SUPPORTING INDOOR COMMERCIAL SEX WORKER'S (CSW) ACCESS TO HIV/STI SERVICES

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ABSTRACT

This research examines supporting indoor commercial sex worker's (CSW) access to HIV/STI services.

Indoor CSW are at high risk for HIV/STI. They are invisible to the public and often ignored by service and research. Many CSW in Vancouver are migrant therefore it is critical to recognize their unique cultural characteristics determining risk. Community led initiative supports indoor CSW access to health services.

In collaboration with a local AIDS service organization a survey was developed to elicit sociodemographic information, HIV/STI knowledge, and health information.

From Aug'06 - Sept '08, 129 surveys were completed by indoor CSW. 59% were migrant women primarily from Asia (79%). Inconsistent condom use, high rates of unplanned pregnancy, together with low HIV/STI knowledge scores show that indoor CSW in the sample are not adequately protected against HIV/STI.

The development of community partnerships has been critical in gaining access and trust with the indoor CSW population. Local community organizations serve as an important bridge to public health.

Dedication

This paper is dedicated to all the volunteers, peers, and CSW who generously gave their time and shared their stories with me; it is these women who are responsible for the ORCHID Project's success.

Acknowledgements

I am privileged to work with the peers and volunteers from the ORCHID Project. I would also like to acknowledge the administrative assistance of Dr Michael Botnick, technical assistance of M-J Milloy, Cody Callon, and Peter Halpin, and the staff at ASIA, in particular ORCHID Service Coordinators Sanjit Thindal and Frank Yang. I am also thankful for the academic support provided by my committee, Dr Robert Hogg and Dr Cari Miller, as well as my Co-Principal Investigators Dr Valencia Remple and Dr Victoria Bungay. Finally, I am grateful to the following sponsors for their invaluable financial and in-kind support: Canadian Institutes for Health Research, BC Medical Services Foundation, Vancouver Foundation, Abbott Laboratories, BCCDC STD/AIDS Control, the Urban Health Research Institute, and the Vancouver Coastal Health Authority.

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The Asian Society for the Intervention of AIDS (ASIA)

Canadian Institutes of Health Research (CIHR)

Commercial sex workers (CSW)

Human Immunodeficiency Virus (HIV)

Outreach and Research in Community Health Initiatives and Development Project (ORCHID)

Respondent Driven Sampling (RDS)

Sexually Transmitted Infection (STI)

University of British Columbia Centre for Disease Control (UBCCDC)

SUPPORTING INDOOR COMMERCIAL SEX WORKER'S (CSW) ACCESS TO HIV/STI SERVICES

Introduction to the public health problem

Canada's ethnic and demographic diversity enhances the country socially and economically, at the same time it produces challenges that are strikingly evident in meeting the healthcare needs of its most marginalized residents. We see the limitations of the healthcare system when we look at how it fails to reach specific communities. Recently, healthcare providers and researchers have focused on this issue, and their work is contributing important understandings about the social determinants that influence the health of persons at risk.

The public healthcare system is often incapable of servicing the needs of these specific populations therefore, community based service organizations have started to engage more directly with the public healthcare system by creating novel programs designed to serve specific populations at risk. Alternative community led health promotion programs which work to supplement deficiencies within the current healthcare system are well situated to address health issues within contextually and culturally specific environments. The ORCHID (Outreach and Research in Community Health Initiatives and Development) Project is one such program in Vancouver. It aims to address limitations in the capacity of current health services by examining the sexual and reproductive health status and needs, and the risk for STI and HIV among female indoor commercial sex workers (CSW) in the Metro Vancouver area. This is a project with which I have been associated from its inception, and the purposes of this paper will

be to examine it as an example of one community organization that is attempting to meet the service gaps of a unique marginalized population who are not receiving the full benefit of the available healthcare services.

Background

Research on the health of CSW in Canada

Research on the health of CSW in Canada shows that, compared to other Canadians, CSW report higher levels of physical and mental health problems and may be more susceptible to premature death (Ward, Collins, and Wamsley, 1993; Pyett, Haste, and Snow, 1996; Farley, 2004; Shannon, Bright, Allinott, et al., 2007). Despite the plethora of research characterizing CSW and the negative health effects of sex work (Benoit and Millar, 2001; Benoit and Shaver, 2006) there is still little understanding of the impact of other social contexts and conditions (i.e., stigmatization, discrimination, work environment, cultural aspects, and social supports) on the health and safety of workers. The commercial sex work community in Canada is not a homogenous population and the industry operates in a myriad of environments and contexts. The majority of studies which have been cited and used for policy formulation at the federal, provincial and municipal levels pertain to outdoor or street based CSW. However, the street based community only account for between 10 percent and 20 percent of all CSW in Canada (Hanger, 2006). Indoor commercial sex accounts for the largest number of women employed within this industry.

Indoor commerical sex workers

Unlike the street-based market, much of the indoor sex industry operates under the guise of legitimate business, and dozens of licensed sex establishments thrive in the Metro Vancouver region. Hundreds of unlicensed, underground 'micro-brothels' are also operating within the commercial sex industry. Within all of these establishments, legal and illegal, a population of women exists hidden from public view and consequently largely ignored and significantly underserved by advocacy groups, health services, and researchers. Further challenges persist, as community health services have traditionally had difficulty developing trust and gaining access to the indoor CSW community. Research in this field has illustrated that isolation, economic deprivation, unsafe work conditions, language barriers, and lack of trust regarding health care in Canada make it difficult for indoor commercial sex workers to access health services (Johnston, Remple, and Thindal, 2008; Kawar, 2004).

