



# Economic Strengthening for Female Sex Workers: A Review of the Literature



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## INTRODUCTION

Female sex workers (FSWs) have been identified as a key population in the global fight against AIDS. In concentrated, mixed, and even generalized epidemics, the contribution of sex work toward the onward transmission of HIV is substantial. High rates of partner change in “upstream” sex work networks have long been recognized to drive “downstream” transmission of sexually transmitted infections (STIs), including HIV. Although modes of transmission analysis once predicted fairly low onward transmission by sex work, in the last two years, more complex analysis with more data has found the contribution by sex work to the spread of HIV/AIDS to be much greater than expected in countries as diverse as Nigeria, Kenya, and India. In light of this evidence, interventions with sex workers to prevent HIV/AIDS could contribute to avert the bulk of infections in many countries.

Globally, it is recognized that prevention and treatment efforts among sex workers require not only a clinical approach, but interventions to address the vulnerabilities of FSWs on a structural level, including legal, physical, and economic factors. The complex structural factors associated with HIV among sex workers have been recognized in the WHO Guidelines for Sex Work and are increasingly addressed through integrated structural approaches used in HIV prevention and treatment programs on the ground.

Because sex work is illegal in many countries, the sex industry has been driven underground, leaving sex workers legally vulnerable. Given the clandestine and socially stigmatized nature of their work, sex workers are left without recourse to legal protection from threats to their safety, vulnerable to arrest and abuse, and without access to health and social services. Stigma has been shown to impact sex workers on a deeper level and is associated with lower levels of self-esteem (Scorgie et al., 2012). Physically, FSWs are frequently subjected to violence perpetuated by pimps, clients, police and madams. Sex work is associated with high levels of drug and alcohol abuse. Sex workers have limited bargaining power with clients and are vulnerable to violent sex, rape, and sex without condoms. Due to frequent engagement in risky sex, sex workers have a global HIV rate of 11.8%, which is 13.5 times greater than the general population (Kerrigan et al., 2013).

These problems are directly related to the economic vulnerability of FSWs, the vast majority of whom report entering sex work for financial reasons due to lack of alternative employment opportunities. Stigma reduces FSWs’ access to formal financial services, and many resort to incurring large debts to exploitative money-lenders in order to meet their financial needs, including paying off debts to pimps and brothel-owners.

The literature on HIV interventions targeting FSWs underscores the inextricable connections between gender, political-legal, and economic structures on the vulnerability of FSWs and their susceptibility to HIV. The good news is that interventions that target sex workers are cost-effective and they work. Analysis by the World Bank demonstrated that FSW-targeted interventions in Ukraine and Kenya have resulted in cost savings of \$39M and \$8.9M respectively, contributing to aversion of thousands of potential HIV infections (D. Kerrigan et al., 2012, p. xxix).

Despite evidence supporting the efficacy of structural interventions and the key role that economic vulnerability plays in contributing to structural vulnerability, there is relatively little research focused on the financial lives and needs of FSWs. Furthermore, though control over resources has been identified as a central component of economic vulnerability, there is limited research on this topic as pertains to FSWs.

This report reviews the literature on economic strengthening (ES) interventions for risk reduction and HIV prevention among FSWs to identify best practices as well as opportunities for further research. It begins with an overview of intervention approaches, including evidence supporting structural interventions. It then discusses existing research on the needs and financial practices of sex workers, followed by an overview and analysis of interventions designed to meet these needs. The report concludes with recommendations for future research to lay the groundwork for a future ES pilot with FSWs.

## THE LITERATURE ON THE LIVES AND NEEDS OF SEX WORKERS

Best practices for sex worker interventions have been promoted by UNAIDS and other international organizations based on broad dimensions of interest that can apply to sex workers in multiple contexts. However, these

general guidelines must be tailored to a given context to be truly effective. Even in a specific geographic location, FSWs are not a homogeneous group. Overall, key themes emerge from the literature on the characteristics of FSWs, their health needs, economic lives, and the barriers that they face due to gender inequality and stigma.

### The State of the Research

In this review, ten studies were selected from the literature for in-depth analysis according to their focus on the economic needs and practices of FSWs. Most of the literature on the lives of FSWs uses interview and survey data, with common questions around reasons for entering sex work and engagement in risky behaviors. Most studies seek to answer a specific question; few undertake an exploratory analysis of structures of vulnerability to HIV. Given the importance of economic factors in structural interventions, surprisingly few studies focus on the financial needs and habits of FSWs, though most discuss the experiences of FSWs in ways that shed light on these practices.

Below is a summary table of the studies reviewed:

Study	Goals	Methods	Findings	Notes
(K, 2004)	Explore link between poverty and sex work	Interviews with sex workers in Mumbai (N = 501)	High levels of poverty, low levels of vocational skills, low levels of income, among FSWs	Demonstrates that FSWs would prefer alternate employment  Does not demonstrate causality  Sheds light on socioeconomic status and livelihood choices of FSWs

<b>Study</b>	<b>Goals</b>	<b>Methods</b>	<b>Findings</b>	<b>Notes</b>
<b>(Evans, Jana, &amp; Lambert, 2010)</b>	Explore structure of vulnerability among FSWs in Kolkata, India	Participant observation, interviews with sex workers (N = 61) and senior project managers, focus groups	Elaborated structural determinants of vulnerability among FSWs based on concepts of “identity and agency” and “economic security”	Examines structures of vulnerability on micro and macro levels  Incorporated multiple ethnographic methods  Done during Sonagachi intervention, not prior
<b>(Nagot et al., 2002)</b>	Explore sex work network, including those who do not self-identify as sex workers	Quantitative survey with FSWs (N = 447)	Elaborated typology of six kinds of sex workers: seaters, roamers, sellers, cabarets, students, bar waitresses	Accounts for heterogeneity among FSWs
<b>(L.C. Tsai et al., 2013)</b>	Explore financial lives of FSWs	Computer-based, interviewer-administered baseline assessment in randomized control trial for feasibility of savings intervention for FSWs in Mongolia (N = 204)	Discussed income strategies of FSWs  Demonstrated how high levels of financial responsibility and limited bargaining power increase risk for HIV and other STIs	One of few papers that focus on financial lives of FSWs
<b>(Fitzgerald-Husek, Martiniuk, Hinchcliff, Aochamus, &amp; Lee, 2011)</b>	Explores determinants of condom use among FSWs in Oshakati area of Namibia	Qualitative interviews (N = 10)	Patriarchal power relations are a major determinant in condom use  Condom use is determined by factors beyond what is usually considered: education, empowerment, and economic	Points out heterogeneity of sex workers’ experiences and motivations for using condoms  Very small sample size  Language difficulties in translation of interviews

