; OHCHR/UNAIDS, 1996; Wu & Sullivan, 2006). Six national ministries support condom promotion, and the government released guidelines encouraging FSWs to receive reproductive health and STI treatment (Wu, Sullivan, Rotheram-Borus, Li, & Detels, 2008). As a result of the 100% condom use policy, condom use increased and STIs decreased (Yang et al., 2005; Li et al., 2006; Rou et al., 2007; Wu, Rou, Jia, Duan, & Sullivan, 2007; Yang et al., 2005; Zhongdan et al., 2008).

Clinic attendance—In China, FSW clinic attendance increased following changes to a clinic's location and staff (Wong, 2003). Other studies showed higher consistent condom use and lower STIs when FSWs accessed clinic services (Li et al., 2006; Rou et al., 2007). In another study, only 11% of FSWs utilized VCT services (Wang et al., 2010). Low utilization calls for stronger policy that encourages sex workers to follow through on clinic services. A policy may motivate managers to give sex workers time off to obtain health check-ups.

Background and Overview of the HIV epidemic in the Philippines

Similar to mainland China, the Philippines has a low HIV prevalence (<1% of the adult population). However, newly-diagnosed HIV cases rose from 528 in 2008 to 709 in 2009. HIV prevalence among FSW, MSM, and IDUs increased from 0.08% in 2007 to 0.47% in 2009 (Philippine National AIDS Council, 2010). Sexual contact is the leading mode of transmission (79%), followed by a new rise in cases from needle-sharing (17%) (Philippines DOH, 2010). Table 1 presents the annual number of HIV/AIDS cases with combined numbers from 1984 to 2004, and annual numbers by major routes of transmission from 2005 to March, 2010.

Policy towards female sex workers

Sex work is illegal in both China and the Philippines, but many females driven by family obligations leave impoverished rural provinces to work in city brothels or entertainment establishments (Fang et al, 2008; Hong & Li, 2009).

Established in the Philippines following the 1945 National Sexually Transmitted Disease Control Program, SHCs now number 180 (Palapay, 1996). Local city ordinances enforce the Philippines AIDS Prevention and Control Act (1998), including a 100% condom use policy adopted by 15 Local Government Units (UNAIDS, 2009), mandated FSW clinic visitation, multisector AIDS councils, and ensuring entertainment establishments don't employ anyone under 18 years old (USAID, 2002). In 2005, over 75% of sex workers in most of the 15 sentinel cities attended the SHC at least once a month (Philippines DOH, 2005). Table 2 compares structural and environmental approaches implemented by China and the Philippines.

A social hygiene clinic model in the Philippines

In the southern Philippines, Morisky, Tiglaio, et al (1998, 2004, 2006) conducted a 3-year longitudinal quasi-experimental study in four cities in the southern Philippines. The study interviewed approximately 1500 establishment-based FSWs, their managers, and potential male clients at baseline, post-test, and follow-up. Cities were randomized to 1 to 4 conditions. The study trained managers and peer educators from approximately 160 different establishments, and held monthly peer education and manager meetings.

Clinic outcomes

The study evaluated the relative effects of interventions on appointment-keeping behavior in the SHCs. Approximately 25% of the FSWs were dropped from the analyses if they did not have sex with their clients. FSWs were required to attend social hygiene clinics weekly or bimonthly. The appointment-keeping ratio (0 to 1) was based on the number of weeks each month a FSW was employed and the number of clinic visits made during the month. The total number of months in each review period consisted of 6 months pre-test, 18 months post-test, and 6 months of follow up assessment. Adjusting for baseline differences, for FSWs participating at least 3 months during the pre, post and follow-up periods, appointment keeping behavior at follow up significantly increased for the intervention group compared to the control group ($p < 0.05$). Individuals with higher appointment keeping ratios had higher rates of consistent condom use (OR 2.7 95% CI=1.6 – 3.7) and significantly lower rates of STI (OR= .43, 95% CI= .26 – .57). Table 3 summarizes condom use, clinic attendance, and STI rates among FSWs registered in Social Hygiene Clinics in the Philippines compared to China.