Migrant indoor sex workers

Migrant women represent a population that continues to be forgotten and are therefore not specifically considered in the development of new health care policies and services. (Vissandjee B, Thurston W, Apale, A and Nahar K, 2007) Migrant women, particularly from Asian countries, are overrepresented within Vancouver's indoor sex industry (e.g., massage parlours, escort agencies and unlicensed micro-brothels) (Remple, Johnston, Patrick, Tyndall, and Jolly, 2007). CSW in general and migrant CSW in particular, experience a myriad of health concerns. Literature specific to Asian CSW offers several additional explanations as to the lack of access these women have to health

services: trafficked and/or migrant women are usually isolated, marginalized and highly vulnerable (Diocson and Imperial-Alcuitas, 2000; Suthibhasilp, Petroff and Nipp, 2000). CSW often experience abuse, exploitation, and lack control over their lives and sex work conditions (Diocson, 2000; Suthibhaslip, 2000). Whether trafficked or migrant, CSW usually come to Canada for familial, political, and/or economic reasons and are therefore reluctant to return to their country of origin if they can not find conventional means of supporting themselves (Diocson, 2000, Suthibhaslip, 2000). Globalization is a significant factor which further encourages and facilitates migration (Diocson, 2000, Suthibhaslip, 2000). Since many CSW are here without immigration status and from non-English speaking countries, they may fear making themselves visible to immigration authorities by seeking services.

In Vancouver, research suggests that migrant CSW have significantly lower knowledge scores concerning prevention, testing, and treatment of HIV and sexually transmitted infections (STI). Migrant CSW are also less likely to have a regular health care provider or to disclose the nature of their work to their health care provider, thereby reducing the likelihood of addressing health concerns associated with their working conditions (e.g., STI and HIV testing and treatment) (Johnston, Fast, Bungay, 2008). Approximately half of all indoor CSW do not use consistent birth control methods; many have had recent unplanned pregnancies and collectively they report high rates of gynaecological symptoms (Johnston, 2008). Social factors specific to inconsistent condom use such as economic need, gendered power relations, and cultural knowledge are major factors influencing women's health within indoor sex venues.

Exploring community based models of service: ASIA and the Orchid Project

Prevention and intervention efforts have until recently been determined by mainstream discourse, however, current prevention strategies are not always appropriate for all communities. To provide an effective HIV/STI education and intervention program, it is important to attempt to understand the cultural enclaves at risk. For example, condom distribution and peer education initiatives are not successful in some Asian communities because of conflict between cultural and religious values.

In 1994, the Asian Society for the Intervention of AIDS (ASIA) conducted an exploratory investigation of the world of commercial indoor sex work in Vancouver involving immigrants from Asia. ASIA not only succeeded in gaining access to indoor sex establishments, but found some similarities between CSW in indoor establishments and those working in other types of sex venues especially in terms of the barriers they experience to consistent condom use, health education, and access to health services (Ghys, Jenkins, and Pisani, 2001). While the study findings confirmed that indoor CSW are vulnerable to STI and HIV and there are definite educational needs in terms of STI and HIV transmission and prevention, further qualitative inquiry also demonstrated that indoor sex work is contextually unique therefore interventions can not been generalized to all CSW. Contrary to the common notion that working indoors is safer than on the streets (Alexander, 1998), some indoor CSW expressed fear of working inside because they are hidden from view therefore making them more vulnerable. (Johnston, Fast, Spencer, Yang, and Bungay, 2009, and Bungay, Atchison, Halpin, and Johnston 2009)

The Orchid project has grown out of the work of ASIA. It is an example of a program that attempts to bring research and service together to provide health service,

within the intersections of health, social service, and research, inside the commercial sex trade. ASIA and researchers from the University of British Columbia Centre for Disease Control (UBCCDC) have developed a community-based model of intervention with indoor sex workers to assess health needs and healthcare seeking behaviour as well as to promote knowledge and prevention of HIV/STI. That is a fundamental element of the Orchid project.

ASIA has historically used a North American Community Based Model developed for AIDS Service Organizations, which promotes community access to testing and health services (ASIA, 2003). Despite the holistic strategies employed by this community-based model, the practice is embedded within a North American service paradigm (ASIA, 2003). However as an organization which works with linguistically and culturally diverse immigrant and refugee populations from Asia, these strategies have not always been appropriate. Communities are often marginalized from the mainstream in many complex ways and individuals face multiple challenges including; language, culture, poverty, addictions, literacy, citizenship, immigration, and mental health that affect their risk for HIV/STI.

It is the overall goal of the Orchid project to increase awareness among CSW, especially those who are migrants, of factors related to HIV/STI transmission and to increase their skills and knowledge in order that they may protect themselves from harms related to selling sex. It is a team project in which I have been a full partner in every facet of design, implementation and evaluation. Since 2006, I have been the Co-Principal Investigator and I am reviewing its work with that background.

Methods

Community consultation

ASIA's "Women's Project" (pilot project conducted in 2002/2003) was a community based participatory action research project that identified a segment of CSW previously overlooked by HIV/STI education/prevention initiatives, namely CSW working in indoor establishments. Upon completion of the pilot, a community consultation was conducted with AIDS service providers, community members, academics, and professionals working with the target community. The goals of the consultation were to identify gaps in services and research, seek advice, and elicit feedback on the project plan regarding relevance, feasibility, and potential challenges.

Peer based outreach model

In order to establish a supportive environment for our target population of Asian CSW, we created a peer based outreach model. We recruited "Peers" (women with sex work experience) and trained them to become; translators, health educators, and researcher assistants. Through peer-support we have been able to offer education, advocacy, referral, and accompaniment, thus reducing or eliminating social barriers to these individuals accessing preventative information, health care, and / or social services. Peer-outreach activities include a holistic HIV / AIDS prevention initiative that is culturally competent and language specific. Engaging peers in the development, planning, implementation, and evaluation of the project was critical.

Based on the findings of our community consultation, we developed the Outreach and Research in Community Health Initiatives and Development (ORCHID) project.

