

RELATIONSHIPS BETWEEN STIGMA AND INTIMATE PARTNER VIOLENCE AMONG  
FEMALE SEX WORKERS LIVING WITH HIV IN SANTO DOMINGO,  
DOMINICAN REPUBLIC

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## ABSTRACT

Amelia Clement Rock: Relationships Between Stigma and Intimate Partner Violence Among Female Sex Workers Living with HIV in Santo Domingo, Dominican Republic  
(Under the direction of Clare Barrington)

**Background:** Intimate partner violence (IPV) victimization is associated with numerous adverse health outcomes, including suboptimal HIV treatment. Violence against female sex workers (FSW) perpetrated by intimate partners outside of sex work (e.g. boyfriends or husbands) has received little attention. Stigma negatively influences economic resources, social relationships, and psychological and behavioral outcomes of the stigmatized, which may increase IPV risk. Informed by stigma, economic, and alcohol use motivation theories, I assessed relationships between HIV and sex work stigma and IPV among FSW living with HIV, including indirect effects via income, savings, and alcohol use.

**Methods:** I analyzed cross-sectional and longitudinal survey data from a cohort of FSW living with HIV in Santo Domingo, Dominican Republic (n=266). I used multivariable logistic regression to assess relationships between enacted, anticipated, and internalized HIV and sex work stigma and recent IPV victimization (Aim 1), and path analysis to examine mediated relationships between stigma and IPV via income, savings, and alcohol use (Aim 2).

**Results:** Participants reporting HIV-related job loss had 5.6-times the odds of IPV compared to others (95% CI: 1.9, 16.2). A higher level of fear of family exclusion due to HIV was associated with a 1.8-fold increase in IPV odds (95% CI: 1.12, 2.82), and a higher level of fear of colleagues taking your clients if you revealed your status was associated with a 1.7-fold increase in IPV odds (95% CI: 1.2, 2.6). Indirect effects were insignificant. Social HIV

discrimination was negatively associated with income, and alcohol use and savings were positively associated with IPV.

**Conclusions:** HIV stigma may undercut economic resources, social ties, and mental health, creating barriers to ending abusive relationships, or causing stress and couple conflict leading to IPV. Stigma-driven economic precarity may heighten the importance of maintaining intimate partner relationships, despite violence. Fears of family rejection may discourage HIV disclosure, diminishing social support that protects against IPV, or create a specter of isolation that hampers ending abusive relationships. Curbing workplace HIV discrimination could reduce IPV vulnerability by protecting against economic losses and precarity. Community mobilization interventions could address IPV by increasing peer support and providing the experience of supportive community.

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## LIST OF ABBREVIATIONS

ART	Antiretroviral therapy
BL	Baseline
BLFU	Baseline/follow up
CEDAW	The Convention on the Elimination of all Forms of Discrimination Against Women
CEPROSH	Centro de Promoción y Solidaridad Humana
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CI	Confidence interval
COIN	Centro de Orientación e Investigación Integral
CONAVIHSIDA	Consejo Nacional para el VIH y el SIDA
DV	Dependent variable
DHS	Demographic and Health Surveys
EFA	Exploratory factor analysis
FSW	Female sex workers
FU	Follow up
GBV	Gender-based violence
HIC	High-income countries
HLIE	Half-longitudinal indirect effect
IBBSS	Integrated Biological and Behavioral Surveillance Survey
ILO	International Labour Organization
IV	Independent variable
IPV	Intimate partner violence

LAC	Latin America and Caribbean
LMIC	Low- and middle-income countries
MCAR	Missing completely at random
MODEMU	El Movimiento de Mujeres Unidos
MSM	Men who have sex with men
ND	No date
NGO	Non-governmental organization
OTRASEX	La Organización de Trabajadoras Sexuales
PLHIV	People living with HIV
RMSEA	Root-mean-square error of approximation
TLI	Tucker–Lewis Index
UNAIDS	The Joint United Nations Programme on HIV/AIDS
USAID	U.S. Agency for International Development
WHO	World Health Organization
WLS	Weighted least squares

## CHAPTER 1. INTRODUCTION: AIMS AND OVERVIEW

Intimate partner violence (IPV) victimization among women is associated with a host of negative health and social outcomes, including depression and social isolation,<sup>1-4</sup> unintended pregnancy,<sup>5</sup> HIV infection,<sup>6-10</sup> poorer physical functioning and general health,<sup>11</sup> and injury and death.<sup>12-14</sup> An increasing number of studies also show harmful effects of IPV on antiretroviral therapy (ART) adherence and HIV viral suppression,<sup>15-18</sup> indicating that IPV is a major threat to the health and wellbeing of women living with HIV and public health efforts to stem the epidemic through treatment-as-prevention approaches.<sup>19-24</sup>

Compared to the global research, policy, international frameworks, and programming dedicated to violence against women generally, violence against female sex workers (FSW) has received little attention.<sup>24-29</sup> The body of work on violence perpetrated against FSW by their intimate partners outside the context of sex work who do not pay for sex acts (e.g. husbands or boyfriends) —is particularly limited. In the one systematic review of multivariable quantitative studies of violence against FSW globally, 4% to 73% of FSW reported experiencing violence perpetrated by an intimate or other nonpaying partner, a wide range based on only three studies meeting inclusion criteria.<sup>28</sup> Many existing studies of violence against FSW do not specify or disaggregate perpetrators,<sup>10,30-33</sup> which inhibits interpretation of their findings with regard to the distinct etiology of IPV, since risk factors for IPV can differ from risk factors for violence perpetrated by others.<sup>2,15,34,35</sup> Not specifying the perpetrator also limits usefulness of study findings for intervention design, since violence experienced in different relationship contexts may call for different responses—for example, while interventions addressing workplace



characteristics, such as policing that drives street-based sex workers' transactions into remote locations, may be helpful for addressing client violence risk,<sup>32</sup> they may have little relevance to violence within intimate partner relationships. The studies of violence against FSW that do specify perpetrator(s) typically focus on violence perpetrated by clients and police, even though, in many contexts, violence from intimate partners appears more prevalent.<sup>2,15,36-38</sup> Finally, most studies examine simple risk factor/outcome associations with cross-sectional data, leaving more complex pathways through which factors relate to IPV unexplored.<sup>28,39</sup>

Although research has identified a number of factors that may increase the risk of IPV victimization among FSW,<sup>2,27,32,34,40-42</sup> the influence of stigma remains understudied. Stigma is regarded by FSW, people living with HIV (PLHIV), and researchers as a powerful structural driver – contextual factor external to the individual, such as economic policies, laws, and social norms<sup>43-45</sup>—of their health, lived experiences, and relationships.<sup>44,46-59</sup> FSW living with HIV contend with both HIV stigma and sex work stigma, which are mutually reinforcing and exacerbated by stigma associated with gender, race, class,<sup>58,60,61</sup> an interplay defined as intersectional stigma.<sup>62-64</sup> Per Hatzenbuehler et al.<sup>65</sup> stigma produces various adverse social and health outcomes among stigmatized people through mediated pathways, including negatively affecting their available economic resources and social relationships, and spurring psychological and behavioral responses such as substance use.<sup>65</sup> When these pathways are considered in tandem with empirical and theoretical scholarship on IPV risk factors, stigma appears as a potential important structural driver of IPV among FSW living with HIV, and economic resources and alcohol use as potential mediators of the relationship.

Informed by theories of stigma, feminist economics, and alcohol use motivation, the purpose of this study is to assess pathways of influence between stigma and IPV against FSW

living with HIV. Given empirical research showing that different mechanisms of stigma have distinct relationships with health outcomes,<sup>66,67</sup> I examine enacted, anticipated, and internalized stigma related to sex work and HIV. In line with socio-ecological theories of IPV, I assume that variation in individuals' IPV risk is explained by a web of multilevel factors,<sup>24,39,68,69</sup> Specific aims include:

- 1) Assess the association between enacted, anticipated, and internalized HIV stigma and sex work stigma and IPV.
- 2) Examine explanatory mechanisms of relationships between HIV and sex work stigma and IPV, including economic resources and alcohol use.

To address these aims, I analyzed longitudinal quantitative data collected as part of *Abriendo Puertas* (Opening Doors), an intervention to promote HIV prevention and care within a cohort of 250 cisgender FSW living with HIV in Santo Domingo, Dominican Republic (2012-2014).<sup>70,71</sup> Surveys including measures of enacted, anticipated, and internalized HIV and sex work stigma were conducted at baseline and ten months follow up. The primary outcome in this study was self-reported IPV at follow up. Violence questions, adapted from the World Health Organization (WHO) Violence Against Women Instrument,<sup>72</sup> asked participants about their experiences of seven different acts of physical and sexual violence perpetrated by intimate partners in the last six months. A previous analysis of baseline data found that 18.3% of participants experienced violence from a sexual partner in the last six months, with a greater proportion reporting violence from intimate partners (12.3%) than from clients (8.3%).<sup>15</sup>

I conducted multivariable logistic regression to assess whether measures of HIV and sex work stigma are related to IPV (Aim 1), and path analysis to test mediation of these relationships by economic resources and alcohol use (Aim 2). This study expands the small literature on the

etiology of IPV among FSW and is one of the first to examine correlates of IPV among FSW living with HIV. Findings advance understanding of multiple pathways through which stigma may influence IPV vulnerability in this population, which can be used to develop programs and policies that address impacts of stigma and reduce IPV, potentially stemming numerous downstream adverse health and social outcomes.

## **CHAPTER 2. BACKGROUND**

### **2.1 Contextualizing this study: critical perspectives on sex work, terminology, and gaps in the research**

In this section, I first provide an overview of dominant theoretical perspectives and debates on sex work in scholarship and advocacy and situate this study and my perspective amongst these. I then critically analyze the gaps in research on intimate partner violence among FSW and argue that these are rooted in stigmatization of FSW. I then present my choice of key terminology—“sex workers” and “intimate partner”—reflecting on arguments for and against different options, including the potential to reproduce stigma and usefulness for social mobilization.

#### **Perspectives on sex work**

This study is preceded by a long-standing and ongoing debate around the nature of sex work and what society should do about it, originating in feminist dialogues, and involving voices from sex workers, the social and health sciences, policy and legal arenas, and community- and NGO-based activism. Sex work sociologist Ronald Weitzer has distilled three fundamental theoretical perspectives from the various schools of thought involved in these conversations: the oppression paradigm, the empowerment paradigm, and the polymorphous paradigm.<sup>73</sup> The oppression paradigm and the empowerment paradigm, espoused by groups of scholars and activists known as radical abolitionist or Marxist feminists and pro-sex feminists respectively, represent opposing ends of this debate. These two groups disagree about the fundamental nature of sex work and how, if at all, society should respond—is it possible for women to do sex work

by choice, or do the constraints placed upon them by economic structures and patriarchy limit their options to the extent that the notion of “consensual sex work” is a contradiction in terms?<sup>73-</sup>

<sup>75</sup> The two groups can also be differentiated in terms of their framing of the fundamental human rights violation associated with sex work: while for radical abolitionist feminists, the human rights violation is prostitution itself, for pro-sex feminists, the violation is state repression of prostitutes through criminalization of the practice.<sup>76</sup>

Radical abolitionist feminists such as Catherine MacKinnon, Carole Pateman, and Christine Overall argue that in context of patriarchal capitalism, prostitution is both the ultimate expression and cause of the subordination of women, whose existence is contingent upon inequality in social or economic power between prostitutes and their clients.<sup>77</sup> As it is an “institution of male supremacy” analogous to how “slavery was an institution of white supremacy”<sup>78</sup> and to rape,<sup>79</sup> it should be abolished rather than regulated or decriminalized. Prostitution is different from other forms of labor, including forms involving the sale of physical or intimate services, because it inherently entails the sale of women’s “self” on a more profound level than any other form of labor in which services of the body are sold.<sup>80</sup> Given the inherent exploitative and violent nature of prostitution, no woman who had any other option would choose it: “women in prostitution are observed to be prostituted through choices precluded, options restricted, possibilities denied.”<sup>74(p274)</sup> By this logic, women who are engaged in sex work are coerced – whether directly by pimps, or indirectly by the constraints of poverty – and thus victims.<sup>81</sup> In the view of feminists who reflect the empowerment paradigm, such as Anne McClintock, Lynn Sharon Chancer, and Camille Paglia, sex work is work, involves agency, and can be a means to liberation from patriarchy through sexual expression and/or economic independence.<sup>73,82</sup> They view radical feminists’ critique of prostitution as a hypocritical

reproduction of traditional, repressive morality around female sexuality, and of stigmatizing notions of FSW as victims.<sup>58</sup>

Weitzer's third, "polymorphous" paradigm, accepts aspects of the abolitionist and pro-sex feminists' arguments, but rejects the notion of an essential meaning, singular origin, or uniform experience of prostitution, as these are culturally and historically specific.<sup>82</sup> The polymorphous paradigm:

...holds that there is a constellation of occupational arrangements, power relations, and worker experiences. Unlike the other two, this paradigm is sensitive to complexities and to the structural conditions shaping the uneven distribution of agency, subordination, and job satisfaction.<sup>73(p215)</sup>

Scholars in this group are linked in part by their orientation toward "situating the meaning of prostitution empirically."<sup>82(p98)</sup> They document varying FSW experiences and working environments and interpret them within their broader structural contexts, using ethnography, surveys, and other forms of empirical investigation.<sup>61,73,82</sup> This work sheds light on how context and sex work arrangements modulate the extent to which consent and choice are possible, and the extent to which sex work exposes women to empowerment, liberating sexual expression, violence, and other harm.<sup>58,82</sup> Radical abolitionists reject the polymorphous approach, arguing that focusing on differences in the experiences of FSW and their working conditions circumvents the fundamental problem, which is that, "like rape, sexual assault, sexual harassment, and incest, prostitution is inherently gendered, a component and manifestation of the patriarchal institution of heterosexuality."<sup>81</sup>

Sociologists whose work reflects the polymorphous paradigm have developed typologies of sex work that capture wide variation in women's sex work experiences across multiple domains, and reflect "constellations"<sup>73(p215)</sup> of factors that shape these experiences. Scambler's "typology of sex work careers" includes six types—"coerced," "destined," "survivors,"

“workers,” “opportunists,” and “bohemians”—that reflect characteristics such as type and urgency of needs met through sex work, levels of agency and coercion experienced, and timespan of engagement in sex work.<sup>61,83</sup> Individuals may move from one career to another.<sup>83</sup> Paradigmatic examples of “survivors” are people who use drugs, single parents, and people in debt—that is, those with pressing economic needs that greatly, if not fully, compromise their agency in sex work. “Opportunists” are those aiming to finance specific life projects such as migration or education. “Workers” are those for whom sex work is a permanent job. “Bohemians” do sex work casually, without economic need. Weitzer’s typology uses a more fine-grained, descriptive approach that captures characteristics of sex work and the workplace environment associated with different modes of sex work, i.e. call girls, escorts, brothel workers, massage parlor workers, and street walkers.<sup>73</sup> These characteristics include “business location” (private premises, hotels, brothels, parks, cars and allies), “prices charged,” “public visibility,” “exploitation by third parties,” “impact on community,” and “risk of violent victimization.” By showing how these characteristics vary within and across the different modes of sex work, Weitzer highlights potential risk and protective factors for experiencing negative outcomes such as violence or exploitation by pimps.

Although scholars of the polymorphous paradigm approach sex work with a more nuanced, less essentializing perspective than strong adherents of either the oppression or empowerment paradigms, they, too, at times oversimplify and perpetuate stigma. Typologies like Weitzer’s and Scambler’s can be highly useful for meaningful reduction of complex human experience, but inevitably obscure the experiences of some. For example, FSW may occupy more than one of Scambler’s types simultaneously, not only sequentially. Scambler’s paradigmatic example of Bohemians as “casual, without need”<sup>83(p1080)</sup> is also dismissive, offering

no analysis of the social, cultural, psychological, or other type of “need” driving or significance of sex work for these women. In Weitzer’s typology, some characteristics of sex work and the workplace environment implicitly center the perspectives and experience of the non-sex working community—i.e. the “public” and “community” indicated in the characteristics “impact on community” and “public visibility”—rather than those of sex workers, which contributes to a sense of a dominant “us” group and a separate, other “them” group. The creation of these two groups by those in power (i.e. the “us” group) constitutes one fundamental stigma process, per stigma theorists Link and Phelan,<sup>84</sup> as will be discussed at length in Chapter 3, Theoretical Framework. Weitzer’s typology additionally excludes characteristics reflecting FSW community resources and strengths, such as social cohesion and community empowerment, which also influence risk of exposure to harms such as violence and HIV.<sup>59,85</sup> These characteristics may not be seen or recognized by non-sex workers, and their exclusion is another way which this typology marginalizes sex workers’ perspectives and experiences.

Other scholars representing the polymorphous paradigm, many in anthropology, gender studies, and sociology, show how FSWs’ exposure to different sex work environments and the risks they entail is shaped by stigma and inequality along lines of race, class, and gender.<sup>58,82</sup> For example, Elizabeth Bernstein’s ethnography of sex work in San Francisco illustrates how FSWs’ race and class provide them access to different specific neighborhoods and streets in which to work, which vary with regard to factors such as level of pay, client profile, risk of violence, interaction with law enforcement, indoor location access, and control by pimps and other men.<sup>82</sup> Women with disadvantaged social positions with regard to race and/or class face the greatest exposure to harmful sex work conditions and experiences—the most similar to those imagined by the oppression paradigmists—while those with greater social, cultural, and racial capital may



be able to avoid these experiences, and have more opportunities for the experiences of liberatory sexual transgression and empowerment through sex work that the empowerment paradigmists emphasize.

In line with the polymorphous paradigm, I reject the assumption of a universal nature or consequences of sex work, and understand the structural context of sex work, and people's social position within it associated with their race, gender, class, and sexuality, to influence the extent to which they are exposed to harms such as violence (and have access to experiences of sex work as transgressive sexual liberation). Violence and other harms often associated with sex work are not inherent to sex work but rather to the structural conditions in which it takes place.<sup>58</sup> My study focuses on one structural driver—stigma, related to HIV and sex work—and its relationship to FSWs' risk of experiencing IPV. I was not able to explore empirically the role of race, gender, class, and sexuality in those relationships because those variables were not measured and/or lacked variability in the study population, but see this as an important area of future research for advancing understanding of lived experiences of people experiencing intersectional stigma.

Finally, I also take the position that sex work is a legitimate form of work regardless of the nature of individual women's experiences of it, and that sex workers are entitled to a safe and supportive working environment, as defined by the International Labor Organization (ILO), including safety from violence.<sup>86</sup>

### **Key terminology used in this study**

#### ***“Sex worker”***

As Scambler's (2007) typology indicates, the term “worker” or “sex worker” best describes one of many modes of exchanging sex for money or goods, and cannot be applied to all modes and people who practice them. Based on her ethnographic research on sex work and sex tourism in Cuba and Puerto Plata, Sosúa, Santo Domingo, and Boca Chica in the Dominican

Republic, Amalia Cabezas argues that the term is neither accurate nor sufficiently useful for social mobilization for women in this context.<sup>88,89</sup> The term is:

...difficult to apply to the new forms of flexible contingent practices that may contain elements of partial commodification but that do not conform to the rigid categories of commercial sex work...[it] presupposes a fixed identity and thereby creates and freezes differences and subjects. This identity may be fixed where institutions like brothels and pimps control the conditions of women's sexual activity, but not necessarily in less constrained situations. *Sex worker* is an empowering term in situations where the woman or man does not have substantial control over the disposition of sexual activities because it marks those activities as labor and therefore as entailing worker rights.<sup>88(p21)</sup>

Empirical research from the Dominican Republic and other settings in the global South illustrates the “flexible contingent” nature of sex work practices: many FSW in the Caribbean, including in the Dominican Republic, are not constrained by brothels and pimps, do not do sex work full time or stay in one site or one arrangement, and have a relatively high degree of autonomy.<sup>90</sup> It is also common to work in venues where their roles are multifaceted and ambiguous—for example, bars and discos, establishments not solely dedicated to selling sex, where they are hired as waitresses or dancers, but are also available for hire for sex.<sup>91</sup> Many FSW working in such venues identify more as waitresses, dancers, or girlfriends than as sex workers.<sup>91-93</sup> Relationships with clients are not impermeably distinct from intimate partner relationships—they may have characteristics such as intimacy, trust, friendship, and instrumental support beyond the sexual transaction, and/or transform into intimate partner relationships over time.<sup>91,94-97</sup> In failing to reflect the flexible, context-dependent nature of sex worker identities and practices, the term sex worker “creates and freezes differences and subjects”—it implies a stable, unambiguous sex worker identity, which, in turn, cleanly separates women who practice sex work from other women, contributing to their stigmatization.

Despite these problems with the term, there are strong arguments for using it in conducting research in the Dominican Republic. Firstly, the term *trabajadora sexual* (female sex

worker) has common usage, meaning, and history in this context. It was introduced into popular discourse by *Centro de Orientación y Investigación Integral* (Center for Orientation and Integral Research [COIN]), a community-based organization that played a key role in the HIV response,<sup>98</sup> and taken up by *El Movimiento de Mujeres Unidas* (The Movement of United Women [MODEMU]) and *La Organización de Trabajadoras Sexuales* (The Organization of Sex Workers [OTRASEX]), leading community based FSW organizations that advocate for FSW solidarity and rights.<sup>88,99,100</sup> Secondly, utilization of the term and other language of human and worker rights has proved an useful tool for FSW in fighting for their rights in this specific context, including ending violence against sex workers, protection of labor rights, and access to health care.<sup>88</sup> For example, Cabezas describes how in 1997, MODEMU successfully pushed back against zoning laws to create a red light district and contain sex work in Santo Domingo by drawing on this language, which “repositioned [FSW] from fallen women to legal-juridical subjects worthy of protection.”<sup>88(p159)</sup>

I choose to use this terminology in solidarity with these community-led efforts and principles of human rights, and because it is consistent with the position that sex work is a legitimate form of work<sup>101</sup> and local terminology, while also hearing Cabezas’s call for better language to address the limitations discussed. This terminology additionally has the advantage of avoiding the term “prostitute” or “prostitution,” which in many contemporary contexts – including among FSW in the Dominican Republic<sup>92</sup>—reflects and contributes to their stigmatization.<sup>102</sup> For example, “prostitute” has been used by radical abolitionist feminists in constructing sex workers as inherently powerless victims (e.g. when MacKinnon refers to sex workers as categorically “prostituted”<sup>74(p274)</sup> [her italics]). It should be noted that among some sex workers and advocates, avoidance of the term “prostitute” is considered an expression of

stigmatizing views toward and discomfort with sex work, as explained by Brazilian sex worker leader and activist Gabriela Leite.<sup>103</sup> Some therefore have reclaimed and use terms such as prostitute and “whore” as expression of identity and pride.<sup>58,104</sup>

### ***“Intimate partners” and “clients”***

The lack of mutual exclusivity between FSWs’ client and intimate partner relationships that has been found in many places in the global South<sup>94</sup> presents challenges to communicating about IPV against FSW. When researchers refer to FSWs’ “clients and intimate partners” (or clients and “intimate or other non-paying partners,” e.g. Deering et al.<sup>28</sup>), this language treats the two relationship categories as discrete, and reflects an assumption that intimacy is not found in or is mutually exclusive with client relationships, which, as discussed, is often not borne out empirically.

Alternatively, some researchers use the terms “non-paying partners and paying partners,”<sup>105-108</sup> which avoids drawing a line between the two relationship categories on the basis of intimacy. However, evidence from many contexts suggests that just in the way that intimacy, defined in terms of qualities such as love, closeness, trust, and emotional connectedness, crosses the line, so does financial exchange. Assumptions of a mutual exclusivity between financial exchange and romantic intimacy may have roots in Western European and North American feminist and early Marxian thought on sex work that emphasizes alienation and estrangement from the self through female body commodification in capitalist societies,<sup>90(pp62-63)</sup> which may be more influential in settings in the global North, where studies have indeed found that FSWs do often treat their client and intimate partner relationships as mutually exclusive.<sup>94(p811)</sup>

Another problem with the “non-paying/paying partners” option is that it centers FSWs’ work in defining their intimate partner relationships, putting disproportionate emphasis on their professional lives, thus obscuring their full identities and experiences. Deborah Brock observes

that “women working in prostitution *become* prostitutes in the eyes of others; that is, publicly they are more identified with their work than are people in other jobs.”<sup>109(p11)</sup> This type of equation of the whole of an individual with his or her stigmatizing social label is evidence of one central feature of the stigmatization process, the separation of “us” from “them,” per Link and Phelan:

Evidence of efforts to separate us from them are sometimes directly available in the very nature of the labels conferred. Incumbents are thought to "be" the thing they are labeled (Estroff 1989). For example, some people speak of persons as being "epileptics" or "schizophrenics" rather than describing them as having epilepsy or schizophrenia. This practice is revealing regarding this component of stigma because it is different for other diseases. A person has cancer, heart disease, or the flu—such a person is one of "us," a person who just happens to be beset by a serious illness. But a person is a "schizophrenic."<sup>84(p370)</sup>

In summary, none of the commonly used and recognized language for FSWs’ intimate partners and clients is unproblematic with respect to the potential for contributing to stigmatization of sex workers. In this study, I use the terms “intimate partner” and “client,” but recognize that these categories are not, in fact, dichotomous and exist on a continuum in the lived experiences of many FSWs.<sup>91</sup> Intimate partner here refers to people with whom FSW have formalized partnerships, such as marriage, and informal partnerships, such as dating, informal marriage, and sexual relationships, and who do not pay FSW for sex acts, although they may give them money.<sup>24</sup> Clients are those who pay with money or in-kind for sex acts. The use of the term “client” signals my position that sex work is a legitimate form of work.

### **Gaps in research on violence and IPV against female sex workers**

Violence against FSW has received little attention in research, policy, international frameworks, and programming in comparison to that dedicated to women not identified as sex workers.<sup>24-29</sup> This can be traced in part to the ways in which global organizing around human rights gender issues and violence against women, which culminated in the 1993 UN World Conference on Human Rights in Vienna, has historically excluded FSW. The discourse and

instruments of this movement, which continue to inform policy, research, and programming, have typically addressed sex work only as a form of violence against women and FSW as victims of patriarchy.<sup>88</sup> As Cabezas argues,

Although the issue of violence against women has been an important one for Latina feminists for more than twenty years, the conceptualization of the female subject within this discourse has largely focused on domestic battery, a heteronormative bias that overlooks women who sell sex. Women who sell sex are outside the bounds of patriarchal protection, religious mores, and legality...being accused of prostitution seemingly renders women deserving of abuse.<sup>88(pp153, 164)</sup>

Stigmatization of sex workers led to a dearth of attention to human rights violations against them. The bias toward violence occurring within the private, heteronormative, domestic realm also produced a focus on the “doings of evil men,”<sup>88(p156)</sup> and silence around the forms of State-perpetrated and sanctioned violence that sex workers uniquely experience, such as discriminatory law enforcement practices targeting sex workers.

However, primarily over the past decade, a body of public health research on violence against FSW emerged, which, conversely, has focused disproportionately on violence in the workplace environment, perpetrated mainly by clients and police. This literature has devoted relatively scant attention to IPV, violence experienced in the private realm. This imbalance is inconsistent with empirical data suggesting that IPV may be a more problem for more FSW in many contexts.<sup>2,15,36,110-112</sup> The lack of attention to FSWs’ intimate partner relationships and their private lives reflects a narrow focus on their professional, public lives,<sup>113</sup> which, again, arises from sex work stigma, as argued in the previous section (“Key terminology used in this study”).

The disproportionate focus in public health research on workplace violence may also stem from negative stereotypes—an additional stigma process per Link and Phelan<sup>84</sup>—about sex work as inherently violent toward and exploitative of women (perpetuated by radical abolitionist feminism). These stereotypes may lead to assumptions that sex workers are necessarily at risk of abuse from their clients or others in the workplace (e.g. pimps), and/or more at risk in the

workplace than in their intimate partner relationships, which are normative and not similarly attached to meanings of inherent violence and exploitation. That all sex workers are single is another “myth”<sup>114(p4)</sup> (i.e. stereotype) about sex workers that may account for the lack of attention to violence in their intimate relationships, which Strathdee and colleagues argue “can denigrate, devalue, and marginalize” them.<sup>114(p4)</sup> This myth may reflect a perception of sex workers as not wanting or eligible for the same types of social attachments as other people, and thus as fundamentally other, of a “them” group.

With regard to gaps in the literature, it is important to note that while the focus of this research is heterosexual, cisgender women, transgender women and cisgender men comprise large and understudied proportions of the global population of sex workers.<sup>73</sup> Their experiences of violence, including IPV, have received even less attention. Transgender women sex workers face stigma in most contexts at levels surpassing that experienced by cisgender sex workers. For example, in addition to the discriminatory laws used against cisgender sex workers, transgender women must additionally contend with laws prohibiting “cross-dressing” or impersonation of another sex.<sup>115</sup> Studies have shown transgender women sex workers to experience greater levels of violence from both police and clients, compared with cisgender male and female sex workers.<sup>112,116</sup>

## **2.2 Intimate partner violence against women**

Before discussing IPV against FSW, I will provide in this section background on IPV against women not identified as FSW globally, including terminology, prevalence, consequences, and etiology.

### **Terminology**

The WHO defines violence as “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in

or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation.”<sup>117(p23)</sup> The inclusion of “power” broadens the traditional understanding of violence that focuses on the physical aspect of violence to include acts that stem from a power relationship, such as threats and intimidation, as well as acts of neglect and omission.<sup>117</sup>

Studies in diverse settings indicate that the most common perpetrators of physical and sexual violence against women are their intimate partners.<sup>24,26</sup> IPV is defined as the self-reported experience of one or more acts of physical, sexual, and/or psychological violence by a current or former partner since the age of 15 years,<sup>24,117</sup> and considered a violation of women’s human rights.<sup>24</sup> The definition of “intimate partner” varies between settings and includes formal partnerships, such as marriage, and informal partnerships, such as dating relationships and sexual relationships.<sup>24</sup> In this dissertation, references to “IPV among” and “IPV against” women refers to women’s experiences of IPV perpetrated against them, also referred to as “victimization.”

IPV takes multiple forms, including physical violence, such as kicks, slaps, punches, and assault with weapons and homicide; sexual violence, including sexual coercion (e.g. forced sex, rape); psychological violence including belittling, humiliation, intimidation; and controlling behaviors such as isolating a person from their family and friends, monitoring their movements, and restricting their access to information or assistance.<sup>29,117</sup>

### **Prevalence and outcomes**

IPV is a burdensome health and social problem spanning countries, cultures, and socio-economic groups. Worldwide, nearly a third (30.0%) of all women who have been in an intimate relationship have experienced physical and/or sexual violence perpetrated by their intimate partner (95% confidence interval ([CI] = 27.8% - 32.2%).<sup>24</sup> At the WHO Regional level, prevalence is highest in the African, Eastern Mediterranean and South-East Asia Regions, where approximately 37% of ever-partnered women report ever having experienced physical and/or



sexual IPV. Latin America and the Caribbean has the next highest prevalence (30%), followed by the European and Western Pacific Regions (25%).<sup>24</sup> Physical IPV is nearly always accompanied by psychological abuse, and by sexual abuse in one-third to over one-half of cases.<sup>117</sup>

IPV is associated with numerous adverse physical and mental health and social wellbeing outcomes among women,<sup>24</sup> such as depression and social isolation,<sup>1-4</sup> unintended pregnancy,<sup>5</sup> HIV infection,<sup>6-10</sup> poorer physical function and general health,<sup>11</sup> and injury and death.<sup>12,13,118</sup> The individual and population level economic costs of IPV are also immense.<sup>119-121</sup> An increasing number of studies show harmful effects of IPV on ART adherence and HIV viral suppression,<sup>15,16</sup> and immunological decline rates among those not receiving treatment.<sup>122</sup> Given the well-established positive effects of viral suppression—including improved quality of life, and reduced morbidity, mortality, and risk of onward transmission of the virus<sup>19-23</sup>—IPV represents a major threat to the health and wellbeing of PLHIV and to public health efforts to stem the epidemic.<sup>24</sup>

### **Theoretical standpoints**

Scholars and advocates have applied various theoretical lenses to understanding the causes of IPV against women, which tend to emphasize the importance of different correlates and contexts.<sup>39,123</sup> These lenses reflect a range of disciplines, including psychology (e.g. social learning theory, cognitive behavioral theory), criminology, economics, bio-behavior (e.g. neurochemical mechanisms), public health, gender studies, sociology, and intersections among these.<sup>124</sup> Sociological theories—in which feminist theory, family conflict theory, and resource theories can be included<sup>125-127</sup>—view social structure, social position, and access to socioeconomic resources as important to understanding IPV.<sup>124</sup> Feminist theory views IPV as a continual pattern of male violence perpetrated against female partners, resulting primarily from male domination and control over women within patriarchal society (e.g. Dobash and

Dobash<sup>128</sup>). Research applying feminist theory often focuses on “power and control in relationships, social norms condoning wife beating, and structural and economic forces that keep women trapped in abusive relationships.”<sup>129(p47)</sup> Family conflict theory rejects a focus on patriarchy, and places greater emphasis on the social position of families associated with factors such as low income and unemployment, and the resulting stresses. IPV from this standpoint may be perpetrated equally by men and women, depending on context, and the majority occurs occasionally and in context of family conflict.<sup>124,130,131</sup> Other scholars have attempted to reconcile these two standpoints. For example, Johnson developed a framework encompassing four types of IPV, which vary in regard to gender symmetry (i.e. the extent to which it is perpetrated by men, women, or both), whether or not it is related to a systematic attempt at control of one partner by the other, and whether it constitutes resistance to a partner’s violence or not.<sup>132</sup>

Although debates among adherents to these different theories continue, many researchers agree that the probability of IPV occurring in women’s relationships is attributable to combinations of and interactions between multiple factors at the macrostructural, community, relationship, and individual levels of the socio-ecological model; no one factor deterministically leads to IPV in a given relationship, and the most salient factors and their relationships to one another vary across contexts.<sup>24,39,68,69,133-135</sup>

### **Socio-ecology and structural drivers of IPV**

A socio-ecological model of IPV is commonly used to visualize the multilevel factors that influence IPV risk.<sup>26,39,68,69</sup> The model adopted by the WHO that is based on the work of Lori Heise and others encompasses four levels of factors influencing IPV—individual, relationship, community, and societal—which are defined below:<sup>26,39</sup>

- Individual (ontogenic) factors: genetic and personality traits (e.g. predisposition toward

impulsivity), and childhood and adolescence experiences brought to the relationship by both women and their partners

- Relationship (microsystem) factors: relationship dynamics and immediate relationship context, including household and influence of extended family
- Community (mesosystem) factors: communities with which women and partners engage related to work, friendship, faith, and governance
- Societal (macrosystem) factors: the socio-cultural, economic, and political systems (e.g. stigma, social norms, economic opportunity, policies), which embed and shape social relations and behavior at lower levels of the model.

I additionally draw on socio-ecological models developed by scholars in sex work and HIV research in defining socio-ecological levels and identifying useful concepts and terms for this study. Models developed by Shannon et al.<sup>45</sup> and the STRIVE Research Consortium<sup>43,136</sup> include levels equivalent to those bulleted above, but use distinct terminology and highlight population-specific experiences. They use the term “macrostructural” or similar instead of “societal” to refer to the model’s highest level,<sup>43,45,68,136</sup> which I will also do in the remainder of this dissertation. Shannon and colleagues and STRIVE additionally use the concepts “structural factors” or “structural drivers,” which are defined as contextual factors external to the individual that influence risk of adverse individual and population HIV outcomes.<sup>43-45,136</sup> Structural factors act at the macrostructural and community levels, but can manifest and have influence at relationship and individual levels (e.g. societal level gender inequities can create gender-based, unequal power dynamics within couples).<sup>43-45</sup> Shannon and colleagues’ model specifies key sub-domains of the community level in the socio-ecology of HIV risk among FSW: “sex work organization” (e.g. sex worker collectivization and community empowerment) and “work

environment” (e.g. sex work venue policies, violence, neighborhood policing).<sup>44,45</sup> While the literature linking those domains to HIV risk is much greater than that linking them to IPV among FSW, existing studies indicate that they are highly relevant to IPV risk as well, as will be discussed in Section 2.3.

Finally, in line with STRIVE, Shannon, and other theorists, I conceptualize factors at all levels as interplaying with one another in a multi-directional, co-constitutive fashion.<sup>43-45,137,138</sup> Examples include when structural factors, such as cultural norms, influence individuals’ behaviors, which, in turn, reinforce and reproduce norms, and when community mobilization of FSW leads to changes in policy or stigma, which, in turn, enable FSW community collectivization and improved individual violence outcomes.<sup>59,90,92,98,139,140</sup>

### **Correlates of IPV**

In this section, I provide a brief overview of global research on factors associated with IPV victimization of women not identified as FSW, focused on multi-country studies and systematic reviews. Evidence from studies in the Dominican Republic is reviewed in Section 2.5, IPV in the Dominican Republic.