Study	Goals	Methods	Findings	Notes
			independence	Highlights role of gender inequality in HIV epidemic
<b>(Onyeneho, 2009)</b>	Describes the current knowledge, attitude and practices on HIV/AIDS issues among FSWs in Enugu and preferences for income generating skills to inform HIV-prevention intervention	Structured interviews using quantitative knowledge, attitude and practice (KAP) interview schedule (N = 135)  Focus group discussions	Perception scores revealed themes of economic and social vulnerability and high levels of ignorance about HIV  Most FSWs in this area were school-aged or students	Gained qualitative info before quantitative survey  Surveyed all FSWs in selected communities
<b>(Ngo et al., 2007)</b>	Examined the sex workers' social and economic lives, their working environment, social relationships and presentation of self in everyday social contacts and interactions in two cities in Vietnam	In-depth interviews (N = 30)  Focus groups (N = 69)	Discusses effects of stigma on self-esteem and the problems with government sanction of FSWs	Demonstrates exceptions to every generalization  Compares different kinds of sex workers  Only qualitative data
<b>(Reed, Gupta, Biradavolu, Devireddy, &amp; Blankenship, 2010)</b>	Explores the relationship between debt, violence, and HIV risk among FSWs	Surveys and semi-structured interviews using respondent-driven sampling (N = 673)	Demonstrated high levels of debt among FSWs  Explored experience and causes of debt among FSWs  Linked debt to violence and increased vulnerability to HIV	Strong sample size  Strong statistical associations between debt and violence despite self-reporting  Participants not randomly selected, self-selected
<b>(Scorgie et al., 2012)</b>	Systematic review of socio-demographic characteristics and behavioral risk factors	Review of qualitative and quantitative studies using Medline, Web of Science and	FSW vulnerability is linked to poverty, violence, criminalization, drug use, high mobility	Systematic review of a large number of relevant studies (N = 128)

Study	Goals	Methods	Findings	Notes
	of female sex workers in Sub-Saharan Africa	Anthropological Index databases  for articles published between  January 2000 and April 2010		Discusses regional variation
<b>(Oyefara, 2007)</b>	Examines relationships between food security, sexual behavior, STI transmission and abortion rates	Quantitative questionnaires and in-depth interviews of FSWs in Lagos, Nigeria (N = 320)	Food insecurity and poverty linked to entry into sex work  Food insecurity linked to risky behavior  High levels of pregnancy and abortion	Strong sample size  Qualitative and quantitative data  20% of questionnaires not returned or not used

Studies on the lives of FSWs suffer similar limitations. Nearly all use cross-sectional data and are therefore limited in their account for change over time. Since most studies are limited to a specific geographical location, they are of limited generalizability. Finally, nearly all of the studies rely on self-report data for behavioral practices, such as condom use, and face potential social desirability bias.

## Themes in the Literature

### Characteristics of FSWs

Throughout the literature, economic need and coercion are mentioned as the primary motivating factors for entering sex work (Odek et al., 2009; Pillai, Bhattacharjee, Ramesh, & Isac, 2012). When interviewed, sex workers across settings express desire for alternative forms of employment, but lack the skills to find another job (Fitzgerald-Husek et al., 2011; K, 2004; Ngo et al., 2007). As explained by one study, “Compared to commercial sex, few other jobs offer the same advantages for women, including ease of entry, a ready market and higher earnings than any other

job these women could find” (Vuylsteke & Jana, 2001, p. 202). In Sub-Saharan Africa, women can be motivated to enter sex work in response to conflict and displacement. In fact, in West Africa and other regions affected by conflict, more than half of FSWs report that they are foreign nationals (Scorgie et al., 2012).

It is important to note, however, that not all FSWs choose their line of work at all: many are trafficked or forced into sex work as minors. A study in Andhra Pradesh, India, found that one in five sex workers met the UN definition of experiencing sex trafficking (Gupta, Reed, Kershawa, & Blankenship, 2011). Many report being “tricked” into sex work with promises of work or simply to meet survival needs (Scorgie et al., 2012). Trafficked persons are especially vulnerable to both violence and HIV risk behaviors.

Not all sex workers self-identify as such. In Sub-Saharan Africa, the definition of a sex worker is complicated by stigma and a high prevalence of transactional sex, blurring the lines between

girlfriend and boyfriend or sex worker and client (Scorgie et al., 2012). Indirect sex workers do sex work to supplement income from another job (Lee et al., 2010). In their study in Burkina Faso, Nagot and colleagues (2002) identified six types of sex workers, only two of which self-identified as sex workers: seaters, who wait for clients in a given location, and roamers, who travel around bars and nightclubs to seek clients. Mobile street-side vendors, bar waitresses, students, and cabarets (those who make and sell beer) were all identified as nonprofessional, or indirect sex workers. Other studies distinguish between street-based and venue- or brothel-based sex workers (Ngo et al., 2007). Here, venue- and brothel-based FSWs are described as earning higher income and relying on more diverse sources of income than their street-based counterparts, who are described as older, poorer, and more dependent on sex work. Overall, FSWs tend to be a mobile and clandestine population that is difficult to locate without the assistance of key informants (Johnston, Sabin, Hien, & Huong, 2006; Vuylsteke & Jana, 2001).

The relationships sex workers form with each other and with others are just as varied as sex workers themselves. Ngo and colleagues (2007) describe escorts and call girls as working independently from other FSWs, therefore forming fewer relationships. Venue-based sex workers, however, do form relationships. Whereas in some areas FSWs work independently from pimps (Sherman et al., 2010), in others, pimps are used to provide physical protection for FSWs in designated areas in exchange for money and sex (Ngo et al., 2007). Pimps benefit from an unequal power relationship, and often use violence to control sex workers.

### **Health Needs**

In addition to their susceptibility to HIV, FSWs face a number of barriers to good health. A major problem for FSWs is lack of access to quality

health services, with barriers to utilization including “stigma, inconvenient hours of operation and economic, language or other cultural barriers” (Vuylsteke & Jana, 2001, p. 200). Contraception use is limited among FSWs, who frequently undergo repeated abortions (Oyefara, 2007; Vuylsteke & Jana, 2001). FSWs also face high risks of rape and violence by clients and pimps. Finally, many studies report high levels of drug and alcohol use among FSWs, often cited as a coping mechanism (Lee et al., 2010; Mbonye et al., 2012; L.C. Tsai et al., 2013; Vuylsteke & Jana, 2001), or a habit perpetuated by brothel-owners that hope to get FSWs hooked (Ngo et al., 2007).

Food security is an important dimension for inquiry because it has implications for both the economic vulnerability of FSWs as well as their biological susceptibility to HIV. Food security affects HIV transmission according to nutritional, mental health, and behavioral pathways (S. D. Weiser et al., 2011). In one study of sex workers in the Lagos metropolitan area in Nigeria, 35% of respondents entered sex work as a response to food insecurity (Oyefara, 2007). The same study found a significant statistical relationship between poverty, food insecurity and consistent condom use by FSWs, with authors summarizing: “hunger and malnutrition were the factors that pushed young women into prostitution in Nigeria and these same factors hindered them from practicing safe sex within the sex industry” (p. 626).

### **Economic Lives**

The literature is abundant with evidence connecting economic desperation to risky behavior among FSWs. Poverty and limited options are the most-cited reasons for entering sex work, affecting risk in direct and indirect ways. Food insufficiency, for example, has been linked to transactional sex, inconsistent condom use, and other risk behaviors in Swaziland and Botswana (S. Weiser et al., 2007), while lower rates of condom use have been shown in young women

from poorer households in South Africa (Hargreaves et al., 2007). For FSWs, economic need limits bargaining power with clients, who frequently offer higher prices for sex without a condom (L.C. Tsai et al., 2013).