The ORCHID project is situated as a service delivery program within the ASIA organization and includes components of outreach, service delivery, and research. ASIA utilizes language and other ethno-cultural tools to maintain a unique approach to delivering services to Asian CSW. ASIA's academic partners and a community advisory committee comprised of members from other relevant community-based organizations and the target population, employ a multi-method, multidisciplinary approach to meet the study objectives. That is the framework within which Orchid works.

Accessing indoor commerical sex establishments

The primary method for gaining access to indoor CSW was through outreach activities. ASIA has developed a peer-and-volunteer outreach program. We gained access to difficult-to-reach sex establishments through the peer and volunteer outreach activities. Outreach teams visited establishments which had been first accessed in a pilot study and they visited additional locations as the project has progressed. Establishments have been mapped geographically, and outreach teams consisting of one peer and one volunteer visit establishments on a weekly basis.

During research visits, women are also offered harm reduction services (e.g., HIV prevention supplies, education, referrals, and translation) and HIV and STI screening.

Sampling methods

Building on the outreach model, we used two consecutive sampling methods to identify eligible participants and to develop the research recruitment framework: we recruited the first wave of participants purposefully through targeted sampling (Watters

and Biernacki, 1989). Subsequent waves of participants were recruited by respondent driven sampling (RDS).

With the peer group, we developed targeted purposeful sampling to recruit study participants. Targeted sampling is characterized by a flexible, interactive approach and is recommended for sampling and recruiting hard-to-reach or 'hidden' populations where probability sampling methods may not be feasible and convenience sampling may not be rigorous enough to meet the assumptions of the research design. (Watters, 1989). We targeted establishments that represented maximum variation in terms of type of venue, ethnicities of workers, socioeconomic status of the workers, and geographical location, all factors that have been associated with differences in HIV and STI prevalence and risk (Harcourt and Donovan 2005).

Respondent Driven Sampling (RDS) was then employed once each 'seed', recruited by targeted sampling, had agreed to participate in the study and had completed a questionnaire. Participants were given three recruitment information vouchers that were coded in such a way that we can identify which 'seed' they came from. The 'seed' had the option of handing out recruitment information vouchers to 1 to 3 co-workers/friends. After enrolled, the recruit becomes a 'recruiter'/participant and was assigned a different study code. RDS has been shown, when handled properly, to produce estimates that are asymptotically unbiased (Salganik and Heckathorn, 2004).

Capacity building

ASIA developed and implemented a training program for all peers and volunteers. This program included education in prostitution and immigration legalities,

outreach methods, field note documentation, access and referral to healthcare resources, interpretation, and self-care strategies, as well as, knowledge and skills in the prevention of STI and HIV transmission. In the first two years of the project outreach teams made contact with over 50 establishments, of which 37 allowed repeat visits. Teams visited an average of 6-12 establishments per week (Remple, 2007). It is important to note that ORCHID does not restrict service to CSW of Asian descent, but rather prevention, education, and outreach are offered to all CSW in their preferred language.

Instrument development

In collaboration with the peers we developed a questionnaire to elicit information regarding standard socio-demographic variables, condom use, sexual practices, sex partner characteristics, HIV/STI-related knowledge, employment characteristics, sexual health and health-seeking behaviours. We administered all questionnaires in person, either at the respondents' work place or in another location of their choice. For those women who were not proficient in English, an interpreter from ASIA was provided.

Statistical analysis

Questionnaire responses were entered into an SPSS database (v.17, SPSS Inc., Chicago, Illinois, USA.). The final analytic dataset containing all variables of interest was then accessed in R (v. 2.6.1, R Foundation for Statistical Computing, Vienna, Austria). All statistical procedures were conducted in R.

Descriptive statistics constituted the bulk of the analysis. Exploratory analyses examined characteristics of indoor CSW, demographic variables of interest included, age, country of origin, and education. Sex work related characteristics considered

included: length of time working in the sex industry, place or environment of work, number of clients seen in a week, and frequency and number of hours of work in a one week period. Sexual risk was assessed by evaluating HIV and STI knowledge and self assessment of ever contracting HIV and STI. We assessed the health-seeking behaviour of our subjects by their answers to our questions about having a regular healthcare provider, frequency of pap tests, unplanned pregnancy, and frequency of HIV and STI testing. As a first step, we examined univariate relationships between the primary outcome variable and all explanatory variables using χ^2 tests of difference. Next, we constructed a multivariate logistic regression model using a *a priori*-defined modelling protocol including all explanatory variables significant at the $p < 0.05$ level in univariate analyses.

Ethics

We paid study participants an honorarium for their expertise and to supplement any potential loss in their earnings. Our study received annual ethical approval from the University of British Columbia Clinical Research Ethics Board and the Simon Fraser University Office of Research Ethics.

Results

Characteristics of the study community

Through the course of the project, we recruited 12 peers and 19 volunteers who were trained and supported as outreach workers, translators, and health educators and who were able to help researchers carry out study activities. To date, ORCHID outreach and research teams have visited 31 different licensed venues (massage parlours, beauty

enhancement spas, and escort agencies) and 8 micro brothels. The unlicensed micros brothels we have visited thus far have only employed female Asian CSW. We have only met 2 individuals who were trafficked to Vancouver specifically for the sex trade; however, we have encountered several other CSW who remain here illegally, all of whom originate from various Asian countries.

Survey results

Between Aug 2006 and May 2008, 120 surveys were completed by CSW in their venue of work. Characteristics and a general description of the cohort are displayed in table 1. Within the 25 sex work establishments that we visited, 59% of respondents were migrant women, and 79% of those migrant women originated from Asian countries and the mean age of participants was 31 years. Significantly, 59% of CSW both Canadian born and migrant reported not having a regular health care provider, and 89% stated that they had not disclosed the nature of their work to their provider. Additionally, 39% of participants reported not using any form of birth control and 50% had experienced unplanned pregnancies. Finally, 14 (11%) of participants reported not having health care insurance.