Individual and relationship factors consistently positively related to IPV victimization risk among women in LMIC include alcohol abuse by either or both partners (problematic drinking by men is typically associated with higher IPV ORs than problematic drinking by women), women’s young age, women’s attitudes supportive of wife beating, either or both partners’ exposure to violence in childhood, cohabitation, and male partners having outside sexual partners.<sup>141,142</sup> Being formally married is associated with diminished IPV risk.<sup>141</sup> In studies in HIC, risk factors include drug use; financial, work, and acculturation-related stress; low social support; victim violence perpetration; victim depression and fear of future abuse;<sup>134</sup> separated relationship status, low relationship satisfaction, and high relationship discord or

conflict all increased risk of women's IPV victimization.<sup>133</sup> Recent IPV victimization was bidirectionally related to depressive symptoms and drug use in a meta-analysis of global cohort studies.<sup>143</sup>

Community and macrostructural factors associated with increased IPV risk among women in LMIC include high levels of IPV in social networks and communities, community norms supporting violence, and higher district murder rates.<sup>144</sup> Indicators of gender equality are protective against IPV against women in LMIC, including women's literacy, women's participation in savings/credit groups, women's autonomy, and female literacy measured at the neighborhood, village, and community levels.<sup>144</sup> Based on her review of research from LMIC on economic empowerment measured in various forms such as income, education level, and economic assets, Heise finds that empowerment is protective against IPV victimization of women in some places but not all, and economic inequality within relationships is a more important predictor than absolute economic status or empowerment of either partner.<sup>68</sup> In a ten country study, women's high socio-economic status and secondary education were consistently negatively associated with IPV risk.<sup>141</sup> Current IPV is less prevalent among women in LMIC with a high proportion of women in the formal work force, but working for cash increases a woman's risk in countries where few women work. Additionally, a girl's education is more strongly negatively associated with risk of partner violence in countries where wife abuse is normative than where it is not.<sup>145</sup>

In the U.S., higher levels of perceived violence, stronger norms of non-intervention, exposure to violence, worry about violence at community levels, low collective efficacy (i.e. levels of social cohesion and informal social control), high unemployment, low average income, higher proportion of female-headed households, and low education levels measured at

community levels are consistently associated with increased risk of IPV among women.<sup>144,146</sup>

## **2.3 Violence against female sex workers**

### **Prevalence and correlates**

A systematic review of violence experiences among FSW globally by Deering and colleagues (2014) found a lifetime prevalence of sexual and/or physical violent victimization by intimate or other nonpaying partners (i.e. non-clients, including formal and informal intimate partners) ranging from 4% to 73%, and of sexual and/or physical workplace violence (i.e. perpetrated by clients, police, managers, pimps, madams, or other third parties) ranging from 45% to 75%. In studies in diverse contexts such as China, the U.S., India, Pakistan, Jamaica and the Dominican Republic, the proportion of women reporting IPV is greater than the proportion of women reporting violence perpetrated by clients.<sup>2,15,36,37,110-112</sup> This difference may be attributable to differences in characteristics of these relationships, differences in exposure to opportunities to be victimized by these partner types, and/or differences in study designs (e.g. inclusion criteria) and definitions.

Below, I review peer reviewed, quantitative and qualitative studies of factors related to prior and current physical, sexual, verbal, and psychological IPV against FSW in global settings outside of the Dominican Republic, which I used in conceptualizing mechanisms through which stigma and IPV may be related, and in selecting control variables for statistical analyses. This review includes quantitative studies of correlates of IPV in which the IPV variable: (1) specifically identifies the perpetrator as an intimate partner, (2) does not specify the perpetrator type (e.g. “ever experienced sexual or physical violence”), or (3) is inclusive of intimate partners and other perpetrator types (e.g. “physical abuse by someone (excluding clients) in the last six months”<sup>32</sup>). Studies in categories (2) and (3) were included because these may capture violence perpetrated by intimate partners, even if not exclusively; however, it is not possible to verify that

significant relationships identified in these studies hold for experiences of violence specifically perpetrated by intimate partners. I report the specific IPV variable, including perpetrator and timeframe, used in each study reviewed when this information is available to enable readers to consider such findings with awareness of this potential limitation to their relevance to IPV. All quantitative findings are from multivariable analyses that controlled for potential confounding variables and cross-sectional study designs unless otherwise noted. Relationships deemed statistically significant had p-values of .05 or lower unless otherwise specified. Similar to presentation of quantitative findings, I review qualitative studies where the perpetrator of violence is specified as an intimate partner or unspecified. Qualitative findings identify and describe factors related to IPV against FSW, processes linking these phenomena, and their contexts.

The literature identifies factors associated with IPV against FSW at multiple levels of the socio-ecological model of IPV: individual (physical and mental health; substance use; sexual behavior; history of abuse), relationship (power dynamics; affective dynamics), community (social support), and macrostructural (economic conditions, constraints, and mobility; sex work and HIV stigma). I review findings in that order. I devote extended attention to findings on the relationship between stigma and IPV as it is the relationship of focus in this study. In doing so, I draw upon findings from studies on other factors reviewed (e.g. substance use, power dynamics, etc.) to articulate pathways through which associations between experiences of stigma and IPV may operate.

This section includes discussion of studies describing FSWs' experiences of verbal, physical, and sexual violence and controlling behaviors perpetrated by intimate partners that could be classified as both IPV *and* enacted sex work and/or HIV stigma. These are not included

as independent variables in my statistical models given the overlap and my focus on how stigma experienced outside the context of the intimate partner relationship—enacted stigma perpetrated by others, and anticipated and internalized stigma experienced internally by FSW living with HIV—influences risk of violence within the relationship.

### ***Individual level factors***

#### *Mental and physical health*

Studies of FSW in multiple settings find IPV to be associated with negative outcomes related to mental health, psychosocial wellbeing, and sexual and reproductive health. In China and in two cities at the Mexico/U.S. border, IPV was associated with depression among FSW.<sup>2,3,147</sup> Correlates in studies in China also include loneliness and suicidal behavior.<sup>2,148</sup> Among FSW living with or affected by HIV participating in a prospective cohort study in Canada, FSW who experienced physical and/or sexual violence had increased odds of moderate-to-severe food insecurity.<sup>17</sup> With regard to sexual and reproductive health, many studies of violence against FSW focus on its relationship to HIV transmission and HIV prevention efforts. FSW in Cameroon and Côte d'Ivoire who had ever experienced physical or sexual violence had a greater odds of being HIV-positive than those who had not.<sup>10,149</sup> In India, FSW who reported recent sexual and/or physical violence from their husbands (last six months) were more likely to report STI symptoms.<sup>150</sup>

#### *Substance use*

Multiple studies have found positive relationships between substance use and risk of IPV among FSW. Various measures of alcohol use and abuse are positively associated with experiencing violence, including ever being intoxicated,<sup>2</sup> frequency of use,<sup>35,151</sup> being a binge drinker,<sup>152</sup> and harmful and hazardous drinking in one longitudinal study in Kenya.<sup>153</sup> Hong and colleagues<sup>2</sup> assessed emotional, physical, and/or sexual violence by an intimate partner in the last



12 months, while Chersich<sup>152,153</sup> used a measure of physical and/or sexual violence in the last 12 month by any perpetrator, <sup>35</sup> used a measure of physical violence from an intimate partner in the past year, and Mountain<sup>151</sup> used a lifetime measure of physical and/or sexual violence. Authors theorize that the association between alcohol use and IPV is due to alcohol's impairing effects on FSWs' ability to detect the potential for violence, escape from violent situations, and/or avoid risky situations when intoxicated, although this interpretation is based mainly on studies focus of client-perpetrated and other workplace violence.<sup>35,154</sup> Another explanation, demonstrated in qualitative studies in India, is that in context of highly patriarchal gender norms, intimate partners discipline their FSW partners with physical violence for using alcohol because it constitutes a failure to conform to these norms.<sup>155</sup>

Quantitative studies indicate that FSWs' sexual partners' drinking is also associated with increased risk of IPV against FSW. Among FSW in China, those whose intimate partner drank were more likely to report experiencing physical, sexual, and/or emotional abuse from an intimate partner.<sup>156</sup> Two studies in India found that alcohol use by FSWs' intimate partner at the time of sex was positively related to IPV (physical abuse by their primary intimate partner in the last year in one study and severe physical and/or sexual violence from an intimate partner in the last six months in the other).<sup>35,157</sup> Another in India similarly found the odds of experiencing sexual violence from anyone in the past three months to be greater among FSW who reported having two or more sex partners with a strong tendency to drink alcohol before sexual activity as compared to FSW who reported having no such partners.<sup>158</sup> Qualitative studies with FSW in India and Kenya also suggest that alcohol consumption by FSWs' intimate partners leads to their perpetration of IPV.<sup>110,155,159</sup>

With respect to drug use, research has found daily prescription opioid use—which the

authors interpret as a marker of substance dependency—to increase the odds of recent physical and/or sexual IPV in the last six months among FSW in Canada.<sup>27</sup> A measure of inability to access drug treatment in a population of women with high levels of drug dependency was also associated with physical IPV in this context.<sup>32</sup> These relationships may be explained by mechanisms similar to those of alcohol use/IPV relationships, e.g. FSWs’ reduced capacity to detect and escape violent situations when using drugs. Alternatively, these drug use indicators may mark situations of mutual drug dependency of intimate partners in which risk of conflict and abuse is elevated.<sup>160-163</sup> Qualitative research from Vancouver illustrates how intimate relationships of women living with drug dependency and extreme poverty offer them shelter, food, intimacy, and drugs.<sup>160</sup> Male partners, also drug dependent, take advantage of their needs to pressure them in to doing sex work, the male partners playing the role of pimp, to generate money for drugs.<sup>160</sup> Male partners’ dependency on the women’s income generation, together with their position of authority over her work and gendered power dynamics, leads to abusive behavior, including controlling their movement, business transactions, income, and access to condoms and drugs, and physical and sexual abuse.<sup>155,160,164,165</sup>

### *Sexual behavior*

Several studies show characteristics of FSWs’ sexual behavior to be correlated with IPV. For example, in a cohort study in Mombasa, Luchters et al.<sup>41</sup> identified a positive relationship between reported number of sexual partners and experience of violence from any partner in the last 12 months. A number of studies examine the relationship between IPV and condom use in FSWs’ sexual relationships. A prospective cohort study of FSW living with HIV in Mombasa, Kenya found that recent physical, sexual, or emotional violence by the current or most recent emotional partner was associated with significantly higher risk of unprotected sex. In a study in Canada, moderate or severe physical IPV in the last six months was associated with inconsistent

condom use with intimate partners in the last six months,<sup>166</sup> a finding consistent with results from a dyadic analysis that found IPV perpetration and victimization to be associated with unprotected sex within abusive intimate partner relationships among FSW at the Mexico/U.S. border.<sup>42</sup> A study in Cameroon found lifetime physical or sexual violence to be associated with difficulty in condom negotiation with intimate partners and experiencing condom failure (slipping or breaking).<sup>149</sup> Female sex workers in India who reported sexual and/or physical violence from their husbands in the last six months and those in Cameroon who reported lifetime physical or sexual violence have also been found to be more likely to report inconsistent condom use within their *client* relationships.<sup>149,167,168</sup> Physical or sexual violence in the last six months from any partner was also associated with unprotected sex with last client among FSW in Mozambique.<sup>33</sup> In Argentina, having experienced sexual abuse was positively related to inconsistent condom use with both intimate partners and clients.<sup>169</sup>

There are several explanations for findings of an inverse relationship between IPV and condom use with intimate partners or clients. Experiences of IPV may reduce FSWs' perceived power to negotiate sexual relations and condom use with sexual partners,<sup>150</sup> or increase their fear of violent reprisals. Abuse from intimate partners may also create economic insecurity (e.g. by undermining income generation activities<sup>119</sup>); this, in turn, may increase their need for income generation through sex work to levels that compromise their ability to be selective with clients and reject potentially violent ones.<sup>150</sup> Findings that FSW who reported sexual and/or physical violence from their husbands (last six months) were more likely to report accepting more money for unprotected sex trades<sup>150</sup> (i.e. tolerate higher levels of risk of harm) may support this latter explanation. It is also possible that condom use spurs IPV rather than the reverse: a qualitative study of FSW indicates that condom initiation by female partners can lead to their IPV

victimization in contexts of shifting gender relations and increasing empowerment of FSW, in which male partners feel their power relative to women to be threatened and perceive condom initiation as a manifestation of this threat, leading to their perpetration of violence.<sup>170</sup> Finally, male intimate partners and clients who tend to act violently may also be less likely to suggest or accept condom use than those who are nonviolent.

Findings from a dyadic study of FSW who use drugs and their male partners in cities at the Mexico/U.S. border indicate that the male partner having concurrent partners is also associated with their female partners' odds of experiencing emotional, physical, and sexual violence from a current intimate partner in the past six months.<sup>40</sup> Male partners who perpetrate IPV may be more likely than other men to also have concurrent partners, due to norms of masculinity that encourage demonstration of sexual prowess and power over women through both behaviors (e.g. Heise and McGrory<sup>171</sup>). Alternatively, concurrent relationships may lead to women's jealousy, which leads to couple conflict, that in turn heightens risk of IPV. Ulibarri<sup>172</sup> observed that among women in this study population, threats to their intimate relationships and jealousy were particularly strong drivers of conflict escalation behaviors. She linked this to women's context of drug use and sex work stigma, social isolation, and poverty, which rendered their intimate partner relationships highly important sites of refuge, love, respect, and emotional and material support,<sup>163,173</sup> and the stakes of maintaining them high. This exacerbated their reactions to perceived threats to relationships, such as concurrent sexual relationships, which increased potential for conflict and violence perpetration by both male and female partners.<sup>161,163,172-174</sup> Studies also show that male partner sexual jealousy upon discovery of the woman's involvement in FSW and suspicions of infidelity lead to IPV.<sup>96,164</sup>

### *History of abuse*

Studies show that having a history of past abuse is associated with increased risk of IPV

against FSW. Cross-sectional and longitudinal studies find an association between reporting childhood abuse and recent IPV,<sup>27,40</sup> and between forced sexual debut and recent IPV.<sup>175</sup> When women enter sex work in conditions of coercion and abuse, they may experience an increased risk of experiencing IPV in the short and/or long term: having entered sex work via trafficking is associated with recent violence from any perpetrator,<sup>176,177</sup> having been forced into sex work is associated with experiencing sexual violence from any partner in the first month of sex work,<sup>178</sup> and having been coerced or deceived into sex with their first ten clients is associated with lifetime sexual violence.<sup>151</sup> Research primarily with women not identified as FSW in HIC indicates that these findings may reflect trauma and other effects of abuse that can lead to increased risk of subsequent violence, i.e. revictimization.<sup>179</sup> As scholars of violence against FSW note, experiences of violence in childhood can normalize the experience of abuse, increasing the likelihood of revictimization in adulthood.<sup>28,36</sup> Traumatic violence experiences at any point in the lifecourse can lead to post-traumatic stress disorder, which can hamper victims' ability to detect and avoid violent incidents, and thus increase risk of future IPV.<sup>180,181</sup>

### ***Relationship level factors***

#### ***Power dynamics***

The majority of quantitative studies examining FSWs' intimate partner relationships focus on sexual relationship power dynamics, frequently using the "relationship control" subscale of the Sexual Relationship Power Scale developed by Pulerwitz and colleagues,<sup>35,40-42,182,183</sup> or a single item from this measure ("most of the time, we do what my partners wants to do"<sup>175</sup>). All studies except one<sup>35</sup> suggest that FSWs' sexual relationship power is protective against IPV. For example, in a cohort of FSW in Mombasa, Kenya, low relationship power was associated with reporting sexual IPV in the last 12 months.<sup>41</sup> A dyadic analysis of victimization and perpetration of IPV in the past year among FSW and their male steady partners in cities at the

Mexico/U.S. border, which examined female and male partners' relationship power, found that FSWs' sexual relationship power was negatively associated with IPV victimization among female partners, and male partners' sexual relationship power was positively associated with IPV victimization among female partners.<sup>42</sup> These findings may be interpreted in light of feminist theories that view IPV as a form of male assertion of dominance over female partners in context of a patriarchal society.<sup>128</sup> When male partners possess greater power, they may demonstrate this through violence, or use violence to achieve power.

Men may also use violence to maintain power when they perceive it as threatened due to disruptions in the gender hierarchy within the relationship or in the community, a phenomenon known as “male backlash.”<sup>184</sup> Disruptions can be caused by factors such as female partners' involvement in political activities seeking to change gender power relations.<sup>170</sup> The contrasting findings of Heylen et al.<sup>35</sup> that FSW with more decision-making power in their primary intimate partner relationship had increased odds of physical abuse by that partner in the last year may reflect such backlash. Women who assume dominating roles in decision-making may also more readily engage in disagreements and conflict with male partners, which may lead to increased risk of IPV, particularly in contexts where male violence against women is acceptable.

Women's provision of financial support to their intimate partners was associated with increased risk of physical and/or sexual IPV in the last six months in a study in Vancouver with women reporting high levels of drug use.<sup>27</sup> In this study population, the finding may mark relationship dynamics in which the woman's sex work supports a mutual drug dependency and gendered power dynamics and violence that can arise from this situation, as discussed in the “Substance use” section above. A positive association between FSWs supporting their intimate partners financially and recent IPV has also been found among non-drug using FSW in India,

which the authors attribute to the disruption in traditional gender norms that this financial arrangement entails coupled with male partners' stigmatizing attitudes toward the source of the financial support.<sup>157</sup>

### *Affective dynamics*

Studies of FSW who have intimate partners that act as their pimp illustrate how power dynamics intersect with affective dynamics to produce IPV risk. Male partners have typically transitioned from intimate partner to pimp, from client to intimate partner to pimp, or from client to pimp.<sup>155,160,164,165</sup> Female sex workers have reported cases where the man—as her intimate partner—becomes jealous and violent when she sees clients, which he himself—as her pimp—has sent her.<sup>164</sup> In a study in India, men who were both intimate partners and pimps of survival sex workers expressed a sense of entitlement—as their employer—to punish the FSW with violence when they did not perform their work satisfactorily, e.g. if they refused to have sex with clients the partners/pimps found.<sup>155</sup> This sense of entitlement was bolstered by a patriarchal perception that she, as his intimate partner, was “his.”<sup>155,165,185</sup>

Regarding positive relationship affective dynamics, one study with FSW in India found that believing that their intimate partner was unlikely to leave them and receiving social support from intimate partners were both protective against severe physical and/or sexual IPV in the past six months.<sup>157</sup>

### *Community level factor*

#### *Social support*

Studies suggest salubrious effects of social support on IPV risk. Among FSW in Chennai, India, the number of social network members, including friends and family), with whom FSW spoke about violence in the family (IPV and/or child abuse) in the past three months was negatively associated with the odds of experiencing forced sex with one or more regular, casual,

or commercial partner(s) in the last three months.<sup>158</sup> The authors interpret this finding as evidence of the protective role of access to social support in women's vulnerability to IPV. They argue that receiving social support through talking about violence may bolster women's self-esteem, and provide practical assistance to help them deal with experiences of violence and find strategies to avoid violent clients.<sup>158</sup> Having a greater number of network members who provide this support, and therefore access to a greater level of support, may thus reduce their odds of experiencing forced sex.

Also indicating an inverse relationship between social support and IPV, the absence of social support was positively associated with IPV in a study among street-based, migrant FSW in China: FSW who reported having one or fewer social network members who they can go to as a source of financial support in crisis situations had a 2.5-fold greater odds of experiencing violence inflicted by a husband or boyfriend in the past six months compared to those reporting a greater number of sources of financial support (above and beyond other measures of their economic resources).<sup>34</sup> In this study, not reporting FSW peers as a source of financial and/or emotional support crisis situations were the factors most strongly related to reporting IPV.<sup>34</sup> Hail-Jares and colleagues<sup>34</sup> argue that this finding signifies the particular importance of peer social ties and peer social support for FSW, migrants, and other members of marginalized social groups in contending with IPV and other stressful conditions. As described by FSW, MSM, and transgender women participating in a qualitative study in multiple Latin American and Caribbean countries,<sup>186</sup> peers may be able to uniquely identify with and provide support for experiences of violence and stigma, and do so when family members will not or cannot.

### ***Macrostructural level factors***

#### *Economic conditions, constraints, and mobility*

Studies among FSW that shed light on relationships between access to essential



resources, such as money and housing, and risk of IPV typically indicate a negative relationship. Power over resources— that is, possession of a bank account, voter identification, and ration identification card—was protective against experiencing violence in the past six months among FSW in India.<sup>187</sup> Among young FSW in Kenya, regular income was negatively associated with lifetime physical violence.<sup>151</sup>

Female sex workers reporting being currently in debt in India had a greater odds of experiencing physical violence from anyone in the past six months compared to those not currently in debt.<sup>188</sup> Notably, in this study, FSWs with debt were also more likely to report currently having a husband or other male partner.<sup>188</sup> This may suggest that debt pressures FSW into finding or maintaining intimate partner relationships, and into overlooking current abuse or signs of potential abuse from these partners. However, the study's violence outcome does not allow attribution of reported violence to intimate partners. Alternatively, being in an intimate relationship may bring them debt via male partners' debt, which could increase their economic need and, in turn, the pressure to tolerate violence from intimate partners and/or clients. With regard to housing, Reed and colleagues<sup>31</sup> found residential instability (five or more evictions in the past five years) to be associated with sexual and/or physical violence from anyone in the last six months among FSW in India. Shannon et al.<sup>49</sup> also identified significant, positive relationships between homelessness and physical violence and rape from anyone excluding clients in the last six months among street based FSW in Canada.

Mobility prompted by scarcity in income generation opportunities may also exacerbate risk of IPV for FSW. In India, having worked in three or more villages or towns in the past year was associated with increased risk of sexual and/or physical violence from anyone in the last six months among FSW.<sup>189</sup> Other measures of mobility in this context, including having moved four

or more times in the past year and staying in previous two places for one month or less, are also associated with greater odds of experiencing either physical or sexual violence from anyone in the last six months.<sup>30</sup> Explaining the harmful relationship they found between FSWs' mobility and their primary study outcome, condom use, Saggurti et al.<sup>30</sup> speculate that mobility reduces FSWs' power to negotiate with sexual partners about condom use by locating them in new environments where they have no or reduced access to social support and services and high economic need. Such deleterious effects of mobility on access to social and economic resources, and in turn, power dynamics with partners, may also help to explain the association between mobility and increased risk of IPV. This hypothesis is supported by the numerous studies detecting an inverse relationship between FSWs' relationship power and IPV risk, discussed above, e.g. Ulibarri et al.<sup>42</sup>.

Studies with FSW reporting hard drug use and their male intimate partners in Mexico/U.S. border cities illustrate how couples' experiences of economic strain, in combination with stigma and gender norms, can negatively impact relationship dynamics and lead to conflict and IPV.<sup>172,190-192</sup> This population experiences social and economic exclusion that leads to female partners' sex work, and constrains male partners' ability to support their partners financially and eliminate their need to do sex work. This impedes male partners' ability to adhere traditional norms of masculinity and male authority, which, in turn, leads their feelings of inadequacy, emasculation, anger, and sadness, particularly when female partners make more money than they.<sup>161,162</sup> These negative feelings, which can be amplified by sex work stigma and jealousy about their female partners' sexual relationships with others,<sup>113,161</sup> can lead to couple tension, conflict, and IPV.<sup>161,162,193,194</sup>

#### *Sex work stigma and HIV stigma*

A growing body of research suggests a complex relationship between stigma and risk of

IPV among FSW. Most of this work focuses on sex work stigma, with few studies examining HIV stigma, reflecting the paucity of literature on FSW living with HIV and their intimate partner relationships. Below I present research findings describing FSWs' experiences of enacted, anticipated, and internalized HIV and sex work stigma (refer to Section 3.1 for definitions of these terms). For each of these, I posit pathways through which they may be related to IPV vulnerability, drawing on findings on other factors related to IPV reviewed above.

### Enacted stigma and IPV

Female sex workers in studies in settings including eastern Africa, the Mexico/U.S. border, and urban Canada describe experiencing enacted sex work and HIV stigma because they are known to be FSW and/or living with HIV, in the forms of community gossip and verbal abuse, and exclusion from community social life and institutions, such as parties, traditional ceremonies, initiatives to help orphans, and churches.<sup>47,160,195 196</sup> Female sex workers living with HIV report losing friendships upon disclosure of one or both of their stigmatized statuses.<sup>62</sup> As suggested by studies on social networks and support previously discussed, social isolation and reduced social support resulting from such experiences of stigma may increase risk of IPV against FSW.<sup>2,34</sup>

Enacted sex work and HIV stigma from health providers is also widely reported in forms such as denial of care and treatment for injuries from physical or sexual assault and other health issues, violation of confidentiality and public humiliation, superfluous STI testing, sexual harassment, blaming FSW for their health problems, hostility, and disrespect.<sup>62,197-199</sup> Experiences of stigma from providers may lead to reduced access to support available through health services<sup>186</sup>—such as counseling and linkages to services for women experiencing IPV—that can help women leave violent relationships and otherwise reduce exposure to IPV.<sup>53,200</sup>

Studies in many contexts reveal high levels of enacted sex work stigma against FSW in the form of law enforcement discrimination, mainly police-perpetrated. Evidence of abuse by law enforcement comes disproportionately, but not exclusively, from contexts where sex work stigma is institutionalized in the criminalized status of sex work, and where enforcement policing strategies are used (e.g. police “crackdowns” on areas where sex workers work). Examples of law enforcement discrimination include policemen’s excessive use of physical force; coerced sex and extortion; arbitrary arrest, detainment, and fines; gang rape; blackmail; verbal and psychological abuse (e.g. calling them “sluts” and “whores”), espousing the view that FSW cannot be raped; and denying protection to FSW.<sup>47,52,97,111,160,201-206</sup> In Serbia, police physically and verbally assaulted FSW, and revealed them as sex workers to their intimate partners and others as forms of discipline and punishment for the moral transgressions of their work; one FSW described police as beating them to stop them from doing sex work, while saying, “why don’t you find another job?”<sup>207</sup> FSW living with HIV report being denied ART when detained or incarcerated.<sup>208</sup>

A few studies have tested associations between law enforcement discrimination and violent victimization among FSW. In a longitudinal study, Shannon et al.<sup>32</sup> found that physical assault by police and/or having been forced to provide sexual favors to police prior to baseline were associated with increased odds of reporting rape by someone other than a client in the last six months during study follow up visits. In Côte d’Ivoire, lifetime experiences of police refusal to provide protection to FSW because of selling sex, harassment or intimidation of FSW by the police because of selling sex, being arrested, and having been to prison were all associated with increased odds of ever experiencing physical and/or sexual violence.<sup>10</sup> In Cameroon, reporting lifetime physical or sexual violence was associated with reporting feeling that the police do not

protect them, arrest and imprisonment, and having been blackmailed.<sup>149</sup> Erickson et al.<sup>175</sup> report marginally significant ( $p=0.097$ ) positive associations between recent police arrest or incarceration and odds of moderate/severe physical IPV (having been slapped, pushed or shoved, kicked, beaten up, choked or burnt, threatened with a weapon) or sexual IPV (having been physically forced to have sex against will, had sex out of fear, forced into degrading or humiliating sexual acts) within the last six months among FSW in post-conflict Uganda.

Interpretation of these quantitative studies' findings in terms of the etiology of IPV is difficult, since in all cases but Erickson<sup>47</sup> the outcome measures used do not specify violence perpetrator. Furthermore, in all of the studies aside from the longitudinal study from Shannon et al.,<sup>46</sup> it is not possible to establish temporal ordering of stigma independent variables and IPV dependent variables. However, qualitative research helps to identify potential mechanisms through which enacted stigma from police may be related to experiencing IPV. Police abuse can lead to fear and distrust of police among FSW, which can hamper them from accessing police and judicial support to avoid ongoing or future violence.<sup>32,47,113,186,207</sup> In multiple countries in eastern Africa, FSW experienced police abuse when reporting experiences of violence to police, such as being forced to recount experiences of sexual trauma in unnecessary detail and blamed for the violence because they are sex workers—such experiences lead some to resolve to never again seek police protection.<sup>47</sup> Furthermore, extortion by police and fines can impose economic burdens, which may in turn increase the risk of IPV,<sup>186,209</sup> as indicated by the studies showing negative relationships between economic resources and IPV discussed above.

Violence from clients in forms such as verbal abuse using slurs for sex workers<sup>96,210</sup> and physical and sexual abuse often express views of sex workers as degraded, deviant, and deserving,<sup>47,96,164,210-212</sup> and can be understood as a form of enacted sex work stigma. In a study

of male clients in India, for example, men expressed views of FSW as permanently “soiled,”<sup>213(p12)</sup> “machines,”<sup>185(p552)</sup> that existed to satisfy desires of men, invulnerable to physical pain, and ineligible for love or long-term relationships like normal, honorable women. These views gave the men a sense of entitlement and justification to physically abuse FSW to correct deviant or uncooperative behavior.<sup>155</sup> Javalkar et al.<sup>157</sup> found that FSW in Karnataka who experienced physical and/or sexual violence from a client in the past six months had over twice the odds of recent IPV compared to those who had not experienced client violence. Sexual violence from clients such as the number of men who came for sex exceeding the number discussed with client beforehand, which may indicate gang rape, was also associated with increased odds of ever experiencing physical and sexual violence among FSW in Côte d’Ivoire.<sup>10</sup> Erickson et al.<sup>175</sup> found that recent client violence was associated with moderate/severe physical IPV in the last six months among FSW in Northern Uganda. Qualitative work suggests that in contexts where FSW experience a constant threat of client- and/or police-perpetrated violence, the lack of security may alter intimate partner relationship power dynamics in ways that increase potential for IPV: FSW may seek security and protection from their intimate partners,<sup>113</sup> who take advantage of this state of insecurity and fear to abuse them.<sup>170</sup>

Female sex workers also describe experiences of verbal, physical, and sexual violence and controlling behaviors perpetrated by intimate partners that can be classified both as IPV *and* enacted sex work and/or HIV stigma. Some intimate partners shame and insult them about their involvement in sex work<sup>194,212</sup> and HIV status.<sup>159</sup> For instance, an FSW living with HIV in a study in Kenya recounted her intimate partner calling her “person coffin” to insult her, constructing her as already dead and linking HIV to the meaning of certain death.<sup>159</sup> During couple conflict, FSWs’ intimate partners may draw on sex work stigma, such as the blaming

discourse, which holds that FSW are to blame if they are raped and/or that they cannot be raped.<sup>113</sup> Female sex workers in multiple countries describe how their intimate partners use their status as sex workers to coerce or manipulate them to have sex.<sup>47,159,212</sup> Studies also illustrate how intimate partners exploit the sex work stigma FSW face outside the relationship, utilizing it to blackmail them to prevent them from leaving the relationship.<sup>47,62</sup>

### Anticipated stigma and IPV

Female sex workers experience fear and anxiety about community members, friends, family, and colleagues learning of their HIV and/or sex worker status. This can lead to avoidance of disclosure, feelings of detachment from social ties from whom they feel they must hide a part of themselves, and social isolation.<sup>47,62,197,205,210,214</sup> Social isolation and reduced social support resulting may, in turn, increase risk of IPV against FSW, as discussed above.<sup>2,34</sup> Anticipated stigma from social network members can also influence relationship affective dynamics in ways that increase conflict and potential for IPV. For example, in one of the studies with FSW reporting hard drug use and their male intimate partners in Mexico/U.S. border cities previously cited,<sup>172,190-192</sup> a participant's fear of stigma from her partner's family heightened her insecurity about the relationship and jealousy about his time spent with them, which led to relationship tension and conflict.<sup>161</sup>

Anticipated stigma from health providers related to both HIV and sex work is a prominent barrier to receiving health services among FSW.<sup>62,198</sup> Findings of associations between reporting lifetime physical or sexual violence and fearing health services and avoiding seeking health services among FSW in Cameroon and Côte d'Ivoire could indicate that anticipated stigma from health providers increases IPV risk.<sup>10,149</sup> Similar to the impact of enacted stigma from health service providers discussed above, reduced access health services due to

anticipated stigma may diminish access to support for victims of IPV, such as linkages to counseling and other specialized services that can support women in coping with and leaving violent relationships.<sup>53,200</sup>

### Internalized stigma and IPV

Female sex workers' experiences of internalized HIV and sex work stigma can involve perceiving of themselves as disgraced, filthy, and/or guilty of wrongdoing due to sex work, and as abnormal and/or condemned to imminent death due to their HIV status.<sup>196,210,212,214</sup> Female sex workers and other women living with HIV in Canada experienced internalized sex work stigma when they viewed themselves as blameworthy for violence perpetrated against them because they are sex workers, and internalized HIV stigma when they viewed themselves as undesirable to potential intimate partners due to their HIV status;<sup>62</sup> both of these forms of internalized stigma can dissuade women from leaving abusive relationships<sup>62</sup> and may thus increase their exposure to IPV. Internalized HIV and sex work stigma may also be linked to IPV via self-isolation,<sup>210</sup> and negative psychological effects such as depression, which studies show to be related to experiencing IPV.<sup>2,3,147</sup>

To assess the potential relationships between stigma and IPV against FSW indicated by the above studies, more quantitative research that allows establishment of temporal ordering of stigma and IPV and that uses violence outcomes that specify the perpetrator as an intimate partner is needed. Additional quantitative and qualitative research is also needed to increase knowledge of pathways through which stigma relates to IPV.

### **Public health interventions addressing IPV against female sex workers**

To date, there is only one rigorously evaluated intervention in which IPV against FSW is the primary outcome of interest: Samvedana Plus, implemented by Karnataka Health Promotion Trust and evaluated among 800 female sex workers and their intimate partners in northern India.



It aimed to reduce violence and increase condom use in the intimate partnerships of FSW. Components included working with couples, FSW, male partners, and communities to change IPV-enabling norms, promoting healthy relationships, increasing awareness of IPV, rights, and services, and building capacity of community based organizations to respond to IPV.<sup>215</sup> A cluster randomized trial showed no significant effects of the intervention on IPV.<sup>216</sup>

Interventions to reduce violence perpetrated by clients and police against FSW have been conducted as part of community empowerment interventions for HIV prevention and demonstrated effectiveness.<sup>59,187,217,218</sup> Examples of violence interventions implemented by the Avahan India AIDS Initiative include advocacy with police and government officials, police training and sensitization, legal literacy/empowerment workshops for FSW provided by human rights lawyers, education of journalists on sex workers to address perpetuation of sex work and HIV stigma in the media, facilitation of sex worker collectivization and social cohesion through drop-in centers, peer outreach, and skills building activities, and establishment of 24-hour crisis management teams to respond to incidents of violence.<sup>59,139,140,218,219</sup> Beattie et al.<sup>217</sup> reported significant reductions between baseline and endline surveys in the proportions of FSWs reporting physical or sexual violence from anyone in the past year, which may encompass IPV. Being a member of an FSW peer collective was significantly negatively associated with reporting violence in Karnataka, which qualitative analysis attributed to collective members' increased confidence in confronting situations of violence in the workplace due to their ability to call upon other sex workers in the area for support. Peer collective membership also helped FSW avoid violent clients because members shared information regarding bad clients.<sup>220</sup> It is plausible that such peer support may also help FSW to develop strategies to mitigate violence from intimate partners, given research findings suggesting positive effects of peer social support on IPV risk.<sup>34</sup>

However, effects of community empowerment interventions on FSWs' risk of IPV are complex and studies suggest the potential for negative unintended consequences. In context of Avahan implementation in Mysore, India, which led to increased public involvement of FSW in community activities and reduced police violence, reports of IPV increased.<sup>158</sup> Argento et al.<sup>170</sup> posit that although this increase may be in part due to women's increased sense of empowerment to report abuse associated with the intervention (as has been found elsewhere<sup>106</sup>), it may stem from intimate partners' violent backlash against shifting gender power relations in the community associated with the program.

Evaluations of a limited number of HIV interventions focused on individual behavioral change and knowledge among FSW have also provided evidence of significant effects on their vulnerability to IPV. Wechsberg et al.<sup>221</sup> and colleagues compared the effects of two HIV prevention interventions targeting drug and alcohol use, condom use, and violence from clients and intimate partners, implemented in Pretoria, South Africa. The "Standard Intervention" consisted of individual educational and informational skill-building sessions regarding reducing drug- and sex-related HIV risks and referral resources. The "Woman-Focused Intervention" included the components of the Standard Intervention plus a personalized assessment of each woman's drug and sexual risks that informed individual goal setting activities around condom use, violence prevention strategies (e.g. with respect to alcohol use), communication techniques in difficult situations, ways to exit a dangerous situations, and discussion of patriarchal gender norms and attitudes.<sup>222</sup> Reductions in the proportion of FSW reporting experiencing physical and/or sexual IPV from a primary intimate partner occurred between baseline and six month follow up in both study arms, with larger effects seen among FSW who participated in the Women-Focused Intervention.

## **2.4 Study context: the Dominican Republic**

### **Socioeconomic and HIV epidemiological context**

The Dominican Republic is a Spanish-speaking country of nearly 11 million people, located in the Caribbean region on the island of Hispaniola, which it shares with Haiti.<sup>223,224</sup> The capital city, Santo Domingo, is situated in the Southeast, with a population of approximately 3 million people.<sup>223,224</sup> The Dominican Republic has experienced one of the fastest rates of economic growth in Latin America and the Caribbean (LAC) in recent years, averaging 5.3 % annually between 1993 and 2018.<sup>225</sup> Rapid economic growth, together with the higher growth of the income of the bottom 40 percent compared to the overall population, has led to declines in poverty and inequality, with a 2-point decrease in the Gini index (from 47.7 to 45.7).<sup>226</sup> However, nearly a third of the population lives in poverty<sup>226</sup> and access to social protections programs is inadequate, with social spending in the Dominican Republic low compared to the rest of the LAC region.<sup>227</sup> In 2018, life expectancy at birth was 74 years, the total fertility rate close to replacement level at 2.4 births per woman,<sup>224</sup> and the mean years of schooling among adults 25 years and older was 7.9.<sup>228</sup>

The most recent estimate of HIV prevalence among FSW in the Dominican Republic is approximately 4.4% [1.7% - 6.3%],<sup>229</sup> nearly five times greater than the national adult prevalence of 0.9 [0.7 - 1.3].<sup>230</sup> In Health Region 0, which includes Santo Domingo, it is 0.5%, 0.3% among women and 0.6% among men.<sup>231</sup> Demographic and Health Survey data suggest that education level and wealth quintile are inversely related to HIV risk,<sup>231</sup> and prevalence is similar in urban (0.3%) and rural (0.4%) areas.<sup>231</sup>

## 2.5 IPV in the Dominican Republic

### Context of violence against women

The national government began responding to the issue of violence against women in the late 1990s. Domestic violence was not considered a crime until 1997, when the Law 24–97 on Domestic Violence was enacted, establishing a protocol and services for treatment of cases of intra-familial and domestic violence.<sup>232,233</sup> In 2007, Law No. 46-07 instituted an annual campaign, “16 Days of Activism on Violence Against Women,” and the Constitution was amended in 2010 to address gender equality, including addition of an article (No. 42) condemning domestic and gender-based violence.<sup>234,235</sup> The Dominican Republic also ratified the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) in 1982 and the Optional Protocol in 2001, and the Inter-American Convention on the Prevention, Punishment, and Eradication of Violence Against Women (“Convention of Belem Do Para”).<sup>235</sup> A goal in the Ministry of Women’s National Plan for Gender Equality (PLANEG) 2007-2017 is “to eradicate all forms of violence against women throughout their lives.”<sup>235</sup> In November 2017, the Ministry of Justice put forward a 22-point National Plan against Gender Violence.<sup>236</sup>

Ethnographic research illustrates anti-violence discourse in public space and media coverage, and popular awareness of the issue.<sup>204</sup> Cabezas<sup>204</sup> observed that the International Day for the Elimination of Violence against Women – held on November twenty-fifth to commemorate *las Hermanas Mirabal* (the Mirabal sisters), political activists in the Dominican Republic who were murdered by the Trujillo dictatorship in 1960—receives significant attention.<sup>237-243</sup> *Las Hermanas Mirabal* have become a symbol of anti-violence against women in the Dominican Republic, and stories memorializing them and about violence against other women are featured in many newspapers, especially around November twenty-fifth. Buildings, parks, schools, and a province are also named after *Las Hermanas*.<sup>204,241</sup> In Winter 2018, a large

Christmas tree decorated with images of the faces of women murdered by their partners, along with bloody hands, could be seen prominently displayed in downtown Santo Domingo (R. Dayton, personal communication, March 16, 2018). Possibly reflecting this public discourse, empirical research suggests low social acceptability of violence against women: the percentage of Dominican women and men agreeing to at least one instance where “wife-beating” is justified is low, particularly when compared to other LMIC.<sup>244</sup> Caridad Bueno<sup>244</sup> found, using recent Demographic and Health Survey (DHS) data, that six percent of women and men agreed to at least one justification for “wife-beating,” whereas scholars in other settings have found these percentages to range from 8% to 91%.