FSWs are often caught in a web of exploitative relationships that place them at an economic disadvantage, often in persistent debt. Some brothel-based sex workers are charged by owners for food and rent, others are debt-bonded to pimps, madams and traffickers (Evans et al., 2010). Due to stigma and discrimination, it can be difficult for FSWs to open formal bank accounts, leading them to resort to borrowing from high-interest moneylenders, resulting in even more debt. Debt itself has sinister connections to violence and HIV risk. A study in Andhra Pradesh revealed very strong statistical associations between debt and the experience of violence, which itself is associated with HIV risk, among FSWs (Reed et al., 2010).

Although economics play a major role in vulnerability, there is no linear relationship between poverty and HIV risk, and the economic status of FSWs varies greatly. As put by Kim and colleagues, “AIDS is a disease of inequality, often associated with social or economic transition, rather than a disease of poverty itself” (2008, p. S57). At a national level, there is no correlation between GDP and HIV rates in Sub-Saharan Africa, but inequality is associated with higher rates of HIV in Sub-Saharan Africa, Asia, and Latin America. Rather than focusing on poverty, it makes sense to address socioeconomic status and inequality, including gender inequality. These issues are directly related to control over income, something that many FSWs do not have. A study of women participating in a microfinance program in the Dominican Republic demonstrates that increased income, in the form of loans, does not enhance HIV-related bargaining power, but control over income does (Ashburn, Kerrigan, &

Sweat, 2008). It also makes sense to consider how economic factors affect food security, a major risk factor for vulnerability to HIV that can be ameliorated by economic strengthening intervention (Weiser et al., 2007; Weiser et al., 2011).

### **Gender Inequality and Stigma**

Gender inequality affects FSWs on three levels: economically, physically through violence and risk for disease, and socially through stigma and limited legal rights. As discussed above, FSWs face financial pressures from pimps, gangs, madams, and moneylenders. They can also face pressure from significant others that limit their control over their income.

The role of gender inequality is particularly stark in its relation to the vulnerability of FSWs to violence at the hands of pimps, partners, and clients (Ngo et al., 2007). In a study based in Enugu Town, Nigeria, FSWs described the continuous threat of rape and coercion into rough sex, resulting in abrasion and increased risk for HIV (Onyeneho, 2009). Where efforts to limit violence against FSWs have been made, the results have been critical to stemming the spread of HIV. In Kenya, it is estimated that reductions in violence against FSWs “could avert over 5,300 new infections among sex workers and 10,000 new infections among adults” (D. L. Kerrigan, Fonner, Stromdahl, & Kennedy, 2013, p. xxxi).

Meanwhile, stigma remains the undercurrent of the compound risks that FSWs face, creating barriers to accessing health and banking services as well as compromising their legal rights. Given that sex work is illegal in many countries, FSWs must live and work in secrecy and have limited to no legal recourse when they face rape or on-the-job exploitation. They are often harassed by police, which interrupts their income and increases their dependence on each transaction, increasing their likelihood to agree to sex without

a condom (Ngo et al., 2007; Onyeneho, 2009). Stigma and gender inequality combine to make discussions around HIV with significant others taboo and even dangerous. The AIDS Stigma Kenya (ASK) study showed that for the women involved, economic empowerment was not protective of participants in terms of fear of domestic violence from husbands as a response to discussions about AIDS (Gnauck et al., 2013).

## **APPROACHES TO HIV- PREVENTION INTERVENTIONS FOR FEMALE SEX WORKERS**

Given the multiple vulnerabilities experienced by FSWs, HIV-prevention interventions targeted to this population are well-documented, supported by a growing body of evidence, and guided by standards of practice endorsed by international health and development organizations. Best practices have shifted from behavioral and biomedical approaches to combination approaches featuring structural intervention. The Joint United Nations Programme on HIV/AIDS (UNAIDS) published a comprehensive guidance note on HIV-prevention interventions for FSWs in 2012, synthesizing these best practices into three guiding pillars (UNAIDS, 2012).

### **Combination Intervention**

Until recently, HIV prevention interventions were not well-supported by evidence, with many trials failing to demonstrate decreases in HIV infection (Padian et al., 2011). However, recent studies demonstrate increasing success in prevention, with particularly strong results when biomedical, behavioral, and structural interventions are combined. This marks a distinct shift away from interventions focused exclusively on either behavioral or biomedical factors, as well as the rise

in recognition of structural factors that affect the course of the HIV epidemic.

Behavioral approaches attempt to reduce “risky behaviors and reinforce protective ones, typically by addressing knowledge, attitudes, skills, and beliefs” (AIDSTAR-One, 2014). These include interventions that promote condom use, encourage delayed sexual debut, encourage partner reduction, and foment peer education, among other activities. Biomedical approaches leverage medical technologies against infection, such as antiretroviral medications, pre- and post-exposure prophylaxis, and condom promotion (Rotheram-Borus, Swendeman, & Chovnick, 2009).

Interventions include setting up clinics to provide medical services, infant feeding for mothers with HIV, and provision of contraception, among others. There is consensus in the literature that biomedical and behavioral approaches are mutually-reinforcing, and indeed must be connected to ensure adherence and efficacy.

A more recent focus on structural interventions has brought attention to factors beyond the individual level that mediate susceptibility to HIV, including social, legal, cultural, and economic factors (Ashburn et al., 2008). Structural interventions introduce an extra layer of complexity to HIV prevention and can be difficult to evaluate due to the complexity of causality and challenges of randomization. However, a growing body of evidence supports the use of combination interventions that address behavioral, biomedical, and structural issues (UNAIDS, 2010).

### **Structural Interventions with FSWs**

Structural interventions address factors beyond the level of the individual, including overarching social and economic structures, that contribute to HIV transmission. Structural issues are particularly salient in addressing the HIV-vulnerability of high-risk groups such as sex workers. Poverty,

gender inequality, stigma, political and legal structures all contribute to both engagement in sex work and increased likelihood of contracting HIV. Structural interventions can be top-down, state-led national programs, or bottom-up mobilization activities to create social and political change (Evans et al., 2010). Among structural factors considered in FSW interventions, poverty and gender inequality are typically most emphasized (Dworkin & Blankenship, 2009).

### **Economic Empowerment**

Economic strengthening, or empowerment, interventions for FSWs usually provide microfinance services or vocational training. Though poverty is a contributing factor to vulnerability, its relationship with HIV is not linear. Inequality, gender norms, and education levels all affect how and at what levels poverty impacts vulnerability (Kim et al., 2008). Though economic empowerment interventions show promise, there is limited evidence demonstrating whether and how they work. A systematic review of income-generating interventions for HIV prevention found inconclusive evidence on the efficacy of both microfinance and vocational training interventions (Kennedy, Fonner, O'Reilly, & Sweat, 2013). However, there is evidence that economic strengthening interventions can improve food security (Xiong, 2012), which is both a strong motivating factor for entering sex work as well as engaging in risky sexual behavior (Oyefara, 2007; S. Weiser et al., 2007).