Prior to their participation in ORCHID, 9 women in the sample had never been tested for an STI and 14 had never been tested for HIV. 76% of study participants reported being tested once a year or more for STI and 62% reported being tested for HIV once a year or more. As a result of low testing rates, outreach teams have accompanied 23 Asian participants to clinics for HIV/STI screening and pap smears.

Univariate analyses of socio-demographic, behavioural and psychological factors associated with Asian-born status are shown in table 2. Factors positively associated with being Asian born and working in the commercial sex industry included: older age (OR = 1.26; 95%CI: 1.16 – 1.36), increased number of hours worked daily (OR = 1.18; 95%CI: 1.01 – 1.37), inconsistent condom use outside work (OR = 6.07; 95%CI: 2.45 – 15.04), low perception of HIV risk (OR = 2.41; 95%CI: 1.05 – 5.53), low perception of STI risk (OR = 5.00; 95%CI: 1.54 – 16.26), and current use of birth control (OR = 2.83; 95%CI: 1.33 – 6.06). Factors negatively associated with being Asian born and working in the commercial sex industry included: fewer months spent working in commercial sex trade (OR = 0.98; 95%CI: 0.97 – 0.99), inconsistent condom use at work (OR = 0.45; 95%CI: 0.22 – 0.94), low HIV knowledge (OR = .37; 95%CI: 0.16 – 0.87), low STI knowledge (OR = .33; 95%CI: 0.16 – .70), and having a doctor who is unaware of CSW work (OR = 0.18; 95%CI: 0.04 – 0.84).

Like table 2, table 3a also highlights low perceptions of HIV (OR = .203; 95%CI: .084 – .534) and STI risk (OR = .430; 95%CI: .192 – .961) in relation to HIV and STI knowledge. Even when HIV and STI knowledge are looked at individually as in tables 3b and 3c, results are similar. Additionally tables 3a, 3b, and 3c emphasize deficiencies in knowledge of both HIV and STI of Asian born CSW. Tables 3a, show a greater than two-fold increase of HIV and STI knowledge in non-Asian CSW (OR = 2.386; 95%CI: 1.169 – 4.870). Low knowledge scores for Asian born CSW remain significant even when HIV and STI are examined individually as displayed in tables 3b and 3c.

Table 4a, 4b, and 4c present results of a multivariate logistic regression analysis of factors associated with HIV and STI knowledge in ORCHID. Table 4c shows a

positive association with high STI knowledge scores and low perceptions of STI risk (AOR =4.286, 95%CI: 1.458-12.597). Table 4b shows that high HIV knowledge is negatively related to Asian born origin and infrequent HIV testing. Table 4a highlights high HIV and STI knowledge scores are positively related with low perception of STI risk.

Table 5 presents the results ORCHID obtained of a multivariate logistic regression analysis of factors associated with Asian-born status in relation to HIV. Factors significantly associated with migrant CSW and their HIV knowledge, perceptions, and prevention behaviours include: inconsistent condom use at work (AOR= 6.02, 95%CI: 2.27-15.97) and inconsistent condom use with intimate partners (AOR= 0.42, 95%CI: 0.18-0.97). Surprisingly there was no significant relationship between Asian born CSW and their STI (AOR = 2.39, 95%CI: 0.61-9.34) and HIV (AOR = 1.37, 95%CI: 0.51-3.66) perceptions of risk.

Discussion

The high rates of unplanned pregnancy, lack of birth control, and low rates of regular HIV and STI testing together with inconsistent condom use show that indoor CSW in our sample are not adequately protected against HIV and other STI. Further to this, poor HIV and STI knowledge scores show that CSW born in Asian countries may be at higher risk for HIV and STI. Low perceptions of risk for HIV and STI might also be indicative of poor education and knowledge of disease transmission. Additionally women with less than annual HIV screening were more likely to have migrated from Asian countries and were less likely to have disclosed their CSW status to health providers. This evidence clearly indicates that at least a portion of CSW in this project is not being adequately serviced by the healthcare system at large.

Although it has been difficult to gain access to the hidden indoor community of CSW, we have through the activities of our study enabled outreach workers to begin to establish a strong presence with credibility within a large segment of the indoor commercial sex industry (massage parlours). We plan to continue to make inroads into this community and to build on the network of indoor CSW contacts held by our team members from SFU (Atchison and Lowman), and to pay particular attention to the more underground, unlicensed micros in order to explore the risk environment of these less main-stream, more hidden sex venues.

The absence of a probability sample limits our ability to provide a generalized description of the CSW population. This is a common methodological problem in studies involving hidden populations, and through the application of targeted sampling and

multiple modes of recruitment, I believe that the current study population is a representative cross section of the total CSW population in the Lower Mainland. Furthermore, while it is not our purpose to generalize the results of this study to other populations, we believe that the issues raised by our study thus far are not unique to the Vancouver indoor sex industry context. Although the exact numbers are not known, it is estimated that thousands of women work within the massage parlour, escort, and micro industry in Canada, and brothel-type sex work is well established in many other developed and developing countries throughout the world. Moreover, previous research has illustrated that the large numbers of women supplying sexual services is a clear indication that there is an even larger population of men who are willing to pay for these services. Given the paucity of research regarding indoor CSW and their male clients, ORCHID represents one of the first attempts to gain an understanding of the HIV/STI risk environment that characterizes an enormously lucrative and burgeoning industry.

To date, there has been little research that specifically investigates the ways in which contextual forces (such as the work environment, social norms regarding CSW roles, and cultural traditions regarding gender) and local circumstances (including limited ability to speak English, having few alternative employment options, poverty, immigration status, and police raids) shape the health and health-seeking behaviour of migrant CSW.