The combined intervention (peer/manager) group had significantly lower STI rates compared to other study groups (–21.8% difference, 36.4% to 14.6%). FSWs in the combined group reported more positive condom attitudes and establishment policies encouraging condom use. The manager-only intervention group had fewer STIs and negative attitudes towards condoms, and higher knowledge and perceived risk than the peer-only intervention group (Morisky et al., 2006). The usual care group had the highest number of HIV+ cases compared to other study groups (Morisky & Tiglaio, 2010). STIs decreased when the city mandated karaoke bar workers to attend the SHC (Morisky, Peña, Tiglaio, & Liu et al, 2002).

FSWs often felt conflicted between taking care of their health and feeling pressured to accept economic incentives from clients to financially support their families. However, FSWs were aware that with an STI, they could not work until they were medically cleared.

Managers also knew that when a worker was absent due to an STI, regular customers would not frequent the establishment. Therefore, both employees and managers readily adhered to the health departments' regulations to avoid a loss of income. Establishment managers formed an association and offered loans to FSWs for STI medication purchase and adherence (Morisky, Peña, Tiglaio, & Liu, 2002).

Freelance sex workers

Stigma prevented several freelance workers from visiting the SHC, despite their desire to seek clinic services. Therefore, the project offered a special clinic service in a neutral location in the community. Services were offered Fridays, 5 to 7 pm, and were popular throughout the continuation of the project. Many of the young women who requested anonymous services were itinerant freelancers (students) who found it necessary to turn to commercial sex to pay for their tuition.

New data collection in Quezon City, Philippines

Method

Data were collected November 2009- January 2010 from 445 female entertainers working in 54 establishments in Quezon City, Metro Manila. Institutional Review Boards in the U.S. and Philippines approved the study. The study stratified establishments by type (karaoke bar, club, spa/sauna) and randomly sampled from lists provided by two SHCs. NGO interviewers used structured surveys to interview all individuals present in each establishment.

Results

Quezon City ordinances—Quezon City requires entertainers to attend HIV/AIDS awareness seminars, weekly SHC check-ups, and to secure health certificates ("yellow cards"). The City Health Department checks regularly to determine whether establishments have business licenses and condoms, and weekly to see if employees have health certificates and are at least 18 years old. Managers receive one warning and are advised to allow staff to comply or else face closure through due process and by the licensing and health departments' recommendation.

A second ordinance in 1999 created an STI/AIDS Council, with representation from the city health department, Department of Education, NGOs, establishment managers and employees, and a youth led organization. A third ordinance strengthened implementation of the rule requiring entertainers to have weekly checkups at SHCs.

Descriptive data—Entertainers were employed in sauna/spas (63%), clubs (24%), and karaoke bars (13%). On average, they were 24.8 years old, with 9.7 years of education. They worked for an average of 23 months at their current job, 31 months as an entertainer, and 10 months at a job where "people paid to have sex" with them. They had an average of 1 child (range: 0–8) and 5 sexual contacts with an establishment guest in a typical week (maximum: 37).

Condom use—Of those with a regular sexual partner (steady boyfriend or husband, N= 322–371), 9%–11% said they always used a condom with a regular partner. Of those that had sex with establishment guests or casual, non-regular sexual partners (N= 202– 290), 36%–52% said they always used a condom with an establishment guest or casual partner. The first number excludes those who answered "not applicable" and those who did not respond to the question and the second number includes in the total N, those individuals who did not respond to the question.

Clinic attendance and STIs—Regarding clinic attendance, 34% said their primary place of medical treatment was the SHC vs. other locations such as a private doctor/clinic/hospital (34%), government hospital (28%), community health center (22%), traditional healer (9%), company clinic (3%), friends/peers (2%), self examination, and “not applicable” (5%). Some entertainers never attended the clinic because the SHC doctor and medical technician visited them at their workplace. However, not all establishments received this special service because other businesses mandated their workers to go individually to the SHC.

Knowledge about STIs—Entertainers said they knew somewhat to a great deal about STIs if the SHC was their primary medical care source (46%), and somewhat to a great deal about STIs if self-medication was their primary medical source (37%). The following never had an STI test if their primary place of treatment was the following: SHC (17%), company clinic (46%), government hospital (29%), private doctor/clinic/hospital (22%), 18% community health center (18%), and traditional healer (12%).

Self-reported STIs during the past six months were low in this sample of entertainers (4%).

Discussion

The impact of on-going clinical examinations on STI prevention among establishment-based workers became evident as changes occurred through years of community-based participatory research. Clinics were effective avenues of outreach and service provision to sex workers. Surveillance data conducted at clinic sites were useful to plan, allocate resources, and evaluate outreach activities and STI services.