Though microfinance is often discussed as a structural, economic intervention, some authors question whether it truly affects larger economic and social structures (Kim et al., 2008). Evans and colleagues distinguish between structural and individual empowerment (2010), arguing that for an intervention to be truly structural, it must affect factors beyond the individual. Despite limited evidence on the effect of microfinance on HIV, well-documented interventions such as IMAGE

and TRY have demonstrated reduced intimate partner and gender-based violence and increased likelihood to refuse sex without a condom, respectively (Dworkin & Blankenship, 2009).

One of the factors that affects the physical and economic vulnerability of FSWs is gender inequality (Dworkin & Blankenship, 2009; Fitzgerald-Husek et al., 2011), which not only limits their control over financial resources and increases their risk for poverty, but places them at a disadvantage when bargaining with clients about safe sex practices and increases their risks for violence. Gender inequality plays into the stigmatization of sex work, reducing sex workers' access to legal protection and social and health services.

### **Best Practices**

Throughout this review, the three pillars of HIV prevention interventions for FSWs outlined by UNAIDS will be referenced as the standard for such interventions. UNAIDS' guidance note emphasizes human rights-based approaches, noting that the most successful interventions occur when "sex workers are able to assert control over their working environments and insist on safer sex" (UNAIDS, 2012, p. 4). The three pillars, with illustrative intervention activities, are presented on the following page.

## **INTERVENTION EXAMPLES**

This review discusses eight interventions that consider the structural factors required to address the needs of FSWs, with a focus on economic empowerment. These interventions feature either microfinance and/or vocational training as an approach to meeting the economic needs of FSWs. The literature on economic strengthening interventions for FSWs is limited, and intervention studies were selected based on the quality of information available. In addition to

**Pillar 1: Assure universal access to comprehensive HIV prevention, treatment, care and support.**

- Removing structural barriers to access
- Information and education
- Preventive services
- Linking and integrating services
- Eliminating violence against SWs

**Pillar 2: Build supportive environments, strengthen partnerships and expand choices.**

- Addressing stigma
- Expanding choices
  - Alternative employment
  - Housing
  - Education, including vocational training
  - Control of family assets
  - Microfinance mentioned here

**Pillar 3: Reduce vulnerability and address structural issues.**

- Gender norms
- Poverty
- Education for all
- Address needs of refugees, IDPs, migrants, asylum seekers

*Adapted from UNAIDS, 2012 p. 7*

interventions focused primarily on economic strengthening, the Sonagachi Project, a community mobilization project with a secondary impact on economic strengthening, was also included as an example of best practice.

## **Community Mobilization**

Community mobilization is an intervention tactic that encourages collectivization to bring about structural change. Interventions using this strategy seek to change social and political structures by organizing FSWs to confront structural barriers

on multiple levels, resulting in both individual and collective empowerment (Blanchard et al., 2013).

A common feature of community mobilization interventions is the use of peer-education, typically through training FSWs to become peer-educators in their communities to teach other FSWs about HIV-related topics. Peer education is widely supported as a best practice in HIV intervention (Gay et al., 2012). A systematic review of 30 studies on peer education interventions between 1990 and 2006 showed that interventions increased knowledge of HIV, decreased equipment sharing for drug users, and increased condom use (Medley, Kennedy, O'Reilly, & Sweat, 2009). Other tactics include forming FSW cooperatives to provide vital services to the community, such as microfinance or running clinics, and lobbying for political change.

### **The Sonagachi Project**

The Sonagachi Project is one of the best-known FSW interventions. It has received the honor of being designated a model HIV-prevention project by the World Health Organization and has received recognition in the New York Times (Basu et al., 2004). Although it wasn't designed with an "empowerment" focus, it evolved from a behavioral HIV-prevention intervention to a full-scale social movement. The Sonagachi HIV STD Project (SHIP) began in 1992 in Songachi, a red-light area in Kolkata, India, where baselines showed that 80% of sex workers had STIs, only 1% used condoms, and 1% had HIV (Evans et al., 2010).

The goal of SHIP was to address vulnerability to HIV among FSWs, among whom India's HIV epidemic is concentrated, through clinics in red-light areas and peer education on HIV-related topics. The focus of the project shifted to promoting collective action and empowerment. As peer educators built relationships with other FSWs, ideas began to spread and FSWs began to

gain the organizing capacity to develop their own collectives. This resulted in a change to the internalized stigma in the discourse among sex workers and in the community, encouraging political mobilization and changes in larger political norms. Eventually, one of the collectives, Durbar, took charge of the project. The mobilized FSWs lobbied the government to register their collective as a state-recognized cooperative, overcoming opposition from the state as well as social stigmatization. The FSWs received “formal recognition as an occupational group by the State for the first time” (p. 459). In response to demand, the USHA Multi-purpose Cooperative was formed to provide microfinance and banking services. Although no control study was conducted, the impact of the intervention has been clear. HIV levels among sex workers in Kolkata have been steady at 11%, with consistent condom use at 80%. This is a marked difference from surrounding major cities such as Mumbai, where HIV levels among FSWs were at 23.62% in 2010 after a peak at 54.29% in 2003 (Evans et al., 2010, p. 459).

There are a number of descriptive and qualitative studies on the Sonagachi Project, but few quantitative studies (Swendeman, Basu, Das, Jana, & Rotheram-Borus, 2009). One such study replicated the intervention to test the efficacy of the Sonagachi model in increasing condom use in a controlled environment, using community organizing and advocacy, peer education, condom social marketing, and establishing a health clinic (Basu et al., 2004). The study randomly selected 100 sex workers each from two communities in India, receiving assessment every 5-6 months over 15 months. These communities were matched with control communities based on size, socioeconomic status, and number of sex workers. The results of the study showed that condom use increased in the intervention community to 39%, compared to 11% in the control community. The

proportion of consistent condom users increased by 25% in the intervention community, where the control community experienced a 16% decrease.

Because only two study communities were assessed, the generalizability of these results is limited. Furthermore, information on condom use was generated using self-report data, which could be biased. Finally, some contamination between control and intervention communities was possible, further limiting the validity of study results. Nonetheless, the study adds significantly to the literature on HIV interventions with FSWs by testing the Sonagachi model using a control group.

A follow-up on this study evaluated the model’s impact against five common factors of effective, evidence-based HIV/STD prevention programs, including: 1) providing a frame to motivate change; 2) increasing knowledge of risk and protective factors; 3) building cognitive, affective, and behavioral skills; 4) reducing environmental barriers to change; and 5) building ongoing social support to sustain change over time” (Swendeman et al., 2009, p. 1158). Given the difficulty of measuring empowerment as an abstract construct, this study sought to contribute to the evidence base for empowerment-based interventions by measuring empowerment according to the above proxies. The study used assessment activities and interviews with FSWs to construct a summary outcome index.

One limitation of the study was that there was greater attrition, with only 80% retention, in the control community than the intervention community, where the retention rate was 93%. Another issue had to do with the construction of the index, which was not balanced across domains. However, the authors conclude that though both the control and intervention communities received “STD/ HIV prevention and treatment services, the Sonagachi

empowerment intervention improved the majority of the HIV/STD linked measured outcome variables, demonstrating that empowerment intervention components can enhance health-related prevention outcomes above and beyond the impacts of clinical services and health education” (p. 1165).