Implications for public health practice

Given the size of the largely un-accessed population of indoor CSW, projects such as ORCHID have enormous potential to make an impact on the HIV/AIDS risk to Canadians. This project is highly relevant to the goals of CIHR and the federal HIV/AIDS initiative, primarily as it relates to preventing acquisition and transmission of new infections and its potential to contribute to the global effort to reduce the spread of HIV and mitigate the impact of disease. The issues of HIV/AIDS risk and challenges to population access within the indoor commercial sex work network are not a unique Vancouver or Canadian phenomena. Although the exact numbers are not known, it is estimated that thousands of women work within the massage parlour, escort, and micro industry in Canada, and brothel-type sex work is well established in many other developed and developing countries throughout the world.

The ORCHID Project is an excellent example of a program that enhances the capacity of the current public health system and acts as a point of contact and bridge to a highly marginalized CSW community. The ORCHID Project provides a simple small scale service within a larger system of HIV screening and education using innovative methods to access a hidden CSW population in the Metro Vancouver region. The peer model has been an essential element in the successful implementation of the outreach service. Although community outreach nurses currently visit massage parlours in the City of Vancouver, the ORCHID Project, at its inception, was the only peer-based outreach project in Canada, and has proven to be highly successful. The peers' ability to use their experience and personal history with the women is clearly instrumental in building trust and rapport. This relationship provides the opportunity for outreach

workers to offer health education to CSW, and to encourage harm reduction. ORCHID has further helped to lessen the isolation and marginalization experienced by many CSW.

The ORCHID project provides a model of service delivery that can be used by other similarly at-risk communities wanting to provide grass-roots initiatives to meet the unique health needs of their populations. The bridge that community-based organizations provide between marginalized communities and the public healthcare system serves a vital role in maintaining healthy communities. Alternative health initiatives which work within the current public system are better situated to address specific healthcare issues within a contextually and culturally specific environment. Creating programs that reduce the barriers to accessing health services experienced by CSW while improving their health status has important implications for thinking about the health of other disadvantaged and marginalized populations within Canada. Working closely with community service organizations, health professionals, and policy makers have the opportunity to develop and promote unique integrated programmes which address the main sources, conditions, and processes linked to the health disparities.

Recommendations

Outreach education activities should focus on consistent condom use with all partners, as well as the promotion of regular HIV/STI screening, and the facilitation of healthcare access for migrant and Asian women.

Future research and interventions need to explore how and why CSW get into sex work, how they choose their venue of work, and how they communicate with their clients and negotiate the transactions that ensue. Social context heavily influences how

decisions are made and how CSW protect themselves sexually, physically and emotionally. The health needs of migrant CSW are at present poorly understood, and therefore remain unmet by current health care delivery methods. An experience-based approach is essential to develop effective strategies to promote the health of CSW, including enhancing women's health-related decision making, and improving health care service delivery and uptake.

Conclusion

As social determinants of health are more widely recognized as important factors influencing health seeking behaviours of individuals in Canada, community based organizations have the opportunity to play a vital role in the development and implementation of novel health care programs designed to serve vulnerable and hard to reach populations.

Personal critical reflection

I have been with the ORCHID project from its inception in 2003. As I explained earlier in this paper, my role has been that of a full partner in every facet of the planning, design, implementation, and evaluation of the project. At ORCHID's inception, I was Co-Chair of the Asian Society for the Intervention of AIDS. As a member of a community based AIDS service organization I had first hand knowledge of the issues some individuals in my community were having accessing HIV education, prevention, and testing. As a result, when approached by a researcher (Dr Valencia Remple) from the UBC Centre for Disease Control, I immediately agreed to collaborate on an exploratory

investigation of Asian women who may be at risk for HIV. Together with research and community partners as well as the target population we created a project which allowed us to work together for the first time on what has proven to be a challenging and rewarding project specifically created to reach a hidden marginalized population.

In 2006 I changed my role in the study from community partner to Co-Principal Investigator, thus giving me a project to focus on in my pursuit of a Masters of Science with the Faculty of Health Science. Under the guidance of my preceptor (Dr Victoria Bungay) and my supervisor (Dr Robert Hogg) I have participated in development of a quantitative instrument, conducted interviews, and have learned to conduct statistical analyses related to this study. This was an iterative process and necessarily required consultation and co-interpretation with study investigators, peers, and participants.

Throughout the ORCHID project, I have shared its successes and its challenges. The enthusiasm, commitment, and insights of the peers and the community were invaluable to the development of the project and provided important contributions to study objectives, logistics, and knowledge translation. The ORCHID activities met with little resistance from the commercial sex community itself, as evidenced by the high response rate in gaining access to establishments and survey data collection. The months spent developing the study plan and conducting the community consultation enabled the team to be as prepared as possible to initiate the project.

The project itself has posed a number of challenges to the peers and I remain concerned about team members who continue to struggle with life challenges. There is always a risk for peers who are asked to participate in activities in the context of their previous lives that the work they do with ORCHID may trigger a relapse in their lives.

While it remains unclear as to whether or not their participation in ORCHID activities precipitated some of our peers' struggles, we tried to be mindful from the beginning that working with peers required putting appropriate support mechanisms in place. It also required a great deal of patience, clear communication, and flexibility to maintain a functioning work schedule. For many peers this was their first "straight" job that required commitment and accountability. Monthly team meetings and regular debriefing sessions proved invaluable for both maintaining team cohesion and keeping the work plan on track.