However, the landscape of discourse, social norms, and attitudes toward IPV in the Dominican Republic is multifaceted and contradictory. In a qualitative study in Santo Domingo, female focus group participants constructed women as to blame for their experiences of IPV, whether directly—saying, “it is our fault”—or indirectly, saying it is women who should put a stop to it.<sup>245(p547)</sup> Community health workers in focus groups in multiple regions shared this stance, stating that women are often at fault for IPV.<sup>246</sup> Interviews with key informants examining barriers to the uptake of gender based violence (GBV) services among FSW, men who have sex with men (MSM), and transgender women in Puerto Plata highlighted victim blaming by health care providers and victims themselves, as well as normalization of violence and perceptions that it is an immutable problem.<sup>247</sup> Given the prominence of the victim blaming discourse in this structural context, internalized sex work stigma may increase risk of IPV among FSW living with HIV by leading to victim self-blame and normalization of violence, thus discouraging them from reporting it, seeking services, and/or from rejecting abusive partners.

## **Prevalence and consequences of IPV**

IPV is the fourth leading cause of death among women in the Dominican Republic.<sup>248</sup> Two hundred women are murdered every year, half (52%) by intimate partners, according to the Procuraduría General de la República Dominicana.<sup>231</sup> Thirty-four point six percent of ever married or in union women ages 15-49 reported having been a victim of physical, emotional, or sexual violence perpetrated by a husband or companion in the most recent DHS (2013). Twenty-five percent experienced emotional, physical, or sexual violence from a husband or companion (i.e. current husband/companion for women currently in union or the most recent partner for divorced, separated, or widowed women) in the last 12 months.<sup>231</sup> Emotional abuse was most commonly reported (20.4%), followed by physical (14.7%), and sexual (4.2%). Prevalence of recent physical or sexual violence by Health Region ranged from a low of 11.7% in Regions 5 and 6 to 19.5% in Health Region 0 where the capital city Santo Domingo is located. Notably, levels of IPV victimization per the DHS only reflect the experiences of ever married or in union (i.e. cohabiting) women (87.1% of those of reproductive age<sup>231</sup>), which may influence prevalence estimates—cohabitation and formal marriage have been found to be, respectively, positively and negatively related to recent IPV victimization among women in LMIC.<sup>141</sup>

Regarding IPV consequences, 42.4% of the female respondents reporting recent physical or sexual violence from a husband or companion experienced physical injuries as a result.<sup>231</sup> Thirty-nine point nine reported wounds, bruises or pains, and 10.7% reported serious injuries such as broken bones or teeth and deep wounds.<sup>231</sup> In qualitative studies, Dominican women and health service providers describe IPV as a commonplace occurrence with serious consequences including poor mental health.<sup>245,249</sup> In one study on mental health, service providers throughout the Dominican Republic identified IPV as the problem they would fix if they had the opportunity to fix one.<sup>249</sup>

## **Correlates of IPV**

Multivariable quantitative analyses that control for potential confounders using cross-sectional DHS data have identified factors at the individual, relationship, community, and structural levels significantly related to experiences of IPV victimization among women not identified as FSW in the Dominican Republic. A small number of qualitative studies corroborate these findings. This literature is summarized below.

Individual level factors positively associated with increased IPV risk among ever married or in union women include younger age at first marriage (<20 years old),<sup>142</sup> rural residence,<sup>184</sup> witnessing inter-parental violence (fathers beating mothers), and believing wife beating is justified in at least one circumstance.<sup>142,184</sup> Reporting physical or sexual violence from a spouse in the last 12 months is associated with increased likelihood of experiencing a pregnancy ending in a non-live birth, STI symptoms in the past year, and unwanted births in the past five years.<sup>250</sup> Women who reported that their partners frequently got drunk had a 9.8-fold greater odds of reporting IPV compared to those whose partners did not drink.<sup>142,251</sup> These findings are supported by qualitative research: female focus group participants in Santo Domingo viewed men's alcohol use as a primary factor leading to IPV perpetration.<sup>245</sup>

Regarding relationship level factors, Flake and Forste<sup>251</sup> found that households with female-dominant decision-making (the woman makes most decisions) had twice the odds of IPV in comparison to households with egalitarian decision-making (partners have an equal say in most issues).<sup>251</sup> This finding may be interpreted as a form of male retaliation for women's disruption of the traditional gender hierarchy (i.e. "male backlash," previously discussed in Section 2.3 under "Power dynamics"). Alternatively, women who assumed dominating roles in household decision-making may have been more likely to engage in disagreements and conflict with intimate partners.

At the community level, Caridad Bueno and Henderson<sup>184</sup> found that Dominican women who were members of political organizations had more than four times the probability of experiencing IPV as compared to women who were not involved in political organizations. This could also be evidence of male backlash, or of politically engaged women's increased empowerment to recognize and report IPV.

At the macrostructural level, they examined economic factors and found that the relationship between women's access to economic resources and IPV depended on whether they were poor or rich and the type and level of resources.<sup>184</sup> Employment was protective for poor and rich women, suggesting that such access to economic resources may give women leverage to negotiate with their male partners or exit options from the relationship. Having money for one's own use was only protective for rich women. This suggests that for economic resources to have a protective effect on risk of IPV, they must be sufficient to provide real means for women to leave abusive relationships and support themselves and their dependents; the money that poor women are likely to have may not meet these requirements.<sup>184</sup> When poor urban women's independent resources surpassed their husband's, they experienced elevated risk of IPV, suggesting that possession of economic resources can elevate risk if it disrupts the gender hierarchy in the relationship, in which case it can lead to male partner retaliation through IPV perpetration.

## **2.6 Violence against female sex workers in the Dominican Republic**

Female sex workers in the Dominican Republic have protested violence against their community for decades.<sup>98,252</sup> During the first congress on sex work in the Dominican Republic in 1995, organized by COIN, FSW identified multiple forms of violence against them including physical and verbal abuse from clients and pimps; restriction of internal migration; random police raids, blackmail and incarceration; and discrimination in laws and policies designed to protect women.<sup>98</sup> However, violence against FSW receives little attention, according to



MODEMU,<sup>204</sup> and research on IPV against FSW, particularly those living with HIV, is highly limited. *Abriendo Puertas*, which used non-probabilistic sampling, is the only study of violence among FSW living with HIV and of violence against FSW in which disaggregation by perpetrator is possible. Among *Abriendo Puertas* participants at baseline (n=268), 18.3% reported any physical or sexual violence from a sexual partner in the last six months. Twelve point three percent reported IPV, 8.3% reported client violence, and 2.6% reported both.<sup>15</sup>

Two additional surveys have included indicators of violence against FSW. The 2012 Integrated Biological and Behavioral Surveillance Survey (IBBSS), carried out in five cities using respondent driven sampling, found that just over a fifth (21.5%) of FSW in Santo Domingo (n=401) reported experiencing at least one type of abuse or maltreatment in the past year. 91.5% of those reported physical maltreatment, 31.4% reported rape, and 11.2% reported robbery or assault. In a separate survey item, 18.4% of FSW reported being forced to have sexual relations.<sup>229</sup> Among participants in Santo Domingo (n=264) in the HVTN 907 cohort study (2009-2012), which examined recruitment and retention of FSWs at high risk of HIV infection into HIV vaccine trials, 21.6% had experienced forced sex from a sexual partner.<sup>253</sup>

## **2.7 Sex work in the Dominican Republic**

### **Female sex worker population characteristics**

According to recent estimates, 88 thousand women in the Dominican Republic, or 3.3% of the adult female population, are FSW, defined as women who look for clients who pay them money or give them gifts for sex.<sup>254</sup> In Santo Domingo, this proportion is 2.1% (approximately 15 thousand women).<sup>254</sup> Per the 2012 IBBSS, 78.4% of FSW in Santo Domingo over age 15 years were single (i.e. had no intimate partner or had an intimate partner with whom they were not married or cohabiting), 9.5% were married or cohabiting with a man, and 12.1% were separated, divorced or widowed. Over half (55.4%) had only primary school level education,

41.2% had completed secondary school, and 3.4% had university level education.<sup>229</sup> Sex work is the primary source of income for the majority of FSW (95.5%) of FSW in this context.<sup>229</sup> The remaining 4.5% report salary or maintenance/remittances as their principle income sources. Forty-three point two percent make an equivalent of approximately USD \$258-\$515<sup>1</sup> (RD\$10,001 – 20,000 Dominican pesos) per month. One quarter make USD \$155 – \$258, 22.4% make USD \$515 or more, and 9.8% make USD \$155 or less.

### **Socioeconomic context of sex work and gender relations in the Dominican Republic**

Dramatic increases in women’s labor participation occurred in the Dominican Republic beginning in the 1970s due to several factors.<sup>255</sup> In the 1960s, development strategies shifted toward export-led industrialization and tourism,<sup>255</sup> industries which favored cheap female labor and came to replace the sugar export industry as the basis of the Dominican economy by the 1980s. The 1982 economic crisis and structural adjustment programs led to lowered wages and increased cost of living, which heightened the need for women to join the labor force.<sup>256</sup> The supply of qualified women workers also increased due to decreasing fertility and increasing female (and male) education.<sup>255</sup> Simultaneously, the decline of the sugar industry led to mass unemployment among men and their increased reliance on informal sector work.<sup>255</sup> These macro-economic trends led to women’s assumption of the role of primary or sole breadwinner in many households and shifts in gender dynamics at the household level, with outcomes such as greater marital instability.<sup>255</sup> Women experienced increases in authority within their relationships due to their indispensable household economic contributions, and more power for resisting male dominance and leaving unsatisfactory relationships.<sup>93,255</sup>

However, persistent traditional gender norms and women’s economic precarity have constrained growth in women’s authority and agency.<sup>93(pp. 121-125, 127),255</sup> Safa<sup>255</sup> describes how

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<sup>1</sup> Calculated using conversion rates from January 1, 2012 at <https://www.oanda.com/currency/converter/>

men responded to shifting gender relations by becoming more controlling and dominating toward their female partners.<sup>255</sup> The myth of the male breadwinner persisted at the state and workplace levels, perpetuating notions of women's labor as supplementary, and driving down their wages.<sup>255</sup> Women with low education levels commonly have precarious jobs that do not cover the high cost of living, multiple dependents, and lack of involvement of the fathers of their children and help from State social protection programs.<sup>92,93,252,255,257</sup> Social networks can provide critical but limited short term support given family and friends' own financial constraints.<sup>92</sup> Such economic pressures and precarity create barriers to dissolving and challenging male dominance in relationships.<sup>92,225,255</sup>

Economic strain is unevenly distributed among women, as access to employment depends on their social positions within hierarchies of race, color, class, citizenship, and HIV status.<sup>93,257</sup> Those who work in factories, domestic work, the tourism industry, and elsewhere commonly report extremely long work hours and commutes, involuntary and unpaid overtime, sexual harassment, state and employer repression of labor organizing, lack of opportunity for advancement, and psychological and other abuse by employers.<sup>90,92,93,257</sup> For many women, sex work provides much better pay for fewer hours of work, more control over their working hours, greater flexibility to care for their children, and freedom from abusive employers.<sup>90,92,93</sup> Sex workers have described how sex work provides financial independence that enables escape from oppressive patriarchal gender relations within their households and relationships, including IPV.<sup>204,258</sup>

## **The sex work industry**

### ***Legal status and work environments***

Selling sexual services among adults aged 18 years and older is not explicitly prohibited by the law in the Dominican Republic.<sup>259</sup> Articles 334, 334-1 and 335 of the penal code (*Contra*

*la violencia intrafamiliar*, Ley No. 24–97) address prostitution by seeking to punish those who profit from the earnings of sex workers and who facilitate the practice of prostitution.<sup>259</sup>

However, in practice, sex workers are commonly treated as criminals by law enforcement.<sup>89,252</sup>

For example, in Sosúa and Boca Chica, popular tourist destinations, a special police unit exists to control social “*delicuentes*” (delinquents)—FSW and others working in the informal economy—perpetually subjecting them to arrest and fines.<sup>92,93</sup>

As is the case throughout the Caribbean, it is common for FSW in the Dominican Republic to not do sex work full time or stay in one site or one arrangement, to have multiple sources of income, and many have a high degree of autonomy.<sup>90,92,204</sup> They typically operate without pimps, which increases their control over their work hours, prices, and client selection.<sup>92,93</sup> However, those who work in direct establishments (brothels) or in bars where they also live, must adhere to the rules and regulations of the owners, and their behavior (e.g. condom use) and movement may be closely monitored.<sup>91,92</sup> Some FSW, particularly migrants, depend on the bar owners for housing and are not permitted to work elsewhere.<sup>92</sup>

Sex for sale is not located within a bounded “red-light zone” in Santo Domingo, but rather found throughout the city (Y. Donastorg, personal communication, June 23, 2016). Forty-five percent of FSW participating in the 2012 IBBSS reported working on the street, and the remainder reported working in indoor establishments (42.3%) or unspecified venues (13.1%). Indoor establishments include bars, cantinas, or discos (18.6%); brothels or *casas de cita* (date houses) (13.6%); and cafeterias, *colmados* (corner general stores, which are sometimes social gathering places), or carwashes (10.1%). Indoor establishments include two types: direct and indirect. In indirect establishments, such as bars and discos, FSW are typically hired as waitresses or dancers who are also available for hire for sex.<sup>91</sup> They earn money from salaries

and tips and from selling sex. Men and women attend indirect establishments at times for drinks and dancing only, such as a birthday celebration or a regular night out.<sup>91</sup> Due to the flexibility of their role and of the function of the indirect establishment space, many FSW working there identify as waitresses, dancers, or girlfriends rather than as sex workers.<sup>91</sup> In Santo Domingo, some women travel periodically to work in neighboring beach towns such as Boca Chica that are popular with tourists, e.g. on weekends to supplement income from Monday-Friday jobs.<sup>93</sup>

Direct establishments, namely brothels and *casas de cita*, are an older and more traditional type of establishment.<sup>91</sup> Female sex workers often live on-site at direct establishments, see a higher volume of clients than women who work at indirect establishments, and identify as sex workers.<sup>91</sup> High-end direct establishments attract a variety of clients but are more likely to draw those of higher socio-economic status including businessmen, diplomats, and government officials than indirect establishments.<sup>91</sup> Direct establishments contain beds although sex may occur in nearby motels. They are better able to enforce condom use policies because they are generally stricter environments in which women's behavior is closely monitored; for this reason, as noted above, some are socially repressive for women who work there.<sup>91</sup>

#### *Alcohol use*

Alcohol use is a prominent aspect of the social context in which FSW work and live in Santo Domingo, in line with studies of FSW in multiple contexts globally.<sup>154,205,260,261</sup> Alcohol consumption is a central aspect of socializing in sex establishments, which often generate a significant portion of revenue through alcohol sales.<sup>91</sup> Female sex workers are expected to encourage clients to drink, pressured to drink by clients, and cite drinking with clients as a health-compromising aspect of their job.<sup>91,92,154,205,258,260</sup> Support and solidarity among staff within sex establishments, including FSW, managers, disc jockeys, and bouncers, can help protect against alcohol-associated risks (e.g. client violence) through monitoring alcohol

consumption and encouraging FSW to go home if they seem intoxicated.<sup>91</sup> Frequent alcohol use is also a central mode of socialization within peer networks of clients and intimate partners of FSW.<sup>262-264</sup>

Surveys indicate variation in levels of alcohol use across different populations of FSW in Santo Domingo. Almost all participants in the 2012 IBBSS consumed alcohol one or more times per week in the last month: 53.3% consumed alcohol 1-3 days per week, 26.9% 4-6 days per week, and 19.0% everyday.<sup>229</sup> Among *Abriendo Puertas* participants at baseline (n=268), the proportion reporting using alcohol at least once a week was much lower (35.4%)<sup>70</sup>—which may be due to efforts to minimize alcohol consumption associated with their HIV status and perceived negative interaction between alcohol and ART.<sup>265</sup> Heavy drinking was prevalent among members of the HVTN 907 study cohort, who were eligible to enroll in part based on indicators of social vulnerability (e.g. low education and absence of ties with local sex worker community organization).<sup>253,266</sup> In that cohort, 84.8% reported consuming four or five or six or more drinks every day on average.<sup>253</sup>

#### *Social networks and intimate partner relationships among female sex workers*

Kennedy and colleagues<sup>267</sup> found FSW living with HIV in Santo Domingo to have many sources of social support, including friends, family and partners, who were critical for their physical and mental health and wellbeing, and helped them to deal with stigma. Social ties provided information, motivation to seek medical care, and assistance with financial costs of care. In addition to support for HIV-related needs, social ties with female friends and acquaintances are a critical—if not sole—conduit of social capital to draw upon when seeking livelihood opportunities for FSW and other low-income women, particularly when faced with economic shocks (e.g. a split from a male partner, other employment loss).<sup>92</sup>

MODEMU, whose mission focuses on fostering solidarity, empowerment, and support

amongst FSW, offers various forms of support to the sex worker community, including emotional support, educational workshops, and linkages to legal assistance, vocational training, literacy classes, and medical screenings.<sup>98,268</sup> Female sex workers in Santo Domingo and elsewhere in the Dominican Republic also report divisiveness and stigmatization amongst FSW associated with competition for clients, efforts to cope with their own stigmatization, and fears of HIV transmission.<sup>92,258,269,270</sup>

A small number of studies describe intimate partner relationships of FSW in Santo Domingo. In two qualitative studies that included FSWs' male partners, many couples reported meeting in the context of sex work when both worked at the same sex establishment (the men as doormen, bartenders, etc.) or during a sex work transaction. Others met through their social networks.<sup>91,271</sup> "Intimate partner" and "client" relationships were not mutually exclusive categories, with qualities and functions typically associated exclusively with one often found in both. For example, many FSW had clients who they saw repeatedly over time ("regular" or "special" clients), with whom they developed trust, friendship, emotional and economic dependency, and intimacy.<sup>91</sup> Some relationships with clients converted to intimate partner relationships. Other types of partners that had characteristics of both client and intimate partner relationships were identified, such as "amigos," whose label reflects the non-binary nature of FSWs' relationships.<sup>91,204</sup>

A qualitative study by Barrington et al.<sup>271</sup> illustrates how dynamics within FSWs' intimate partner relationships both subvert and adhere to traditional gender roles in this context. Economically, women and men both provided one another with economic support and women expressed appreciation of the economic independence sex work afforded them. Men's ability to act as traditional breadwinner for the couple was undercut by a lack of economic resources,

which led some to accept, if not be completely comfortable with, their partner's sex work. Male partners were more focused on their feelings of love and intimacy toward their partners than the women, who constructed their relationships in largely pragmatic terms, focusing on economic needs and actively seeking out economic opportunities with other partners.<sup>271</sup> At one level, this may reflect participants' lack of adherence to traditional gender norms in which women are focused on intimacy and men on breadwinning. At another, economic level, it may reflect typical gender relations in which women have more limited economic opportunity outside of their partnerships than do men, which renders the economic aspect of their intimate relationships more important for them than for the men. Traditional gender dynamics were indeed evident in women's narratives of experiencing emotional suffering, violence, and jealousy in their relationships, and men's narratives of having outside sexual relationships, being abusive, and not providing adequate sufficient economic support.<sup>271</sup> Some men described overlooking women's stigmatized sex worker status when their partners fulfilled gender-normative caretaking and housekeeping responsibilities. Others felt shame about their partner's sex work and avoided discussing it, reflecting and perpetuating sex work stigma.<sup>271</sup>

### **Experiences of sex work and HIV stigma among female sex workers living with HIV**

In this section, I integrate empirical findings from public health, anthropological, human rights, and psychometric literatures<sup>92,93,258,267,269,272-277</sup> to describe enacted, anticipated, and internalized HIV and sex work stigma in the setting of the Dominican Republic. I describe negative meanings that are attached to HIV and sex work, how stigma associated with HIV, sex work, and other social characteristics mutually reinforce one another, and the impacts of stigma on the life chances<sup>84</sup> of FSW and PLHIV.

I identified four dimensions of enacted and anticipated sex work and HIV stigma in reviewing the literature: social discrimination, workplace discrimination, health service



discrimination, and law enforcement discrimination. Each of these dimensions apply to both HIV and sex work stigma, except law enforcement discrimination, which was seen in relation to sex work only in the literature. The prominence of these dimensions of stigma in the literature informed my selection of stigma constructs and relationships to examine in this dissertation.

The public health and human rights research I reference was conducted in Santo Domingo and other cities throughout the Dominican Republic, and the ethnographic works in Boca Chica,<sup>93</sup> Andres,<sup>93</sup> and Sosúa,<sup>92</sup> coastal towns and popular international sex tourist destinations. The ethnographies focus primarily on sex work in context of the tourism industry and the processes of globalization that underpin it. Readers should note that the sex work industry in Santo Domingo and the clientele of *Abriendo Puertas* participants are not dominated by sex tourists. However, the experiences of FSW they portray are likely directly shared by some *Abriendo Puertas* participants—Boca Chica and Andrés are located a short bus ride from Santo Domingo, and some *Abriendo Puertas* participants report residing there. Some FSW who live in Santo Domingo spend time working in Boca Chica.<sup>93</sup> Finally, many FSW residing in Sosúa are transient migrants from urban areas including Santo Domingo who ultimately return.<sup>92</sup>

### ***Enacted and anticipated stigma***

#### *Social discrimination*

Female sex workers and other women living with HIV in Santo Domingo and elsewhere report pervasive HIV stigma from family, friends, and community members, in forms such as gossip, blame, verbal abuse, rejection, and disclosure of women's HIV status to their children.<sup>258,269,274-276</sup> A term for a person living with HIV—*sidosa/o* (person with AIDS)—is an insult,<sup>258</sup> which defines the whole person in reference to her HIV status. One study participant described how her partner's family blamed her for her partner's HIV infection, which they attributed to her sex work,<sup>269</sup> reflecting negative meanings of HIV as “self-earned,”<sup>278</sup> and of sex

work as a source of HIV. Nearly a third (30.0%) of FSW in Santo Domingo surveyed in the 2012 IBBS reported experiencing family contempt for being a sex worker.<sup>229</sup>

In their ethnographies, Brennan<sup>92</sup> and Gregory<sup>93</sup> illustrate HIV and sex work stigma in portraying how people draw upon and reproduce stigma in interpreting unwanted social changes they perceive in their communities. In Sosúa, FSW are constructed as both cause and effect of increased crime, drugs, pollution, HIV, and moral and cultural decay linked to globalization and the growth of the tourism industry. In community members' talk, newspapers, and other local media, negative meanings associated with sex workers include laziness, greed, and criminality; the word "*puta*" (prostitute) is used interchangeably with "*ladron*" (thief). HIV is constructed as something of alien origin and polluting—whether brought in by international tourists<sup>92</sup> or by Haitian migrant FSW<sup>93</sup>—that threatens an essential, pure "*Dominicanidad*" (Dominicanness).<sup>92</sup>

Anticipated HIV discrimination leads women to avoid HIV support groups for fear of their status being outed to community members, which can reduce support from other PLHIV, and to seek care at clinics far from their communities, which can produce economic costs (e.g. transportation) and diminish access to health services and HIV care.<sup>48,258,269</sup> Some women living with HIV avoid disclosing their status to people with whom they have close relationships to prevent status outing to the broader community, which can also decrease the level of social support they receive.<sup>258</sup> Anticipated HIV stigma from community members and male partners in combination with anticipated HIV workplace discrimination can have economic consequences for PLHIV—some avoid applying for jobs to prevent HIV status outing in their communities that can result from illegal employer HIV testing, which is perceived as ubiquitous.<sup>277</sup>

### *Health service discrimination*

Female sex workers and other women living with HIV describe discrimination by health service providers who treat them in a distant way upon learning their HIV status, refuse to

provide services, disclose their HIV status to partners, family members, neighbors, friends, or others without their knowledge or consent, and/or demand they undergo HIV testing before administering unrelated services.<sup>258,267,269,277</sup> Women living with HIV interviewed by Human Rights Watch<sup>277</sup> reported being pressured into sterilization post-HIV diagnosis by providers who framed it as a necessity or gave misleading information about risks and benefits. Results of the 2012 IBBSS suggest that experiences of sex work stigma in context of health services are also highly common among FSW in Santo Domingo: 85.7% reported maltreatment in health services.<sup>229</sup>

Anticipated HIV discrimination by health providers can lead to delays in engagement with HIV care.<sup>269</sup> In an assessment of barriers to the uptake of GBV services by FSW and other key populations conducted by the LINKAGES project, participants reported fear of discrimination by health service providers due to past experiences of being mocked or turned away when seeking violence response assistance, which prevented future service seeking.<sup>247,279</sup> Anticipated sex work stigma is common among FSW in Santo Domingo, according to the 2012 IBBSS: half of participants (50.3%) reported hiding being sex worker in health services.<sup>229</sup>

#### *Workplace discrimination*

Women experience HIV stigma in the workplace, in- and outside of the sex industry. In the sex industry, FSW in direct establishments have reported other sex workers disclosing their HIV status or physically assaulting them due to their status, in some cases leading to loss of employment and/or clients.<sup>92,269</sup> Outside the sex industry, multiple studies show illegal employer HIV testing and discrimination to be a widespread problem, particularly for women and key populations.<sup>280</sup> Female sex workers and other women living with HIV report that employers exclude them from prospective jobs based on HIV test results required during the hiring process, and fire them from existing jobs when they test HIV-positive during mandatory and involuntary

testing.<sup>258,267,275</sup> Others report discriminatory treatment and pressure to leave from employers based on rumors of their HIV-positive status (e.g. domestic workers being required to wear rubber gloves).<sup>258,269,275,277</sup>

Documented consequences for FSW and other women of employer HIV testing include unemployment and underemployment in the short and long terms, intense economic and emotional stress, and social isolation.<sup>258,267,275,277,281</sup> The economic stress is exacerbated for women when their male partners leave them due to their HIV status.<sup>277</sup> Among those who are not already involved in sex work, it leads many to enter the sex industry.<sup>277</sup> Possibly reflecting this trajectory and the economic consequences of HIV stigma, 19% of participants in the *Abriendo Puertas* cohort reported at baseline first becoming involved in sex work subsequent to their HIV diagnosis.<sup>70</sup> Finally, exclusion from employment is injurious to their internal sense of autonomy, control, and dignity.<sup>277,280</sup>

Women living with HIV report anticipated HIV discrimination by employers that both deters job seeking to prevent status outing to social networks as described above, and deters status disclosure to friends and family to prevent spread of the information to employers, which can increase social isolation.<sup>275</sup> Female sex workers also report anticipated sex work workplace discrimination: 30% of FSW in Santo Domingo reported hiding being a sex worker in seeking employment.<sup>229</sup>

#### *Law enforcement discrimination*

Female sex workers in the Dominican Republic experience maltreatment by law enforcement, such as physical, verbal and sexual abuse (e.g. gang rape, coerced sex in exchange for protection), random arrest, detainment, and extortion by police.<sup>89,252,258</sup> As reported by Amnesty International, a survey of 400 cisgender FSW conducted by Red de Mujeres Trabajadoras Sexuales de Latinoamérica y el Caribe (RedTraSex) and its national partner

organization, OTRASEX, found that 86% of participants had been forced to have sex with police in exchange for not being arrested, and over 30% had had sex with a police officer out of fear.<sup>252</sup> At the hands of police, nearly half had been pushed or thrown to the floor, 56% had been groped, and 34% had been threatened with a weapon.<sup>252</sup> Three-quarters had been verbally threatened by police. Female sex workers working on the street describe hiding from police when they see them coming for fear of abuse.<sup>252</sup> Those who report experiences of violence to the police or district attorney offices are ignored, turned away, or laughed at.<sup>204,247,252</sup> Anticipated discrimination and discomfort due to past experiences of abuse from police and of maltreatment when seeking to report violence from police and others deters FSW from seeking law enforcement protection.<sup>247,252,279</sup>

Law enforcement discrimination is prominent in ethnographies of FSW who work in areas popular with tourists, such as Sosúa and Boca Chica, where the tourism industry strives to shield tourists from “*delincuentes*” (delinquents).<sup>92,93</sup> Sex workers’ position within racial, class, citizenship status hierarchies determines the level of law enforcement discrimination that they experience.<sup>89</sup> For example, in their policing of sex workers, Sosúan police are much more likely to apply the label of sex worker to women who are black and poor than to those who are not;<sup>92</sup> as sex work scholar and advocate Pheterson argues in defining sex work stigma, racial and class positions are “used as evidence of female unchastity” that provide grounds for stigmatization.<sup>282(p461)</sup> In Boca Chica, police are much less likely to intrude upon and abuse sex workers in high class venues as compared to those working in low class venues or on the street.<sup>93</sup> Sex workers in higher class venues are perceived by police and clients to be less “settled in” to sex work than lower status FSW and “less disposed to crime, drug abuse, and HIV infection”<sup>93</sup>— that is, more loosely tied to the sex worker label and its negative meanings. Interactions with

law enforcement that leave FSW with criminal records reify the association between sex work and criminality. They can exacerbate FSWs' poverty, directly, due to the costs of bribes, and indirectly, by hampering their ability to get jobs, as one typically cannot get a job in the formal sector with a criminal record.<sup>93</sup>

### ***Internalized stigma***

Quantitative research shows that experiences of enacted stigma are positively associated with experiences of internalized stigma among women living with HIV and FSW living with HIV.<sup>276</sup> Female sex workers living with HIV in Santo Domingo have described experiences of internalized HIV stigma and ways that it compromises their health and wellbeing, including spurring intense fear of early death; feelings of shame, guilt, worthlessness, and low self-esteem; depression, anxiety and suicidality; and self-isolation and non-disclosure of their HIV and sex worker statuses to friends and family.<sup>258,265,269</sup> The link between internalized stigma and depression among FSW and women living with HIV in the Dominican Republic has been found to be statistically significant.<sup>50</sup>

Brennan<sup>92</sup> portrays how FSW resist such internalization of sex work and HIV stigma, through self-identity construction in alignment with social norms and values, and through meting it out to others. In their talk about themselves and other FSW, FSW in Sosúa drew heavily on gender norms and discourses that construct women as either “Madonnas” or “*putas*” (prostitutes). Madonnas are good mothers—that is, focused on their obligation to their children and homes, self-sacrificing, responsible, frugal, and caring. They are defined in opposition to *putas*, who fail to demonstrate self-sacrifice by spending money on themselves and/or their boyfriends, and who do not maintain boundaries by accepting anyone as a client at any time of day, not using condoms, and approaching clients rather than waiting to be approached.<sup>92</sup> Stigmatizing others helps to create a “them” against which an honorable “us”<sup>84</sup> can be defined.

Female sex workers in both Santo Domingo and Boca Chica expressed a lack of shame about doing sex work when they constructed it as their means to fulfill their obligations to meet the needs of their households and dependents, and a sense of pride in being self-sacrificing mothers.<sup>93,258</sup> Sex traded for money was not immoral sex when it was done in service of being a good mother, which Helen Safa and others have argued is a primary defining aspect of femininity and womanhood in the Dominican Republic and throughout Latin America.<sup>255,283,284</sup>

### CHAPTER 3. THEORETICAL FRAMEWORK

In this dissertation, I examine the relationship between stigma and IPV with the goal of advancing understanding of (1) the etiology of IPV against FSW living with HIV and (2) pathways through which stigma—relates to the risk of IPV. To conceptualize relationships between HIV and sex work stigma and IPV, I developed a framework that integrates theory from multiple disciplines and empirical studies on IPV risk factors among FSW. This study takes a socio-ecological approach to examining the etiology of IPV, which assumes that variation in individuals' IPV risk is explained by a web of multilevel factors.<sup>39,44,68</sup>

The theoretical framework, detailed below, draws on the work of Link and Phelan,<sup>84</sup> Earnshaw,<sup>285</sup> Parker and Aggleton,<sup>60</sup> Pheterson,<sup>58</sup> and others to define stigma broadly and related to HIV and sex work stigma specifically. To conceptualize how stigma influences FSWs' risk of IPV, I employ Hatzenbueler, Phelan, and colleagues' fundamental cause theory of stigma,<sup>65</sup> which lays out a set of mediated pathways through which stigma degrades the health of stigmatized populations. These include depleting available resources, undermining social relationships, and spurring harmful psychological and behavioral responses among the stigmatized.<sup>65(p814)</sup> I draw on feminist economic household bargaining theory to theorize how stigma may increase women's risk of IPV via its adverse effects on availability of economic resources<sup>184,286,287</sup> and an affect regulation motivational model of alcohol use to theorize how stigma may increase women's risk of IPV via psychological and behavioral responses.



### 3.1 Stigma

Erving Goffman's work is the starting point for a large and evolving body of theory and empirical research on stigma and its social and health consequences. Goffman (1963) defined stigma as “an attribute that is significantly discrediting” in a society, which, when applied to a person through rules and sanctions, leaves him/her with a “spoiled” identity. An extensive literature has employed Goffman's theory within an individualistic, socio-cognitive approach to stigma, in which stigma is produced via individuals' cognitive processes such as stereotyping others, as well as emotional responses such as anger,<sup>60,84</sup> and the influence of these processes on micro-interactions between stigmatizers and the stigmatized. From this perspective, the negative effects of stigma can be addressed through behavior change of individuals—whether by altering the perceptions, attitudes, feelings, and/or knowledge of stigmatizers, or enhancing the coping capacities of the stigmatized.<sup>60,84</sup> Later work, particularly in sociology and anthropology, has centered the role of stigma in the production and maintenance of power relations at the macrostructural level, and the need for macrostructural and community level processes to address it.<sup>60,61,84,288</sup> In the words of Parker and Aggleton, stigma is “not merely as an isolated phenomenon, or expressions of individual attitudes or of cultural values, but...central to the constitution of the social order”—how society is stratified, affording some more power than others, with negative impacts on the “minds and bodies” of the stigmatized.<sup>60(p17)</sup>

Link and Phelan<sup>84</sup> conceptualize stigma as the co-occurrence of five processes: (1) labeling of people who have a trait that is deemed a socially significant difference; (2) linking of such labels to negative attributes (i.e. stereotyping); (3) separation of the stigmatized (“them”) from the stigmatizers (“us”); (4) discrimination against the stigmatized through social exclusion, devaluation, and rejection; and (5) social status loss of the stigmatized. Experiences of discrimination and diminished social status result in reduced access to “life chances”—that is,

resources and positive outcomes such as employment, education, healthcare, social ties, health, and life itself.<sup>65,84(p371)</sup> For stigmatization to occur, these processes must take place within a context of unequal power relations in which stigmatizers have disproportionate control and influence over political, social, economic, and cultural institutions, resources, and discourse.<sup>84</sup>

In their HIV stigma framework, Earnshaw and colleagues (2009) distill three discrete “mechanisms” through which stigma affects individuals,<sup>285</sup> linking stigma as a macrostructural factor to individual level health outcomes. Enacted stigma is defined as people’s experiences of overt acts of prejudice and discrimination from others.<sup>61,66</sup> Anticipated stigma is individuals’ expectations or fears that they will experience prejudice and discrimination from others in the future.<sup>84,285,289</sup> Internalized stigma<sup>285</sup> occurs when people apply negative meanings associated with their stigmatized social characteristic(s) to themselves.<sup>65,84,290</sup>

Theory and empirical literature illustrate the negative meanings attached—during Link and Phelan’s second stigma process, described above—to HIV and sex work and points of intersection. Kleinman’s<sup>278</sup> articulation of the cultural meanings of illness, particularly sexually transmitted disease, identifies negative meanings that are linked to HIV: early death and bodily disfigurement, “self-earned” illness, and stigmatized groups associated with the illness (e.g. homosexuals, sex workers, and drug users). Lawless, Kippax, and Crawford,<sup>291</sup> examining constructions of women living with HIV, add uncleanness, indiscriminate promiscuity, and pollution, which are also linked to historical constructions of women as dangerous, potential sources of infection.<sup>292,293</sup> As these scholars’ works indicate, stigma associated with sex work, drug use, poverty, sexual orientation, race, and gender, and HIV stigma are co-constitutive and mutually reinforcing.<sup>61,294</sup> Aggleton and Parker discuss these intersections in terms of social inequality, arguing that inequalities along gender, class, sexuality, and racial lines fuel the social

production of HIV stigma, which in turn maintains and exacerbates these social inequalities.<sup>60,294</sup> Intersectional stigma theory elucidates how these intersections shape the lived experiences of individuals.<sup>58,60-64,295</sup> For example, PLHIV who are members of other stigmatized groups such as sex workers perceive their association with those groups to increase the level of HIV stigma they experience.<sup>290,291,296</sup>

Defining sex work stigma, or the “whore stigma,” Pheterson states that women are “both named and dishonored by the word whore.”<sup>282(p461)</sup> This illustrates Link and Phelan’s stigma processes of labeling, linking of labels to negative meanings, separation of the stigmatized, and social status loss. Per Pheterson, “unchaste” is the primary negative attribute linked to the whore label, defined as “indulging in unlawful or immoral sexual intercourse; lacking in purity, virginity, decency (of speech), restraint, and simplicity; defiled (i.e., polluted, corrupted).”<sup>282(p461)</sup> She describes sex work stigmatization within the legal, social, psychological, and progressive ideological realms,<sup>58</sup> and its consequences for FSWs’ life chances. In the legal realm, a wide range of sex workers’ activities are criminalized in many contexts (e.g. standing on the street appearing available for a sexual transaction), leading to a loss of civil liberties and human rights (e.g. via involuntary medical testing, loss of freedom to travel). Psychological discourse has attached meanings such as “maladjustment” and “neurosis” to sex workers separating sex and love in their work, behavior deemed deviant, separating them from other women. Progressive ideologies of feminism and socialism seeking to liberate women and workers have constructed sex workers as “the prototype victims of patriarchy and capitalism,” connecting them with negative meanings of victimization, objectification, and alienation.<sup>58(p57)</sup> This is exemplified by the views of Marxist and other radical abolitionist feminists (e.g. Catherine MacKinnon) discussed in Section 2.1. Like HIV stigma, sex work stigma maintains and is maintained by

inequities in social relations of gender, class, sexuality, race.<sup>58</sup> Women's social positions within hierarchies of race, class, HIV status, and gender can be utilized as evidence of unchastity, leading to their stigmatization.<sup>282</sup> Illustrating how sex work stigma maintains gender inequity, Pheterson argues that women learn their culture's criteria for sex work stigmatization, the risk of which "acts as a whip holding females in a state of subordination."<sup>282(p462)</sup>

### **Stigma and health**

Stigma corrodes health and social wellbeing of stigmatized populations through multiple pathways.<sup>65,84</sup> Drawing on fundamental cause theory,<sup>297</sup> Hatzenbuehler et al.<sup>65</sup> conceptualize stigma as a fundamental cause of population health disparities because it influences multiple disease outcomes through multiple risk factors; affects access to resources such as knowledge, money, power, and social capital that can be used to prevent the disease or manage its consequences; and is strongly related to health inequities across time and place.<sup>65,297</sup> Hatzenbuehler specifies a set of mediated pathways through which stigma influences population health outcomes, including effects on "availability of resources," "social relationships," and "psychological and behavioral responses."<sup>65(p814)</sup> Having greater access to resources, such as money, power, beneficial social connections, and health care gives individuals a health advantage. Stigmatized populations experience depletion of such resources through "resource-reducing discrimination" in realms such as employment and health services.<sup>65(p814)</sup> Exclusion and abuse of the stigmatized by members of their social networks weakens their social ties and can lead to social isolation, with negative effects on many health indicators.<sup>2,34</sup> Psychological and behavioral responses include coping through substance use and poor self-image, which may also lead to greater risk of adverse health outcomes.