These findings are consistent with studies from other regions. For example, sex workers in Thailand benefited from organizational policies and HIV prevention interventions by health personnel (Chandeying, 2004; Ford & Koetsawang, 1999). In Hong Kong, a behavioral sentinel surveillance survey carried out in the Government SHCs in 2000 revealed that 75.0% of FSWs used condoms consistently with commercial sex partners (Chan, Ho, & Lo, 2002). Although SHCs have existed in Hong Kong since 1928 and have targeted FSWs, examinations are still voluntary and captures about one-fifth of STIs in Hong Kong (Hong Kong Government Social Hygiene Service, 2000). In a review of interventions across several studies and nations, Shahmanesh, Patel, Mabey & Cowan (2008) found that improved access to STI treatment, in combination with sexual risk reduction and condom promotion, reduced HIV/STI rates in sex workers. A similar national policy targeting prevention efforts for sex workers at the organizational level can be highly effective in China.

Both China and the Philippines have made HIV/AIDS prevention a national priority, evidenced by their respective national policies and programs targeting sex workers and other at-risk groups. Both countries have HIV surveillance and evaluation systems in place. NGOs and foreign donors play a major role in prevention programs in both countries.

However, the Philippines began to address HIV/AIDS in 1988, early in the worldwide epidemic. China did not adopt an aggressive approach to HIV/AIDS prevention until 2003. Instead, China expanded their harm-reduction program for injecting drug users before the Philippines because of an earlier, high rate of HIV infection among IDUs in China.

Similarly, China expanded their 100% condom use outreach to sex workers, but did not yet adopt a policy towards the regular screening of sex workers in clinics. In the Philippines, several local governments adopted the government-run SHC model and 100% condom use

policies for sex workers. Both countries outlaw sex work, but China is more reluctant to adopt policies that may appear to encourage sex work.

Organizational policy has impacted individual health service utilization (Chiao, Morisky, Ksobiech, Masson, & Malow, 2007). Likewise, the effects of the organizational policy of banning smoking in public restaurants and bars/nightclubs are documented in the West (Bates, Fawcett, Dickson, Berezowski, & Garrett, 2002; Dimich-Ward, Lawson, Hingston, & Chan-Yeung, 2005). Such a policy benefits employees and clients to interact in a healthy environment. One can make similar comparisons for consistent condom use behavior and improving the health status of employees and customers. The success of enacting major changes in behavior is predicated on the concept of establishing normative expectancies and making smoking socially unacceptable. Similar analogies can be made for consistent condom use among FSWs in establishments. Community norms, peer pressure, and fines provide the social reinforcement necessary for consistent condom use. A high value of health motivates one to use condoms consistently despite opportunities to receive a higher price for unsafe sex. The individual places health above financial remunerations as she knows that if she has an STI, SHC personnel will not sign her yellow card until she is medically cleared. An inability to work results in salary loss and causes additional hardships. Therefore, the best solution is to always use condoms and to convince clients to do likewise.

Conclusion

This paper makes several recommendations for a policy change in China for female sex workers and the integration of this policy change in establishment-based settings. First, linking a 100% consistent condom use policy to the provision of free clinical testing at local social hygiene clinics or local health departments in China is important. The rationale for this policy is based on the strong empirical evidence that early assessment of STI prevents the possible sequelae of more dangerous infections such as HIV. The policy is directed towards female employees working in establishments, which cater to the sex industry.

Second, it is crucial for establishment owners and managers to increase their responsibility in managing the sexual health of their employees, particularly if the government mandates the registration of establishment-based employees. Whether the entertainer adheres to regular clinical exams largely depends upon the owner and manager's enforcement and support.

Third, enforcement of the policy by the Health department staff entails regular check-ups of the presence of health cards held by the entertainers and of business licenses at the establishment level.

These are policy recommendations for reducing HIV/STIs in China based on volumes of data collected in a longitudinal quasi-experimental study in four non-contiguous communities in the Philippines. It is a goal that China considers these policies as part of the harm-reduction model already implemented throughout China regarding IDU and needle sharing. If managers and floor supervisors had to register employees in the local STD clinic, their level of responsibility towards their workers' health would be heightened and therefore they may give greater attention to implementing educational policy in the establishment.