I would like to acknowledge, that the benefits experienced from conducting this project far outweighed the costs in terms of establishing a credible presence in the community, providing peers with a new, marketable skill set, enhancing the capacity of ASIA to conduct community-based research, and successfully conducting a novel study within a previously under researched community

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Appendix A

Table 1: Characteristics of 120 participants from 25 sex establishments		
Characteristic	No.	(%)
Age		
Mean	31	
Range	19-50	
Country of birth		
Canada	49	(41%)
China	40	(33%)
Thailand	8	(7%)
Jamaica	3	(3%)
USA	2	(2%)
Philippines	2	(2%)
Other European Country	5	(4%)
Other Asian Country	7	(13%)
Other	4	(3%)
No. of months working in sex trade		
Mean	34.5	
Range	.67-180	
Type of commercial sex venue ever worked in		
Escort Agency	34	(28%)
Out-call	27	(22%)
Adult films	3	(2%)
In-call	28	(23%)
Outside (track, street)	19	(16%)
Massage Parlour	107	(89%)
Micro brothel (unlicensed venue)	14	(12%)
Other	17	(14%)
Average No. of days a week working in commercial sex		
Mean	4.92	
Range	2-20	
Average No of hours a day working in commercial sex		
Mean	8.83	
Range	2-24	
Average No. clients per week		
Mean	13.32	
Range	1-55	
Have a regular health provider		
Yes	49	(41%)
No	71	(59%)
Have healthcare insurance (Care card, medical		

service plan)		
Yes	105	(88%)
No	14	(12%)
Have a doctor that knows that you do sex work	13	(11%)
Yes	107	(89%)
No		
Ever had an unplanned pregnancy		
Yes	60	(50%)
No	58	(48%)
Missing	2	(2%)
How often get tested for HIV virus		
Never	14	(12%)
Only once in my life	18	(15%)
Every 2 or more years	12	(10%)
Once a year	37	(31%)
More than once a year	38	(32%)
Missing	1	(1%)
How often get tested for STI		
Never	9	(8%)
Only once in my life	8	(7%)
Every 2 or more years	9	(8%)
Once a year	40	(33%)
More than once a year	51	(42%)
Missing	3	(2%)

TABLE 2. Univariate analyses of socio-demographic, behavioural and psychological factors associated with Asian-born status in ORCHID (*n* = 120 women)

Characteristic	Total n (%)	Asian born		OR	95% CI	*p*-value
		No *n* (%) *n* = 64	Yes *n* (%) *n* = 66			
Age						
Median (IQR)	30.0 (24.0 – 36.0)	25.5 (21.5 – 29.5)	36.0 (32.0 – 40.0)	1.26	1.16 – 1.36	< 0.001
Education						
≥ High school	101 (84.2)	52 (81.3)	49 (87.5)			
< High school	19 (15.8)	12 (18.8)	7 (12.5)	0.62	0.23 – 1.70	0.349
Work environment						
Any other	101 (84.2)	58 (90.6)	52 (92.9)			
Unlicensed	19 (15.8)	6 (9.4)	4 (7.1)	0.74	0.20 – 2.78	0.659
Time in trade (months)						
Median (IQR)	18.0 (0.0 – 39.0)	24 (0 – 56)	12 (2 – 22)	0.98	0.97 – 0.99	0.004
Work (hours/day)						
Median (IQR)	8.0 (6.5 – 9.5)	8.0 (7.5 – 8.5)	10 (8.5 – 11.5)	1.18	1.01 – 1.37	0.033
Inconsistent condom (work)						
No	56 (46.7)	24 (37.5)	32 (57.1)			
Yes	64 (53.3)	40 (62.5)	24 (42.9)	0.45	0.22 – 0.94	0.031
Inconsistent condom (other)						
No	86 (81.7)	56 (87.5)	30 (53.6)			
Yes	34 (28.3)	8 (12.5)	26 (46.4)	6.07	2.45 – 15.04	< 0.001
Perception of STI risk						
All other	102 (85.0)	60 (93.8)	42 (75.0)			
"Never"	18 (15.0)	4 (6.2)	14 (25.0)	5.00	1.54 – 16.26	0.004
Perception of HIV risk						
All other	88 (73.3)	52 (81.3)	36 (64.3)			
"Never"	32 (26.7)	12 (18.8)	20 (35.7)	2.41	1.05 – 5.53	0.036

TABLE 2. Univariate analyses of socio-demographic, behavioural and psychologic factors associated with Asian-born status in ORCHID (*n* = 120 women)

Characteristic	Total n (%)	Asian born		OR	95% CI	*p*-value
		No *n* (%) *n* = 64	Yes *n* (%) *n* = 66			
HIV knowledge score						
< 80%	31 (25.8)	11 (17.2)	20 (35.7)			
≥ 80%	89 (74.2)	53 (82.8)	36 (64.3)	0.37	0.16 – 0.87	0.021
STI knowledge score						
< 80%	60 (50.0)	24 (37.5)	36 (64.3)			
≥ 80%	60 (50.0)	40 (62.5)	20 (35.7)	0.33	0.16 – 0.70	0.003
Have health care provider						
No	33 (27.5)	18 (28.1)	15 (26.8)			
Yes	87 (72.5)	46 (71.9)	41 (73.2)	1.07	0.48 – 2.39	0.870
Doctor aware of sex work						
No	107 (89.2)	53 (82.8)	54 (96.4)			
Yes	13 (10.8)	11 (17.2)	2 (3.6)	0.18	0.04 – 0.84	0.017
Pap/exam frequency						
< 1/year	29 (24.2)	14 (21.9)	15 (26.7)			
≥ 1/year	91 (75.8)	50 (78.1)	41 (73.2)	0.77	0.33 – 1.77	0.531
Current birth control						
No	50 (41.7)	34 (53.1)	16 (28.6)			
Yes	70 (58.3)	30 (46.9)	40 (71.4)	2.83	1.33 – 6.06	0.006
STD test frequency						
≤ 1/year	69 (57.5)	30 (46.9)	39 (69.6)			
> 1/year	51 (42.5)	34 (53.1)	17 (30.4)	0.38	0.18 – 0.82	0.012
HIV test frequency						
≤ 1/year	82 (68.2)	41 (64.1)	41 (73.2)			
> 1/year	38 (31.7)	23 (35.9)	15 (26.8)	0.65	0.30 – 1.42	0.282