Findings from empirical studies of FSW and PLHIV are consistent with the detrimental effects on health and social wellbeing outcomes delineated in fundamental cause theory of

stigma. A systematic review and meta-analysis on the association between HIV stigma (any mechanism) and health among people living with HIV found relationships between HIV stigma and higher rates of depression, lower social support, and lower levels of ART adherence and access to and usage of health and social services. This study also identified weaker relationships between HIV stigma and anxiety, quality of life, physical health, emotional and mental distress, and sexual risk practices.<sup>298</sup>

Studies have elucidated how specific mechanisms of stigma relate to health. Enacted, anticipated, and internalized sex work and HIV stigma are found to act as barriers to accessing health services.<sup>53,197,198</sup> Internalized sex work stigma is negatively associated with retention in HIV care<sup>48</sup> and enacted sex work stigma negatively associated with HIV testing.<sup>168</sup> Enacted and anticipated sex work stigma have been found positively associated with prevalent HIV infection among FSW.<sup>299</sup> Enacted and internalized sex work stigma are associated with ART interruption and low condom use with clients.<sup>48,49,51,168</sup> Enacted HIV stigma is associated with more severe HIV symptoms<sup>300</sup> and lower CD4 count,<sup>66</sup> while internalized HIV stigma is adversely associated with ART initiation, current ART use, and ART adherence.<sup>301-303</sup> With regard to mental health and social wellbeing, anticipated and internalized HIV and sex work stigma are related to depression,<sup>50,304</sup> and anticipated sex work stigma may lead to anxiety.<sup>214</sup> Enacted, anticipated, and internalized stigma have also been shown to lead to health-harming coping behaviors among PLHIV and FSW, such as alcohol use.<sup>2,65,212,305,306</sup> Among PLHIV, enacted, anticipated, and internalized HIV stigma experiences are related to social isolation.<sup>290,296,307</sup> Research examining pathways of these relationships is scanty, but demonstrated mediators of relationships between internalized HIV stigma and ART outcomes include self-efficacy and depression.<sup>67,303</sup>

### **3.2 Stigma and IPV: relationship pathways**

#### **Stigma, availability of resources, and IPV**

Stigma related to HIV and sex work depletes availability of resources such as money, health care, and law enforcement protection through discrimination by employers, health providers, and law enforcement among FSW, PLHIV and FSW living with HIV.<sup>65(p814)</sup>

Regarding effects of stigma on economic resources, empirical research indicates that FSW and PLHIV in the Dominican Republic commonly experience workplace HIV discrimination by employers and colleagues, which can lead to unemployment, underemployment, loss of clients, and ultimately a paucity of economic resources.<sup>267,269,275,277,280</sup> In addition, law enforcement sex work discrimination, such as random arrest and extortion, can have detrimental effects on economic resources for FSW: they must pay police bribes, and having a criminal record can lead to reduced access to formal employment.<sup>92,93</sup> Finally, social HIV and sex work discrimination, such as rejection by family and other social network members, may cut off access to instrumental support, including connections to income generation opportunities.<sup>92,267</sup> Anticipated HIV stigma from community members, male partners, and employers can lead PLHIV to avoid applying for jobs to prevent outing of their HIV status, which can result from illegal employer HIV testing.<sup>277</sup>

Depleted economic resources may, in turn, increase women's risk of IPV victimization. Feminist economic theory of heterosexual relationship dynamics and household outcomes posits that when women have more real and potential resources, such as income, employment, education, assets, and social capital, they have more power to resist male dominance in the household, and to negotiate better outcomes, such as freedom of movement, decision-making, and nonviolence.<sup>184,286,287</sup> The greater women's ability to support themselves and their dependents and the more viable their "exit options"<sup>184(p2)</sup> from the relationship, the more likely they are to be able to reject poor treatment, and leave abusive relationships.<sup>255</sup>

The household bargaining model's construction of a heteronormative, monogamous relationship, defined in relation to a delimited, domestic "household," does not reflect the intimate partner relationships of many low resourced women in the Dominican context, whether sex workers or not. Many *Abriendo Puertas* participants do not share households with their intimate partners, and the "intimate partner" category in the survey—"those with whom you have had at least three times but who do not pay you for sex although they may give you money"—may capture relationships with substantial variation in characteristics such as level of economic and emotional involvement. In casual relationships with minimal economic involvement, women's lack of independent resources might not exert significant influence on their intimate partner relationship dynamics and risk of IPV. In addition, in the Dominican Republic among low income women, FSWs' economic dependence on male partners cannot be assumed: men's economic opportunities are also constrained, women are often the head of their households economically, and in some cases men are dependent on women for economic support.<sup>92,255,271</sup> Nevertheless, supporting themselves and their dependents alone is often extremely difficult for such women due to high costs of living and other factors previously described (see Section 2.7 under "Socioeconomic context of sex work and gender relations in the Dominican Republic"), and maintaining relationships may be a preferable or necessary arrangement.<sup>255</sup> FSW in this setting commonly describe male partners as key resources for covering basic economic needs and the loss or lack of male partners as significant economic stressors.<sup>92,93,255,271</sup> The notion that a woman's access to such resources outside of her intimate partner relationship increases her ability to leave the relationship, have power within the relationship, and/or avoid relationships altogether, thus remains appropriate and useful for theorizing impacts of stigma-induced economic strain on IPV in this population. I quantitatively test economic resources—monthly

income and savings—as mediators of relationships between HIV and sex work stigma and IPV.

With regard to other adverse impacts of stigma on available resources that may increase IPV risk, law enforcement discrimination, such as police physical abuse and refusal to provide protection to FSW, also acts as a barrier to their receiving police and judicial protection from IPV, which may increase their IPV risk.<sup>10,32,47,113,175,186,207,252,308</sup> Discrimination in health services reduces accessibility of services for FSW living with HIV,<sup>186</sup> and may specifically limit their access to support that can help women leave violent relationships and otherwise avoid IPV, such as counseling and referrals to IPV-focused services.<sup>53,200,265,279</sup>

### **Stigma, social relationships, and IPV**

Social HIV and sex work discrimination, such as rejection and verbal abuse by friends, family, and community members, may decrease access to social support, which studies suggest is protective against IPV.<sup>2,34,158</sup> Emotional support, including encouragement and self-esteem bolstering, may otherwise help those experiencing IPV overcome emotional difficulties of terminating abusive relationships,<sup>158,265</sup> and instrumental support can provide the needed relationship “exit option”<sup>184</sup> (e.g. a loan, a place to stay) for doing so. Anticipated HIV stigma can also prevent PLHIV from disclosing their status to family and friends, leading to feelings of detachment and social isolation.<sup>47,62,197,205,210,214,269,275,309</sup>

### **Stigma, psychological and behavioral responses, and IPV**

Studies of FSW indicate that experiences of enacted, anticipated, and internalized stigma can cause negative emotional states, which drinking serves as a tool to manage. Cooper and colleagues<sup>310</sup> affect regulation motivational model of alcohol use posits that individuals drink in order to reduce negative emotions and/or to enhance positive emotions.<sup>310</sup> Female sex workers describe drinking both during work and outside of work in order to suppress and process anxiety (e.g. of being outed during chance encounters with community members), depression, and shame



associated with stigma experiences, and to enhance positive feelings of courage to participate in this stigmatized, criminalized activity.<sup>154,205,212,260,261,306</sup>

Multiple studies have found positive relationships between measures of FSWs' alcohol use and their risk of IPV, including alcohol intoxication,<sup>2</sup> binge drinking,<sup>152</sup> and harmful and hazardous drinking,<sup>153</sup> as described previously. The positive association between alcohol use and IPV among FSW may be due to impaired ability to detect the potential for violence, escape from violent situations, control sexual relations, and/or avoid risky situations when intoxicated.<sup>154,205,260,261</sup> Another explanation is that intimate partners punish FSW for drinking, in contrast to clients who often encourage or coerce them into drinking. In qualitative studies in India, FSWs' intimate partners (who were sometimes also their pimps) reported disciplining their FSW partners with physical violence for using alcohol, which they saw as a violation of norms of acceptable female behavior.<sup>155</sup> I quantitatively test alcohol use as a mediator of the relationships between HIV and sex work stigma and IPV.

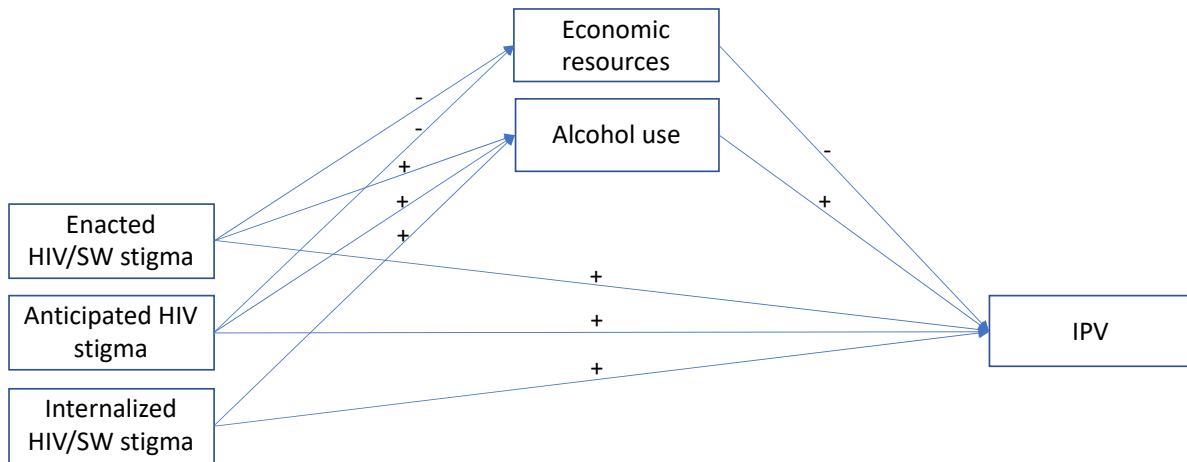
Additional psychological and behavioral responses associated with internalized sex work stigma include self-blaming for IPV and views of violence against FSW as normal, and with internalized HIV stigma include fears of being undesirable and unable to find another partner.<sup>62,258</sup> These responses serve as barriers to leaving abusive relationships.<sup>62</sup> Internalized stigma may also be linked to IPV via negative psychological effects such as depression, which studies in the Dominican Republic and elsewhere show to be related to experiencing IPV victimization.<sup>2,3,50,147,258,265</sup>

### **3.3 Conceptual model and hypotheses**

This study assesses whether, and pathways through which, stigma related to HIV and sex work influences the risk of IPV against FSW living with HIV. Figure 3.1 depicts the relationships I examined. In Aim 1, I tested relationships between HIV stigma (enacted,

anticipated, and internalized) and sex work stigma (enacted and internalized) and IPV. In Aim 2, I tested the indirect effects of HIV stigma (enacted and anticipated) and sex work stigma (enacted) on IPV via economic resources (monthly income and monthly savings), and the indirect effects of HIV stigma (enacted, anticipated, and internalized) and sex work stigma (enacted and internalized) on IPV via alcohol use.

**Figure 3.1 Conceptual model**



## CHAPTER 4. STUDY DESIGN AND METHODS

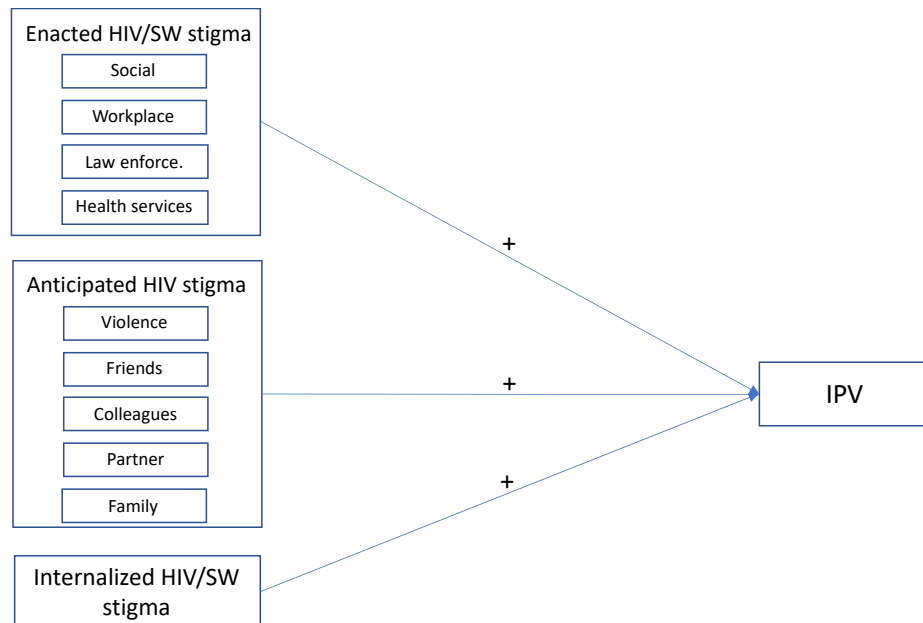
The purpose of this study is to assess pathways of influence between HIV and sex work stigma and IPV against FSW living with HIV. I quantitatively tested the relationships of multiple mechanisms of HIV and sex work stigma with IPV (Aim 1), and the indirect effects of stigma on IPV via alcohol use and economic resources (Aim 2). Conceptual models for Aims 1 and 2 and depicted in Figures 4.1 and 4.2.

### 4.1 Study aims and hypotheses

#### **Aim 1: Assess the association between HIV and sex work stigma and IPV.**

*Hypothesis:* FSW living with HIV reporting higher levels of HIV stigma (enacted, anticipated, and internalized) and sex work stigma (enacted and internalized) will report greater odds of IPV compared to those who report lower levels of stigma.

**Figure 4.1 Conceptual model for aim 1**

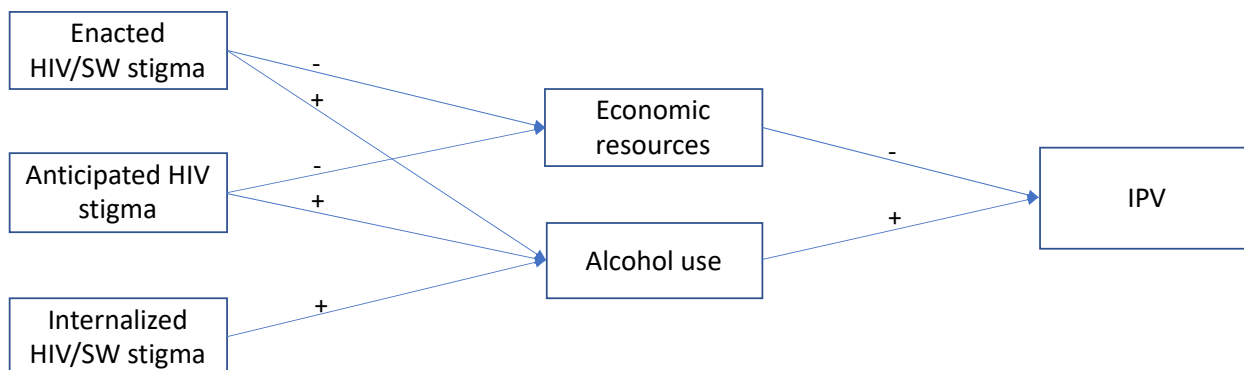


**Aim 2: Examine explanatory mechanisms of relationships between HIV and sex work stigma and IPV, including economic resources and alcohol use.**

*Hypothesis 2.1:* FSW living with HIV reporting higher levels of enacted HIV and sex work stigma and anticipated HIV stigma will report lower economic resources than those reporting lower stigma levels; having lower economic resources will, in turn, be associated with greater odds of IPV.

*Hypothesis 2.2:* FSW living with HIV reporting higher levels of enacted, anticipated, and internalized HIV and sex work stigma will report greater alcohol use than FSW reporting lower stigma levels; in turn, greater alcohol use will be associated with greater odds of IPV.

**Figure 4.2 Conceptual model for aim 2**



**4.2 Parent study**

I analyzed baseline (BL) and follow up (FU) survey data from an evaluation of *Abriendo Puertas* (Opening Doors), a multi-level intervention promoting HIV care and prevention with FSW living with HIV in Santo Domingo, Dominican Republic (2012-2014).<sup>70,71</sup> *Abriendo Puertas* was developed based on formative research conducted in 2011, which identified factors at individual, interpersonal, and structural levels that affect FSWs’ health and well-being, such as poor mental health, HIV and sex work stigma, and poor quality HIV care and treatment

services.<sup>267</sup> A cohort of 250 women participated in the intervention research in 2013-2014. The intervention included four components: individual counseling, peer navigation, clinician sensitivity training, and community mobilization (i.e. “*Casas Abiertas*” or open houses). The surveys, which included measures of enacted, anticipated, and internalized HIV and sex work stigma, were conducted at BL and ten months FU.<sup>71</sup>

### **Sampling, recruitment, and data collection**

Participants were recruited via a non-random sampling approach led by peer navigators (current/former FSW experienced in conducting HIV outreach, prevention, and providing support for PLHIV). Navigators approached women they knew or were referred to through their ongoing community-based work with sex workers, and recruited from the HIV clinic in coordination with clinic staff. Women who were participating in the study also provided referrals.<sup>70</sup>

To be eligible for the study women had to meet the following criteria: be at least 18 years of age, HIV-positive, and report having exchanged sex for money in the last month. HIV status was confirmed via a single rapid test (Retrocheck) prior to the BL survey.<sup>70</sup> From November 2012 to February 2013, 268 FSW were enrolled and completed a BL survey. Of those, 250 participated in the intervention, and 228 (91%) were retained at ten month FU and completed FU surveys between November and December 2013. A trained Dominican female interviewer administered structured paper surveys to participants in Spanish in a private office. Following the surveys, participants provided vaginal swabs for STI testing and whole blood samples for HIV viral load testing, which were collected by a physician.

All participants provided consent prior to data collection. Consent was obtained orally to minimize potential breaches in confidentiality. All study protocols and consent procedures were approved by the Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health, the University of North Carolina, and the Instituto Dermatologico y Cirugia de Piel Dr.

Humberto Bogart Diaz, the Dominican research partner for the study, which oversaw all local data collection. Each participant received approximately 10 U.S. dollars for completing each survey visit.

### **4.3 Measures**

#### **Dependent variable**

##### ***Intimate partner violence***

Seven IPV questions, adapted from the WHO Violence Against Women Instrument,<sup>15,72</sup> asked whether participants had or had not experienced particular acts of physical or sexual violence (e.g. been pushed, kicked, forced to have sex) perpetrated by intimate partners, new clients, and regular clients in the last six months. The questions were asked separately for each of these partner types. Intimate partners were defined as sexual partners with whom a participant had sex three or more times who did not pay per sexual act although they may have given her money (e.g. for rent). If a participant answered “yes” to any of the seven questions regarding violence perpetrated by an intimate partner, she was considered to have experienced IPV. The seven IPV questions were included in both BL and FU surveys, but their timeframe was “in the last six months” in the BL survey and “since you started the study” (i.e. the previous ten months) in the FU survey, as shown in Table 4.1. In the BL survey, the seven IPV questions were only posed to participants who had replied affirmatively to at least one of two preceding questions regarding whether they had had conflict with or received maltreatment from sexual partners. In the FU survey, the seven IPV questions were posed to all participants.

**Table 4.1 IPV outcome variable**

Variable	Survey	Indicator(s)	Time frame	Response options	Response recorded
Intimate Partner Violence	BL, FU	<i>Have you been:</i> <ol style="list-style-type: none"> <li>1. Pushed, held by force, slapped</li> <li>2. Twisted arm, pulled hair, threw something at you</li> <li>3. Kicked, thrown against wall, punched, or hit with something that could hurt her</li> <li>4. Burned on purpose</li> <li>5. Choked or used a knife or weapon</li> <li>6. Used force like punched, held against wall or floor, threatened with weapon to get sex</li> <li>7. Threatened you to get sex</li> </ol>	BL: Previous six months FU: Since study enrollment (previous ten months)	Yes No (for all seven items)	Yes = 1 No = 0

## Independent variables

### *Stigma*

Measures of enacted, anticipated, and internalized HIV stigma were adapted from existing HIV stigma scales<sup>311,312</sup> and draw on the Earnshaw<sup>313</sup> HIV Stigma Framework.<sup>70</sup> The sex work stigma measures were adapted from the HIV measures, given the scarcity of validated sex work measures at the time of survey design,<sup>314,315</sup> by changing “HIV” to “sex work” in all items.<sup>2</sup> The surveys did not include measures of anticipated sex work stigma due to the parent study’s focus on HIV and the lack of available sex work stigma measures. All stigma measures are presented in Appendix A.

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<sup>2</sup> Since then, a comprehensive, reliable, and valid scale to measure sex work stigma has been developed using data from FSW in the Dominican Republic and Tanzania.<sup>316</sup> Kerrigan D, Karver T, Barrington C, et al. Development of the experiences of sex work stigma scale using item response theory: Implications for research on the social determinants of HIV. *Under review* 2020.

### *Enacted stigma*

Enacted stigma is defined as the experience of being discriminated, stereotyped, or prejudiced against due to a social characteristic (e.g. being HIV positive or a sex worker). Based on public health, anthropological, human rights, and psychometric literatures,<sup>92,93,258,267,269,272-275,277</sup> I identified five forms of enacted stigma experienced by PLHIV and FSW in the Dominican Republic: social discrimination, health service discrimination, workplace discrimination (job loss), workplace discrimination (establishment abuse), and law enforcement discrimination. All of these forms apply to stigma related to both HIV and sex work, except for law enforcement discrimination, which refers to sex work only. Social discrimination includes gossip, contempt, verbal abuse, linking HIV and sex work to one another (e.g. attributing FSWs' HIV status to their sex work, or assuming FSW are HIV-positive) and to other negative meanings, and rejection by friends, family, and community members. Health service discrimination encompasses providers' refusal to provide services, behaving distantly or hostilely, and outing HIV or sex worker status to clinic or family/partners. Workplace discrimination (job loss) indicates having been fired and/or excluded from hiring due to HIV or sex worker status. Workplace discrimination (establishment abuse) includes verbal or physical abuse within sex work workplaces by establishment owners or FSW colleagues, e.g. FSW physically assaulting FSW living with HIV due to their HIV status or outing their status to clients.<sup>92,269</sup> Law enforcement discrimination encompasses police arbitrary arrest, extortion, sexual/physical/verbal abuse, refusal to provide protection, and blaming FSW for experiencing abuse.

To measure these constructs, I selected binary survey items assessing lifetime enacted stigma experiences in the BL survey and combined them to create multi-item indices or used them as single item measures. All multi-item indices are comprised of two to four items. Mean



scores (range: 0-1) were calculated for multi-item indices that had at least one item with a non-missing value. Workplace HIV and sex work discrimination (job loss) measures were assessed with one binary item, “Have you ever lost a job because you are living with HIV/are a sex worker?” Per DeVellis, an index is a “superordinate label for the several discrete variables that contribute to it,” which independently influence the level of the index.<sup>317(p79)</sup> Given this, items will not necessarily correlate with one another.<sup>317(p79)</sup> Thus, reliability analyses for the indices are not reported.<sup>318</sup>

### *Anticipated HIV stigma*

Anticipated stigma refers to expectations of discrimination, stereotyping, and/or prejudice from others in the future due to a social characteristic. Five survey items assessed anticipated HIV stigma: you are afraid you could be threatened with violence if your HIV status were known; you are afraid that if you disclosed your HIV status to your friends, they would lose respect for you; you are afraid that if you disclose your HIV status to the women with whom you work, they could take your clients; you are afraid your partner could leave you if your HIV status were known; you are afraid that your family could exclude you from regular family activities if your HIV status were known. For each item, participants were prompted to endorse five statements on a 4-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree). The items reflect different feared forms of discrimination, which may have different levels of importance or impact for participants, and thus different relationships with IPV risk. The items “you are afraid you could be threatened with violence if your HIV status were known” and “you are afraid your partner could leave you if your HIV status were known” were also expected to relate more strongly to IPV than other items because they possibly captured known proximal correlates of IPV, perceived risk of violence<sup>319</sup> and abandonment anxiety,<sup>320</sup> respectively. Thus, the anticipated stigma items were included in models as discrete variables.

### *Internalized stigma*

Internalized stigma is defined as the application of negative attitudes towards one's stigmatized characteristic to oneself. Two eight-item scales, previously validated using *Abriendo Puertas* FU data,<sup>321</sup> assessed participants' levels of internalized HIV stigma and internalized sex work stigma. Participants were prompted to respond to statements such as "HIV/being a sex worker makes you feel like a bad person" and "You feel worthless because you are living with HIV/are a sex worker" on a 4-point Likert scale ranging from strongly disagree to strongly agree. I conducted confirmatory factor analysis (CFA) of the scales, which indicated strong unidimensionality and internal reliability and that all eight items loaded significantly on the latent constructs in both cases (Cronbach's alpha = 0.87 for both; all loadings  $p < .001$ ). The final scales exhibited adequate fit (CFI = 0.99, TLI = 0.98, and RMSEA = 0.08 for both). Mean scores was calculated for both multi-item scales when at least one item had a non-missing value (range: 1-4). Complete final scales are presented in Appendix A and results from CFA are presented in Appendix B.

### **Mediators**

#### *Alcohol use frequency*

This measure estimates how frequently participants consumed alcohol in the last six months. Responses were collapsed into three categories of use frequency: frequent (a few times per week, once a week, on the weekends), infrequent (once a month, on rare occasions, once every two weeks), and never. Hypothesized mediator variables are shown in Table 4.2.

Results from a study of ten countries in the Americas and other research indicate that the amount of alcohol consumed per occasion and heavy episodic (i.e. binge) drinking by either partner are more strongly and consistently related to IPV than frequency of alcohol consumption or total consumption (i.e. frequency\*amount consumed per occasion in a given time period), and

would thus be preferable measures for this study.<sup>322,323</sup> However, complete data on alcohol use frequency were available only. Previous studies have found alcohol use frequency measures to be associated with violent victimization among FSW.<sup>2,151</sup>

**Monthly income**

The amount of money (Dominican Pesos [DOP]) participants earn per month in total from any source was assessed and converted to U.S. dollars (USD) at the 2012 exchange rate (38.8 DOP/USD). The variable was logged to address its skewed distribution and minimize influence of outliers.

**Monthly savings**

The amount of money (DOP) participants save per month in total from any source was assessed. The measure may indicate income in relation to expenses and resources not used to meet basic needs and other typical monthly expenses. It was also converted to USD and logged.

**Table 4.2 Mediators**

Variable	Survey	Indicator(s)	Time frame	Response options	Response recorded
Income	FU	Approximately how much money do you make per month in total, including sex work and other sources [in DOP]?	Month	[Fill in # DOP]	# U.S. Dollars <sup>3</sup>
Savings	FU	How much money do you save per month [in DOP]?	Month	[Fill in # DOP]	# U.S. Dollars <sup>2</sup>
Alcohol use frequency	BL, FU	15.2 In the last month, how frequently did you consume alcohol?	Previous month	Everyday Almost every day A few times/week Once/week On the weekends Once/two weeks Once/month Rare occasions Never	Frequently=2 Infrequently=1 Never=0

<sup>3</sup> DOP converted to USD using January 2012 exchange rate, 38.8 DOP/USD, per <https://www1.oanda.com/currency/converter/>

## **Controls**

Variables were included as controls if they were theoretically plausible causes of both independent variables (IVs) and dependent variable (DV), i.e. confounders. Variables that were potential mediators of relationships between IVs and DVs were not included as controls to avoid incorrectly nullifying relationships. In Aim 2 mediation analysis, models controlled for potential confounders of relationships between IVs (stigma measures) and outcome (IPV), mediators (alcohol use and economic resources) and outcome, and IVs and mediators. All control variables were drawn from BL survey data except intervention exposure intensity. Control variables are shown in Table 4.3.

### ***Socio-demographic factors***

Age (years), educational attainment (any years primary/any secondary or tertiary school), civil status (cohabiting partner, non-cohabiting partner, no partner including separated, widowed, divorced), number of children.

### ***Number of sexual partners per month***

Participants reported the number of new and regular clients and intimate partners they had had in the last 30 days. New clients were those with whom they had sex once or twice. Regular clients were those with whom they had sex at least three times and who pay for sex.

### ***Worksite***

Participants were asked where they worked in the previous three months. Response options (club or disco, bar, street, hotel/motel, general store, billiard hall, other/specify) were collapsed into two categories, street versus sex establishment or independent.

### ***Intervention exposure intensity***

The intensity of FSWs' exposure to the *Abriendo Puertas* intervention, the main exposure in dose-response analyses of the *Abriendo Puertas* intervention impact,<sup>71</sup> was used as a control

for effects of *Abriendo Puertas* participation. A binary indicator variable was created for each main intervention component: attending all individual counseling sessions, having a peer navigator, and participating in community mobilization activities. Counseling session attendance data were sourced from program attendance records, and the other indicators were sourced from the survey. Intervention exposure intensity was defined as high/moderate if at least two indicators were equal to 1, and low in all other cases.<sup>71</sup>

**Table 4.3 Control variables**

Variable	Survey	Indicator(s)	Time frame	Response options	Response recoded
Age	BL	How old are you?	Present	[Fill in # years]	# years
Educational attainment	BL	What education level are you in? What educational level did you reach?	Present	Primary: 1, 2, 3, 4, 5, 6, 7, 8 Secondary: 1, 2, 3, 4 University: 1, 2, 3, 4	Any secondary or tertiary = 1 Any years primary = 0
Civil status	BL	Regarding your civil status, are you currently...	Present	Married with papers and living together Living with someone without papers With a steady partner but not living together Single (widowed, divorced, or separated) Other	Non-cohabitating steady partner = 2 Lives with a spouse/steady partner = 1 Single (widowed, divorced, or separated), no steady partner = 0
Worksite	BL	In the last three months (including now), where have you worked?	Previous three months	In a club or disco In a bar In the street In a hotel/motel In a general store In a billiards hall Other	Street = 1 Sex establishment or independently (all else) = 0
Number of children	BL	How many children do you have?	Present	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	# children
Number of sexual partners per month	BL	8.1A/8.1B/8.1C How many [new clients/regular clients/intimate partners] have you had in the last 30 days?	Previous month	[Fill in # partners]	# partners
Intervention exposure intensity	FU	In the last six months, have you participated in a <i>Casa Abierta</i> ? In the last six months, have you had contact with a navigator, that is a colleague that provides you with support and helps you access health and HIV services?	Previous 6 months	Yes No  [Fill in number of counseling sessions attended] (source: program records)	Contact with a peer navigator=1 (If else=0) Attended one or more Casas Abiertas=1 (If else=0) Attended all six individual counseling sessions= 1 (if else=0)  High/moderate intensity (at least two indicators = 1) = 1 Low intensity if else = 0

## **4.4 Data analysis**

### **Dataset preparation**

I examined missing data, outliers, multicollinearity (correlation > .80 and variance inflation factor  $\geq 10$ )<sup>324</sup> amongst IVs,<sup>324</sup> and differences between participants lost to FU and retained. Given the very low level of missing data, I deemed imputation unnecessary and conducted complete case analysis.<sup>325</sup> I used two analytic samples in multivariable analyses. The BL sample was comprised of cases that participated in the BL survey (n=268). Two (0.75% of participants at BL) were missing data on key covariates and dropped from the study, yielding a final analytic BL sample of 266. The BL/FU (BLFU) longitudinal sample was comprised of cases that participated in the study at both BL and FU (n=228). Five (2.19% of participants at FU) were missing data on key covariates and dropped from the study yielding a final analytic BLFU sample of 223. No instances of problematic multicollinearity were detected. I used two-tailed tests and a significance level for all analyses of probability value less than or equal to .05.

To assess whether the individuals who were lost to FU (n=40) after the BL survey differed from those who completed the FU survey (n=228), I conducted chi-square and t-tests comparing these two groups on age, educational attainment, civil status, IPV at BL, internal migration, residence, number of sexual partners, number of children, number of years since HIV diagnosis, number of years in sex work, worksite type, HIV care utilization, general health status, and drug use. I did not find significant differences between the two groups on any of these characteristics.

### **Confirmatory factor analysis**

To establish internalized HIV and sex work stigma variables measured using multi-item scales, I conducted CFA and examined scale reliability. I conducted CFA on the full BL sample (n=268) as this was the largest available sample from the study population. I used a measurement

model building process guided by Bollen, Bauer, Kline, and Brown.<sup>326, 327, 328, 329</sup> I set the scale of the latent variable with the mean at zero and the standard deviation at 1. I produced parameter estimates using the robust weighted least squares (WLS) estimator, which performs well under a variety of conditions, including moderate and small sample sizes<sup>329,330</sup> and a probit link function. Robust WLS uses all available data under the assumption that missing data is missing completely at random (MCAR).<sup>331</sup> I requested standardized model coefficients, and examined residual variance signs and communality sizes for evidence of misspecification or other problems. I evaluated model fit with the chi-square, Tucker–Lewis Index (TLI), the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA). Models with a TLI and CFI of at least 0.95 and an RMSEA value of .05 or less were considered to have good fit.<sup>332</sup> RMSEA values less than 0.08 suggested adequate model fit.<sup>333</sup> I considered a chi-square to degrees of freedom ratio equal to two or less to be further evidence of good fit.<sup>327</sup> To improve fit, correlations between measurement errors for pairs of items were added based on modification indices while ensuring that such changes did not conflict with theory.<sup>327</sup> Confirmatory factor analysis (CFA) was conducted in Mplus software, version 8, and reliability was calculated in SAS, version 9.4. Complete CFA results are available in Appendix B.

### **Aim 1: Multivariable logistic regression**

I first produced univariate statistics for all variables and determined the unadjusted bivariate associations between the IVs and IPV outcome and controls and IPV outcome using logistic regression. I examined the Shapiro-Wilk *W* statistic p-value to determine whether quantitative variables were normally distributed (a value less than .05 led to rejection of the null hypothesis of normality) and whether it was most appropriate to report medians or means. Due to the low levels of workplace sex work and HIV discrimination (abuse in establishment) reported (less than 30 participants had non-zero values), those two variables were not included in bi- and



multivariable analyses to avoid instability and imprecision in path estimates.

For both HIV and sex work stigma, I ran two models for each stigma mechanism (enacted, anticipated, and internalized), one containing all stigma variables assessing that mechanism with controls and one without controls. I then ran the final combined stigma model including all stigma variables, with and without control variables. I ran all models using the BL and BLFU samples.

In models using the BLFU sample, the IPV outcome was from FU while all IVs were from BL except the intervention exposure intensity control. Control variables were the same in BL and BLFU models except for BL IPV and intervention exposure intensity, included in the BLFU models only. Those two variables were conceptually plausible mediators as well as confounders and thus had the potential to nullify relationships of interest incorrectly. Intervention exposure intensity may be mediator given that stigma can hamper FSW participation in community empowerment interventions<sup>59</sup> and community empowerment interventions may reduce FSWs' risk of violence.<sup>139,265</sup> Baseline IPV may be a mediator of relationships between stigma at BL and IPV at FU since BL enacted stigma measures were lifetime measures and may precede and influence IPV reported at BL. However, I deemed it a priority to control for intervention exposure to strengthen external validity, and to control for BL IPV to strengthen the case for causal interpretations. I conducted sensitivity analyses to assess the effects of inclusion of these two controls in BLFU models on the relationships of interest, which are presented in Appendix C. For all analyses, I used two-tailed tests and a p-value less than or equal to .05 as the significance level. Logistic regression analyses were performed using SAS (version 9.4) and CFA using Mplus, version 8.