The success of the Sonagachi Project underscores the role of community mobilization and empowerment in HIV prevention interventions for FSWs. Though Sonagachi was not originally intended to be an economic strengthening project, it later incorporated microfinance through the FSW-run USHA cooperative. There is little evidence of the specific impact of economic strengthening on the success of Sonagachi, but its structural approach can serve as a model for other HIV-prevention interventions with FSWs.

### **Economic Strengthening for FSWs**

Economic strengthening interventions directed toward FSWs typically incorporate microfinance and/or vocational training, with the goal of decreasing FSWs’ vulnerability to HIV by decreasing their financial reliance on sex work. As discussed, economic need is associated with decreased bargaining power and decreases in the likelihood that FSWs will refuse clients who insist on sex without a condom. It is also associated with higher levels of debt, and, in turn, violence. Economic strengthening interventions seek to diversify FSWs’ income sources or to enable them to leave sex work altogether for alternative forms of employment. They can also serve as platforms for HIV education and conduits for social capital development (Kennedy et al., 2013). Overall, however, the evidence remains mixed on the efficacy of income-generating interventions in preventing HIV.

### **Evidence on Economic Strengthening for HIV Prevention**

Microfinance is a well-documented intervention for the purposes of women’s empowerment and poverty-reduction, though it is still not a primary response to HIV, and evidence for its effects in the context of HIV prevention for FSWs is more limited (AIDSTAR-One, 2010). Microfinance, particularly microcredit, has received some criticism in recent years based on evidence of potential negative consequences for participants. In some cases, women take out microloans merely as proxies for their husbands, who retain control over the household finances. In other cases, microcredit, microenterprise, and economic empowerment activities for women can trigger domestic violence, divorce, or greater workloads for women tasked with domestic responsibilities in addition to microenterprise responsibilities. Overall evidence on the efficacy of microfinance remains mixed (Duvendack et al., 2011).

On the other hand, microfinance has yielded some stunning, positive results. A World Bank study, for example, attributed 40% of the rural poverty reduction experienced in Bangladesh from 1991 to 1999 to microfinance (Khandker, 2005). One of the most well-known examples of the impact of microfinance on HIV is the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) Project, which began in the Limpopo province of South Africa in 2001. IMAGE began as a pilot with randomized control trial evaluation and has since been scaled up. Today, it continues to provide HIV education and microfinance to women. According to a 2007 evaluation, IMAGE resulted in a 55% decrease in domestic violence as well as enhanced well-being, confidence, and influence in household decision-making (AIDSTAR-One, 2010).

Additionally, the IMAGE study compared a microfinance intervention to a control as well as a microfinance and health education intervention to

a control (Kennedy et al., 2013). Compared to the control, the microfinance intervention did not yield significant differences in condom use. The microfinance intervention that incorporated gender and HIV education reported greater likelihood among participants to seek counseling and less likelihood to report unprotected sex, but no difference in frequency of multiple partnerships.

In their systematic review of income-generating interventions and their impact on HIV, Kennedy and colleagues (2013) list two studies that tested the combination of microfinance, health education, and business development education. The first, an FSW intervention that introduced condoms, group-based loans, and business training and mentorship, resulted in fewer sex partners among participants and increased condom use with regular partners, but no change in casual partners (Odek et al., 2009). A second study of the Shaping the Health of Adolescents in Zimbabwe (SHAZ) intervention did not demonstrate changes in condom use (Kennedy et al., 2013).

Finally, studies of interventions combining vocational training and health education also show mixed results. In Uganda, a youth intervention yielded significant decreases in number of sex partners, more abstinence and condom use, but no change in sexual activity (Rotheram-Borus, Lightfoot, Kasirye, & Desmond, 2012). Similar interventions with FSWs, discussed below, did not significantly affect condom use (Lee et al., 2010; Sherman et al., 2010).

## **Microfinance**

### ***Kenya Voluntary Women Rehabilitation Centre (K-VOWRC)***

The Kenya Voluntary Women Rehabilitation Centre (K-VOWRC) was established in 1992 to provide sex workers with the social and economic

skills necessary to leave sex work (McCormick & Munguti, 2003). In addition to business loans, K-VOWRC provided women with counseling and peer support. In a study conducted between 1999 and 2000, over 75% of participants reported that the program had effected a change in their work. Positive changes were reported in “health status, drug use, social interaction and status, and economic status” (p. 59). Although a number of women in the program found alternative work, about 60% of participant loans were in arrears. Overall, though the program delivered on its intended social outcomes, its model was proven to be financially unsustainable.

K-VOWRC has since been incorporated into state-run HIV-prevention programming and is now known as HerStory Centre, including the following programs: Health Education, Counseling and Paralegal Training; Peer Lead Support System; Girls Vocational Training, which was recently funded by the Bill and Melinda Gates Foundation; and Family and Kinship Support (HerStory Centre, 2012). Although data is not available on the effectiveness of the current programs, it is clear that K-VOWRC has altered its strategy and increased its sustainability as HerStory.

### ***Pragati***

Pragati is a large-scale HIV prevention program targeting FSWs in Bangalore, India. It was launched in 2005 with support from the Gates Foundation, UNDP, Karnataka State AIDS Prevention Society, and Vrutti, and is implemented by Swathi Mahila Sangha (SMS), a sex worker collective, and Swasti, a health resource center (Souverein et al., 2013). The program provides a holistic set of services including microfinance services, de-addiction services, condom promotion, STI prevention and detection, and the provision of safe spaces for self-care. The program is based on the theory that the empowerment of FSWs will serve as

protection against health risks and HIV transmission.

Pragati is based on three intervention strategies:

(1) protect and respond, which involves implementing an outreach strategy in which peer educators and outreach workers start a dialogue with the FSWs about the services and benefits offered through the Pragati programme (this strategy also involves sensitising primary and secondary stakeholders of the sex worker industry, e.g. brothel owners, pimps, and the police, to the problems and needs of FSWs);

(2) improve their quality of life through identifying and addressing long-term development needs such as providing support for alcohol de-addiction, providing savings and credit facilities, and creating options for alternative and diversified livelihoods; and

(3) build the capacities of the FSWs to address the issues that threaten their lives and livelihoods through strengthening group action and developing a strong collective of FSWs. (Souverein et al., 2013, p. 3)

A recent study examined program exposure, condom distribution, and STI rates of program participants between 2005 and 2008 (Souverein et al., 2013) using data collected by the clinics run by Swasti. Statistical analysis revealed significant increases in program exposure, decreases in STI incidence, and increases in reported condom use at last paid sex. Although this study suffered from a lack of a control group and a relatively short follow-up time (1.48 years), it is one of the few studies on similar programs that is longitudinal, rather than cross-sectional.

Through Pragati, a cooperative Women's Bank (Swathi Jyothi) was set up by SMS. A study evaluating the reach of the program yielded evidence of promising uptake of microfinance services, with more than half of the over 3,000 women that joined as shareholders between 2007 and 2010 opening savings accounts, and 2.2 million rupees (\$38,500 USD) in savings accumulated during this period (Euser et al., 2012). This study also emphasized the demand for the crisis response component of the program, highlighting the need to address violence against FSWs.