These recommendations are potentially difficult to implement in China, given the bureaucratic nature of government. However, pilot study data indicate significant reductions in STI when FSWs visit clinics. Therefore, by beginning with provinces where positive relationships between establishments and local Health Departments already exist, cities can develop ordinances that require regular examinations of FSWs and entertainers in local STI

clinics. The Philippines can benefit from China's harm reduction approaches and, conversely, China can gain much information from the SHC policy in the Philippines.

In summary, China and the Philippines both promote 100% condom use among sex workers. However, all local governments in both nations have yet to adopt this policy. HIV remains low among FSWs in the Philippines. The early best practice of monitoring and treating STIs through Social Hygiene Clinics may help. Prostitution is illegal in both China and the Philippines. However, the Philippines health system mandates all establishment entertainers to register with the government and to receive regular STI health check ups at the government clinic. In addition, the Philippines' goal is to have behavioral change communication in every prevention effort, to encourage partnerships between local governments and NGOs, and to establish local AIDS councils.

Some recommendations may require a great deal of negotiation among policy makers in China. It took a long time to create a harm-reduction program for drug users and many experts wrongly believed the Chinese government would never support it. . Therefore, having FSWs register and undergo regular STI screening is not an unreasonable recommendation.

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Table 1

Number of HIV/AIDS cases reported by risk status in the Philippines, January 1984–March 2010 by routes of transmission (N=4,817)

	1984–2004	2005	2006	2007	2008	2009	2010	Total
Heterosexual	1375	131	193	139	160	216	67	2281
Homosexual	385	47	81	107	215	336	159	1330
Bisexual	116	14	26	74	127	252	85	694
Other	324	18	9	22	26	31	82	512
Blood/blood products	(17)	(2)	(0)	(0)	(0)	(0)	(0)	(19)
Injecting drug use	(6)	(1)	(0)	(0)	(1)	(0)	(68)	(76)
Needle prick injury	(3)	(0)	(0)	(0)	(0)	(0)	(0)	(3)
Mother-to-child	(33)	(0)	(4)	(8)	(2)	(2)	(1)	(50)
Unknown	(265)	(15)	(5)	(14)	(23)	(29)	(13)	(364)
Total	2200	210	309	342	528	835	393	4817

Source: Philippines DOH (2010); 2010 data consists of only three months (Jan–Mar).

Table 2

Comparison of structural and environmental approaches in the HIV/AIDS education and service delivery for sex workers between China and the Philippines