I conducted multivariable analyses using both BL and BLFU samples for the purpose of

gaining maximum insight into the relationships of interest despite the limitations of both cross-sectional and longitudinal approaches to these small intervention study data: intervention exposure and attrition in the BLFU sample and simultaneous measurement and lack of temporal ordering of variables in the BL sample. Strengths of the cross-sectional approach were use of a larger, complete, non-intervention exposed sample, and strengths of the longitudinal approach were the establishment of temporal ordering of variables (i.e. BL measures of lifetime stigma experiences preceded the outcome, IPV in the last ten months) and control for the BL level of the outcome, which strengthened the case for directions of associations aligned with hypotheses and causal interpretations.<sup>334</sup>

## **Aim 2: Path analysis**

I estimated path models to assess the indirect effects of enacted and anticipated stigma on IPV via economic resources and alcohol use, and the indirect effects of internalized stigma on IPV via alcohol use. I used a model building approach recommended by MacKinnon<sup>335</sup> for multiple mediator models in which separate, simple mediation models are first estimated for each of the hypothesized mediators, and then those found to mediate IV/DV relationships are combined in a final multiple mediator model. I produced parameter estimates using the robust weighted least squares (WLS) estimator, which performs well with moderate and small sample sizes,<sup>329,330</sup> and a probit link function. I requested standardized model coefficients and evaluated model fit with the Tucker-Lewis Index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) statistics, the chi-square/degrees of freedom ratio. Mplus produces direct and indirect effects for latent continuous response variables underlying categorical DVs, which can be understood to reflect the propensity of participants to have the different DV values.<sup>327,331</sup> The product of regression coefficients for each 'a' path and 'b' path pair ( $a*b$ ) constituted an indirect effect.<sup>336</sup> Statistical significance of the  $a*b$  indirect effects were

assessed by computing their standard error and bias-corrected bootstrapped confidence intervals (CI) based on 5,000 bootstrap resamples. Bootstrapping is a nonparametric method of estimating standard errors and CIs that does not make assumptions about the sampling distribution of the indirect effect and provides more accurate Type I error rates and greater power for detecting indirect effects than other methods.<sup>327,337</sup> The key IVs and controls except intervention exposure intensity were from BL and the mediators and IPV outcome from FU. I assessed indirect effects for each hypothesized mediated pathway regardless of whether total effects were significant, as total effects may be insignificant even when there are significant indirect effects if direct and indirect effects have opposite signs, a phenomenon known as inconsistent mediation.<sup>338</sup>

For alcohol use, I also produced estimates of “half-longitudinal” indirect effects (HLIEs), since measures of this mediator at both BL and FU were available, as the method requires (income and savings measures were only available at FU).<sup>337,339,340</sup> This method adds rigor to mediation analysis conducted with data from only two timepoints. See Appendix D for details and results of this analysis. As I was not able to compute HLIEs for all mediators in my study, results were not reported in Chapter 6, Manuscript 2, but may I may use this method in future mediation research where only two time points are available, using data from this study or other sources.

#### **4.5 Human subjects and ethics**

All *Abriendo Puertas* study protocols and consent procedures were approved by the Institutional Review Boards (IRBs) of the Johns Hopkins Bloomberg School of Public Health (IRB # 00004504) and the Instituto Dermatológico y Cirugía del Piel Humberto Bogaert (IDCP) (Consejo Nacional de Bioética en Salud). For UNC-Chapel Hill, the IRB of the Johns Hopkins Bloomberg School of Public Health was the IRB of record. The JHSPH IRB approved a protocol amendment to add Amelia Rock as a student investigator on May 5, 2016. The UNC Office of

Human Research Ethics determined on February 2, 2018 that this dissertation research (study #: 17-1164) does not constitute human subjects research as defined under federal regulations [45 CFR 46.102 (d or f) and 21 CFR 56.102(c)(e)(1)] and does not require IRB approval.

## **CHAPTER 5. HIV STIGMA IS ASSOCIATED WITH INCREASED ODDS OF INTIMATE PARTNER VIOLENCE AMONG FEMALE SEX WORKERS LIVING WITH HIV IN SANTO DOMINGO (MANUSCRIPT 1)**

### **5.1 Background**

Intimate partner violence (IPV) victimization among women is associated with a host of negative health and social outcomes, including depression and isolation,<sup>1-3,143</sup> unprotected sex, unintended pregnancy, and HIV infection,<sup>5-9,18</sup> suboptimal antiretroviral therapy (ART) adherence and viral suppression,<sup>15,16</sup> and injury and death.<sup>12,13,341-343</sup> Compared to the global research, policy, international frameworks, and programming dedicated to IPV against women not identified as sex workers, IPV against female sex workers (FSW), especially those living with HIV, has received little attention.<sup>24-29</sup> Many studies of violence against FSW do not specify or disaggregate perpetrators,<sup>10,30-33</sup> inhibiting interpretation of their findings with regard to the etiology of IPV, as risk factors for IPV may differ from risk factors for client-perpetrated violence victimization.<sup>2,15,34,35</sup> Among those that do specify perpetrator, the majority focus on violence perpetrated by clients and police, even though in many contexts violence from intimate partners outside the context of sex work who do not pay for sex acts (e.g. husbands or boyfriends) may be more prevalent.<sup>2,15,36,37</sup>

Although research has identified a number of factors that may increase the risk of IPV victimization among FSW,<sup>2,27,32,34,40-42</sup> the influence of stigma—regarded by FSW, people living with HIV (PLHIV), and researchers as a powerful structural driver of their health, lived experiences, and relationships<sup>44,46-53,55,57-59,344,345</sup>—remains understudied. Female sex workers living with HIV contend with both HIV stigma and sex work stigma, which are co-constitutive,

mutually reinforcing, and exacerbated by stigma associated with other social characteristics, such as gender, race, and class,<sup>58,60,61</sup> an interplay defined as intersectional stigma.<sup>62-64</sup> Stigma is the co-occurrence of labeling of people who have a socially significant characteristic, linking of labels to negative meanings and stereotypes, and separation of, discrimination against, and social status loss of the stigmatized, all within a context of unequal power relations, per Link and Phelan.<sup>84</sup> In fundamental cause theory of stigma, Hatzenbuehler et al.<sup>65</sup> describe processes through which stigma produces various adverse social and health outcomes among stigmatized people, including negatively affecting their available resources, social relationships, and psychological and behavioral responses.<sup>65(p814)</sup> When these processes are considered in tandem with empirical and theoretical scholarship on IPV risk factors among FSW and others, stigma emerges as a potential important structural driver of IPV.

Stigma depletes availability of resources such as money, health care, and law enforcement protection through discrimination by employers, health providers, law enforcement, and others.<sup>65(p814)</sup> Depletion of economic resources, due, for example, to HIV workplace discrimination, may hamper women's ability to leave or have power within abusive intimate partner relationships, which may increase their risk of IPV.<sup>184</sup> Reduced availability of health services<sup>186</sup> may limit access to support that can help women leave violent relationships and otherwise avoid IPV, such as counseling and referrals to IPV-focused services.<sup>53,200,265,279</sup> Law enforcement discrimination such as police physical abuse and refusal to provide protection to FSW are barriers to their receiving police and judicial protection from IPV.<sup>10,32,47,113,175,186,207,252,308</sup> Exclusion and abuse of the stigmatized by their social network members and anticipated such maltreatment decreases access to social support that is protective against IPV.<sup>2,34</sup> Finally, stigmatization leads to psychological and behavioral responses such as

depression, diminished self-esteem, and alcohol use for affect regulation, which are positively associated with IPV risk. Internalized stigma and low self-esteem may lead individuals to justify violence perpetrated against them and undermine their capacity to terminate abusive relationships,<sup>62,65,258</sup> while alcohol intoxication may compromise FSWs' ability to detect and escape violent situations.<sup>154</sup> Research to investigate the relationship between stigma and IPV risk among FSW living with HIV is needed.

As reflected above, empirical studies show that different mechanisms of stigma—enacted, anticipated, and internalized—have distinct relationships with health outcomes.<sup>66,67</sup> This indicates that knowledge of relationships of multiple mechanisms of stigma with IPV will be needed to develop well-targeted interventions. In addition, simultaneous examination of stigma associated with multiple social characteristics is needed to best reflect the lived experiences of people experiencing intersectional stigma, and may serve to fill a gap in interventions addressing it.<sup>346</sup> On a technical level, inclusion of multiple stigma mechanisms in the same quantitative models may minimize path estimation error, given research demonstrating relationships amongst different stigma experiences, which could confound results if not accounted for.<sup>303,347</sup> Thus, this study assesses whether enacted, anticipated, and internalized stigma associated with both HIV and sex work predict IPV victimization (physical or sexual) among FSW living with HIV. I hypothesize that HIV and sex work stigma will be associated with increased odds of IPV among FSW living with HIV. This study will help address the gap in research on the etiology of IPV perpetrated against FSW by intimate partners outside the context of sex work and advance knowledge on the influence of stigma on FSW living with HIV. Findings may help guide design of programs and policies to reduce the burden of IPV, with positive downstream effects on other indicators of health and wellbeing.

I analyze longitudinal data from a cohort of FSW living with HIV in Santo Domingo, Dominican Republic,<sup>70,71</sup> where an estimated 3.3% of the country's adult female population sells sex in exchange for money or goods.<sup>254</sup> HIV prevalence among FSW is approximately 4.4%,<sup>229</sup> six-fold greater than the national adult HIV prevalence of 0.7%.<sup>348</sup> A fifth of FSW in Santo Domingo reported experiencing at least one type of abuse in the past year, including physical maltreatment, rape, and robbery or assault, in 2012.<sup>229</sup> A previous analysis of the current study cohort at BL found that 18.3% experienced violence from a sexual partner in the last six months, with a greater proportion reporting violence from intimate partners (12.3%) than from clients (8.3%).<sup>15</sup> Among women broadly in the Dominican Republic, IPV is the fourth leading cause of death.<sup>248</sup> Anthropological and public health research illustrate anti-violence against women discourse in public space and media coverage, popular awareness of the issue,<sup>204,238-243</sup> and seemingly low social acceptability: the percentage of Dominican women and men agreeing to at least one instance where “wife-beating” is justified is low (six percent), particularly when compared to other low and middle income countries.<sup>244</sup> However, the landscape of norms and attitudes toward IPV is multifaceted and contradictory—qualitative studies suggest that victim blaming and normalization of IPV are pervasive.<sup>245(p547),246,247</sup>

## **5.2 Methods**

### **Parent study**

I analyzed BL and FU survey data from an evaluation of *Abriendo Puertas* (Opening Doors), a multi-level intervention promoting HIV care and prevention with a cohort of 250 FSW living with HIV in Santo Domingo, Dominican Republic (2012-2014).<sup>70,71</sup> The surveys, which included measures of enacted, anticipated, and internalized HIV and sex work stigma, were conducted at BL and ten months FU.



### ***Sampling, recruitment, and data collection***

Participants were recruited via a non-random sampling approach led by peer navigators (current/former FSW experienced in conducting HIV outreach, prevention, and providing support for PLHIV). Navigators approached women they knew or were referred to through their ongoing community-based work with sex workers, and recruited from the HIV clinic in coordination with clinic staff. Women who were participating in the study also provided referrals.<sup>70</sup>

To be eligible for the study women had to meet the following criteria: be at least 18 years of age, be HIV-positive, and report having exchanged sex for money in the last month. HIV status was confirmed via a single rapid test (Retrocheck) prior to the BL survey.<sup>70</sup> From November 2012 to February 2013, 268 FSW were enrolled and completed a BL survey. Of those, 250 participated in the intervention, and 228 (91%) were retained at ten month FU and completed FU surveys between November and December 2013. A trained Dominican female interviewer administered structured paper surveys to participants in Spanish in a private office. Following the surveys, participants provided vaginal swabs for STI testing and whole blood samples for HIV viral load testing, which were collected by a physician.

All participants provided consent prior to data collection. Consent was obtained orally to minimize potential breaches in confidentiality. All study protocols and consent procedures were approved by the Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health, the University of North Carolina, and the Instituto Dermatologico y Cirugia de Piel Dr. Humberto Bogart Diaz, the Dominican research partner for the study, which oversaw all local data collection. Each participant received approximately 10 U.S. dollars for completing each survey visit.

### **Measures**

All measures are based on self-report unless specified otherwise.

## ***Dependent variable***

### ***Intimate partner violence***

Seven IPV questions, adapted from the WHO Violence Against Women Instrument,<sup>15,72</sup> asked whether participants had or had not experienced particular acts of physical or sexual violence (e.g. been pushed, kicked, forced to have sex) perpetrated by intimate partners, new clients, and regular clients in the last six months. The questions were asked separately for each of these partner types. Intimate partners were defined as sexual partners with whom a participant had sex three or more times who did not pay per sexual act although they may have given her money (e.g. for rent). If a participant answered “yes” to any of the seven questions regarding violence perpetrated by an intimate partner, she was considered to have experienced IPV. The seven IPV questions were included in both BL and FU surveys, but their timeframe was “in the last six months” in the BL survey and “since you started the study” (i.e. the previous ten months) in the FU survey. In the BL survey, the seven IPV questions were only posed to participants who had replied affirmatively to at least one of two preceding questions regarding whether they had had conflict with or received maltreatment from sexual partners. In the FU survey, the seven IPV questions were posed to all participants.

## ***Independent variables***

### ***Stigma***

Measures of enacted, anticipated, and internalized HIV stigma were adapted from existing HIV stigma scales<sup>311,312</sup> and draw on the Earnshaw<sup>313</sup> HIV Stigma Framework.<sup>70</sup> The sex work stigma measures were adapted from the HIV measures, given the scarcity of validated sex work measures at the time of survey design,<sup>314,315</sup> by changing “HIV” to “sex work” in all

items.<sup>4</sup> The surveys did not include measures of anticipated sex work stigma due to the parent study's focus on HIV and the lack of available sex work stigma measures. All complete stigma measures are presented in Appendix A.

Enacted stigma is defined as the experience of being discriminated, stereotyped, or prejudiced against due to a social characteristic (e.g. being HIV positive or a sex worker).<sup>92,93,258,267,269,272-277</sup> Based on public health, anthropological, human rights, and psychometric literatures, I identified five forms of enacted stigma experienced by PLHIV and FSW in the Dominican Republic: social discrimination, health service discrimination, workplace discrimination (job loss), workplace discrimination (establishment abuse), and law enforcement discrimination. All of these forms apply to stigma related to both HIV and sex work, except for law enforcement discrimination, which refers to sex work only. Social discrimination includes gossip, contempt, verbal abuse, linking HIV and sex work to one another (e.g. attributing FSWs' HIV status to their sex work, or assuming FSW are HIV-positive) and to other negative meanings, and rejection by friends, family, and community members. Health service discrimination encompasses providers' refusal to provide services, behaving distantly or hostilely, and outing HIV or sex worker status to clinic or family/partners. Workplace discrimination (job loss) indicates having been fired and/or excluded from hiring due to HIV or sex worker status. Workplace discrimination (establishment abuse) includes verbal or physical abuse within sex work workplaces by establishment owners or FSW colleagues, e.g. FSW physically assaulting FSW living with HIV due to their HIV status or outing their status to clients. Law enforcement discrimination encompasses police arbitrary arrest, extortion, sexual/physical/verbal abuse,

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<sup>4</sup> Since then, a comprehensive, reliable, and valid scale to measure sex work stigma has been developed using data from FSW in the Dominican Republic and Tanzania. 316. Kerrigan D, Karver T, Barrington C, et al. Development of the experiences of sex work stigma scale using item response theory: Implications for research on the social determinants of HIV. *Under review* 2020.

refusal to provide protection, and blaming FSW for experiencing abuse.

To measure these constructs, I selected binary survey items assessing lifetime enacted stigma experiences and combined them to create multi-item indices or used them as single item measures. All multi-item indices are comprised of two to four items. Mean scores (range: 0-1) were calculated for multi-item indices that had at least one item with a non-missing value. Workplace HIV and sex work discrimination (job loss) measures were assessed with one binary item, “Have you ever lost a job because you are living with HIV/are a sex worker?” Per DeVellis, an index is a “superordinate label for the several discrete variables that contribute to it,” and which independently influence the level of the index.<sup>317</sup> Given this, items will not necessarily correlate with one another.<sup>317</sup> Thus, reliability analyses for the indices are not reported.

Anticipated HIV stigma. Anticipated stigma refers to expectations of discrimination, stereotyping, and/or prejudice from others in the future due to a social characteristic. Five survey items assessed anticipated HIV stigma: you are afraid you could be threatened with violence if your HIV status were known; you are afraid that if you disclosed your HIV status to your friends, they would lose respect for you; you are afraid that if you disclose your HIV status to the women with whom you work, they could take your clients; you are afraid your partner could leave you if your HIV status were known; you are afraid that your family could exclude you from regular family activities if your HIV status were known. For each item, participants were prompted to endorse five statements on a 4-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree). The items reflect different feared forms of discrimination, which may have different levels of importance or impact for participants, and thus different relationships with IPV risk. The items “you are afraid you could be threatened with violence if your HIV status

were known” and “you are afraid your partner could leave you if your HIV status were known” were also expected to relate more strongly to IPV than other items because they possibly captured known proximal correlates of IPV, perceived risk of violence<sup>319</sup> and abandonment anxiety,<sup>320</sup> respectively. Thus, the anticipated stigma items were included in models as discrete variables.

Internalized stigma. Internalized stigma is defined as the application of negative attitudes towards one’s stigmatized characteristic to oneself. Two eight-item scales, previously validated using *Abriendo Puertas* FU data,<sup>321</sup> assessed participants’ levels of internalized HIV stigma and internalized sex work stigma. Participants were prompted to respond to statements such as “Being a sex worker makes you feel like a bad person” and “You feel worthless because you are living with HIV” on a 4-point Likert scale ranging from strongly disagree to strongly agree. I conducted confirmatory factor analysis (CFA) of the scales, which indicated strong unidimensionality and internal reliability and that all eight items loaded significantly on the latent constructs in both cases (Cronbach’s alpha = 0.87 for both; all loadings  $p < .001$ ). The final scales exhibited adequate fit (CFI = 0.99, TLI = 0.98, and RMSEA = 0.08 for both). Mean scores were calculated for both multi-item scales when at least one item had a non-missing value (range: 1-4). Complete final scales are presented in Appendix A and results from CFA are presented in Appendix B.

### ***Controls***

Variables were included as controls if they were theoretically plausible causes of both independent stigma variables and the IPV outcome, i.e. potential confounders. Those that were also potential mediators of stigma/IPV relationships were not included so as to avoid their incorrectly nullifying the relationships of interest. All control variables were drawn from BL survey data except intervention exposure intensity.

### *Socio-demographic factors*

Age (years), educational attainment (any years primary/any secondary or tertiary school), and civil status (has cohabiting partner/non-cohabiting partner/no partner, including separated, widowed, divorced).

### *Number of sexual partners per month*

Participants reported the number of new and regular clients and intimate partners they had had in the last 30 days. New clients were those with whom they had sex once or twice. Regular clients were those with whom they had sex at least three times and who pay for sex.

### *Intervention exposure intensity*

The intensity of FSWs' exposure to the *Abriendo Puertas* intervention, the main exposure in dose-response analyses of the *Abriendo Puertas* intervention impact,<sup>71</sup> was used as a control for effects of *Abriendo Puertas* participation. A binary indicator variable was created for each main intervention component: attending all individual counseling sessions, having a peer navigator, and participating in community mobilization activities. Counseling session attendance data were sourced from program attendance records, and the other indicators were assessed in the survey. Intervention exposure intensity was defined as high/moderate if at least two indicators were equal to 1, and low in all other cases.<sup>71</sup>

### **Data analysis**

I produced univariate statistics for all variables and determined unadjusted bivariate associations between stigma measures and IPV and control variables and IPV using logistic regression. I examined correlations and multicollinearity amongst IVs using standard metrics (correlation > .80 and variance inflation factor  $\geq 10$ ).<sup>324</sup> Due to the very low levels of workplace sex work and HIV discrimination (abuse in establishment) reported, those two variables were not included in bi- and multivariable analyses to avoid instability and imprecision in path estimates.

For multivariable modeling, I used two analytic samples. The BL cross-sectional sample was comprised of complete cases that participated in the BL survey (n=268) and the BL/FU (BLFU) longitudinal sample was comprised of complete cases that participated in the BL and FU surveys (n=223). In models using the BLFU sample, the IPV outcome was from FU while IVs were from BL, except the intervention exposure intensity control. For both HIV and sex work stigma, I ran two models for each stigma mechanism (enacted, anticipated, and internalized), one containing all stigma variables assessing that mechanism with controls and one without controls. I did this using both BL and BLFU samples. I then ran the final combined stigma models including all stigma variables, with and without control variables, again using the BL and BLFU samples. Two control variables included in the BLFU models—BL IPV and intervention exposure intensity—were conceptually plausible mediators as well as confounders and thus had the potential to nullify relationships of interest incorrectly, but were considered necessary to include. I conducted sensitivity analysis to examine how including them influenced the strength and significance of the relationships of interest. I used two-tailed tests and a p-value less than or equal to .05 as the significance level for all analyses. Logistic regression analyses were performed using SAS (version 9.4) and confirmatory factor analysis using Mplus, version 8.

I conducted multivariable analyses using both BL and BLFU samples for the purpose of gaining maximum insight into the relationships of interest given the limitations of both cross-sectional and longitudinal approaches to analyzing these small intervention study data: intervention exposure and attrition in the BLFU sample and simultaneous measurement and lack of temporal ordering of variables in the BL sample. Strengths of the cross-sectional approach were use of a larger, complete, non-intervention exposed sample, and strengths of the

longitudinal approach were the establishment of temporal ordering of variables (i.e. BL measures of lifetime stigma experiences preceded the outcome, IPV in the last ten months) and control for the BL level of the outcome, which strengthened the case for directions of associations aligned with hypotheses and causal interpretations.<sup>334</sup>

I tested the following hypothesis: FSW living with HIV reporting higher levels of HIV stigma (enacted, anticipated, and internalized) and sex work stigma (enacted and internalized) will report greater odds of IPV compared to those who report lower levels of stigma.

### **5.3 Results**

After describing participant socio-demographic and behavioral characteristics, I report multivariable findings from the BL analyses (n=266), followed by multivariable findings from the longitudinal analyses (n=223). Findings from bivariate and multivariable analyses without control variables are available in Appendices F and G, respectively.

#### **Sample characteristics**

Table 5.1 presents socio-demographic and behavioral characteristics of participants at BL (n=266). The prevalence of participants reporting having experienced one or more forms of physical or sexual violence perpetrated by an intimate partner in the past six months at BL was 12.03% (n=32) and at FU was 14.80% (33). The median age was 36 (range: 18-61) and approximately two thirds had primary school level of education (any number of years; 64.29%). The majority of participants had a steady partner, with 38.7% cohabiting and 42.11% not cohabiting with their partner. Nearly a fifth (18.80%) did not have a steady partner. Those who worked in the street during the past three months comprised 56.02% of the sample, while the others worked in sex establishments or independently (43.98%).



**Table 5.1 Socio-demographic and behavioral characteristics, *Abriendo Puertas* baseline survey (n=266)**

<b>Characteristic</b>	<b>Median (range, IQR) or percentage (frequency)</b>
<b>Baseline physical/sexual IPV victimization (past six mos.)</b>	
Yes	12.03 (32)
No	87.97 (234)
<b>Follow up physical/sexual IPV victimization (past ten mos.)*</b>	
Yes	14.80 (33)
No	85.20 (190)
<b>Age (years)</b>	36 (18-61, 12)
<b>Educational attainment</b>	
Primary school (any number years)	64.29 (171)
Any secondary or tertiary school (any number years)	35.71 (95)
<b>Civil status</b>	
Lives with spouse/steady partner	38.72 (103)
Non-cohabitating steady partner	42.11 (112)
Single (no steady partner, separated, divorced, widowed)	18.80 (50)
<b>Residence</b>	
Urban (cities/major towns)	90.60 (241)
Rural community	9.40 (25)
<b>Internal migration (past 12 mos.)</b>	
Yes	10.90 (29)
No	89.10 (237)
<b>Number of children</b>	3 (0--8, 2)
<b>Years in sex work</b>	15 (<1-45, 13)
<b>Worksite</b>	
The street	56.02 (149)
Sex establishment or independent	43.98 (117)
<b>Number of sexual partners/mo.</b>	12 (1-51, 10)
<b>Years since HIV diagnosis***</b>	5 (<1-31, 5)
<b>General health status</b>	
Excellent	13.91 (37)
Very good	24.81 (66)
Good	22.56 (60)

	Average	26.69 (71)
	Bad	12.03 (32)
<b>HIV services utilization (times received HIV care, past six mos.)</b>		3 (0-12, 4)
<b>Alcohol use frequency (past mo.)</b>		
	Frequent (a few times/week, once/week, weekends)	35.34 (94)
	Infrequent (once/mo., rare occasions, once/two weeks)	24.81 (66)
	Never	39.85 (106)
<b>Drug use (past six mos.)</b>		
	Yes	7.89 (21)
	No	92.11 (245)
<b>Income (USD**)*</b>		193.30 (0.00-1030.93, 128.87)
<b>Savings (USD**)*</b>		0.00 (0.00-128.87, 12.89)
<b>Intervention exposure intensity*</b>		
	High/moderate	70.40 (157)
	Low	29.60 (66)

\*Measured at FU (n=223).

\*\*Per January 2012 Dominican Pesos to U.S. Dollars exchange rate (38.8 DOP/1 USD)

\*\*\*Missing=2

### **Levels of enacted, anticipated, and internalized stigma**

Table 5.2 presents participants' levels of enacted, anticipated, and internalized stigma reported at BL. Regarding lifetime enacted sex work stigma, the median level of all multi-item measures was zero. The mean level of social discrimination was 0.21 (SD: 0.33), health services discrimination was 0.06 (SD: 0.17), law enforcement discrimination was 0.11 (SD: 0.31), and workplace discrimination (establishment abuse) was .06 (SD: 0.21). The percentage of participants reporting workplace sex work discrimination (job loss) was 10.98% (n=29).

Regarding lifetime enacted HIV stigma, the median level of all multi-item measures was also zero. The mean level of social discrimination was 0.23 (SD: 0.33), health services discrimination was 0.14 (SD: 0.26), and workplace discrimination (establishment abuse) was 0.01 (SD: 0.10).

The percentage of participants who reported workplace HIV discrimination (job loss) was

22.25% (n=59). With respect to anticipated HIV stigma, the median level of fear of being threatened with violence and of losing friends' respect if one's HIV status were disclosed was 3.00 (range: 1.00-4.00). The median level of fear of colleagues stealing your clients, partner abandonment, and exclusion by family members if one's HIV status were disclosed was 2.00 (range: 1.00-4.00, IQR: 2.00). The median level of internalized HIV stigma was 2.25 (range: 1.00-4.00, IQR: 0.88) and of internalized sex work stigma was 2.25 (range: 1.00-4.00, 1.00).

**Table 5.2 Experiences of enacted, anticipated, and internalized stigma (n=266)**

	Baseline	
	Median (range, IQR) or percentage (frequency)	Mean (standard deviation)
<b>Enacted stigma</b>		
<i>Sex work</i>		
Social discrimination	0 (0.00-1.00, 0.33)	0.21 (0.33)
Health services discrimination	0 (0.00-1.00, 0.00)	0.06 (0.17)
Law enforcement discrimination	0 (0.00-1.00, 0.00)	0.11 (0.31)
Workplace discrimination (job loss)	10.98 (29)	-
Workplace discrimination (establishment abuse)	0 (0.00-1.00, 0.00)	.06 (0.21)
<i>HIV</i>		
Social discrimination	0 (0.00-1.00, 0.33)	0.23 (0.33)
Health services discrimination	0 (0.00-1.00, 0.33)	0.14 (0.26)
Workplace discrimination (job loss)	22.35 (59)	-
Workplace discrimination (establishment abuse)	0 (0.00-1.00, 0.00)	0.01 (0.10)
<b>Anticipated HIV stigma</b>		
Fear of threat of violence	3.00 (1.00-4.00, 1.00)	-
Fear of losing friends' respect	3.00 (1.00-4.00, 1.00)	-
Fear of colleagues taking clients	2.00 (1.00-4.00, 2.00)	-
Fear of partner abandonment	2.00 (1.00-4.00, 2.00)	-
Fear of family exclusion	2.00 (1.00-4.00, 2.00)	-
<b>Internalized stigma</b>		
HIV	2.25 (1.00-4.00, 0.88)	-
Sex work	2.25 (1.00-4.00, 1.00)	-

Table 5.3 presents a Pearson correlation coefficient matrix for all stigma variables.

Coefficients ranged from 0.00 to 0.63 and significant coefficients are in bold.

Table 5.3 Stigma variables Pearson correlation coefficients matrix (n=266)

		Enacted sex work				Enacted HIV			Anticipated HIV					Internalized	
		<i>Social</i>	<i>Health</i>	<i>Work</i>	<i>Law</i>	<i>Social</i>	<i>Health</i>	<i>Work</i>	<i>Violence</i>	<i>Friends</i>	<i>Col.</i>	<i>Partner</i>	<i>Family</i>	<i>SW</i>	<i>HIV</i>
Enacted sex work	<i>Social</i>	1.00													
	<i>Health</i>	0.35 <b>&lt;.001</b>	1.00												
	<i>Work</i>	0.37 <b>&lt;.001</b>	0.30 <b>&lt;.001</b>	1.00											
	<i>Law</i>	0.30 <b>&lt;.001</b>	0.17 <b>0.01</b>	0.20 <b>&lt;.001</b>	1.00										
Enacted HIV	<i>Social</i>	0.54 <b>&lt;.001</b>	0.24 <b>&lt;.001</b>	0.28 <b>&lt;.001</b>	0.17 <b>&lt;.001</b>	1.00									
	<i>Health</i>	0.22 <b>&lt;.001</b>	0.49 <b>&lt;.001</b>	0.15 <b>0.02</b>	0.20 <b>&lt;.001</b>	0.31 <b>&lt;.001</b>	1.00								
	<i>Work</i>	0.20 <b>.001</b>	0.16 <b>0.01</b>	0.42 <b>&lt;.001</b>	0.13 <b>0.04</b>	0.34 <b>&lt;.001</b>	0.25 <b>&lt;.001</b>	1.00							
Anticipated HIV	<i>Violence</i>	0.08 0.19	0.14 <b>0.02</b>	0.05 0.37	0.02 0.76	0.00 0.98	0.05 0.42	-0.02 0.80	1.00						
	<i>Friends</i>	0.13 <b>0.03</b>	0.18 <b>&lt;.001</b>	0.12 <b>0.05</b>	0.05 0.46	0.04 0.47	0.03 0.61	-0.08 0.20	0.57 <b>&lt;.001</b>	1.00					
	<i>Col.</i>	0.25 <b>&lt;.001</b>	0.18 <b>&lt;.001</b>	0.14 <b>0.02</b>	0.27 <b>&lt;.001</b>	0.14 <b>0.03</b>	0.18 <b>&lt;.001</b>	0.04 0.47	0.19 <b>&lt;.001</b>	0.26 <b>&lt;.001</b>	1.00				
	<i>Partner</i>	0.03 0.63	0.00 0.98	0.00 0.99	-0.08 0.19	-0.06 0.36	-0.07 0.26	-0.06 0.32	0.04 0.49	0.11 0.08	0.05 0.40	1.00			
	<i>Family</i>	0.14 <b>0.02</b>	0.05 0.41	-0.05 0.42	0.07 0.26	0.13 <b>0.03</b>	0.08 0.18	-0.08 0.21	0.15 <b>0.02</b>	0.25 <b>&lt;.001</b>	0.12 0.06	0.21 <b>&lt;.001</b>	1.00		
Internalized	<i>SW</i>	0.14 <b>0.02</b>	-0.01 0.83	0.08 0.18	0.04 0.50	0.12 <b>0.04</b>	0.06 0.37	-0.03 0.57	0.10 0.09	0.23 <b>&lt;.001</b>	0.15 <b>0.01</b>	0.14 <b>0.02</b>	0.20 <b>&lt;.001</b>	1.00	
	<i>HIV</i>	0.21 <b>&lt;.001</b>	0.09 0.13	0.08 0.20	0.11 0.07	0.22 <b>&lt;.001</b>	0.05 0.37	-0.04 0.51	0.30 <b>&lt;.001</b>	0.38 <b>&lt;.001</b>	0.24 <b>&lt;.001</b>	0.19 <b>&lt;.001</b>	0.27 <b>&lt;.001</b>	0.63 <b>&lt;.001</b>	1.00

## **Multivariable analyses**

### ***Final baseline model***

In the final, combined stigma BL model, the association between workplace HIV discrimination (job loss) and IPV was significant, adjusting for all other forms of stigma and controls (see Table 5.4). Those who had experienced workplace HIV discrimination (job loss) had 5.60-times the odds of IPV compared to those who had not (95% C.I.: 1.94, 16.18;  $p=.002$ ). The adjusted association between anticipated HIV stigma in the form of fear that your family could exclude you from family activities if your HIV status were known and IPV was also significant (aOR: 1.78, 95% C.I.: 1.12, 2.82;  $p=.02$ ).

Final, combined stigma model results were consistent with single stigma mechanism models results, despite minor differences in adjusted ORs and p-values. In the enacted stigma model, the adjusted odds of IPV among FSW who had experienced workplace HIV discrimination (job loss) compared to others was 4.09 (95% C.I.: 1.51, 11.03;  $p=.002$ ), and in the anticipated stigma model, the adjusted odds of IPV among those reporting fear that your family could exclude you from family activities if your HIV status were known was 1.57 (95% C.I.: 1.05, 2.35;  $p=.03$ ). See Appendix G for full results from single stigma mechanism model analyses.

**Table 5.4 Adjusted odds of IPV in the last six months by experiences of enacted, anticipated, and internalized stigma among female sex workers living with HIV in Santo Domingo at baseline (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p- value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	2.04	0.45	9.21	.35
Health services discrimination	1.29	0.08	19.77	.86
Workplace discrimination (job loss)	1.62	0.45	5.88	.46
Law enforcement discrimination	3.06	0.69	13.53	.14
<i>Enacted HIV stigma</i>				
Social discrimination	0.39	0.08	1.85	.23
Health services discrimination	0.75	0.12	4.58	.76
Workplace discrimination (job loss)	5.60	1.94	16.18	<b>.002</b>
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.33	0.76	2.35	.32
Fear of losing friends' respect	0.70	0.35	1.39	.31
Fear of colleagues taking clients	0.95	0.64	1.42	.82
Fear of partner abandonment	0.82	0.55	1.23	.33
Fear of family exclusion	1.78	1.12	2.82	<b>.02</b>
<i>Internalized stigma</i>				
Sex work	1.14	0.52	2.48	.74
HIV	1.59	0.65	3.88	.31
<i>Controls</i>				
Educational attainment	0.59	0.22	1.56	.29
Age	0.94	0.89	0.99	<b>.02</b>
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	5.32	1.01	28.02	<b>.05</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	1.48	0.25	8.78	.67
Number of sexual partners per month	1.01	0.97	1.06	.64

### *Final longitudinal model*

In the final, combined stigma longitudinal model, anticipated HIV stigma in the form of fear that your colleagues could take your clients if you disclosed your HIV status to them predicted increased odds of IPV at FU, adjusting for BL IPV and other controls. See Table 5.5. For every increase in the level of fear of colleagues taking clients, the odds of IPV increased by a factor of 1.70 (95% C.I.: 1.12, 2.57;  $p=0.01$ ).

Final, combined stigma model results were consistent with enacted stigma model results (no significant relationships) and fear of colleagues taking clients was associated with IPV:  $aOR=1.72$ , 95% CI: 1.16, 2.56;  $p=0.01$ . However, the adjusted relationship between internalized HIV stigma and IPV ( $aOR=2.24$ , 95% CI: 1.05 4.78;  $p=0.04$ ) was significant in the internalized stigma model but not in the final combined stigma model. See Appendix G for full results from single stigma mechanism model analyses.

**Table 5.5 Adjusted odds of IPV at follow up (last ten mos.) by baseline enacted, anticipated, and internalized stigma among female sex workers living with HIV (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	0.72	0.14	3.63	.69
Health services discrimination	1.39	0.09	21.75	.82
Workplace discrimination (job loss)	1.39	0.35	5.52	.64
Law enforcement discrimination	0.62	0.11	3.64	.60
<i>Enacted HIV stigma</i>				
Social discrimination	1.67	0.32	8.61	.54
Health services discrimination	1.22	0.17	8.74	.84
Workplace discrimination (job loss)	1.15	0.35	3.78	.82
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.60	0.84	3.03	.15
Fear of losing friends' respect	0.61	0.31	1.22	.16
Fear of colleagues taking clients	1.70	1.12	2.57	<b>.01</b>
Fear of partner abandonment	1.08	0.73	1.61	.69
Fear of family exclusion	0.92	0.58	1.45	.71
<i>Internalized stigma</i>				
Sex work	0.73	0.31	1.71	.46
HIV	2.06	0.80	5.30	.14
<i>Controls</i>				
Educational attainment	0.70	0.25	1.95	.49
Age	0.99	0.94	1.05	.79
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	7.94	1.37	45.92	<b>.02</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	3.25	0.53	20.06	.20
Number of sexual partners per month	1.00	0.95	1.06	.89
Baseline IPV	6.79	2.20	20.96	<b>.001</b>
Intervention exposure intensity	0.65	0.23	1.85	.42



As presented in Appendix C, sensitivity analysis indicated that controlling for BL IPV and intervention exposure intensity in the final longitudinal model did not substantially affect findings on the relationships of interest. When BL IPV was excluded from the final model, a slight decrease in strength of the significant relationship found in the full model between fear that your colleagues could take your clients if you told them your HIV status and IPV occurred (model without BL IPV control aOR=1.58, 95% C.I.: 1.06, 2.35; p=.03). Exclusion of intervention exposure intensity also led to a slight decrease in the strength of that that relationship (model without intervention exposure control aOR=1.66, 95% C.I.: 1.10, 2.49; p=.02). No other notable changes compared to the full longitudinal model results occurred when these controls were excluded.