Finally, Pragati has demonstrated success in reaching scale and maintaining cost efficiency. Between 2005 and 2010, the cost of the program per sex worker was about \$38, in accordance to the suggested guidelines by the Indian government's National AIDS Control Organisation, Ministry of Health and Family Welfare (NACO) (Euser et al., 2012, p. 11).

### **Vocational Training: SiRCHESI's Hotel Apprenticeship Program (HAP)**

SiRCHESI (Siem Reap Citizens for Health, Educational and Social Issues) is a Cambodian NGO that founded the Hotel Apprenticeship Program (HAP) in 2006 in order to reduce HIV risk for beer sellers by helping them find alternative employment (Lee et al., 2010). In Cambodia, beer sellers are women who sell a particular brand of beer at bars. They typically engage in sex work to supplement their limited earnings, and thus are considered indirect sex workers. Beer sellers face abuse, and often report overuse of alcohol, as clients frequently encourage or coerce them into excessive drinking on the job, placing them at greater vulnerability to sexual predation. SiRCHESI partners with local hotels to enroll beer sellers in an 8-month hotel apprenticeship program to transition them into more secure and safer employment. The program provides training on literacy, English, social skills,

health education, and hotel skills.

A matched sample of 14 beer sellers were studied using a quantitative survey and semi-structured interviews, finding that although positive changes were observed in health-related knowledge, behavior, self-image and empowerment, condom use did not increase (Lee et al., 2010). It was also found that women do not use condoms consistently with their husbands, despite the likelihood for infidelity or paying for sexual services elsewhere, placing them at continued risk for HIV infection.

### **Combined Microfinance and Vocational and/or Business Training**

#### ***Pi Bags***

The Pi project seeks to decrease sexual risk behaviors among street-based FSWs in Chennai, India, by providing HIV education and a microenterprise project involving training in tailoring canvas bags for export sale (Sherman et al., 2010). The pilot for the project was initiated in 2008 by the Johns Hopkins Bloomberg School of Public Health and Y. R. Gaitonde Centre for AIDS Research and Education (YRG CARE).

This pilot study evaluated the feasibility of the intervention, involving 100 participants in an intervention group, which received microenterprise training and support as well as HIV education, compared to a control group that only received HIV education. Assessment was undertaken at baseline, with a 6-month follow-up. The project provided training to FSWs to tailor export-quality canvas bags, which were sold by the Pi Foundation, a non-profit set up for the purpose of the project. Participants were paid to incentivize their participation in the program.

The results on the impact of the project were quite positive. For the intervention group, economic well-being increased due to a “42% increase in monthly income and a 41% reduction

in income earned from sex work from baseline to follow-up” (p. 655). Both groups reported reduction in number of sex partners. No significant changes in condom use were reported, although the authors attribute this to the effects of an existing condom promotion program in the area.

However, because program participation included remuneration at a higher level than participating in sex work, increases in income can be interpreted as a result of the project design rather than the impact of microenterprise. The financial sustainability of the project is also questionable, given the necessity of setting up a whole new non-profit to market and distribute the products made by participants. Finally, though the intervention group experienced significantly greater sex partner reduction than the control group, this could also be attributable to participation in the microenterprise activity, which the authors recognize as “time-intensive” and a potential practical barrier to participation in sex work.

#### ***Undarga***

The Undarga intervention developed out of feedback given by FSWs who had participated in an HIV reduction trial in Mongolia (Laura Cordisco Tsai, Witte, Aira, Altantsetseg, & Riedel, 2011). To meet the emerging demands for HIV education and support for gaining alternative employment, Undarga was launched as a pilot to test the feasibility of a matched-savings program for FSWs, where matched funds could be used for business development or vocational education. Undarga also provided training in financial literacy and business development as well as mentorship and support. Participants were compensated for participation in trainings. Like similar projects, it was based on the rationale that diversifying FSW income increases bargaining power and reduces vulnerability to HIV. It sought to address some of the sustainability issues with microcredit by introducing a savings-led model. It was also

intended to help FSWs transition to alternate employment. This intervention was meant to have a larger impact on HIV rates in Mongolia as well, where 50% of reported infections among females are found among FSWs.

The feasibility study for Undarga was conducted in 2010 and featured a purposive sample of nine FSWs, who were assessed using written financial literacy and business development tests. They also participated in focus group discussions conducted after trainings and a month after the end of the pilot. Results from the study showed increases in confidence in financial management, improved outlook on finding alternative employment, some improvements in financial literacy, and “initial transition from sex work to alternative income generation for five out of nine participants” (p. 26). Results from the matched-savings portion of the pilot, however, were inconclusive, as this portion of the intervention was only implemented for five weeks. Though the pilot was very small and the matched-savings component was not long enough to adequately assess its impact, it is one of the few studies to assess the combination of vocational training and savings-led microfinance for FSWs.

### **Strengthening STD/HIV Control Project in Kenya (SHCP)**

The Strengthening STD/HIV Control Project in Kenya (SHCP) pilot, implemented by the University of Nairobi and University of Manitoba, tested the effects of adding microfinance to HIV interventions for FSWs in Kenya (Odek et al., 2009). Originally an HIV-prevention peer education program, SHCP responded to participant demands for microfinance services by partnering with a local microfinance institution. Its initial pilot of this approach included 102 participants from 1998-2002, while a scaled up pilot with 227 FSWs lasted from 2003 to 2005. Program components included microcredit for small business development, business

development training, and the promotion of savings practices. The goals of the intervention were to encourage alternate employment and decrease risky behaviors by decreasing number of sex partners and increasing condom use.

The results of the second pilot evaluation, which included a series of surveys and interviews, found that 2/3 of participants had started their own businesses by the end of the study, half reported exiting sex work, and the overall weekly mean number of sex partners was reduced. The number of casual partners, however, did not decrease. The evaluation was based on a pre- and post- analysis without any control, limiting its ability to isolate secular effects on outcomes. Like other studies, it also measured condom use and sexual behaviors according to self-report data, which could suffer from social desirability bias.

### **Combined Economic Strengthening and Community Mobilization**

Most of the literature reviewed featured interventions that either prioritized emphasis on economic strengthening or on community mobilization. A good example of this is Project Avahan in India, a large-scale HIV prevention program for FSWs that has received acclaim and has been cited as a model program (Rau, 2011). Influenced by the Sonagachi Project, Avahan is known for its combination approach to HIV prevention, including facilitating structural change through community mobilization. However, though microfinance appears as an intervention strategy in some Avahan programs (Blanchard et al., 2013), the economic aspect of the program has received little emphasis and little study. The Karnataka Health Promotion Trust (KHPT), also in India, provides an example of a program that emphasizes both mobilization and economic strengthening.

## Karnataka Health Promotion Trust (KHPT)

The Karnataka Health Promotion Trust (KHPT) was established by the Karnataka State AIDS Prevention Society and the University of Manitoba in 2003 in Karnataka province, India to implement and evaluate HIV prevention programs (Pillai et al., 2012). Through its research project, STRIVE, KHPT recently evaluated the effects of programming that combined community mobilization and savings-led microfinance interventions.