TABLE 3a. Univariate analyses of socio-demographic, behavioural and psychological factors associated with Knowledge of HIV and STIs in ORCHID (*n* = 129 women; some variables have missing data)

Characteristic	Total n (%)	Knowledge of HIV and STIs		OR	95% CI	*p*-value
		<80% *n* (%) *n* = 67	≥80% *n* (%) *n* = 62			
Birth origin						
Asian	62 (48.8)	39 (59.0)	23 (37.7)			
Other	65 (51.2)	27 (41.0)	38 (62.3)	2.386	1.169-4.870	.017
Inconsistent condom (work)						
Yes	18 (14.0)	12 (17.9)	6 (9.6)			
No	111 (86.0)	55 (82.1)	56 (90.4)	2.036	.714 – 5.809	.184
Inconsistent condom (other)						
Yes	76 (58.9)	40 (59.7)	36 (58.0)			
No	53 (41.1)	27 (40.3)	26 (42.0)	1.070	.530 – 2.159	.850
Perception of STI risk						
All other	108 (83.7)	50 (80.6)	58 (93.5)			
"Never"	21(16.3)	17 (19.4)	4 (6.5)	.203	.064 – .634	.007
Perception of HIV risk						
All other	93 (72.1)	43 (64.1)	50 (80.6)			
"Never"	36 (27.9)	24 (35.9)	12 (19.4)	.430	.192 - .961	.040
Have health care provider						
No	35 (27.3)	17 (25.3)	18 (29.5)			
Yes	93 (72.7)	50 (74.7)	43 (70.5)	.812	.373 – 1.769	.600
Doctor aware of sex work						
No	23 (17.9)	12 (17.9)	11 (18.0)			
Yes	105 (82.1)	55 (82.1)	50 (82.0)	.992	.402 – 2.447	.986
STD test frequency						
≤ 1/year	78 (60.4)	43 (64.1)	35 (56.4)			
> 1/year	51 (39.6)	24 (35.9)	27 (44.4)	1.382	.681 – 2.806	.370
HIV test frequency						
≤ 1/year	89 (68.9)	50 (74.6)	39 (62.9)			
> 1/year	40 (31.1)	17 (25.4)	23 (37.1)	1.735	.816 – 3.686	.152

TABLE 3b. Univariate analyses of socio-demographic, behavioural and psychological factors associated with Knowledge of HIV in ORCHID (*n* = 129 women; some variables have missing data)

Characteristic	Total n (%)	Knowledge of HIV		OR	95% CI	*p*-value
		<80% *n* (%) *n* = 49	≥80% *n* (%) *n* = 80			
Birth origin						
Asian	62 (48.8)	31 (66.0)	31 (38.8)			
Other	65 (51.2)	16 (34.0)	49 (61.2)	3.063	1.443 – 6.500	.004
Inconsistent condom (work)						
Yes	18 (14.0)	8 (16.3)	10 (12.5)			
No	111 (86.0)	41 (83.7)	70 (87.5)	1.366	.499 – 3.737	.544
Inconsistent condom (other)						
Yes	76 (58.9)	27 (55.1)	49 (61.3)			
No	53 (41.1)	22 (44.9)	31 (38.8)	.776	.378 – 1.596	.491
Perception of STI risk						
All other	108 (83.7)	34 (69.4)	74 (92.5			
"Never"	21(16.3)	15 (30.6)	6 (7.5)	.184	.066 - .515	.001
Perception of HIV risk						
All other	93 (72.1)	30 (61.2)	63 (78.8)			
"Never"	36 (27.9)	19 (38.8)	17 (21.3)	.426	.194 - .935	.033
Have health care provider						
No	35 (27.3)	14 (28.6)	21 (26.6)			
Yes	93 (72.7)	35 (71.4)	58 (73.4)	1.105	.498 – 2.448	.806
Doctor aware of sex work						
No	23 (17.9)	7 (14.3)	16 (20.3)			
Yes	105 (82.1)	42 (85.7)	63 (79.7)	.656	.248 – 1.732	.395
STD test frequency						
≤ 1/year	78 (60.4)	35 (71.4)	43 (53.8)			
> 1/year	51 (39.6)	14 (28.6)	37 (46.3)	2.151	1.006 – 4.559	.048
HIV test frequency						
≤ 1/year	89 (68.9)	40 (81.6)	49 (61.3)			
> 1/year	40 (31.1)	9 (18.4)	31 (38.8)	2.812	1.200 – 6.589	.017

TABLE 3c. Univariate analyses of socio-demographic, behavioural and psychological factors associated with Knowledge of STI in ORCHID (*n* = 129 women; some variables have missing data)

Characteristic	Total n (%)	Knowledge of STI		OR	95% CI	*p*-value
		<80% *n* (%) *n* = 63	≥80% *n* (%) *n* = 66			
Birth origin						
Asian	62 (48.8)	37 (58.7)	25 (39.1)			
Other	65 (51.2)	26 (41.3)	39 (60.9)	2.220	1.092 – 4.514	.028
Inconsistent condom (work)						
Yes	18 (14.0)	12 (19.0)	6 (9.1)			
No	111 (86.0)	51 (81.0)	60 (90.9)	2.353	.824 – 6.715	.110
Inconsistent condom (other)						
Yes	76 (58.9)	37 (58.7)	39 (59.1)			
No	53 (41.1)	26 (41.3)	27 (40.9)	.985	.488 – 1.987	.967
Perception of STI risk						
All other	108 (83.7)	48 (76.2)	60 (90.9)			
"Never"	21(16.3)	15 (23.8)	6 (9.1)	.320	.115 - .887	.029
Perception of HIV risk						
All other	93 (72.1)	40 (63.5)	53 (80.3)			
"Never"	36 (27.9)	23 (36.5)	13 (19.7)	.427	.193 - .944	.036
Have health care provider						
No	35 (27.3)	16 (25.4)	19 (29.2)			
Yes	93 (72.7)	47 (74.6)	46 (70.8)	.824	.378 – 1.797	.627
Doctor aware of sex work						
No	23 (17.9)	13 (20.6)	10 (15.4)			
Yes	105 (82.1)	50 (79.4)	55 (84.6)	1.430	.576 – 3.549	.441
STD test frequency						
≤ 1/year	78 (60.4)	40 (63.5)	38 (57.6)			
> 1/year	51 (39.6)	23 (36.5)	28 (42.4)	1.281	.631 – 2.601	.492
HIV test frequency						
≤ 1/year	89 (68.9)	43 (68.3)	46 (69.7)			
> 1/year	40 (31.1)	20 (31.7)	20 (30.3)	.935	.443 – 1.972	.859