#### **5.4 Discussion**

Study results suggest that HIV-related job loss, fear of family exclusion due to HIV, and fear of colleagues taking one's clients if one's HIV status were known may constitute risk factors for IPV among FSW living with HIV. These relationships may be attributable to the influence of these forms of stigma on availability of resources, psychological and behavioral responses, and social relationships, as argued below in line with fundamental cause theory of stigma. Findings illustrate the state of economic and social precarity FSW living with HIV experience due to stigma, combined with other features of their structural context. Per Judith Butler, precarity is “the politically induced condition in which certain populations suffer from failing social and economic networks . . . becoming differentially exposed to injury, violence, and death.”<sup>349p.25</sup> Precarity often refers to “uncertain, unpredictable, and risky”<sup>350(p.2)</sup> conditions of labor. In addition to detrimental impacts of depleted economic and social resources due to stigma on IPV risk, I argue below that the uncertainty and fear of the potential for such losses characterizing a state of economic and social precarity may also account for relationships between stigma and

IPV.

A fifth of participants reported ever having lost a job due to HIV, possibly reflecting HIV testing by employers, which is pervasive in the Dominican Republic despite anti-HIV discrimination labor laws, per increasing evidence.<sup>267,269,275,277,280,351,352</sup> Employers of hotels, restaurants, factories, and domestic services fire employees and eliminate job applicants based on mandatory and involuntary testing.<sup>258,267,275,277,280,353</sup> Job loss due to HIV may increase the odds of IPV by reducing available economic resources. Feminist economics household bargaining theory explains that negative relationships between economic resources and IPV risk result from women having fewer real and potential resources outside the household, such as employment and income, which reduces their power to resist male dominance in the household and negotiate better outcomes, such as decision-making authority and nonviolence.<sup>184,286,287</sup> The lesser women's ability to support themselves and their dependents and the less viable their "exit options"<sup>184(p2)</sup> from the relationship, the less likely they are to be able to reject abuse.<sup>255</sup> In the Dominican Republic, no previous quantitative studies have examined the relationship between economic resources and IPV among FSW, but this finding is consistent with a study that found unemployed ever married women to have nearly twice the predicted probability of experiencing IPV compared to their employed counterparts, with the strongest effect among asset-poor urban women.<sup>184</sup>

Empirical studies indicate that household bargaining theory is applicable to this population even though they often do not share a household with their intimate partners and have multiple intimate partners,<sup>271</sup> in contrast to heteronormative assumptions implicit in the theory. Global studies of economic correlates of violent victimization by any perpetrator among FSW such as income,<sup>151,188</sup> housing,<sup>31,32</sup> and having a bank account<sup>187</sup> show negative relationships.

Substantiating the role of power within intimate partner relationships vis à vis IPV risk that the theory encompasses, nearly all quantitative studies examining FSWs' relationship power find it to be inversely associated with IPV.<sup>35,40-42,182,183</sup> Qualitative research in this setting also illustrates how economic resources influence FSWs' relationship decision-making—they describe male intimate partners as key resources for covering basic economic needs, seeking out partners to help, and lacking partners as a significant economic stressor.<sup>92,93,255,271</sup> Low income women in the Dominican Republic generally face great difficulty in supporting themselves alone due to the high costs of living and burden of dependent care, which falls nearly completely on women, combined with inadequate social protections.<sup>88,92,93,227,255,257</sup> Initiating or maintaining relationships with male partners to share these burdens—which, for PLHIV, include costs related to life-saving HIV care and treatment<sup>269,280</sup>—may be a necessary or preferable arrangement, even when relationships are abusive.<sup>18,255</sup>

Depleted economic resources may also influence the risk of IPV in this population by causing stress that degrades intimate partner relationship wellbeing. Social stress theory<sup>354,355</sup> indicates that poverty imposes strain on individuals that results in conflict with others. The strain of poverty affects aspects of intimate partner relationship wellbeing that correlate with IPV risk, including relationship satisfaction and levels of conflict, in empirical studies with mainly non-sex worker populations.<sup>113,133,135,356-360</sup> Financial strain may undercut relationship wellbeing by increasing opportunities for conflicts and tensions, degrading the quality of communication and problem solving, increasing the likelihood partners' problematic personality traits are expressed, and diminishing resources for shared experiences and activities that nurture the relationship.<sup>357,361</sup> Strain due to the female partner's job loss may be especially pronounced if she had previously contributed substantially to household economic resources, a common scenario

within FSWs' intimate partner relationships in the Dominican Republic where men's economic opportunities are also highly constrained.<sup>255,271</sup> Alternatively, stress, conflict, and IPV in intimate partner relationships may arise in response to a female partner's new HIV diagnosis alone<sup>309</sup> due to its implications for male partners' health and relationship fidelity; this could account for the association between job loss due to HIV and IPV, given that many people receive their diagnosis through illegal employer testing that leads to job loss, as described above. Future studies should explore this possibility, as well as the effects of workplace HIV discrimination on couple level indicators of relationship wellbeing.

Among women who are not already involved in sex work, losing a job due to HIV discrimination leads some to enter the sex industry.<sup>277</sup> Possibly reflecting this trajectory, 19% of *Abriendo Puertas* participants reported first becoming involved in sex work subsequent to their HIV diagnosis.<sup>70</sup> Entering the sex industry in the stressful circumstance of an economic shock could foster couple tension, conflict, and IPV.<sup>162,193,194</sup> Studies with sex workers and their partners in contexts of scarce economic opportunity show how male partners who are unable to support the couple financially and eliminate the need for the female partner to do sex work can experience feelings of sadness, anger, jealousy, and emasculation—especially if the female partner makes more money<sup>161</sup>—which are exacerbated by stigmatizing views of sex work.<sup>113,162,193,271</sup>

Deleterious effects of job loss due to HIV on individual mental health and self-esteem – exemplifying psychological and behavioral responses to stigma –could also explain its association with IPV.<sup>277,280</sup> Job loss and denial of work opportunities cause depression and undermine feelings of autonomy and dignity among PLHIV.<sup>196,277,280</sup> Depression and low self-esteem may, in turn, increase the risk of experiencing IPV by undermining motivation and

feelings of capacity to leave abusive relationships.<sup>2,3,50,143,147,258,265,362</sup> Negative emotional states also spur affect regulation behaviors like alcohol consumption, which increases FSWs' IPV victimization risk, possibly by compromising their ability to detect and escape from potentially violent situations.<sup>2,35,152-154,205,212,260,261,306</sup> Finally, minority stress theory-based studies—which examine the disproportionate disease burden borne by people of minority sexual orientation and other marginalized populations due to the social stress of stigma<sup>355</sup>—show that negative psychological responses to stigma, such as depression and rumination, degrade intimate partner relationship wellbeing, which can in turn increase the risk of IPV.<sup>363,364</sup> The mental health impact of workplace HIV discrimination and its mediating role in the discrimination/IPV relationship is another important area of future research.

The positive relationship between the fear of being excluded from regular family activities due to one's HIV status and odds of IPV may reflect detrimental effects of anticipated stigma may on social relationships. Women living with HIV and FSW have described how fear of discrimination prevents them from disclosing their HIV or sex worker status to family and friends, leading to feelings of detachment and social isolation.<sup>47,62,197,205,210,214,269,275,309</sup> Weakened relationships may diminish their access to social support for contending with IPV, such as encouragement, self-esteem bolstering, and help overcoming emotional and practical difficulties of terminating abusive relationships.<sup>158,265</sup> Instrumental support from family (e.g. money, a place to stay) may constitute the needed relationship exit option.<sup>184</sup> Migrant FSW in China with one or fewer social network members to go to for financial support in crisis situations had a 2.5-fold greater odds of experiencing violence inflicted by a husband or boyfriend in the past six months compared to those reporting a greater number of sources of financial support.<sup>34</sup>

Anticipated stigma from family can also negatively influence couple level affective

dynamics. In a study with FSW who use drugs and their intimate partners in Mexico-U.S. border cities, a participant's fear of discrimination by her partner's family heightened her insecurity about their relationship and jealousy about his time spent with them, leading to relationship tension and conflict.<sup>161</sup> Social precarity—the perpetual *threat* of rupture of social ties with family and isolation because of one's HIV status—may also increase the difficulty of ending relationships with intimate partners that are abusive but also constitute sites of love, companionship, and support, as can be the complicated reality in violent intimate partner relationships.<sup>365</sup>

Fear that their colleagues could take their clients if they revealed their HIV status to them, which was also associated with IPV, may capture anticipated stigma from peers (being outed by them) and/or from clients (being rejected by them if outed by peers). Female sex workers living with HIV in the Dominican Republic have described colleagues outing their HIV status to their clients to compete for scarce economic resources.<sup>92,269</sup> The fear may indicate a lack of trusting relationships with peers as it signals status non-disclosure and an expectation that peers would use their HIV status against them for self-gain if given the opportunity. Research indicates that peer support can play a uniquely important role for FSW and other marginalized social groups in contending with IPV and other stressful conditions, as they may be able to identify with and provide support for experiences of violence and stigma, and do so when family members will not or cannot.<sup>34,186</sup> Lacking financial and/or emotional support from FSW peers were the factors most strongly related to reporting IPV in the study of FSW in China cited previously.<sup>34</sup>

Fear that their colleagues could take their clients if they revealed their HIV status also reflects the ever-present potential for economic calamity that this population experiences due to

HIV and sex work stigma, in concert with other contextual factors. Because of the stigmatized, ambiguous legal status of sex work, they lack sex worker labor rights to protect against HIV discrimination-induced income loss and other risks.<sup>89,98,99</sup> Neither the State-provisioned safety net nor help from social networks can be relied upon in times of need, given the inadequacy of social protections and widespread poverty.<sup>92,227</sup> They also experience a lack of protection against workplace HIV discrimination in any jobs they might have outside the sex industry.<sup>258,267,275,277,280,353</sup> Economic precarity due to stigma may intensify the importance for FSW living with HIV of securing and maintaining intimate partner relationships as a safeguard for times of economic shocks, and thus impede avoidance or rejection of abusive but economically supportive relationships.

No other measures of stigma were significantly associated with IPV in the final models, contrary to expectations. It is plausible that effects of enacted stigma on IPV were not detected because they had decayed, given that the stigma variables were lifetime measures and may have captured experiences that occurred long ago. Future studies should consider including measures of both recent and lifetime stigma and IPV experiences to address these issues. Given the large number of key IVs in the final models relative to sample sizes, it is also possible that some effects appeared null due to mediation of relationships between certain stigma variables and IPV by other stigma variables, or competition between IVs for variance in the outcome. In particular, internalized HIV stigma was significantly associated with IPV in all longitudinal models except the final combined stigma model, in which case its OR also decreased. Research should further examine the relationship between internalized HIV stigma and IPV, including indirect pathways of influence.

Differences between findings from BL and longitudinal analyses—workplace HIV

discrimination (job loss) and the fear that your family would exclude you from activities if your HIV status were known were significantly associated with IPV in the BL model only, while fear that your colleagues would take your clients if your HIV status were known was associated with IPV in the longitudinal model only— have several potential explanations. Despite my examination of significant differences between participants who were and were not retained at FU, it is possible that the BL and longitudinal samples are different on unassessed characteristics, especially given the relatively small sample sizes and low outcome prevalence. Even though a control for intervention exposure intensity was included in longitudinal analyses, the BL and BLFU samples differed on intervention enrollment, and it is possible the control did not completely adjust for intervention effects. In light of studies showing impacts of community empowerment interventions on violent victimization outcomes among FSW, intervention participation could have influenced IPV odds.<sup>106,217,220</sup> Intervention effects, along with the smaller BLFU sample size, could help account for the smaller number of significant relationships found in longitudinal analyses. Alternatively, paths found to be significant in BL analyses may have been inflated due to the cross sectional nature of the analysis in which control for the prior level of the DV is not possible and independent and dependent variables are measured simultaneously;<sup>339</sup> these issues are partly addressed with the BL IPV control in the longitudinal models. Finally, the differences in the BL and FU IPV variables—at BL, questions about IPV (last six months) were posed only to women who identified themselves as having had a conflict or argument and/or received maltreatment from a sexual partner (last six months), while at FU, IPV questions (last ten months) were posed to all women—could have led to differences in results as well.

Not administering IPV questions to all participants at BL limited the extent to which prior



levels of the outcome variable could be controlled for in longitudinal analyses and may have led to underestimation of BL IPV prevalence. The IPV measure at BL and FU was limited by not assessing psychological violence. This likely led to underestimation of IPV prevalence, particularly given that emotional abuse is the most commonly reported form of IPV among women in the Dominican Republic.<sup>231</sup> In the BL analyses, it was not possible to determine temporal ordering of stigma experiences and IPV, leaving open the possibility that IPV led to higher levels of stigma rather than the reverse, a plausible hypothesis as IPV can lead to experiences of depression, anxiety and IPV-related stigma<sup>143,366,367</sup> that could in turn lead to higher levels of perceived HIV and sex work stigma. The issue of temporal ordering was addressed in BLFU analysis. Finally, I was not able to examine the role of race, gender, class, and sexuality in the relationships between stigma and IPV because those variables were not measured and/or lacked variability in the study population, but see this as an important area of future research for advancing understanding of intersectional lived experiences of FSW living with HIV in the Dominican Republic.

## **5.5 Conclusion**

This study expands the literature on IPV among FSW. It is one of the first to examine correlates of IPV among FSW living with HIV, and to describe the levels of enacted, anticipated, and internalized HIV and sex work stigma experienced by this population. My findings suggest that to reduce IPV in this population, policies and programs may need to address enacted and anticipated HIV stigma and their economic, social, and psychological and behavioral effects. The relationship between workplace HIV discrimination and IPV contributes to the growing body of evidence that the impunity with which employers discriminate based on HIV is an urgent problem for the health and well-being of PLHIV in the Dominican Republic, which research has already linked to poor mental health and HIV care and treatment.<sup>280,368</sup> Interventions to curb

these employer practices are greatly needed, along with establishment of sex work labor laws to protect against HIV discrimination and precarity of working conditions more generally, in line with demands made by sex worker activists.<sup>98,99</sup> Community empowerment interventions for FSW also hold promise—those targeting HIV prevention in other settings have shown success in reducing sex work and HIV stigma in the general public, which could decrease FSWs' experiences of stigma, and in building FSW community cohesion, which could increase their peer support to protect against IPV.<sup>59,139,140,218,219</sup> Individual counseling, which FSW living with HIV in this context have described as very helpful for building self-esteem, rejecting stigma, and improving mental health, may also aid them in ending abusive relationships.<sup>265,270</sup> While the present study focused on how structural factors may place FSW at higher risk of IPV victimization, interventions to address IPV perpetration are also needed—an intervention in the Dominican Republic that increased uptake of GBV services for key populations successfully implemented individual counseling for IPV perpetrators and couples counseling.<sup>279</sup> To further advance understanding of the multiple pathways in which distinct mechanisms of stigma relate to IPV for the development of targeted interventions, qualitative and quantitative studies should assess indirect effects via factors highlighted in this paper's discussion, such as income, alcohol use, social support, mental health, and relationship wellbeing. To develop a full understanding of the complex relationships between stigma and IPV, enhance intervention effectiveness, and bolster resilience of FSW living with HIV, it will be essential to identify not only the damaging effects of stigma, but also ways in which they draw on their resources and networks to protect against IPV.

## **CHAPTER 6. EXAMINING PATHWAYS BETWEEN STIGMA, ALCOHOL USE, ECONOMIC RESOURCES, AND IPV AMONG FEMALE SEX WORKERS LIVING WITH HIV IN SANTO DOMINGO (MANUSCRIPT 2)**

### **6.1 Background**

Intimate partner violence (IPV) victimization is associated with numerous adverse physical and mental health and social wellbeing outcomes among women,<sup>1-3,5-9</sup> including suboptimal HIV care and treatment.<sup>12,13,15,16,122,341-343,369</sup> IPV against women who practice sex work, particularly those living with HIV, has received relatively little attention compared to the research, policy, and programming dedicated to IPV against women not identified as sex workers. Few studies examine violence perpetrated against female sex workers (FSW) specifically by their intimate partners outside of sex work who do not pay for sex acts (e.g. boyfriends or husbands)<sup>24-29</sup> even though in some contexts, violence from intimate partners is more prevalent than violence from clients and others,<sup>2,15,36,37</sup> and risk factors for IPV may be unique.<sup>2,15,34,35</sup> A systematic review of correlates of IPV and workplace violence (perpetrated by clients, law enforcement, colleagues, and others) against FSW highlights the role of structural factors—contextual factors external to the individual, such as economic policies, laws, and social norms—in producing their risk of violence.<sup>28,44</sup> Knowledge of mechanisms through which structural factors influence individual outcomes may support development of effective interventions. However, most violence studies of FSW examine simple risk factor/outcome associations with cross-sectional data, leaving those mechanisms unclear.<sup>28,39</sup>

In Manuscript 1, I found that HIV stigma, one such structural factor, was associated with IPV among FSW living with HIV in the Dominican Republic. Participants who reported

workplace HIV discrimination had over five times the odds of IPV compared to those who did not. In addition, each increase in fear of being excluded from family activities if your HIV status were known was associated with a nearly 2-fold increase in the odds of IPV, as was each increase in fear of colleagues taking your clients if you told them your HIV status. Further investigation is needed to identify explanatory pathways through which HIV and sex work stigma relate to IPV risk. Per Link and Phelan<sup>84</sup> stigma is the co-occurrence of labeling of people who have a socially significant characteristic, linking of labels to negative meanings and stereotypes, and separation of, discrimination against, and social status loss of the stigmatized, all within a context of unequal power relations. Fundamental cause theory of stigma articulates mediated pathways through which stigma may detrimentally influence the health of stigmatized populations, such as depleting available resources, undermining social relationships, and spurring harmful psychological and behavioral responses.”<sup>65(p814)</sup> This theory, when triangulated with research on stigma and IPV, suggests indirect pathways through which stigma relates to IPV risk among FSW living with HIV. Stigma depletes available resources that can be used to prevent negative health outcomes or manage their consequences,<sup>65</sup> such as money and health care access. Examples of resource-reducing enacted stigma against FSW and people living with HIV (PLHIV) include employer HIV discrimination (e.g. involuntary testing) and status outing by colleagues leading to unemployment and client loss,<sup>267,269,275,277,280</sup> and law enforcement discrimination, such as random arrest and extortion of FSW, which creates economic costs and criminal records that block access to jobs.<sup>92,93</sup> Anticipated employer HIV testing and status outing to community members can also prevent PLHIV—e.g. FSW living with HIV, who often have income generation strategies in and outside sex work--from seeking jobs.<sup>275,277</sup> Enacted stigma additionally undermines social ties, e.g. when friends or families reject their members

living with HIV or practicing sex work, cutting off access to social support and connections to income generation opportunities.<sup>267</sup> Reductions in women's economic resources can reduce their power within and/or ability to leave intimate partner relationships, which may increase their risk of IPV, per feminist economic household bargaining models.<sup>184,255,286,287</sup> Economic resources, such as income and savings, thus constitute potential mediators of relationships between enacted and anticipated stigma and IPV.

In addition to economic mechanisms, stigma may increase the risk of IPV among FSW living with HIV via psychological and behavioral responses to stigma, such as substance use for affect regulation. Individuals drink to reduce negative emotions and/or to enhance positive emotions, per Cooper and colleagues'<sup>310</sup> alcohol use motivation model.<sup>310</sup> Female sex workers describe drinking to suppress depression and shame resulting from stigma experiences, dampen fear of being outed, and enhance feelings of courage to work despite the stigma.<sup>154,205,212,260,261,306</sup> Intoxication due to alcohol use may undermine FSWs' ability to detect and escape from potentially violent situations, increasing their risk of IPV.<sup>154,205,260,261</sup> Alcohol use is thus a potential mediator of relationships between enacted, anticipated, and internalized stigma and IPV.

Using data from a longitudinal cohort of FSW living with HIV in Santo Domingo, Dominican Republic,<sup>70,71</sup> I empirically test whether two measures of economic resources, monthly income and savings, and alcohol use mediate relationships between HIV and sex work stigma and IPV. I tested the following hypotheses, depicted graphically in Figure 6.1:

*Hypothesis 2.1:* Female sex workers living with HIV reporting higher levels of enacted HIV and sex work stigma and anticipated HIV stigma will report lower economic resources than those reporting lower stigma levels; having lower

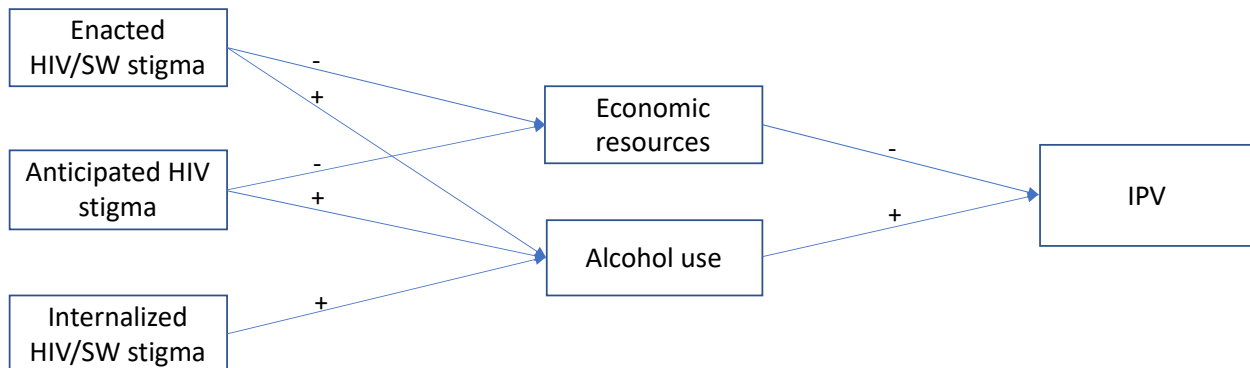
economic resources will, in turn, be associated with greater odds of IPV.

*Hypothesis 2.2:* Female sex workers living with HIV reporting higher levels of enacted, anticipated, and internalized HIV and sex work stigma will report greater alcohol use than FSW reporting lower stigma levels; in turn, greater alcohol use will be associated with greater odds of IPV.

This study will advance understanding of the effects of stigma on the health and wellbeing of FSW living with HIV and complex pathways through which it influences their IPV risk.

Findings may aid development of IPV interventions tailored for this population, which have thus far been scarce and ineffective.<sup>68,216</sup>

**Figure 6.1 Conceptual model of indirect effects hypotheses**



*Note:* Direct effects of stigma on IPV not pictured for clarity.

## 6.2 Methods

### Study setting

I analyzed BL and FU survey data from an evaluation of *Abriendo Puertas* (Opening Doors), a multi-level intervention promoting HIV care and prevention with a cohort of 250 FSW living with HIV in Santo Domingo, Dominican Republic (2012-2014).<sup>70,71</sup> The surveys, which included measures of enacted, anticipated, and internalized HIV and sex work stigma, were conducted at BL and ten months FU.

In the Dominican Republic, an estimated 3.3% of adult women sell sex in exchange for money or goods.<sup>254</sup> HIV prevalence among FSW is approximately 4.4%,<sup>229</sup> six-fold greater than the national adult HIV prevalence of 0.7%.<sup>348</sup> A fifth of FSW in Santo Domingo (n=401) reported experiencing at least one type of abuse or maltreatment in the past year in the 2012 Integrated Biological and Behavioral Surveillance Survey, including physical maltreatment, rape, and robbery or assault.<sup>229</sup> A previous analysis of the current study cohort found that 18.3% experienced violence from a sexual partner in the last six months, with a greater proportion reporting violence from intimate partners (12.3%) than from clients (8.3%).<sup>15</sup> Among women broadly in the Dominican Republic, IPV is the fourth leading cause of death.<sup>248</sup>

### **Sampling, recruitment, and data collection**

Participants were recruited via a non-random sampling approach led by peer navigators (current/former FSW experienced in conducting HIV outreach, prevention, and providing support for PLHIV). Navigators approached women they knew or were referred to through their ongoing community-based work with sex workers, and recruited from the HIV clinic in coordination with clinic staff. Women who were participating in the study also provided referrals.<sup>70</sup>

To be eligible for the study women had to meet the following criteria: be at least 18 years of age, HIV-positive, and report having exchanged sex for money in the last month. HIV status was confirmed via a single rapid test (Retrocheck) prior to the BL survey.<sup>70</sup> From November 2012 to February 2013, 268 FSW were enrolled and completed a BL survey. Of those, 250 participated in the intervention, and 228 (91%) were retained at ten month FU and completed FU surveys between November and December 2013. A trained Dominican female interviewer administered structured paper surveys to participants in Spanish in a private office. Following the surveys, participants provided vaginal swabs for STI testing and whole blood samples for HIV viral load testing, which were collected by a physician.

All participants provided consent prior to data collection. Consent was obtained orally to minimize potential breaches in confidentiality. All study protocols and consent procedures were approved by the Institutional Review Boards of the Johns Hopkins Bloomberg School of Public Health, the University of North Carolina, and the Instituto Dermatologico y Cirugia de Piel Dr. Humberto Bogart Diaz, the Dominican research partner for the study, which oversaw all local data collection. Each participant received approximately 10 U.S. dollars for completing each survey visit.

## **Measures**

All measures are based on self-report unless specified otherwise.

### ***Outcome variable***

#### *Intimate partner violence*

Seven IPV questions, adapted from the WHO Violence Against Women Instrument,<sup>15,72</sup> asked whether participants had or had not experienced particular acts of physical or sexual violence (e.g. been pushed, kicked, forced to have sex) perpetrated by intimate partners, new clients, and regular clients in the last six months. The questions were asked separately for each of these partner types. Intimate partners were defined as sexual partners with whom a participant had sex three or more times who did not pay per sexual act although they may have given her money (e.g. for rent). If a participant answered “yes” to any of the seven questions regarding violence perpetrated by an intimate partner, she was considered to have experienced IPV. The seven IPV questions were included in both BL and FU surveys, but their timeframe was “in the last six months” in the BL survey and “since you started the study” (i.e. the previous ten months) in the FU survey. In the BL survey, the seven IPV questions were only posed to participants who had replied affirmatively to at least one of two preceding questions regarding whether they had had conflict with or received maltreatment from sexual partners. In the FU survey, the seven IPV



questions were posed to all participants.

### *Independent variables*

#### *Stigma*

Measures of enacted, anticipated, and internalized HIV stigma were adapted from existing HIV stigma scales<sup>311,312</sup> and draw on the Earnshaw<sup>313</sup> HIV Stigma Framework.<sup>70</sup> The sex work stigma measures were adapted from the HIV measures, given the scarcity of validated sex work measures at the time of survey design,<sup>314</sup> by changing “HIV” to “sex work” in all items.<sup>5</sup> The surveys did not include measures of anticipated sex work stigma due to the parent study’s focus on HIV and the lack of available sex work stigma measures. All complete stigma measures are presented in Appendix A.

Enacted stigma is defined as the experience of being discriminated, stereotyped, or prejudiced against due to a social characteristic (e.g. being HIV positive or a sex worker). Based on public health, anthropological, human rights, and psychometric literatures,<sup>92,93,258,267,269,272-277</sup> I identified five forms of enacted stigma experienced by PLHIV and FSW in the Dominican Republic: social discrimination, health service discrimination, workplace discrimination (job loss), workplace discrimination (establishment abuse), and law enforcement discrimination. All of these forms apply to stigma related to both HIV and sex work, except for law enforcement discrimination, which refers to sex work only. Social discrimination includes gossip, contempt, verbal abuse, linking HIV and sex work to one another (e.g. attributing FSWs’ HIV status to their sex work, or assuming FSW are HIV-positive) and to other negative meanings, and rejection by friends, family, and community members. Health service discrimination encompasses providers’ refusal to provide services, behaving distantly or hostilely, and outing

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<sup>5</sup> Since then, a comprehensive, reliable, and valid scale to measure sex work stigma has been developed using data from FSW in the Dominican Republic and Tanzania. 316.     ibid.

HIV or sex worker status to clinic or family/partners. Workplace discrimination (job loss) indicates having been fired and/or excluded from hiring due to HIV or sex worker status.

Workplace discrimination (establishment abuse) includes verbal or physical abuse within sex work workplaces by establishment owners or FSW colleagues, e.g. FSW physically assaulting FSW living with HIV due to their HIV status or outing their status to clients. Law enforcement discrimination encompasses police arbitrary arrest, extortion, sexual/physical/verbal abuse, refusal to provide protection, and blaming FSW for experiencing abuse.

To measure these constructs, I selected binary survey items assessing lifetime enacted stigma experiences and combined them to create multi-item indices or used them as single item measures. All multi-item indices are comprised of two to four items. Mean scores (range: 0-1) were calculated for multi-item indices that had at least one item with a non-missing value. Workplace HIV and sex work discrimination (job loss) measures were assessed with one binary item, “Have you ever lost a job because you are living with HIV/are a sex worker?” Per DeVellis, an index is a “superordinate label for the several discrete variables that contribute to it,” and which independently influence the level of the index.(cite presentation) Given this, items will not necessarily correlate with one another. Thus, reliability analyses for the indices are not reported.<sup>318</sup>

Anticipated HIV stigma. Anticipated stigma refers to expectations of discrimination, stereotyping, and/or prejudice from others in the future due to a social characteristic. Five survey items assessed anticipated HIV stigma: you are afraid you could be threatened with violence if your HIV status were known; you are afraid that if you disclosed your HIV status to your friends, they would lose respect for you; you are afraid that if you disclose your HIV status to the women with whom you work, they could take your clients; you are afraid your partner could leave you if

your HIV status were known; you are afraid that your family could exclude you from regular family activities if your HIV status were known. For each item, participants were prompted to endorse five statements on a 4-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree). The items reflect different feared forms of discrimination that may have different levels of importance or impact for participants and thus different relationships with IPV risk. The items “you are afraid you could be threatened with violence if your HIV status were known” and “you are afraid your partner could leave you if your HIV status were known” were also expected to relate more strongly to IPV than other items because they possibly captured known proximal correlates of IPV, perceived risk of violence<sup>319</sup> and abandonment anxiety,<sup>320</sup> respectively. Thus, the anticipated stigma items were included in models as discrete variables.

Internalized stigma. Internalized stigma is defined as the application of negative attitudes towards one’s stigmatized characteristic to oneself. Two eight-item scales, previously validated using *Abriendo Puertas* FU data,<sup>321</sup> assessed participants’ levels of internalized HIV stigma and internalized sex work stigma. Participants were prompted to respond to statements such as “HIV/being a sex worker makes you feel like a bad person” and “You feel worthless because you are living with HIV/are a sex worker” on a 4-point Likert scale ranging from strongly disagree to strongly agree. I conducted confirmatory factor analysis (CFA) of the scales, which indicated strong unidimensionality and internal reliability and that all eight items loaded significantly on the latent constructs in both cases (Cronbach’s alpha = 0.87 for both; all loadings  $p < 0.001$ ). The final scales exhibited adequate fit (CFI = 0.99, TLI = 0.98, and RMSEA = 0.08 for both). Mean scores was calculated for both multi-item scales when at least one item had a non-missing value (range: 1-4). Complete final scales are presented in Appendix A and results from CFA are presented in Appendix B.

## ***Mediators***

### *Alcohol use frequency*

This measure estimates how frequently participants consumed alcohol in the last six months. Responses were collapsed into three categories of use frequency: frequent (a few times per week, once a week, on the weekends), infrequent (once a month, on rare occasions, once every two weeks), and never.

### *Monthly income*

The amount of money (Dominican Pesos [DOP]) participants earn per month in total from any source was assessed and converted to U.S. dollars (USD) at the 2012 exchange rate (38.8 DOP/USD). The variable was logged to address its skewed distribution and minimize influence of outliers.

### *Monthly savings*

The amount of money (DOP) participants save per month in total from any source was assessed. The measure may indicate income in relation to expenses and resources not used to meet basic needs and other typical monthly expenses. It was also converted to USD and logged.

## ***Controls***

Variables were included as controls if they were theoretically plausible causes of both independent variables (IVs) and dependent variable (DV), i.e. confounders. Variables that were potential mediators of relationships between IVs and DVs were not included as controls to avoid incorrectly nullifying relationships. In Aim 2 mediation analysis, models controlled for potential confounders of relationships between IVs (stigma measures) and outcome (IPV), mediators (alcohol use and economic resources) and outcome, and IVs and mediators. All control variables were drawn from BL survey data except intervention exposure intensity.

### *Socio-demographic factors*

Age (years), educational attainment (any years primary/any secondary or tertiary school), civil status (has cohabiting partner/non-cohabiting partner/no partner, including separated, widowed, divorced), number of children.

### *Number of sexual partners per month*

Participants reported the number of new and regular clients and intimate partners they had had in the last 30 days. New clients were those with whom they had sex once or twice. Regular clients were those with whom they had sex at least three times and who pay for sex.

### *Worksite*

Participants were asked where they worked in the previous three months. Response options (club or disco, bar, street, hotel/motel, general store, billiard hall, other/specify) were collapsed into two categories, street and sex establishment or independent.

### *Intervention exposure intensity*

The intensity of FSWs' exposure to the *Abriendo Puertas* intervention, the main exposure in dose-response analyses of the *Abriendo Puertas* intervention impact,<sup>71</sup> was used as a control for effects of *Abriendo Puertas* participation. A binary indicator variable was created for each main intervention component: attending all individual counseling sessions, having a peer navigator, and participating in community mobilization activities. Counseling session attendance data were sourced from program attendance records, and the other indicators were assessed in the survey. Intervention exposure intensity was defined as high/moderate if at least two indicators were equal to 1, and low in all other cases.<sup>71</sup>

### **Data analysis**

The analytic sample was comprised of cases who participated in the study at both BL and FU (n=223). I assessed missingness and predictors of dropout as described in Section 4.4. I

estimated path models to assess the indirect effects of stigma on IPV via income, savings, and alcohol use. I used a model building approach recommended by MacKinnon (2008) for multiple mediator models in which separate, simple mediation models are first estimated for each of the hypothesized mediators, and then those found to mediate IV/DV relationships are combined in a final multiple mediator model. I produced parameter estimates using the robust weighted least squares (WLS) estimator, which performs well with moderate and small sample sizes,<sup>329,330</sup> and a probit link function. Mplus produces direct and indirect effects for latent continuous response variables underlying categorical DVs, which can be understood to reflect the propensity of participants to have the different DV values.<sup>327,331</sup> The product of regression coefficients for each ‘a’ path and ‘b’ path pair (a\*b) constituted an indirect effect.<sup>336</sup> Statistical significance of the a\*b indirect effects were assessed by computing their standard error and bias-corrected bootstrapped confidence intervals (CI) based on 5,000 bootstrap resamples. Bootstrapping is a nonparametric method of estimating standard errors and CIs that does not make assumptions about the sampling distribution of the indirect effect and provides more accurate Type I error rates and greater power for detecting indirect effects than other methods.<sup>327,337</sup> The key IVs and controls except intervention exposure intensity were from BL and the mediators and IPV outcome from FU.

## **6.3 Results**

### **Sample characteristics**

Table 6.1 presents socio-demographic and behavioral characteristics of participants (n=223). The percentage of participants at FU who reported any physical or sexual violence perpetrated by an intimate partner in the past ten months (since study enrolment) out of all participants was 14.80% (n=33). At BL, the median age was 36 (range: 18-61) and approximately two thirds had primary school level of education only (any number of years; 65.02%). Participants most commonly reported having a steady partner with whom they did not

live (43.50%) or a spouse or steady partner with whom they lived (35.87%), while a fifth (20.63%) were single (had no steady partner). In the past month, forty percent (39.91%) never consumed alcohol, while over a third (34.53%) did frequently, and a quarter did infrequently (25.56%). At FU, median monthly income was US\$193.30 (range: 0-1,031) and savings was US\$0.0 (USD 0, range: 0-129).

**Table 6.1 Socio-demographic and behavioral characteristics, *Abriendo Puertas* longitudinal sample (n=223)**

<b>Characteristic</b>	<b>Median (range, IQR) or percentage (frequency)</b>
<b>Follow up physical/sexual IPV victimization (past ten mos.)*</b>	
Yes	14.80 (33)
No	85.20 (190)
<b>Baseline physical/sexual IPV victimization (past six mos.)</b>	
Yes	11.66 (26)
No	88.34 (197)
<b>Age (years)</b>	36.15 (18-61, 12)
<b>Educational attainment</b>	
Primary school (any number years)	65.02 (145)
Any secondary or tertiary school (any number years)	34.98 (78)
<b>Civil status</b>	
Lives with spouse/steady partner	35.87 (80)
Non-cohabitating steady partner	43.50 (97)
Single (no steady partner, separated, divorced, widowed)	20.63 (46)
<b>Residence</b>	
Urban (cities/major towns)	91.48 (204)
Rural community	8.52 (19)
<b>Number of children</b>	3 (0-8, 3)
<b>Worksite</b>	
The street	56.95 (127)
Sex establishment or independent	43.05 (96)
<b>Number of sexual partners/mo.</b>	12 (1-51, 10)
<b>Alcohol use frequency (past mo.)</b>	
Frequent (a few times/week, once/week, weekends)	34.53 (77)
Infrequent (once/mo., rare occasions, once/two weeks)	25.56 (57)
Never	39.91 (89)
<b>Income (USD**)*</b>	193.30 (0.00-1030.93, 128.87)
<b>Savings (USD**)*</b>	0.00 (0.00-128.87, 12.89)
<b>Intervention exposure intensity*</b>	
High/moderate	70.40 (157)
Low	29.60 (66)

\*Measured at FU (n=223).

\*\*Per January 2012 Dominican Pesos to U.S. Dollars exchange rate



### **Levels of enacted, anticipated, and internalized stigma**

Table 6.2 presents participants' levels of enacted, anticipated, and internalized stigma at BL. I report medians for all stigma measures given non-normal distributions, as well as means for multi-item enacted stigma measures, which are easier than medians to interpret due to the large number of zero responses. Percentages and frequencies are reported for the two binary measures, sex work and HIV workplace discrimination (job loss).