The impact of these programs on safe sex practices was tested across the Shimoga, Bellary, and Bangalore Urban districts of Karnataka, starting with baselines conducted between 7 and 19 months after the start of the program, with follow-up surveys conducted 28-37 months later. Integrated Biological and Behavioral Assessments (IBBA) and focus groups were conducted with members and non-members of a group or CBO. This information was used to analyze primary outcomes of collectivization and condom use in the previous year and secondary outcomes of HIV/STI prevalence, condom use with clients and partners, and HIV prevention.

In focus group discussions, FSWs reported that participation in microfinance helped them practice

safer sex. It also emerged that group members had much greater exposure to program interventions than non-members (Pillai et al., 2012). Differences in outcomes across the three districts highlighted differences in organization among FSWs.

Increased condom use was also demonstrated among members compared to non-members in Bellary and Bangalore Urban, but not Shimoga. Where microfinance services were provided through groups where FSWs had membership or the Swathi Jyothi cooperative, such as the FSWs in Bellary and Bangalore Urban, they practiced safer sex. In Shimoga, on the other hand, FSWs accessed credit from other microfinance groups and were comparatively less successful (p. xii). These differences underscore the role of microfinance in encouraging safe sex practices. Other lessons learned include the need to include financial discipline in economic strengthening interventions, as well as the role of economic strengthening initiatives in reducing stigma.

The study design may have suffered from social desirability bias, as sex workers were exposed to repeated rounds of behavioral questions. As a longitudinal design across several districts, however, it brings the benefit of comparing across various collectivization strategies.

## Summary Table of Interventions

Intervention Name	Intervention Type	Outcomes	Strengths	Weaknesses	Sources
Sonagachi HIV STD Intervention Project (SHIP) (1992 - ), Kolkata, India	Community Mobilization	Reduction in STIs	Considered a model empowerment-based project	No studies with control available, so difficult to isolate causal mechanisms	(Basu et al., 2004; Evans et al., 2010; Ghose, Swendeman, George, & Chowdhury, 2008; Jana, Basu, Rotheram-Borus, &
	Clinical Services	Political/legal structural change	Facilitated sustained structural change	Organic evolution did not elaborate causal framework	
	Peer Education	Increased condom use			
	Microfinance				

Intervention Name	Intervention Type	Outcomes	Strengths	Weaknesses	Sources
					Newman, 2004; Swendeman et al., 2009)
<b>Pragati, Swathi Mahila Sangha (SMS) and Swasti, (2005 - ), Bangalore, India</b>	<p>Microfinance</p> <p>Crisis response team</p> <p>De-addiction services</p> <p>Condom promotion</p> <p>STI prevention and detection</p> <p>Rest places/safe spaces</p> <p>Peer Education</p>	<p>Reduction in STIs</p> <p>Increase in condom use</p>	<p>Longitudinal evaluation results</p> <p>Combination intervention approach</p> <p>Large-scale program with significant reach</p> <p>Cost-effective</p>	<p>No control group</p> <p>Relatively short follow-up time</p>	(Euser et al., 2012; Souverein et al., 2013)
<b>STRIVE, Karnataka Health Promotion Trust (KHPT), (2011-2017), India</b>	<p>Community Mobilization</p> <p>Savings</p> <p>Peer Education</p> <p>Clinical Services</p>	<p>Increased condom use (in Ballary and Bangalore Urban)</p> <p>Decreased stigma (Bellary)</p> <p>Decreased violence (some sites)</p> <p>Increased knowledge about condoms and STIs</p> <p>Enhanced self-perception</p> <p>Improved clinical services</p>	<p>Reaches large number of rural FSW</p> <p>Has contributed to Avahan project implementation and inclusion of sex workers in national guidelines on HIV prevention</p> <p>Designed in consultation with FSWs</p>	Social desirability bias in evaluation results	(Pillai et al., 2012)

<b>Intervention Name</b>	<b>Intervention Type</b>	<b>Outcomes</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Sources</b>
<b>Kenya Voluntary Women Rehabilitation Centre (K-VOWRC) / HerStory, (1992 - ), Nairobi, Kenya</b>	Microfinance Counseling Peer support	Alternative employment Increased self-esteem High loan losses Decreased drug and alcohol use	Social outcomes reached successfully Evolved to incorporate more integrative programs as HerStory	2003 study demonstrated lack of financial sustainability No current evaluation data available on HerStory	(McCormick & Munguti, 2003)
<b>Hotel Apprenticeship Program (HAP), (2006 - ), Siem Reap, Cambodia</b>	Vocational training HIV education*	Alternative employment Increased health knowledge No increase in condom use	Reached indirect sex workers, who might not identify as sex workers Addressed alternative employment needs working with local partners	Did not address HIV prevention care and support Did not address gender norms Not “transformatory” (Evans)	(Lee et al., 2010)
<b>Pi Pilot, (2008 - ), Chennai, India</b>	Vocational training Microenterprise HIV education	Alternative employment No change in condom use Decreased number of sex partner	Randomized control trial evaluation Addressed economic empowerment issues	Questionable sustainability – required creation of supplementary NGO Not “transformatory” – no community mobilization	(Sherman et al., 2010)
<b>Undarga, (2010), Ulaanbaatar, Mongolia</b>	Matched savings Financial literacy Business training Mentorship	Alternative employment Increased financial literacy Greater confidence	Addressed economic empowerment, including savings	No HIV education component No community mobilization No integration with other services	(Laura Cordisco Tsai et al., 2011)
<b>Strengthening STD/HIV Control</b>	Microcredit	Alternative	Community	No control study	(Odek et al.,

Intervention Name	Intervention Type	Outcomes	Strengths	Weaknesses	Sources
<b>Project (SHCP) pilots, (1990 - 2006), Kenya</b>	Business training  Mentorship  Savings	employment  Fewer sex partners  Increased condom use	mobilization  Transformatory – demand for MF services from participants  Integrated services	Peer education did not mention*/address violence or stigma	2009)

## Analysis

Impact studies of economic strengthening interventions with FSWs provide strong evidence in favor of integrated, structural interventions as best practice. The most successful of the interventions discussed here adhere to the UNAIDS guidelines for interventions with FSWs. Most notably, these interventions tend to be driven by the FSWs themselves: either directly through cooperatives, or indirectly through consultation. These interventions better resemble Evans and colleagues' conception of "transformatory" interventions, where goals are set by beneficiaries as active agents, rather than "instrumental," where goals are set externally (Evans et al., 2010).

The most celebrated and successful of the interventions discussed in this review is the Sonagachi Project. Sonagachi addressed all three pillars of the UNAIDS guidelines to create sustained, structural change. This was accomplished through community mobilization, which in turn helped change community perceptions of sex work and reduce stigma, culminating in political-legal change that helped FSWs organize and claim their rights. It is important to note here that organizing was the first step of generating change. Economic strengthening activities followed, based on demand from the FSW community.