Item	China	The Philippines
National HIV/AIDS strategy and structures pertaining to sex workers	<p>HIV prevention and treatment policies for the general population were initiated in 2003. These included free voluntary blood tests, free anti-retroviral treatments for AIDS patients with economic difficulties, free medical advice and treatment for pregnant women and infants, free education for AIDS orphans and governmental care for AIDS patients who live in poverty.</p> <p>100% condom use policies have been adopted in some places, but no Social Hygiene Clinic policy has been adopted by the government.</p> <p>The Ministry of Public Security cracks down on prostitution, drug users and illegal blood donation activities. Local public security bureaus perform sweeps and detain them in re-education and detoxification centers. However, the Ministry of Public Security and the Ministry of Justice are also to assist the health department in implementing the laws and regulations of AIDS/STD management, and to participate in relevant investigation and reinforcement of prevention and control plans, and to provide STD/AIDS information to the prisoners and staff in re-education centers and prisons.</p>	<p>The National AIDS and STI Prevention and Control Program began within the Department of Health in 1988. The National AIDS Council formed in 1992 is responsible for the planning, and is the central advisory and policy-making body for the national HIV/AIDS prevention and control projects. Implementation is devolved to local levels.</p> <p>Several local governments have adopted the government-run Social Hygiene Clinics model as well as the 100% condom use policies. For example, General Santos and Angeles City has 100% condom use policies, multisector AIDS councils, HIV/AIDS prevention funds, and a monitoring system to ensure that the sex industry does not employ minors (USAID, 2002).</p> <p>Owner/managers of entertainment establishments have formed associations and are represented in City Health Department HIV/AIDS Councils. They have new levels of responsibility in managing the sexual health of their employees; and for the government enactment of city ordinances regarding the registration of establishment-based employees.</p>
HIV surveillance and evaluation	<p>Sentinel surveillance began in 1995, and behavioral surveillance in 2004 (Sun et al, 2008). There were 15 national HIV comprehensive surveillance sites among female sex workers, from 2004 to 2008 (Wang, L. et al., 2009a).</p>	<p>The national HIV sentinel surveillance system (NHSSS) was established in 1993.</p> <p>The NHSSS included behavior surveillance of sex workers and other most at risk populations (MARPs) every 6 months in up to 10 cities until 1997. The NHSSS ended due to little differences shown in subsequent years, but then resumed annually. An Integrated HIV Behavioral and Serological Surveillance (IHBSS) began in 2004, covering 10 sentinel sites in 2007. A Sentinel STI Etiologic Surveillance System (SSESS) to track STIs also began in 2003 (UNAIDS, 2009).</p>
Mandatory HIV testing	<p>Routine HIV testing during regular check-ups in health care settings and detention centers began in 2005 (Sun et al, 2008). Local authorities and health workers target high risk groups and obtain informed consent in these facilities (Wu, Sun, Sullivan, & Detels, 2006).</p>	<p>Local government ordinances require mandatory HIV testing of all registered female establishment workers every 6 months. This is not a universal ordinance.</p>
Channels of HIV/AIDS education to sex workers and the role of NGOs	<p>A number of international organizations have partnered with the national government to fund local NGOs to provide outreach services to sex workers. The Chinese government has sponsored several hundreds of condom promotion programs specifically targeting sex workers (Sheng & Cao, 2008).</p>	<p>Educational programs based on social learning theory are conducted by local NGOs through the assistance of city health offices to participating establishments.</p>
Accessibility and availability of services	<p>The government pledged to provide free condoms for all HIV/AIDS patients (Sheng, & Cao, 2008), free antiretroviral therapy (ART) to rural residents and urban residents without insurance; free VCT, free prevention of mother-to-child transmission, and free schooling for children of families with HIV/AIDS (Wu, Sun, Sullivan, & Detels, 2006).</p>	<p>No free medical treatment for HIV/AIDS, although HIV medications have been provided free of charge through membership with some NGOs.</p>
Harm reduction	<p>The introduction of harm reduction represents a drastic change in perspective by the government, especially law enforcement agencies that required considerable cooperation and understanding between the Ministries of Health, Public Security, and Justice, and the Food and Drug Administration. There are 320 methadone maintenance treatment (MMT) programs and 93 needle-syringe programs (NSP). These have</p>	<p>Of an estimated 3 million drug users, roughly 15,000 of them are IDUs, and up to 77% IDUs might share needles with others. The first harm-reduction project was introduced in 1994 on the island of Cebu. HIV/AIDS rates among injecting drug users are just now increasing rapidly.</p>

Item	China	The Philippines
	moved from the pilot stage to scale-up (Sullivan & Wu, 2007).	
Services targeted to freelance sex workers and clients	Freelance sex workers are targeted in 100% condom use outreach efforts. The China-UK HIV/AIDS Prevention and Care Project's conducts peer education, seminars, testing services, social gatherings, and two behavioural surveillance studies (BSS) targeting clients of FSWs in Suining, Sichuan (Lau et al., 2009).	Freelancers were reluctant to attend the SHC as they were embarrassed, due to their social status. The SHC in the southern Philippines held clinic visits at a neutral site on Fridays from 5–7 pm. This was one way of extending a policy for establishment-based settings to a second high risk group of sex workers. High risk males are targeted at some worksites in the Philippines (Morisky, Ang, Coly, & Tiglaio, 2004). Some local ordinances mandate workers in all businesses in the city to attend an HIV seminar prior to employment (i.e. Quezon City).

Table 3

Summary of Condom Use, STI Rates, and Clinic Attendance among Female Sex Workers registered in Social Hygiene Clinics in the Philippines compared with Female Sex Workers in China