**Table 6.2 Experiences of enacted, anticipated, and internalized stigma (n=223)**

	Baseline	
	Median (range, IQR) or percentage (frequency)	Mean (range, standard deviation)
<b>Enacted stigma</b>		
<i>Sex work</i>		
Social discrimination	0 (0.00-1.00, 0.33)	0.21 (0.00-1.00, 0.33)
Health services discrimination	0 (0.00-1.00, 0.00)	0.07 (0.00-1.00, 0.18)
Law enforcement discrimination	0 (0.00-1.00, 0.00)	0.11 (0.00-1.00, 0.26)
Workplace discrimination (job loss)	11.66 (26)	-
Workplace discrimination (establishment abuse)	0 (0.00-1.00, 0.00)	.06 (0.00-1.00, 0.21)
<i>HIV</i>		
Social discrimination	0 (0.00-1.00, 0.33)	0.24 (0.00-1.00, 0.34)
Health services discrimination	0 (0.00-1.00, 0.33)	0.14 (0.00-1.00, 0.25)
Workplace discrimination (job loss)	22.42 (50)	-
Workplace discrimination (establishment abuse)	0 (0.00-1.00, 0.00)	0.01 (0.00-1.00, 0.11)
<b>Anticipated HIV stigma</b>		
Fear of threat of violence	3.00 (1.00-4.00, 2.00)	-
Fear of losing friends' respect	3.00 (1.00-4.00, 1.00)	-
Fear of colleagues taking clients	2.00 (1.00-4.00, 2.00)	-
Fear of partner abandonment	2.00 (1.00-4.00, 2.00)	-
Fear of family exclusion	2 (1.00-4.00, 2.00)	-
<b>Internalized stigma</b>		
HIV	2.25 (1.00-4.00, 1.00)	-
Sex work	2.25 (1.00-4.00, 0.96)	-

## Path effects

Effects corresponding to ‘a’ and ‘b’ paths are reported in Tables 6.3-6.5 along with 95% confidence intervals, and significant findings in bold. In the income indirect effects model, participants reporting more social HIV discrimination at BL had lower monthly income at FU compared to those reporting less social HIV discrimination, as shown in Table 3 (a path:  $\beta = -0.92$ ; 95% C.I. -1.38, -0.46;  $p=.00$ ). In the savings indirect effects model, at FU, participants with greater monthly savings had a higher odds of IPV than those with lower monthly savings as shown in Table 4 (b path:  $\beta = 0.11$ ; 95% C.I.: 0.00, 0.23;  $p=.05$ ). In the alcohol use indirect effects model, at FU, participants with more frequent alcohol use had a higher odds of IPV compared to those with less frequent alcohol use, as shown in Table 5 (b path:  $\beta = 0.21$ ; 95% CI: 0.00, 0.43;  $p=.05$ ). No other ‘a,’ or ‘b’ paths were significant in any model. No indirect effects were statistically significant in the simple mediation models. Path estimates for a multiple mediator model were therefore not computed.

**Table 6.3 Mediation by income - adjusted coefficient estimates for path effects**

Independent stigma variable	Effect of stigma on income ('a' path)	Effect of income on IPV ('b' path)	
<b>Enacted sex work stigma</b>			
Social discrimination	0.28 (-0.39, 0.95)	-0.03 (-0.22, 0.16)	
Workplace discrimination (job loss)	-0.04 (-0.82, 0.75)		
Law enforcement discrimination	0.27 (-0.74, 1.27)		
<b>Enacted HIV stigma</b>			
Social discrimination	<b>-0.92 (-1.38, -0.46)</b>		
Workplace discrimination (job loss)	0.38 (-0.07, 0.82)		
<b>Anticipated HIV stigma</b>			
Fear of threat of violence	-0.13 (-0.39, 0.13)		
Fear of losing friends' respect	0.04 (-0.28, 0.36)		
Fear of colleagues taking clients	0.05 (-0.12, 0.21)		
Fear of partner abandonment	0.08 (-0.07, 0.22)		
Fear of family exclusion	0.02 (-0.15, 0.20)		

**Table 6.4 Mediation by savings - adjusted coefficient estimates for path effects**

<b>Independent stigma variable</b>	<b>Effect of stigma on savings ('a' path)</b>	<b>Effect of savings on IPV ('b' path)</b>	
<b>Enacted sex work stigma</b>			
Social discrimination	-0.40 (-1.37, 0.58)	<b>0.11 (0.001, 0.23)</b>	
Workplace discrimination (job loss)	-0.19 (-1.06, 0.68)		
Law enforcement discrimination	-0.21 (-1.33, 0.91)		
<b>Enacted HIV stigma</b>			
Social discrimination	-0.19 (-1.04, 0.66)		
Workplace discrimination (job loss)	0.27 (-0.35, 0.90)		
<b>Anticipated HIV stigma</b>			
Fear of threat of violence	-0.17 (-0.42, 0.08)		
Fear of losing friends' respect	0.18 (-0.15, 0.50)		
Fear of colleagues taking clients	0.017 (-0.17, 0.21)		
Fear of partner abandonment	0.14 (-0.06, 0.35)		
Fear of family exclusion	-0.13 (-0.34, 0.08)		

**Table 6.5 Mediation by alcohol use - adjusted coefficient estimates for path effects**

<b>Independent stigma variable</b>	<b>Effect of stigma on alcohol use ('a' path)</b>	<b>Effect of alcohol use on IPV ('b' path)</b>	
<b>Enacted sex work stigma</b>			
Social discrimination	-0.35 (-1.05, 0.32)	<b>0.21 (-0.002, 0.43)</b>	
Health services discrimination	0.26 (-0.83, 1.34)		
Workplace discrimination - job loss	0.06 (-0.58, 0.70)		
Law enforcement discrimination	-0.53 (-1.28, 0.23)		
<b>Enacted HIV stigma</b>			
Social discrimination	0.27 (-0.35, 0.88)		
Health services discrimination	-0.09 (-1.03, 0.85)		
Workplace discrimination - job loss	-0.15 (-0.67, 0.37)		
<b>Anticipated HIV stigma</b>			
Fear of threat of violence	0.08 (-0.14, 0.31)		
Fear of losing friends' respect	-0.11 (-0.38, 0.15)		
Fear of colleagues taking clients	0.11 (-0.04, 0.26)		
Fear of partner abandonment	0.04 (-0.11, 0.19)		
Fear of family exclusion	-0.01 (-0.19, 0.17)		
<b>Internalized stigma</b>			
Sex work	-0.04 (-0.35, 0.26)		
HIV	0.21 (-0.12, 0.53)		

## 6.4 Discussion

This study contributes to knowledge on ways that stigma affects health and economic outcomes among FSW living with HIV, and on how substance use and economic resources may influence their vulnerability to IPV. Results suggest that, in line the detrimental influence of stigma on economic resources posited by fundamental cause theory of stigma, HIV social discrimination may lead to lower income among FSW living with HIV. In addition, alcohol use and savings may increase the odds of IPV, but not in the direction hypothesized in the latter case. I did not detect indirect effects of stigma on IPV via alcohol use or economic resources variables.

With respect to relationships between stigma and hypothesized mediators, greater HIV social discrimination at BL predicted lower monthly income at FU. This finding is consistent with my expectation that discrimination by members of one's social networks would lead to reduced access to economic resources. As illustrated by an ethnographic study in the Dominican Republic, members of one's social network can be a critical, if not sole, source of connections to income generation opportunities for FSW and other low income.<sup>92</sup> Income did not predict IPV.

Regarding relationships between mediators and IPV, alcohol use frequency was positively associated with IPV, consistent with findings from multiple previous studies of FSW and other women.<sup>2,152,153,323</sup> Alcohol use may cause intoxication that impairs FSWs' ability to detect the potential for violence and escape from violent situations.<sup>154,205,260,261</sup> It is also possible that the relationship is attributable to male partner alcohol use, as partners commonly drink together and men's alcohol use is strongly associated with IPV perpetration in studies with FSW and other women in the Dominican Republic and globally.<sup>110,142,155,156,159,251,323</sup> We were not able to control for male partner drinking as it was not measured in the survey, a limitation of this study. Finally, it should be noted that IPV may have led to increased alcohol use – possibly as a coping mechanism—rather than the reverse, given that they were both assessed at FU.

Unexpectedly, greater monthly savings was associated with a higher odds of IPV. A qualitative study on FSWs and their intimate partners in Santo Domingo identified a norm within relationships of partners sharing available economic resources<sup>271</sup> (e.g. cash). It is possible that male partners could interpret FSWs' saving as a withholding from the relationship that violates this norm and constitutes a betrayal, giving rise to conflict and IPV. Alternatively, it is possible that FSWs' possession of savings threatens the traditional gender hierarchy within relationships, leading to male partner violent retaliation, per "male backlash" theory and empirical findings from women not identified as sex workers in this setting.<sup>184</sup> The applicability of this interpretation to this population is unclear—research with FSW and male partners in the Dominican Republic indicates that the traditional gender hierarchy is both subverted and adhered to within relationships, and some male partners are accustomed to and even dependent on their female partners having economic resources from sex work.<sup>91,92,271</sup>

The direction of the savings/IPV relationship was inconsistent with my finding reported in Manuscript 1 that job loss due to HIV was positively related to IPV, previous studies on economic resources and violence among FSW, and household bargaining models.<sup>31,32,151,184,187,188</sup> This inconsistency aligns with reviews of research on the relationship between having economic resources and IPV among women not identified as sex workers, which find that the relationship depends on type of resource (e.g. income, education, assets) and contextual moderating factors (e.g. presence of patriarchal gender norms).<sup>68,135</sup> Relationships between different types of resources and IPV may have different pathways and require distinct theoretical justifications. While employment and savings both entail possession of money, which theoretically could provide the "exit option"<sup>184</sup> needed to leave an abusive relationship, depletion of non-monetary resources conferred by employment may account for the job loss due to HIV/IPV

relationship.<sup>34,265,280</sup> Some of these were discussed in Manuscript 1, including experiences of self-worth and autonomy and supportive social ties with colleagues. It also possible that IPV may lead to increased savings rather than reverse, given the cross-sectional nature of the analysis—women in abusive relationships may strive to save money in order to build their relationship exit option. Future qualitative and quantitative research is needed to better understand pathways through which different types of economic resources relate to IPV in this population.

There are a few explanations for my findings of null indirect effects of stigma on IPV via income, savings, and alcohol use. A strength of this study is its use of data from a cohort of FSW living with HIV, an underreached population, but it is possible that low power due to the relatively small sample size led to Type I errors, despite the use of bias-corrected bootstrapped CIs. More relationships between stigma and mediators were insignificant than expected as well. It is plausible that true effects of the stigma variables on the mediators and/or IPV were not detected because they had decayed. As enacted stigma experiences were assessed with lifetime measures, they may have occurred long ago and had immediate or short term impacts, which decayed by mediator and/or IPV measurement at FU. Measures of internalized and anticipated stigma capture current experiences, which may have immediate impacts that decayed over the ten month FU period. In addition, not assessing moderators of stigma/mediator relationships may have concealed relationships that are significant at certain levels of those moderators.

Regarding relationships between stigma and economic mediators in particular, participants may have started sex work in order to recover from negative economic effects of enacted or anticipated stigma, in which case effects might have been attenuated. Research in the Dominican Republic indeed documents women living with HIV entering the sex industry to

overcome economic consequences of HIV discrimination,<sup>258,277</sup> possibly reflected in the 19% of participants in this study cohort who first became involved in sex work subsequent to their HIV diagnosis.<sup>70</sup> In addition, economic variable measurement error may have obscured significant relationships. Individual income and savings are highly prone to measurement error, which might in future be reduced with use of multiple survey items.<sup>370</sup>

With regard to stigma/alcohol use relationships, it should be noted that recommended standardized alcohol use measures<sup>371</sup> were not available. It is possible that more comprehensive alcohol use measures that better capture drinking patterns than frequency alone, e.g. quantity-frequency,<sup>371</sup> could better detect the influence of stigma. A measure that incorporated quantity might also more accurately assess the relationship between alcohol and IPV given that intoxication is the hypothesized relationship mechanism, which is dependent on quantity consumed.<sup>372</sup> The alcohol use measure also did not distinguish between alcohol use in and outside of sex work. If consumption occurred primarily within the context of work, the question of how much it would have affected intimate partner relationship dynamics arises. Intoxication due to drinking during sex work could increase IPV victimization risk via mechanisms discussed previously (e.g. negative effects on the ability to escape violence) if the intoxication lasted beyond working hours, which is plausible particularly in cases of heavy drinking.<sup>373</sup>

Other study limitations include the lack of assessment of psychological violence by the IPV measure, likely leading to underestimation of IPV prevalence. The potential for recall bias may be of particular concern for self-reports of stigma and IPV as they can be traumatic experiences, which can lead to memory disturbances.<sup>374</sup> Finally, longitudinal data collected at three timepoints reflecting the temporal ordering of IVs, mediators, and outcome would be needed for the most rigorous assessment of indirect effects and causal interpretations.



## 6.5 Conclusion

This study advances knowledge of how stigma affects FSW living with HIV and risk factors for IPV in this population. To my knowledge this is the first study to explore indirect pathways through which different mechanisms of stigma relate to IPV among FSW and FSW living with HIV. My finding that social HIV discrimination predicted lower income may illustrate how stigma can deplete available economic resources through the weakening of social ties with family and friends, in line with fundamental cause theory of stigma. The consequence of depleted economic resources for IPV risk appears dependent on resource type (e.g. employment, savings, income). Calls for economic empowerment interventions to address risk of violence among FSW (e.g. Roberts et al.<sup>375</sup>) have been made. While a substantial literature has examined these relationships among women not identified as FSW,<sup>68,376-378</sup> more research to determine how and in what circumstances different types of economic resources relate to the risk of IPV in this population is needed to promote intervention effectiveness and prevent unintended negative consequences. My study is the first in this setting to examine relationships between FSWs' alcohol use and their experiences of IPV, and findings echo previous studies showing that alcohol use may increase risk of IPV in this population.<sup>2 152,153</sup> Like many studies that have found linkages between women's alcohol use and IPV,<sup>323</sup> we were not able to control for partner alcohol use, and additional research is needed to understand the relationship mechanism and guide appropriate programmatic responses.

## CHAPTER 7. DISCUSSION AND CONCLUSIONS

In this dissertation, I assessed relationships between multiple mechanisms of HIV and sex work stigma and IPV risk among FSW living with HIV in Santo Domingo, and sought to identify mediated pathways of these relationships. Findings suggest that multiple forms of enacted and anticipated HIV stigma may increase IPV risk. Participants who reported workplace HIV discrimination—having lost a job due to HIV—had over five times the odds of IPV compared to those who did not. In addition, each increase in level of fear of being excluded from family activities if your HIV status were known was associated with a nearly 2-fold increase in the odds of IPV, as was each increase in level of fear of colleagues taking your clients if you told them your HIV status.

There are several possible explanations of these relationships, which reflect processes through which stigma degrades the health and wellbeing of stigmatized populations laid out in Hatzenbuehler's fundamental cause theory of stigma.<sup>65</sup> Job loss due to HIV discrimination may undercut economic resources and/or spur negative psychological and behavioral responses among FSW living with HIV (e.g. depression, low self-esteem, substance use), which can create barriers to leaving abusive relationships or, in the case of substance use, compromise the ability to detect and escape from violent situations. The lack of economic resources may also reduce women's power within their intimate partner relationships, or cause financial stress and relationship conflict, leading to their heightened risk of IPV. Fear of family exclusion may relate to IPV via low social support, which can be protective against IPV<sup>34</sup>—the fear may hamper status disclosure to family members, diminishing access to emotional and economic support, or

mark unsupportive family relationships. Fear that their colleagues could take their clients if they revealed their HIV status to them may also mark unsupportive or untrusting relationships with peers. Alternatively, it may mark the economic and social precarity with which FSW living with HIV—who may lose their jobs or clients at any point if HIV stigma is used against them—live in this context. Precarity may intensify the importance of attaining and maintaining intimate partner relationships that provide economic support as a safeguard for stigma-driven economic shocks, and thus impede rejection of abusive but economically supportive relationships. The perpetual threat of rupture of social ties with family and isolation because of one’s HIV status may also increase the difficulty of ending relationships with intimate partners that are abusive but simultaneously constitute sites of love, companionship, and support, as can be the complicated reality in violent intimate partner relationships.<sup>365</sup>

I tested mediated pathways—enacted and anticipated stigma’s effects on IPV via economic resources (income and savings), and enacted, anticipated, and internalized stigma’s effects on IPV via alcohol use—and did not find significant indirect effects. However, social HIV discrimination at BL did predict lower monthly income at FU in line with my hypotheses, which were based on literature indicating the importance of social ties as resources for income generation opportunities for FSW in this context.<sup>92</sup> Greater alcohol use and greater savings were associated with greater IPV risk, as expected for alcohol use and contrary to expectations for savings. Alcohol use may elevate IPV risk due to effects of intoxication that limit women’s ability to detect and/or escape from violent situations, and female partners’ savings may threaten male partners’ dominance or be perceived by male partners as a betrayal of relationship norms of mutual economic support, leading to conflict and IPV.<sup>154,184</sup>

My results could be understood to indicate that HIV stigma is more impactful than sex

work stigma in this population of FSW living with HIV, since only HIV stigma variables were associated with IPV and mediators. All forms of enacted HIV stigma were more commonly reported than enacted sex work stigma. It is possible that, in this context, HIV stigma is experienced with more frequency, magnitude, or severity—attributes not captured by the binary, lifetime stigma measures used—leading to stronger relationships with IPV. Additional enacted stigma indicators and/or indicators with more response options capturing greater variability might help to assess why only effects of HIV stigma were significant. More response options might increase measures' validity and precision generally, although minimal response options can also enhance reliability and accuracy of measures as they are less likely to produce respondent fatigue.<sup>318</sup> Future inquiry (e.g. cognitive interviewing) to assess whether enacted stigma indicators with more response options, such as a Likert scale, would better assess enacted stigma experiences and their relationships with IPV is warranted. It is also plausible that effects of HIV stigma and not sex work stigma were detected due to superiority (e.g. greater validity) of the HIV measures, given that their design was based on a much larger measurement literature, as previously noted. Future research on sex work stigma's effects should employ the new validated sex work stigma scale developed by Kerrigan et al.<sup>316</sup>

Findings across the two manuscripts highlight the complexity of the relationship between FSWs' possession of economic resources and IPV risk. While findings indicate that job loss due to HIV may be a risk factor for IPV—consistent with a small number of previous studies examining economic resources (e.g. housing, debt) and violence among FSW—greater monthly savings was also associated with greater IPV risk. The finding on the effect of job loss is consistent with household bargaining theory, which posits that women's possession of economic resources gives them greater power within their relationships and the ability to leave abusive

relationships, while the finding on savings is not consistent with this. The finding on savings is, however, consistent with male backlash theory, which explains male partner violence as retaliation against women threatening the traditional gender hierarchy by acquiring economic resources or other forms of power. However, it is not clear how this theory applies in contexts where couples both uphold and challenge that hierarchy-- by virtue of being in intimate partner relationships with FSW, male partners may demonstrate a willingness to accept partners who do not conform to traditional codes of behavior for women, or a need to be accepting due to their own economic precarity. Further studies are needed to elucidate how and when possession of different resources affect IPV risk among FSW, including those living with HIV.

Other limitations to this research, detailed in Chapters 5 and 6, include the small sample size, intervention exposure of participants in longitudinal analyses, cross-sectional design of some analyses, error in measurement of key variables, and lack of data on possible mediators, moderators, and confounders. Future studies, including qualitative research, which can be especially helpful for identifying pathways of associations, should be conducted to further elucidate the relationships of focus in this dissertation. Social support, mental health (e.g. depression), and relationship wellbeing are specific, theoretically plausible mediators of stigma/IPV relationships that I could not assess due to lack of data that should be tested. To develop a full understanding of the complex relationship between stigma and IPV, it will be essential to identify not only stigma's damaging effects, which is the exclusive focus of fundamental cause theory of stigma, but also ways in which stigmatized populations resist and thrive in the face of stigma, such as social cohesion, i.e. trust, solidarity, and mutual aid in a given group.<sup>59,270,379,380</sup> Numerous examples of resistance against stigma involving community social cohesion, linked to positive effects on health and wellbeing of FSW, exist

globally.<sup>98,294,381</sup> Being part of a cohesive FSW community that could act as a safety net in times of need or crisis could mitigate the experience of economic and social precarity, and enable them to avoid or end abusive intimate partner relationships. Examination of social cohesion and other moderating factors may improve modeling of stigma/IPV relationships, and increase chances of detecting true effects.

Examination of how participants' positions within social hierarchies of race, class, and gender moderate stigma/IPV and stigma/mediator relationships may also improve models and better reflect the intersectional lived experiences of this population. For instance, impacts of HIV stigma, such as job loss, on income and savings may be harder to bounce back from—and thus exacerbated—for dark skinned FSW living with HIV of African descent, who are subject to racism and colorism that reduce their labor market access.<sup>257,351</sup> Inclusion of a race or color moderator could thus help better detect the relationships between stigma and economic resources. The effects of precarity due to HIV stigma may be intensified by additional experiences of precarity associated with race, class, gender, or citizenship status. For example, FSW living with HIV from lower social classes, who may have lower levels of education and lack ties with social networks that can offer resources in times of crisis (e.g. significant financial social support, connections to jobs) may be more strongly impelled than those of higher classes to maintain intimate partner relationships, despite the IPV, as a safeguard against precarity resulting from HIV stigma. Inclusion of a class moderator might help better detect the relationships between stigma and IPV.

Putting aside limitations and the need for more research before determining appropriate programmatic and policy responses, my results provide insights suggesting interventions at each level of the socio-ecological model. In general, interventions that reduce or buffer effects of

workplace HIV discrimination and fears of discrimination— including targeting the source of the fears, HIV stigma within the social context broadly and sex worker communities—could have positive impacts on the IPV risk of FSW living with HIV in this context. Interventions that address discrimination by family and friends could also have positive impacts on FSWs' economic status, with many potential downstream effects on health and wellbeing.<sup>382</sup>

Comprehensive anti-discrimination legislation to protect stigmatized populations, including women engaged in sex work and PLHIV, is currently under consideration by legislators in the Dominican Republic.<sup>252,383,384</sup> The *Ley General de Igualdad y No Discriminacion* (General law of Equality and Non-Discrimination), drafted by the National HIV/AIDS Council (CONAVIHSIDA), in partnership with local NGOs, would provide protections against discrimination in an array of spaces, including the workplace, health services, public spaces, and social protection programs.<sup>252</sup> If passed, this structural intervention could deter acts of workplace and other discrimination by establishing legal recourse for victims, and promote values and social norms of non-discrimination against FSW and PLHIV. Stronger norms of non-discrimination could reduce discriminatory behavior within families and communities of these populations.<sup>346,385</sup>

The law includes ensuring equitable access to social protections.<sup>252</sup> It could therefore also mitigate the HIV stigma-driven economic and social precarity of FSW living with HIV, which is exacerbated by the lack of an adequate, accessible social safety net,<sup>93,227</sup> and may elevate their IPV risk. If the law reduces forms of sex work discrimination that deplete economic resources (e.g. extortion by police) and increases access to social protections, it could also improve economic precarity of FSW generally, both HIV-negative and -positive. This, in turn, could reduce the urgency of competition for clients among FSW and the weaponization of stigma in

competition— captured in participants’ reported fear that their colleagues could take their clients if they revealed their HIV status to them—which undermines community trust and cohesion.<sup>92,258,269</sup> Establishment of labor rights for sex workers, including protections against HIV discrimination and other labor conditions of risk and unpredictability, may also be critical for reducing economic and social precarity among FSW and FSW living with HIV,<sup>98,99</sup> with potentially beneficial effects on IPV risk.

However, as is demonstrated by the pervasiveness of workplace HIV discrimination despite the existence of international and domestic anti-HIV discrimination laws,<sup>267,269,275,277,280,351,352</sup> passage of laws alone may not have the intended effects. The law that criminalizes domestic violence and establishes services for victims (1997 Law 24–97) in the Dominican Republic is another example of where a law’s impact on key indicators (e.g. prosecutions of perpetrators<sup>386</sup> and victims’ access to services<sup>204,245,247,252,279,387</sup>) has been greatly undermined by failures in implementation, such as little knowledge of the laws and services in the courts and general public.<sup>232,386,388</sup> It will be imperative that the General law of Equality and Non-Discrimination is accompanied by sufficient implementation oversight and accountability mechanisms if it is to reduce stigma and violence against FSW living with HIV and other populations it aims to protect.

HIV-focused community empowerment interventions in other settings have demonstrated activities that may reduce sex work and HIV stigma in the general public, such as FSW community-led public rallies, education of journalists on sex work to address stigma in the media, and advocacy and training with police and government officials.<sup>59,139,140,218,219</sup> Such approaches could reduce this population’s experiences of enacted and anticipated HIV stigma within their social networks, which I found related to IPV. Building FSW community cohesion, a



central goal of community empowerment interventions,<sup>59,389</sup> could also increase access to peer support among FSW living with HIV, which may be protective against IPV, or help manage stigma's negative effects on social support.<sup>59,139,140,218,219</sup> However, HIV stigma within the community can create divisiveness and conflict that limits cohesion, as reflected in participants' reports of fear their colleagues could take their clients if they told them their status, and in other documented discriminatory behavior toward FSW living with HIV such as physical violence.<sup>92,208,269</sup> To build community cohesion that positively influences risk of IPV among FSW living with HIV, interventions must take an approach that addresses HIV stigma within the community and the intersectional experiences of FSW living with HIV. For example, community empowerment interventions could include anti-HIV stigma training for FSW community organizations themselves, as well as anti-sex work stigma training for organizations of PLHIV. Further research is needed to investigate whether and through what processes peer cohesion and support may interact with stigma and influence IPV risk among FSW living with HIV.

With regard to potential interventions at the couple and individual levels, counseling for couples and male IPV perpetrators was successfully implemented in a Dominican setting in an intervention to increase GBV service uptake among FSW and other key populations (effects on violence outcomes were not reported).<sup>279</sup> Counseling could, for instance, help couples to better manage effects of financial stress resulting from job loss due to HIV on couple dynamics, or couple tension and conflict stemming from anticipated HIV stigma from family (e.g. when FSW fear discrimination by their partner's family<sup>161</sup>). While my analyses did not include enacted stigma from male partners as an IV (for the reasons noted in Section 2.3 under "Prevalence and correlates"), literature documenting how stigma can spur and shape abusive behavior of male intimate partners (e.g. insulting FSW partners about their sex work<sup>54,190</sup> or HIV status,<sup>159</sup> using

their sex work to coerce or manipulate them to have sex,<sup>47,159,212</sup> etc.) indicates that addressing effects of stigma on couple interactions and male partner behavior, via counseling or other interventions, may be important for IPV prevention in this population. Finally, FSW living with HIV in this context have described receiving individual counseling as very helpful for building self-esteem, rejecting stigma, improving mental health, and, in turn, getting out of abusive relationships.<sup>265,270,279</sup>

## APPENDIX A. STIGMA MEASURES

The measures of enacted, anticipated, and internalized HIV and sex work stigma used in all analyses are presented in Tables A.1-A.4 below

**Table A.1 Enacted sex work stigma measures**

Variable	Indicator(s)	Response format
Social discrimination	<i>Have you ever...</i> Felt excluded from family get-togethers because you exchange sex for money? Felt that members of your family have made discriminatory comments or have gossiped about you because you exchange sex for money? Felt rejected by friends because you exchange sex for money?	Items: Yes=1 No=0 Mean score (range 0-1)
Health service discrimination	<i>Have you ever...</i> Felt you have been given bad services in a health center because you exchange sex for money? Been denied medical care because you exchange sex for money? Heard health service personnel gossiping about you because you exchange sex for money?	Items: Yes=1 No=0 Mean score (range 0-1)
Workplace discrimination (sex establishment abuse)	<i>Have you ever...</i> Been insulted or threatened by the owner of the sex work establishment or other employees of the establishment because you exchange sex for money? Experienced abuse or attempted physical or sexual abuse from the owner of the sex work establishment or other employees of the establishment because you exchange sex for money?	Items: Yes=1 No=0 Mean score (range 0-1)
Workplace discrimination (job loss)	<i>Have you ever...</i> Lost a job because you exchange sex for money?	Yes=1 No=0
Law enforcement discrimination	<i>Have you ever...</i> Felt that the police neglected to protect you because you exchange sex for money? Been insulted or threatened by the police because you exchange sex for money? Experienced abuse or attempted physical or sexual abuse by the police because you exchange sex for money? Been imprisoned or detained because you exchange sex for money?	Items: Yes=1 No=0 Mean score (range 0-1)

**Table A.2 Enacted HIV stigma measures**

<b>Variable</b>	<b>Indicator(s)</b>	<b>Response format</b>
Social discrimination	<p><i>Have you ever...</i></p> <p>Felt excluded from family get-togethers because you are living with HIV?</p> <p>Felt that members of your family have made discriminatory comments or have gossiped about you because you are living with HIV?</p> <p>18.6B Felt rejected by your friends because you are living with HIV?</p>	<p>Items: Yes=1 No=0</p> <p>Mean score (range 0-1)</p>
Health service discrimination	<p><i>Have you ever...</i></p> <p>Felt you have been given bad services in a health center because you are living with HIV?</p> <p>Been denied medical care because you are living with HIV?</p> <p>Heard health service personnel gossiping about you because you are living with HIV?</p>	<p>Items: Yes=1 No=0</p> <p>Mean score (range 0-1)</p>
Workplace discrimination (abuse in sex establishment)	<p><i>Have you ever...</i></p> <p>[If APPLICABLE,] Been insulted or threatened by the owner of the sex work establishment or other employees of the establishment because you are living with HIV?</p> <p>Experienced abuse or attempted physical or sexual abuse from the owner of the sex work establishment or other employees of the establishment because you are living with HIV?</p>	<p>Items: Yes=1 No=0</p> <p>Mean score (range 0-1)</p>
Workplace discrimination (job loss)	<p><i>Have you ever...</i></p> <p>Lost a job because you are living with HIV?</p>	<p>Yes=1 No=0</p>

**Table A.3 Anticipated HIV stigma measures**

<b>Variable</b>	<b>Indicator(s)</b>	<b>Response format</b>
Fear of threat of violence	You are afraid you could be threatened with violence if your HIV status were known	Strongly disagree=1 Disagree=2 Agree=3 Strongly agree=4
Fear of losing friends' respect	You are afraid that if you disclosed your HIV status to your friends, they would lose respect for you	Strongly disagree=1 Disagree=2 Agree=3 Strongly agree=4
Fear of colleagues taking clients	You are afraid that if you disclose your HIV status to the women with whom you work, they could take your clients	Strongly disagree=1 Disagree=2 Agree=3 Strongly agree=4
Fear of partner abandonment	You are afraid your partner could leave you if your HIV status were known	Strongly disagree=1 Disagree=2 Agree=3 Strongly agree=4
Fear of family exclusion	You are afraid that your family could exclude you from regular family activities if your HIV status were known	Strongly disagree=1 Disagree=2 Agree=3 Strongly agree=4

**Table A.4 Internalized HIV and sex work stigma measures**

Variable	Indicator(s)	Response format
Internalized HIV stigma	<p>HIV makes you feel like a bad person.</p> <p>You feel like you're not as good as others because you are living with HIV.</p> <p>The attitudes of people towards HIV make you feel worse about yourself.</p> <p>You feel guilty because you are living with HIV.</p> <p>You feel ashamed of living with HIV.</p> <p>It is easier to avoid friends than to tell them that you are living with HIV.</p> <p>You feel worthless because you are living with HIV.</p> <p>You feel that you bring many problems to your family because you are living with HIV.</p>	<p>Items:</p> <p>1 = strongly disagree</p> <p>2 = disagree</p> <p>3 = agree</p> <p>4 = strongly agree</p> <p>Mean score (range 1-4)</p>
Internalized SW stigma	<p>Sex work makes you feel like a bad person.</p> <p>You feel like you're not as good as others because you exchange sex for money.</p> <p>The attitudes of people towards sex work make you feel worse about yourself.</p> <p>You feel guilty because you exchange sex for money</p> <p>You feel ashamed of exchanging sex for money.</p> <p>It is easier to avoid friends than to tell them that you exchange sex for money.</p> <p>You feel worthless because you exchange sex for money.</p> <p>You feel that you bring many problems to your family because you exchange sex for money.</p>	<p>Items:</p> <p>1 = strongly disagree</p> <p>2 = disagree</p> <p>3 = agree</p> <p>4 = strongly agree</p> <p>Mean score (range 1-4)</p>

## APPENDIX B. CONFIRMATORY FACTOR ANALYSIS RESULTS

To establish internalized HIV and sex work stigma variables measured using multi-item scales, I conducted CFA and examined scale reliability using the full BL sample (n=268).

Results are presented below.

### Internalized HIV stigma

The final eight-item scale showed adequate fit: CFI = 0.99, TLI = 0.98, RMSEA = 0.08, Chi-square/degrees of freedom=2.6 (48.72/19) and good reliability (Cronbach's alpha =.87). A correlation between error terms of two items ("1. HIV makes you feel like a bad person" and "2. you feel like you're not as good as others because you are living with HIV") was included in the final model per modification index in order to improve model fit. The eight items loaded significantly on internalized HIV stigma ( $p < 0.001$ ), as presented below.

	<b>Estimate</b>	<b>S.E.</b>	<b>Est./S.E.</b>	<b>P-Value</b>
Item 1	1.000	0.000	999.000	999.000
Item 2	1.049	0.029	35.598	0.000
Item 3	0.902	0.042	21.278	0.000
Item 4	1.017	0.036	27.867	0.000
Item 5	1.035	0.038	27.005	0.000
Item 6	0.625	0.063	9.869	0.000
Item 7	1.114	0.036	30.634	0.000
Item 8	0.846	0.044	19.299	0.000

### Internalized sex work stigma

The final eight-item scale showed adequate fit (CFI = 0.99, TLI = 0.98, RMSEA = 0.08, Chi-square/degrees of freedom=2.9 (48.99/17) and good reliability (Cronbach's alpha = .87). Correlations for error terms of three pairs of items ("1. Exchanging sex for money makes you feel like a bad person" and "2. You feel like you're not as good as others because you exchange sex for money"; "4. You feel guilty because you exchange sex for money" and "7. You feel worthless because you exchange sex for money"; and "4. You feel guilty because you exchange

sex for money” and “5. You feel ashamed of exchanging sex for money”) were included in the final model per modification indices in order to improve model fit. The eight items loaded significantly on internalized sex work stigma ( $p < 0.001$ )—see below:

	<b>Estimate</b>	<b>S.E.</b>	<b>Est./S.E.</b>	<b>P-Value</b>
Item 1	1.000	0.000	999.000	999.000
Item 2	1.024	0.031	33.242	0.000
Item 3	1.035	0.025	40.762	0.000
Item 4	1.021	0.027	38.234	0.000
Item 5	1.047	0.025	42.451	0.000
Item 6	0.737	0.048	15.406	0.000
Item 7	0.898	0.036	24.873	0.000
Item 8	0.655	0.050	13.210	0.000



## **APPENDIX C. CONTROL VARIABLE SENSITIVITY ANALYSIS**

Results of sensitivity analysis to examine how controlling for BL IPV and intervention exposure intensity—theoretically plausible mediators as well as confounders -- influenced the strength and significance of relationships between stigma and IPV are presented in Table C.1 below. As shown, when those controls were excluded individually and together, the strength of the significant relationship found in the full model between fear that your colleagues could take your clients if you told them your HIV status and IPV decreased somewhat. No relationships changed in significance.

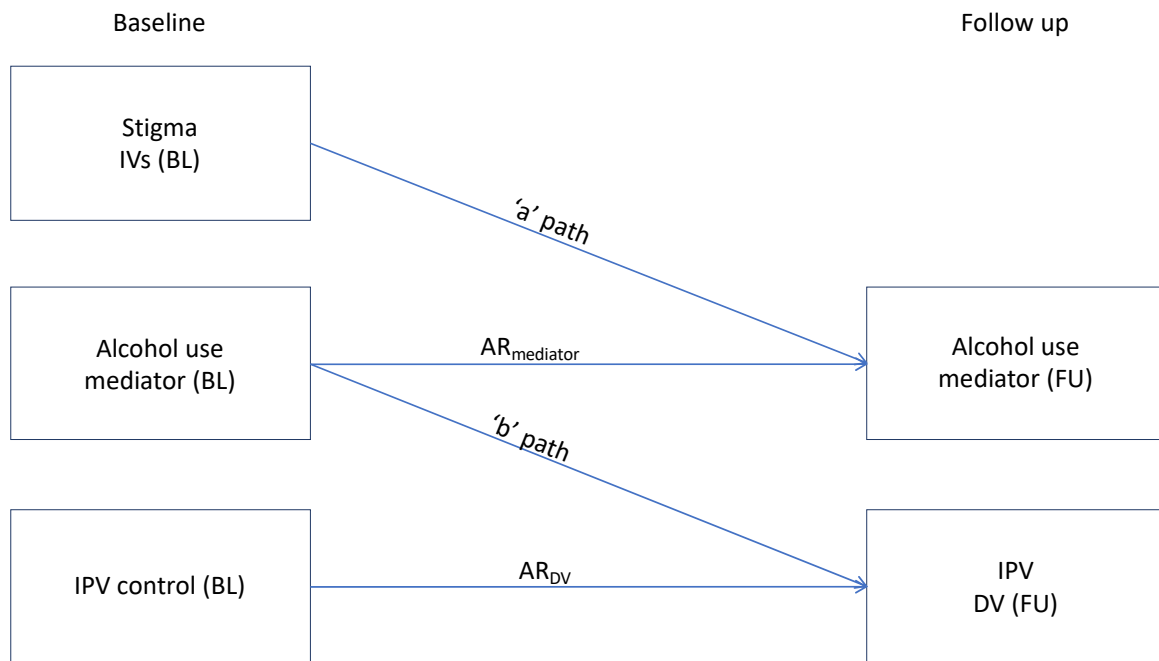
**Table C.1 Sensitivity analysis - inclusion of baseline IPV and intervention exposure controls in BLFU model**

	BLFU final model			Intervention exposure intensity removed			Baseline IPV removed			Intervention exposure intensity and baseline IPV removed		
	OR	95% Wald Confidence Limits		OR	95% Wald Confidence Limits		OR	95% Wald Confidence Limits		OR	95% Wald Confidence Limits	
<i>Enacted sex work stigma</i>												
Social discrimination	0.72	0.14	3.63	0.75	0.15	3.74	1.01	0.21	4.75	1.05	0.23	4.90
Health services discrimination	1.39	0.09	21.75	1.43	0.09	22.62	1.24	0.09	17.29	1.20	0.09	16.74
Workplace discrimination (exclusion)	1.39	0.35	5.52	1.39	0.35	5.54	1.37	0.36	5.21	1.38	0.36	5.23
Law enforcement discrimination	0.62	0.11	3.64	0.59	0.10	3.41	1.19	0.25	5.73	1.11	0.24	5.25
<i>Enacted HIV stigma</i>												
Social discrimination	1.67	0.32	8.61	1.48	0.30	7.37	1.19	0.25	5.68	1.08	0.23	5.05
Health services discrimination	1.22	0.17	8.74	1.32	0.19	9.21	1.06	0.16	7.15	1.18	0.18	7.68
Workplace discrimination (exclusion)	1.15	0.35	3.78	1.16	0.36	3.82	1.69	0.55	5.20	1.70	0.55	5.23
<i>Anticipated HIV stigma</i>												
Fear of threat of violence	1.60	0.84	3.03	1.54	0.82	2.88	1.62	0.89	2.98	1.58	0.87	2.86
Fear of losing friends' respect	0.61	0.31	1.22	0.63	0.32	1.26	0.57	0.29	1.14	0.59	0.30	1.17
Fear of colleagues taking clients	<b>1.70</b>	<b>1.12</b>	<b>2.57</b>	<b>1.66</b>	<b>1.10</b>	<b>2.49</b>	<b>1.58</b>	<b>1.06</b>	<b>2.35</b>	<b>1.55</b>	<b>1.05</b>	<b>2.29</b>
Fear of partner abandonment	1.08	0.73	1.61	1.07	0.72	1.59	1.07	0.73	1.58	1.07	0.73	1.57
Fear of family exclusion	0.92	0.58	1.45	0.93	0.59	1.47	1.11	0.72	1.71	1.12	0.73	1.73
<i>Internalized stigma</i>												
Sex work	0.73	0.31	1.71	0.70	0.30	1.65	0.93	0.41	2.11	0.91	0.41	2.03
HIV	2.06	0.80	5.30	2.12	0.83	5.43	1.87	0.77	4.55	1.91	0.79	4.62

## APPENDIX D. HALF-LONGITUDINAL INDIRECT EFFECTS VIA ALCOHOL USE

In Aim 2, I estimated path models to assess the indirect effects of enacted and anticipated stigma on IPV via economic resources and alcohol use, and the indirect effects of internalized stigma on IPV via alcohol use. For alcohol use, I also produced estimates of “half-longitudinal” indirect effects (HLIEs) since measures of the mediator at both BL and FU were available, which the method requires (income and savings measures were only available at FU).<sup>337,339,340</sup> This method adds rigor to mediation analysis conducted with data from only two timepoints. When data from two timepoints are used and the mediator and DV have been obtained concurrently, the estimated effect of the mediator on the DV may be biased because it is not possible to control for confounding of that path by prior levels of the DV.<sup>339</sup> Figure D.1 visually depicts how data from the two time points are used in estimation of HLIEs via alcohol use. As shown, I estimated longitudinal pathways from the stigma IVs at BL to the measure of the alcohol use mediator at FU (‘a’ paths), and from the BL measure of the mediator to IPV at FU (‘b’ path). To address the potential for prior levels of the mediator and DV to confound these associations, I estimated autoregressive (AR) pathways between BL and FU measures of the mediator ( $AR_{\text{mediator}}$ ) and between BL and FU IPV ( $AR_{\text{D.V.}}$ ). I assessed statistical significance of the  $a*b$  indirect effects by computing their standard errors and bias-corrected bootstrapped CIs.