Pragati also illustrates a comprehensive, combination approach to HIV prevention, with demonstrated cost-effectiveness. This project addressed health needs beyond STI reduction by providing de-addiction services. Finally, SHCP took a mobilization approach, with its original peer education program expanding to provide economic strengthening based on participant demand. Like Sonagachi, these two interventions were strongly led by FSWs themselves.

The interventions that yielded less successful impact results were externally determined, rather than internally directed by FSWs. K-VOWRC demonstrated strong results for its social objectives, but suffered from unsustainable micro-lending practices, using a strategy that ultimately proved untenable (Undarga and KHPT addressed this problem by choosing savings-led approaches instead). HAP and Pi also demonstrated questionable financial sustainability, both dependent on ongoing donations to provide services. HAP did not meet its objective of increasing condom use, and Pi's reported increases in FSW income and transition away from sex work can be attributed more to the provision of a guaranteed work opportunity than capacity-building.

Though there is little information on the cost-effectiveness of most of the interventions in this review, the evidence for the cost-effectiveness of FSW interventions is strong, particularly for areas

with concentrated HIV epidemics, with an estimated average cost of \$102 to \$184 per participant (D. Kerrigan et al., 2012). Sonagachi is cited as a cost-effective intervention, as is Pragati. Interventions with unsustainable microfinance strategies, such as K-VOWRC, or social business strategies, such as Pi, have not demonstrated cost-effectiveness.

Overall, this review confirms previous analysis suggesting that there is more evidence in support of interventions featuring microfinance services combined with health services than for vocational training (Kennedy et al., 2013). It also supports “transformatory” intervention for lasting change. Interventions should always feature HIV education and prevention services. Though evidence on vocational training for HIV prevention among FSWs is mixed, the evidence base includes studies of various intervention strategies, many of which do not include a comprehensive approach. It is possible that vocational training interventions will be more successful when combined with other types of support.

## RECOMMENDATIONS FOR FUTURE RESEARCH AND PILOTING

### Preliminary Research for Pilot Interventions

FSWs are a heterogeneous group with varied needs in environments that vary politically, socially, and economically. Understanding a population’s unique circumstances in a given setting is critical to designing an intervention to adequately meet their needs. As such, it is recommended that research undertaken prior to piloting feature careful attention to the structures of vulnerability that project participants face in

### Research Gaps in the Literature

- Many studies fail to gather data on anal sex, a risky behavior
- Most studies rely on self-report data on condom use and other behavioral patterns
- Most studies gather information on male condom use, neglecting female condom use

*From Scorgie et al, 2012*

their daily lives. For FSW populations, this must include the delicate but critical topic of violence.

The literature on the lives of FSWs is not extensive. It is especially thin on structural analysis of vulnerability and economic behaviors and practices. Analyzing both of these dimensions can yield key insights for intervention design. Pre-pilot research should examine the social networks of FSWs, the occupational structures they inhabit, and distinguish between different types of FSWs and their respective circumstances. This includes indirect sex workers, who may be hidden or may not identify as sex workers. Understanding the social capital of FSWs can yield insights on the potential for collectivization and peer education.

Understanding economic structures will help illuminate the economic needs and opportunities available for FSWs. This is connected to FSW capacity for employment, including their skills and education levels. It is important to investigate power dynamics, as many FSWs are caught in economically exploitative positions due to debt-bondage, the illegal status of their work, backgrounds of poverty, and lack of better opportunities. Other inter-related dimensions for analysis include stigma, violence, and health-

related knowledge.

Though surveys can be used to collect some of this information – particularly that pertaining to health knowledge and consumption – qualitative research, including interviews and focus groups, will be important to obtaining a nuanced picture of the circumstances FSWs face. The most sustainable structural interventions are FSW-led, so intervention design should also be attuned to the demands of internal conceptions of vulnerability of the target population. It should be noted that sex work remains illegal in many countries, making FSWs a very sensitive population. Any research should be handled with extreme care and attention to maintaining the anonymity of those involved.

### **Research Gaps and Recommendations for Piloting**

There is a strong need for further research on economic strengthening interventions for FSWs. Overall, there is still a limited body of research on the effect of economic insecurity on HIV vulnerability among FSWs (Reed et al., 2010). Furthermore, the specific mechanisms by which economic strengthening may affect vulnerability remain unclear: whether increased income, social capital development, or other factors affect outcomes demands further investigation (Dworkin & Blankenship, 2009). Though discussed as a risk factor for HIV transmission, food insecurity is rarely addressed in FSW intervention. Research on how economic strengthening affect HIV risk among FSWs through the channel of food security is an opportunity for further exploration.

A great deal of attention has been given to FSW interventions in India, which has the largest number of HIV cases of any country and where the HIV epidemic is most concentrated among sex workers. Though research on Indian interventions has yielded important insights, it is

not always generalizable. This is particularly true because, in India, sex work is not illegal, which greatly expands opportunities for community mobilization and the pursuit of occupational rights (Evans et al., 2010). In this review, it is notable that community mobilization was featured only in Indian interventions. In other locations, it is unclear how possible it might be to pursue this strategy. Therefore, research is needed on the potential for mobilization in areas more hostile to sex worker rights.

There is also a trend in many studies to either focus on qualitative, “empowerment” variables or quantitative variables to measure HIV risk behaviors, such as condom use or number of sex partners. The effects of economic strengthening interventions are often mediated through such “empowerment” variables, so it is important to measure both.

Though there is a great deal of research on the role of microfinance on women’s empowerment, there is very little research done on savings-led approaches for sex workers. Similarly, inconclusive data on the impact of vocational training demands further investigation, particularly with regard to its effects when combined with microfinance.

In addition to economic strengthening, any pilot initiative must include HIV education, preferably in coordination with clinical service provision. It is also recommended to conduct the study with a control arm and a treatment arm to isolate secular variables. Furthermore, most of the research is based on cross-sectional data, with relatively few longitudinal studies. Longitudinal analysis would provide important insights on sustainability, particularly for a combination savings-led microfinance/vocational training intervention like Undarga, which yielded inconclusive results due to the timeframe of the evaluation (Laura Cordisco Tsai et al., 2011). Finally, a recurring problem in

the literature is the effect of social desirability bias on intervention evaluation results. Given that information on variables like number of sex partners and consistency of condom use depends on self-report data, there is a risk of misreporting. This can be ameliorated by separating pilot implementers from evaluators. Evaluations should also account for self-selection bias (Dworkin & Blankenship, 2009).

## CONCLUSION

The evidence is clear that targeting HIV prevention interventions to sex workers is a cost-effective, high-impact approach to combatting the global HIV epidemic. However, many opportunities for further research and innovation remain, particularly with regard to economic strengthening. More research is needed to investigate the causal mechanisms of effective economic strengthening interventions, including their effects on food security. Additionally, though the research is clear that participant-led interventions have proven sustainable and effective in confronting various structural factors of vulnerability to HIV, it is not clear how transferrable community mobilization approaches to structural change are to environments where sex work is illegal. Finally, there is more research needed on savings-led microfinance and combined microfinance/vocational training interventions. Addressing gaps through further research and piloting will provide a major contribution to the state of the practice of HIV prevention for FSWs.

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