TABLE 4a. Multivariate logistic regression analysis of factors (*including the intercept constant*) associated with HIV and STI Knowledge in ORCHID (n = 129 women; some variables have missing data)

Characteristic	**AOR**	**95% CI**	**p-value**
Birth Origin (Asian = 1 vs Other = 0)	.674	.262 – 1.733	.413
Perception STI risk (all other = 1 vs "Never" = 0)	4.129	.848 – 20.095	.079
Perception of HIV risk (all other = 1 vs "Never" = 0)	.972	.291 – 3.239	.962
STI test frequency (≤ 1/year = 1 vs > 1/year = 0)	1.498	.544 – 4.120	.434
HIV test frequency (≤ 1/year = 1 vs > 1/year = 0)	.610	.226 – 1.650	.331

TABLE 4b. Multivariate logistic regression analysis of factors (*including the intercept constant*) associated with HIV Knowledge in ORCHID (n = 129 women; some variables have missing data)

Characteristic	**AOR**	**95% CI**	**p-value**
Age (years)	.995	.931 – 1.063	.885
Birth Origin (Asian = 1vs Other = 0)	.422	.158 – 1.128	.085
Perception of HIV risk (all other = 1 vs "Never" = 0)	1.839	.788 – 4.289	.159
HIV test frequency (≤ 1/year = 1 vs > 1/year = 0)	.457	.187 – 1.114	.085

TABLE 4c. Multivariate logistic regression analysis of factors (*including the intercept constant*) associated with STI Knowledge in ORCHID (n = 129 women; some variables have missing data)

Characteristic	**AOR**	**95% CI**	**p-value**
Birth Origin (Asian = 1 vs Other = 0)	.505	.186 – 1.373	.181
Perception STI risk (all other = 1 vs "Never" = 0)	4.286	1.458 – 12.597	.008
STI test frequency (≤ 1/year = 1 vs > 1/year = 0)	.773	.327 – 1.826	.557

TABLE 5. Multivariate logistic regression analysis of factors associated with Asian-born status in ORCHID in relation to HIV (n = 120 women)

Characteristic	**AOR**	**95% CI**	**p-value**
Inconsistent condom use, work (yes vs no)	6.02	2.27 – 15.97	< 0.001
Inconsistent condom use, other (yes vs no)	0.42	0.18 – 0.97	0.042
Perception HIV risk ("Never" vs all other)	1.37	0.51 – 3.66	0.532
HIV knowledge (≥80% vs < 80%)	0.47	0.18 – 1.23	0.124
Have healthcare provider (Yes vs no)	1.31	0.52 – 3.31	0.566
Doctor know sex work status (Yes vs no)	0.29	0.06 – 1.47	0.135

Appendix B

The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road,
Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL- MINIMAL RISK RENEWAL

PRINCIPAL INVESTIGATOR:	**DEPARTMENT:**	**UBC BREB NUMBER:**
Victoria Bungay	UBC/Applied Science/Nursing	H06-80260

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

Institution	Site
BC Centre for Disease Control	BC Centre for Disease Control

Other locations where the research will be conducted:
Asian Society for the Intervention of AIDS, West Pender, Downtown Vancouver

CO-INVESTIGATOR(S):
Chris Atchison
Ann Jolly
David M. Patrick
Gina Ogilvie
Mark W. Tyndall
Victoria Bungay
Caitlin Johnston

SPONSORING AGENCIES:
Canadian Institutes of Health Research (CIHR) - "Development of an HIV/AIDS Prevention Intervention for Indoor Sex Workers and Their Partners"

PROJECT TITLE:
Development of an HIV/AIDS Prevention Intervention for Indoor Sex Workers and Their Partners

EXPIRY DATE OF THIS APPROVAL: June 3, 2010

APPROVAL DATE: June 3, 2009

The Annual Renewal for Study have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval is issued on behalf of the Behavioural Research Ethics Board

Dr. M. Judith Lynam, Chair
Dr. Ken Craig, Chair
Dr. Jim Rupert, Associate Chair
Dr. Laurie Ford, Associate Chair
Dr. Anita Ho, Associate Chair

SFU

OFFICE OF
RESEARCH ETHICS

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June 8, 2007

Ms. Caitlin Johnston
Graduate Student
Faculty of Health Sciences
Simon Fraser University

Dear Ms. Johnston:

Re: Development of an HIVAIDS Prevention Intervention for Indoor Sex Workers and Their Partner - Appl. #38198
Title Change

In response to your request, I am pleased to approve, on behalf of the Research Ethics Board, the title change from, "Assessing Inconsistent Condom Use of Indoor Commercial Sex Workers (CSW) at risk from HIV/STI", in the research protocol of the above referenced Request for Ethical Approval of Research originally approved on April 17, 2007.

This letter is also to inform you that the contingency of SFU approval, requiring approval of the University of British Columbia, has been removed in accordance with the documentation of that approval sent by you and included in this file.

If there is an adverse event, the principal investigator must notify the Office of Research Ethics within five (5) days. An Adverse Events form is available electronically by contacting dore@sfu.ca.

.../2