Design	Philippines		China			
	Longitudinal, structural intervention, control group	Longitudinal, prospective study	Cross-sectional	Clinic intervention, No control group	VCT intervention, Control group	Cross-sectional
Sample, N	(Morisky et al 1998, 2004, 2006) implemented a 3-year longitudinal quasi-experimental study in four regions of the southern Philippines: southern Luzon, Cebu, Ilo-Ilo, and northern Mindanao. Managers and peer educators from approximately 110 different establishments received peer education and monthly managerial meetings. 1,482 Filipinas were recruited from 110 entertainment establishments in which they were required to attend social hygiene clinics weekly or bimonthly. Peer Education (n=651) Manager Training (n=602) Combined Intervention (n=1,385) Usual Care (n=919)	Wang et al (2010) prospectively followed 970 female sex workers working in entertainment venues in Jinan City, Northern China, to measure factors related to utilization of a free HIV VCT clinic.	Hong, et al. (2008) A cross-sectional survey was administered among 310 FSWs recruited from entertainment establishments in Luzhou City in Southwest China in 2006. Environmental support was measured by a scale consisting of 8 items regarding condom availability, managerial, and social support of HIV prevention (Cronbach alpha = 0.73).	Rou, et al (2007) set up a women's health clinic near entertainment establishments (karaoke bars, massage parlors, dance halls, beauty parlors) in five provinces: Anhui, Beijing, Fujian, Guangxi, Xinjiang, China. N= 907 sex workers at baseline, 782 at 12-month post-intervention.	Li et al (2006) investigated the cultural adaptation of a voluntary counseling and testing (VCT) intervention for 400 female sex workers (FSWs) in Guangxi, China.	Hesketh T, Zhang J, Qiang D. (2005) carried out semi-structured interviews with 84 sex workers in two types of brothels in Yingjiang County of Yunnan Province, China, where sex work and injecting drug use are common.
Condom use	Percent of Condom Use by Establishment Policy Establishments with condom use rule: 74.5% condom use 25.5% no condom use Establishments without condom use rule: 58.5% condom use 41.5% no condom use Chi-square=2.9, p<.001		Perceived establishment-level support was strongly associated with overall consistent condom use (aOR = 1.7, 95% CI = 1.3, 2.3), consistent condom use in the last 3 sexual acts (aOR =	Condom use increased from 55.2% at baseline to 67.5% at follow up.	The VCT intervention group was significantly higher than the control group in consistent condom use with clients (odds ratio [OR] = 2.23; 95% confidence interval [CI] = 1.26–3.96) at 6 months follow-up.	32% always used condoms and 18% never did.
				Wong (2003) conducted focus groups with 89 sex workers and managers in 36 brothels in Ruili, China.		

China						
Philippines			1.5, 95% CI = 1.1, 2.0)			
STI rates	STI Rates/ 1,000 Clinic Visits for Female Entertainers Registered in Social Hygiene Clinics (7 months Pre vs. 7 months Post Intervention) Peer Education Pre = 54.8 Post = 47.9 p-value = 0.461 Manager Training Pre = 33.7 Post = 25.8 p-value = 0.059 Combined Intervention Pre = 36.4 Post = 14.6 p-value = 0.001 Usual Care Pre = 44.6 Post = 43.7 p-value = ns			Gonorrhoea fell from 26% at baseline to 4% after intervention; Chlamydia fell from 41 to 26%	The intervention group had a significantly lower infection rate of STIs than the control group at follow-up (OR = 0.44; 95% CI = 0.24–0.80).	Self-reported, reproductive track infections such as syphilis, gonorrhoea, Chlamydia found in 30 patients.
Clinic attendance	Appointment keeping behaviour at the SHC for FSW who participated in the intervention at least 3 months (p<0.05): Baseline: Intervention = 63% Control = 77% Post-test: Intervention = 74% Control = 67% Follow-up: Intervention = 68% Control = 60% Individuals with higher appointment keeping ratios had higher rates of consistent condom use (OR 2.7 95% CI=1.6 – 3.7) and significantly lower rates of STI (OR= .43, 95% CI= .26 – .57).	Despite 69% of FSWs willing to attend the VCT clinic, only 11% were tested. Factors related to attendance were: willingness to attend the VCT clinic (Adjusted OR 3.13, 95% CI: 1.62–6.59), low perceived HIV infection risk (Adjusted OR 0.64, 95% CI: 0.35–1.11), low fear of FSWs status disclosure in the clinic (Adjusted OR 0.55, 95% CI: 0.31–0.94) and influence of acquaintances (Adjusted OR 0.52, 95% CI: 0.29–0.89) and peers (Adjusted OR 2.45, 95% CI: 1.40–4.50).	Perceived establishment-level support was strongly associated with HIV testing (aOR = 1.6, 95% CI = 1.1, 2.2).			Fifty-five percent had a health check.
						Increased clinic attendance by threefold (17 to 48 in the first month) following a re-opening of a clinic after changes were made to increase attractiveness of the clinic.