**Figure D.1 Estimation of half-longitudinal indirect effects for alcohol use**



$a*b$  = estimate of the indirect effects of X on Y through M, controlling for baseline alcohol use and IPV

Half-longitudinal indirect effects of stigma on IPV via alcohol use were insignificant.

The relationship between social sex work discrimination and alcohol use was significant ( $\beta = -.80$ ; 95% C.I.-1.58, -0.02;  $p=.05$ ) and, contrary to expectations, negative.

## APPENDIX E. STIGMA LEVELS BY ITEM

Tables and Figures E.1 – E.5 below present percentages of participants at BL who endorsed responses to items comprising multi-item and single item stigma measures.

**Table E.1 Levels of enacted sex work stigma by item (n=266)**

Variable	Item(s)	Percentage (frequency)	
		Yes	No
Social discrimination	Felt excluded from family get-togethers because you exchange sex for money?	16.9 (45)	83.1 (221)
	Felt that members of your family have made discriminatory comments or have gossiped about you because you exchange sex for money?***	26.1 (69)	73.9 (195)
	Felt rejected by your friends because you exchange sex for money?	18.4 (49)	81.6 (217)
Health service discrimination	Felt you have been given bad services in a health center because you exchange sex for money?	7.5 (20)	92.5 (246)
	Been denied medical care because you exchange sex for money?	3.4 (9)	96.6 (257)
	Heard health service personnel gossiping about you because you exchange sex for money?*	7.9 (21)	92.1 (244)
Workplace discrimination (abuse in establishment)	Been insulted or threatened by the owner of the sex work establishment or other employees of the establishment because you exchange sex for money?***	7.2 (19)	92.8 (245)
	Experienced abuse or attempted physical or sexual abuse from the owner of the sex work establishment or other employees of the establishment because you exchange sex for money?***	4.9 (13)	95.1 (251)
Workplace discrimination (job loss)	Lost a job because you exchange sex for money?	10.9 (29)	89.1 (237)
Law enforcement discrimination	Felt that the police neglected to protect you because you exchange sex for money?	10.2 (27)	89.9 (239)
	Been insulted or threatened by the police because you exchange sex for money?	10.9 (29)	89.1 (237)
	Experienced abuse or attempted physical or sexual abuse by the police because you exchange sex for money?	9.0 (24)	91.0 (242)
	Been imprisoned or detained because you exchange sex for money?	13.2 (35)	86.4 (231)

\*Missing=1

\*\*Missing=2

**Table E.2 Levels of enacted HIV stigma by item (n=266)**

Variable	Item(s)	Percentage (frequency)	
		<i>Yes</i>	<i>No</i>
Social discrimination	Felt excluded from family get-togethers because you are living with HIV?	18.8 (5)	81.2 (216)
	Felt that members of your family have made discriminatory comments or have gossiped about you because you are living with HIV?***	29.3 (77)	70.72 (77)
	Felt rejected by your friends because you are living with HIV?	21.4 (57)	78.57 (209)
Health service discrimination	Felt you have been given bad services in a health center because you are living with HIV?*	18.5 (49)	81.51 (216)
	Been denied medical care because you are living with HIV?	9.8 (26)	90.23 (240)
	Heard health service personnel gossiping about you because you are living with HIV?*	14.3 (38)	85.66 (227)
Workplace discrimination (abuse in establishment)	[If APPLICABLE,] Been insulted or threatened by the owner of the sex work establishment or other employees of the establishment because you are living with HIV?***	1.1 (2)	98.86 (261)
	Experienced abuse or attempted physical or sexual abuse from the owner of the sex work establishment or other employees of the establishment because you are living with HIV?***	1.1 (3)	98.86 (261)
Workplace discrimination (job loss)	Lost a job because you are living with HIV?	22.2 (59)	77.82 (207)

\*Missing=1

\*\*Missing=2

\*\*\*Missing=3

**Table E.3 Levels of anticipated HIV stigma by item (n=266)**

		<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>Variable</b>	<b>Item</b>	<i>Percentage (frequency)</i>			
Fear of threat of violence	You are afraid you could be threatened with violence if your HIV status were known	11.7 (31)	11.7 (31)	49.3 (131)	27.4 (73)
Fear of losing friends' respect	You are afraid that if you disclosed your HIV status to your friends, they would lose respect for you	7.1 (19)	11.7 (31)	49.6 (132)	31.58 (84)
Fear of colleagues taking clients	You are afraid that if you disclose your HIV status to the women with whom you work, they could take your clients	43.6 (116)	6.8 (18)	28.6 (76)	21.1 (56)
Fear of partner abandonment	You are afraid your partner could leave you if your HIV status were known	40.2 (107)	14.7 (39)	22.6 (60)	22.6 (60)
Fear of family exclusion	You are afraid that your family could exclude you from regular family activities if your HIV status were known	27.1 (72)	29.3 (78)	28.2 (75)	15.4 (41)

**Table E.4 Levels of internalized HIV stigma by item (n=266)**

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>Item</b>	<i>Percentage (frequency)</i>			
HIV makes you feel like a bad person.	44.0 (117)	34.2 (91)	15.4 (41)	6.4 (17)
You feel like you're not as good as others because you are living with HIV.**	34.1 (90)	31.4 (83)	27.3 (72)	7.2 (19)
The attitudes of people towards HIV make you feel worse about yourself.*	21.9 (58)	24.9 (66)	37.0 (98)	16.2 (43)
You feel guilty because you are living with HIV.*	34.7 (92)	32.5 (86)	24.5 (65)	8.3 (22)
You feel ashamed of living with HIV.	22.9 (61)	26.7 (71)	36.5 (97)	13.9 (37)
It is easier to avoid friends than to tell them that you are living with HIV.***	8.8 (23)	11.5 (30)	63.6 (166)	16.1 (42)
You feel worthless because you are living with HIV.*	40.0 (106)	34.7 (92)	16.2 (43)	9.1 (24)
You feel that you bring many problems to your family because you are living with HIV.****	31.9 (83)	38.1 (99)	23.1 (60)	6.9 (18)

\*Missing=1

\*\*Missing =2

\*\*\*Missing=5

\*\*\*\*Missing=6



**Table E.5 Levels of internalized sex work stigma by item (n=266)**

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>Item</b>	<i>Percentage (frequency)</i>			
Sex work makes you feel like a bad person.*	30.9 (82)	32.8 (87)	31.3 (83)	4.9 (13)
You feel like you're not as good as others because you exchange sex for money.*	29.4 (78)	27.6 (73)	35.9 (95)	7.2 (19)
The attitudes of people towards sex work make you feel worse about yourself.*	22.3 (59)	27.9 (74)	41.1 (109)	8.7 (23)
You feel guilty because you exchange sex for money.**	31.8 (84)	34.5 (91)	27.3 (72)	6.4 (17)
You feel ashamed of exchanging sex for money.	24.4 (65)	25.6 (68)	41.4 (110)	8.7 (23)
It is easier to avoid friends than to tell them that you exchange sex for money.***	14.9 (39)	19.9 (52)	57.6 (151)	7.6 (20)
You feel worthless because you exchange sex for money.*	40.4 (107)	30.9 (82)	20.8 (55)	7.9 (21)
You feel that you bring many problems to your family because you exchange sex for money.****	29.1 (76)	44.1 (115)	19.9 (52)	6.9 (18)

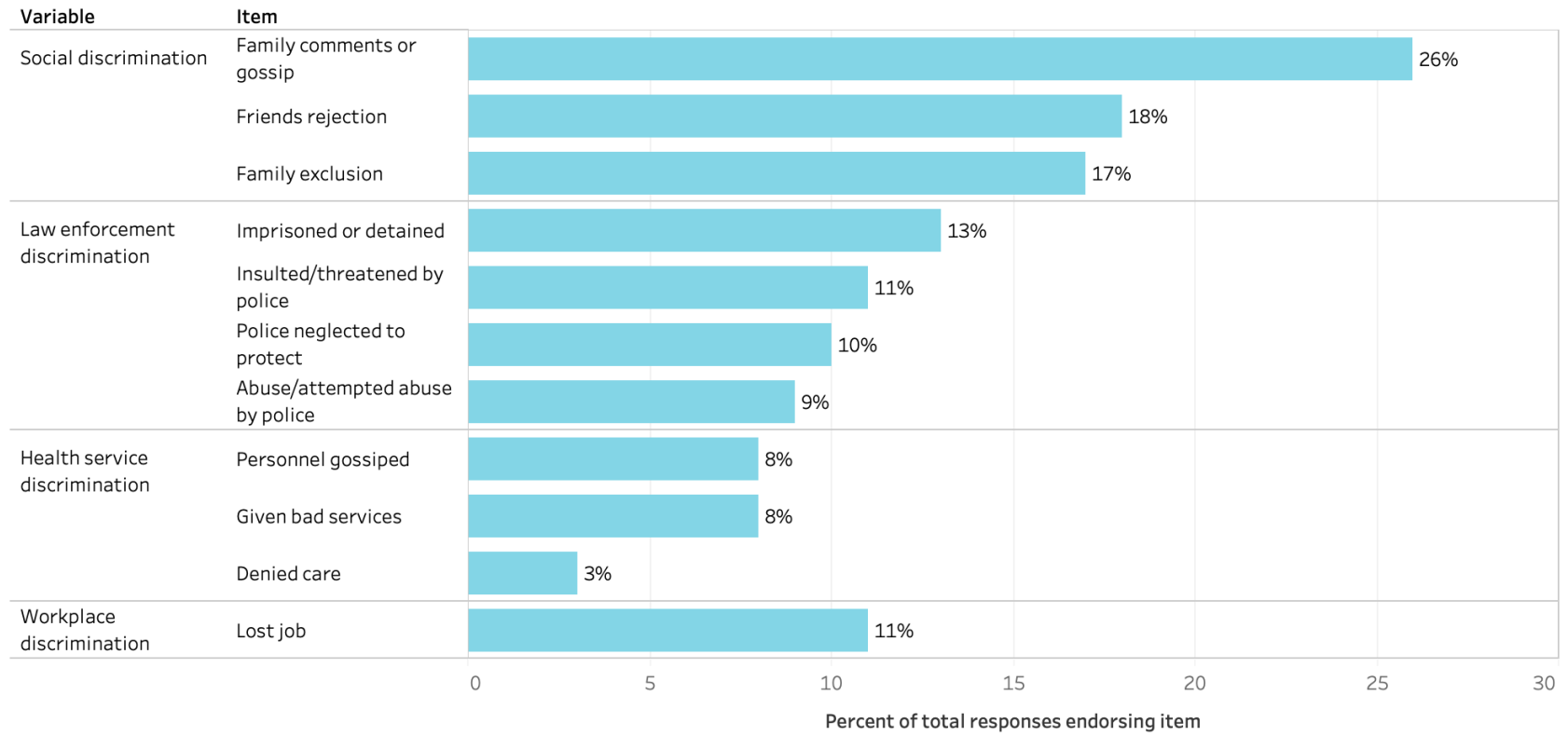
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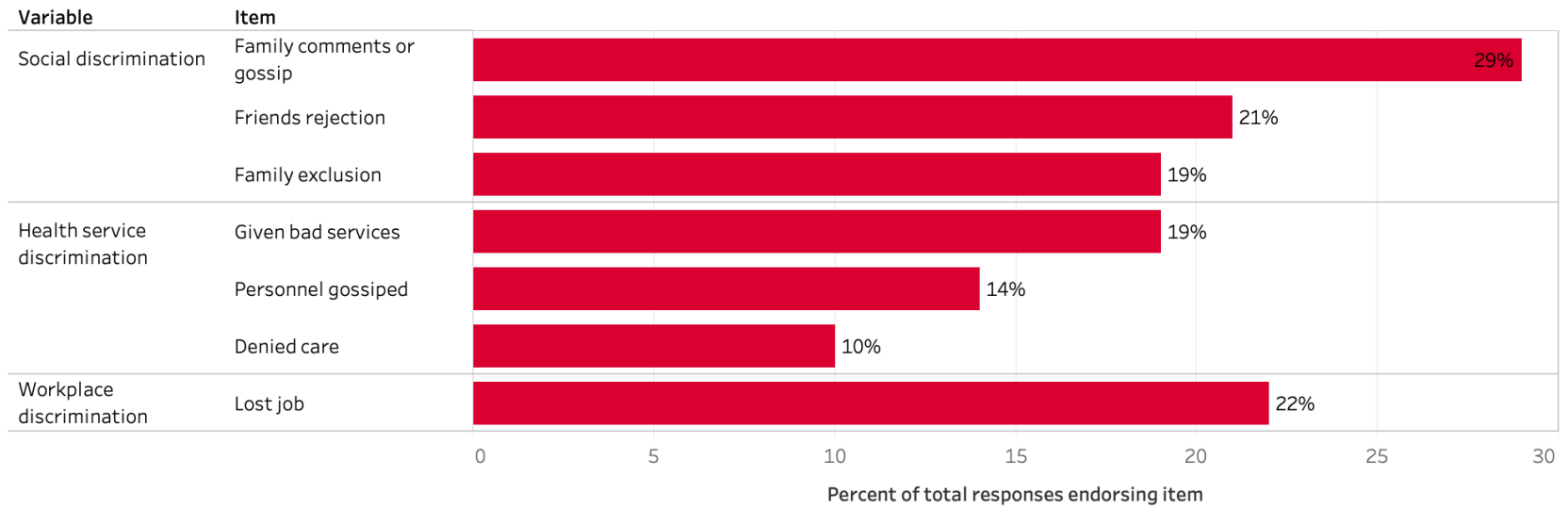
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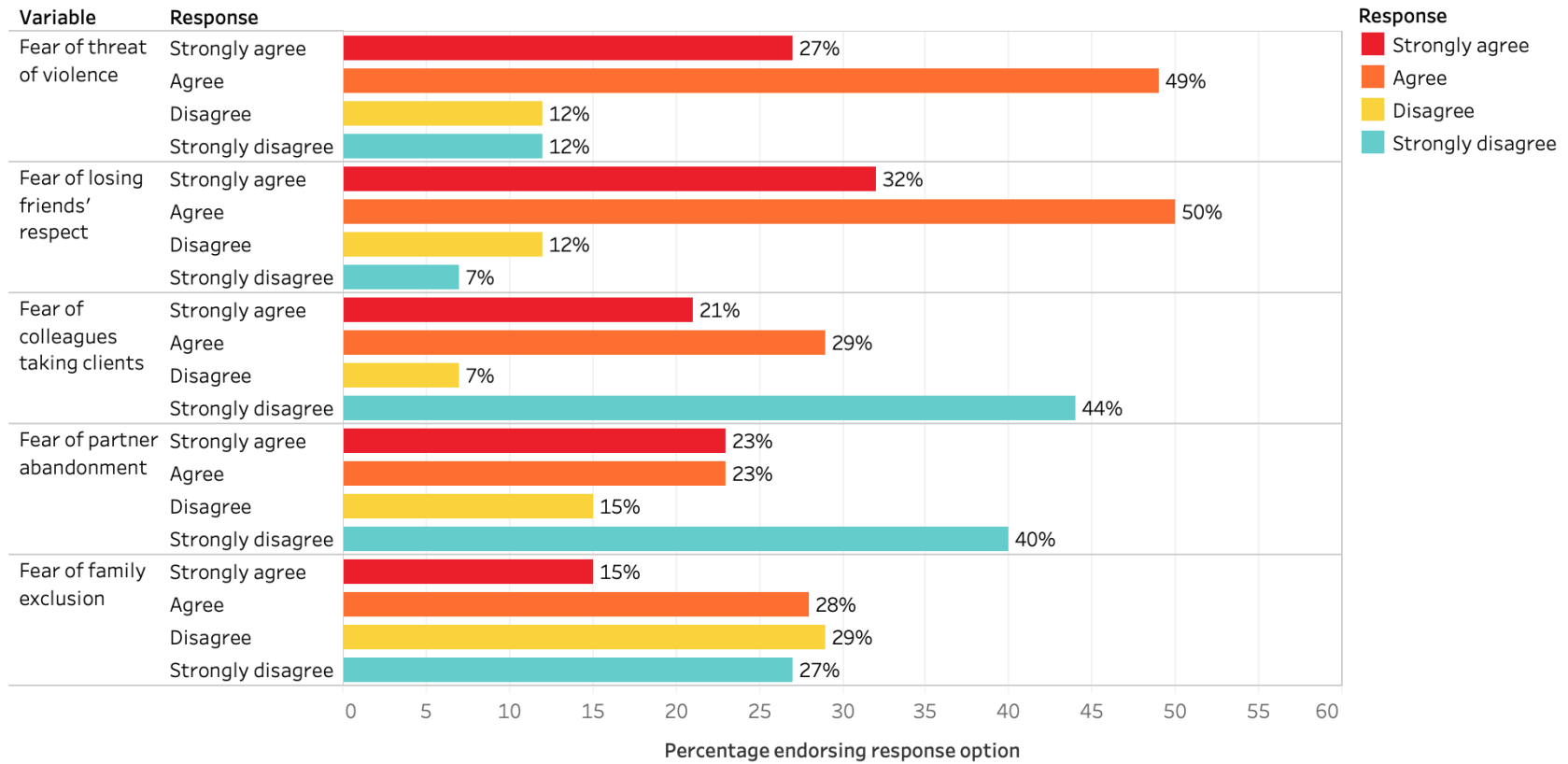
**Figure E.1 Levels of enacted sex work stigma by item (n=266)**



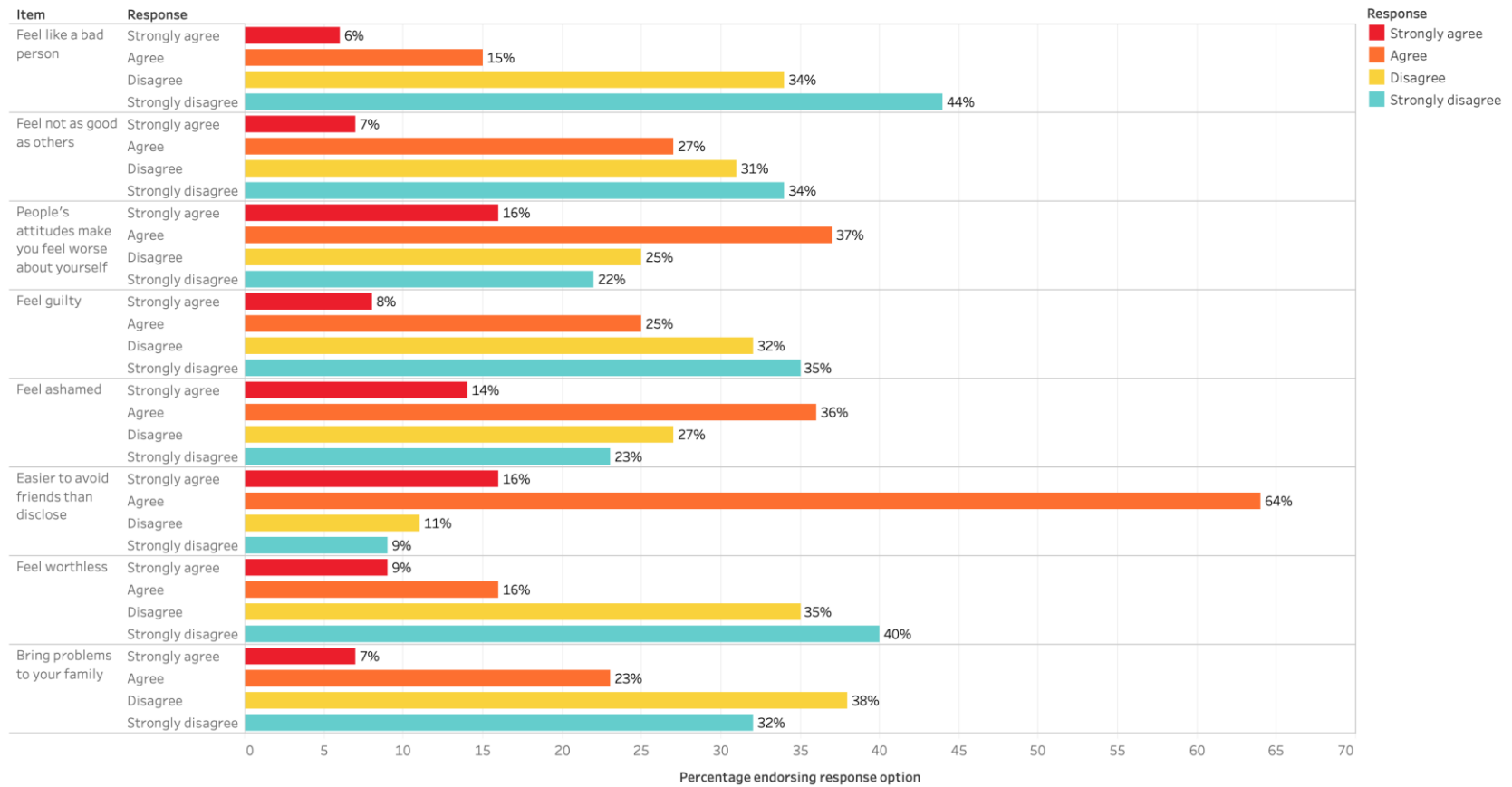
**Figure E.2 Levels of enacted HIV stigma by item (n=266)**



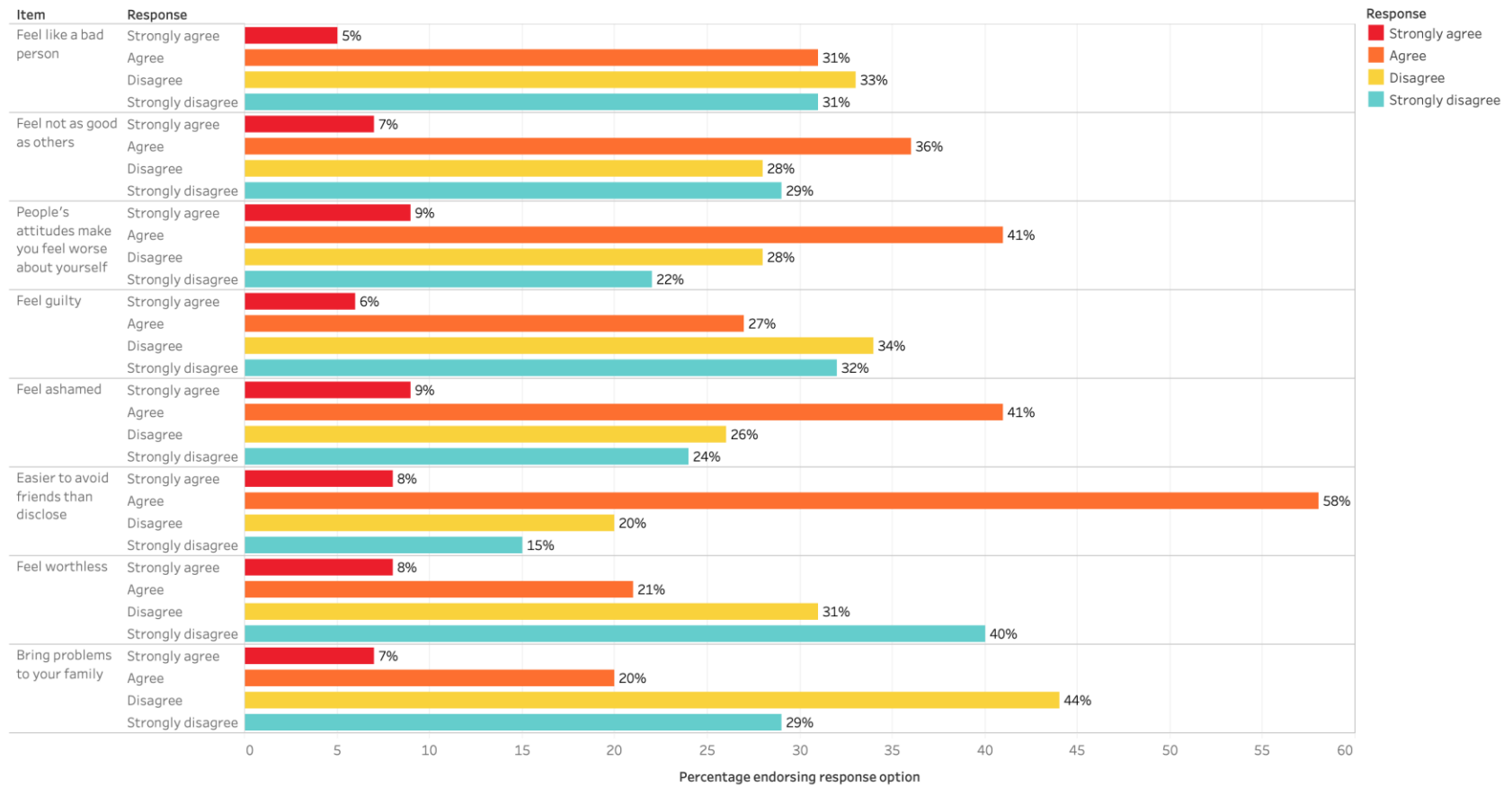
**Figure E.3 Levels of anticipated HIV stigma by item (n=266)**



**Figure E.4 Levels of internalized HIV stigma by item (n=266)**



**Figure E.1 Levels of internalized sex work stigma by item (n=266)**



## APPENDIX F. BIVARIATE ANALYSIS RESULTS

Table F.1 below presents bivariate associations between stigma measures and IPV, and control variables and IPV, produced using logistic regression for the BL and BLFU samples.

**Table F.1 Bivariate analysis results**

	BL sample (n=266)			BLFU up sample (n=223)		
	OR	95% Wald Confidence Limits	Parameter est. p-value	OR	95% Wald Confidence Limits	Parameter est. p-value
<i>Enacted sex work stigma</i>						
Social discrimination	3.84	1.44, 10.25	<b>.007</b>	2.80	1.04, 7.58	<b>.04</b>
Health services discrimination	2.75	0.45, 16.97	.28	2.90	0.49, 17.17	.24
Law enforcement discrimination	5.07	1.65, 15.60	<b>.005</b>	2.38	0.68, 8.24	.17
Workplace discrimination (job loss)	3.38	1.35, 8.46	<b>.009</b>	2.42	0.93, 6.33	.07
<i>Enacted HIV stigma</i>						
Social discrimination	2.11	0.76, 5.86	.15	2.27	0.84, 6.14	.11
Health services discrimination	1.96	0.55, 7.02	.30	2.17	0.57, 8.23	.26
Workplace discrimination (job loss)	3.81	1.77, 8.21	<b>&lt;0.001</b>	1.94	0.87, 4.33	.11
<i>Anticipated HIV stigma</i>						
Fear of threat of violence	1.27	0.83, 1.96	.27	1.42	0.92, 2.20	.11
Fear of losing friends' respect	1.12	0.71, 1.76	.63	1.31	0.73, 1.76	.58
Fear of colleagues taking clients	1.14	0.84, 1.54	.41	1.49	1.09, 2.04	<b>.01</b>

Fear of partner abandonment	0.87	0.63, 1.19	.37	1.06	0.78, 1.43	.72
Fear of family exclusion	1.43	1.00, 2.06	<b>.05</b>	1.21	0.85, 1.72	.30
<i>Internalized stigma</i>						
Sex work	1.40	0.81, 2.41	.23	1.50	0.87, 2.60	.15
HIV	1.56	0.92, 2.64	0.10	1.94	1.14, 3.30	<b>.02</b>
<i>Controls</i>						
Educational attainment	0.56	0.24, 1.31	.18	0.66	0.29, 1.50	.32
Age	0.95	0.91, 1.00	<b>.03</b>	0.97	0.93, 1.01	.10
Civil status: <i>Cohabiting steady partner (vs no partner)</i>	3.54	1.63, 7.70	<b>.001</b>	2.87	1.35, 6.10	<b>.006</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	0.50	0.22, 1.12	.09	0.71	0.33, 1.52	.37
Number of sexual partners per month	1.02	0.98, 1.06	.30	1.02	0.98, 1.07	.31
Baseline IPV	-	-	-	8.85	3.61, 21.70	<b>&lt;.001</b>
Intervention exposure intensity	-	-	-	0.82	0.37, 1.79	.61



## **APPENDIX G. SINGLE STIGMA MECHANISM MULTIVARIABLE RESULTS**

For Aim 1, for both HIV and sex work stigma, I ran two models for each mechanism of stigma --enacted, anticipated, and internalized-- one containing all stigma variables of that mechanism with controls and one without controls, using BL and BLFU samples. Results from those analyses are presented in Tables G.1-G.12 below.

**Table G.1 Odds of IPV in the last six months by experiences of enacted stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	3.10	0.80	11.93	.10
Health services discrimination	0.79	0.07	9.19	.85
Workplace discrimination (exclusion)	1.30	0.44	3.89	.64
Law enforcement discrimination	3.26	0.94	11.35	.06
<i>Enacted HIV stigma</i>				
Social discrimination	0.48	0.12	1.99	.31
Health services discrimination	0.92	0.17	4.82	.92
Workplace discrimination (exclusion)	3.54	1.41	8.94	<b>.007</b>

**Table G.2 Adjusted odds of IPV in the last six months by experiences of enacted stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	2.78	0.65	11.88	.17
Health services discrimination	1.03	0.08	14.07	.98
Workplace discrimination (exclusion)	1.32	0.40	4.31	.65
Law enforcement discrimination	3.41	0.87	13.41	.08
<i>Enacted HIV stigma</i>				
Social discrimination	0.48	0.11	2.19	.34
Health services discrimination	1.17	0.22	6.37	.85

Workplace discrimination (exclusion)	4.09	1.51	11.03	<b>.006</b>
<i>Controls</i>				
Educational attainment	0.58	0.23	1.50	.26
Age	0.94	0.90	0.99	<b>.02</b>
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	5.49	1.09	27.63	<b>.04</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	1.68	0.31	9.07	.55
Number of sexual partners per month	1.01	0.96	1.05	.79

**Table G.3 Odds of IPV in the last ten months by experiences of enacted stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	1.86	0.47	7.32	.37
Health services discrimination	1.02	0.10	10.86	.98
Workplace discrimination (exclusion)	1.38	0.42	4.50	.60
Law enforcement discrimination	1.60	0.42	6.09	.49
<i>Enacted HIV stigma</i>				
Social discrimination	1.14	0.30	4.33	.85
Health services discrimination	1.23	0.22	6.84	.82
Workplace discrimination (exclusion)	1.41	0.52	3.81	.50

**Table G.4 Adjusted odds of IPV in the last ten months by experiences of enacted stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Enacted sex work stigma</i>				
Social discrimination	1.05	0.22	4.92	.95
Health services discrimination	1.80	0.12	25.92	.67
Workplace discrimination (exclusion)	1.08	0.30	3.87	.91
Law enforcement discrimination	0.82	0.17	4.06	.81
<i>Enacted HIV stigma</i>				
Social discrimination	1.42	0.33	6.22	.64
Health services discrimination	1.54	0.24	9.73	.65
Workplace discrimination (exclusion)	1.27	0.43	3.75	.66
<i>Controls</i>				
Educational attainment	0.75	0.29	1.90	.54
Age	0.98	0.93	1.03	.43
Civil status:				
<i>Cohabiting steady     partner (vs no partner)</i>	5.47	1.05	28.52	<b>.04</b>
<i>Non-cohabiting     steady partner (vs no     partner)</i>	3.38	0.62	18.28	.16
Number of sexual partners per month	1.01	0.96	1.06	.75
Baseline IPV	5.94	2.15	16.40	<b>&lt;.001</b>
Intervention exposure intensity	0.84	0.33	2.16	.72

**Table G.5 Odds of IPV in the last six months by experiences of anticipated stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.32	0.76	2.30	.33
Fear of losing friends' respect	0.81	0.44	1.49	.50
Fear of colleagues taking clients	1.11	0.80	1.52	.54
Fear of partner abandonment	0.80	0.58	1.11	.19
Fear of family exclusion	1.51	1.02	2.22	<b>.04</b>

**Table G.6 Adjusted odds of IPV in the last six months by experiences of anticipated stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.36	0.79	2.32	.27
Fear of losing friends' respect	0.81	0.44	1.50	.51
Fear of colleagues taking clients	1.15	0.82	1.61	.42
Fear of partner abandonment	0.84	0.58	1.20	.34
Fear of family exclusion	1.57	1.05	2.35	<b>.03</b>
<i>Controls</i>				
Educational attainment	0.54	0.22	1.32	.18
Age	0.95	0.91	1.00	<b>.04</b>
Civil status:				

<i>Cohabiting steady partner (vs no partner)</i>	7.16	1.51	34.06	<b>.01</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	2.37	0.45	12.43	.31
Number of sexual partners per month	1.00	0.96	1.04	.90

**Table G.7 Odds of IPV in the last ten months by experiences of anticipated stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.63	0.90	2.95	.11
Fear of losing friends' respect	0.66	0.35	1.24	.20
Fear of colleagues taking clients	1.51	1.08	2.13	<b>.02</b>
Fear of partner abandonment	1.03	0.75	1.42	.84
Fear of family exclusion	1.15	0.79	1.68	.48

**Table G.8 Adjusted odds of IPV in the last ten months by experiences of anticipated stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Anticipated HIV stigma</i>				
Fear of threat of violence	1.75	0.98	3.15	.06
Fear of losing friends' respect	0.67	0.35	1.29	.23
Fear of colleagues taking clients	1.72	1.16	2.56	<b>.007</b>
Fear of partner abandonment	1.13	0.78	1.62	.52

Fear of family exclusion	0.96	0.63	1.47	.86
<i>Controls</i>				
Educational attainment	0.70	0.27	1.82	.46
Age	0.99	0.94	1.04	.72
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	7.87	1.50	41.41	<b>.01</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	3.45	0.64	18.74	.15
Number of sexual partners per month	1.00	0.95	1.05	.93
Baseline IPV	6.51	2.36	17.93	<b>&lt;.001</b>
Intervention exposure intensity	0.67	0.24	1.82	.43

**Table G.9 Odds of IPV in the last six months by experiences of internalized stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Internalized stigma</i>				
Sex work	1.08	0.53	2.19	.83
HIV	1.49	0.76	2.94	.25

**Table G.10 Adjusted odds of IPV in the last six months by experiences of internalized stigma (n=266)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Internalized stigma</i>				
Sex work	1.10	0.56	2.14	.79
HIV	1.62	0.83	3.16	.16
<i>Controls</i>				
Educational attainment	0.50	0.21	1.21	.12
Age	0.95	0.91	1.00	<b>.04</b>
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	5.37	1.18	24.41	<b>.03</b>
<i>Non-cohabiting steady partner (vs no partner)</i>	1.68	0.34	8.27	.52
Number of sexual partners per month	1.01	0.97	1.05	.68

**Table G.11 Odds of IPV in the last ten months by experiences of internalized stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Internalized stigma</i>				
Sex work	0.93	0.45	1.94	.85
HIV	2.03	1.01	4.09	<b>.05</b>



**Table G.12 Adjusted odds of IPV in the last ten months by experiences of internalized stigma (n=223)**

	<b>OR</b>	<b>95% Wald Confidence Limits</b>		<b>Parameter est. p-value</b>
<i>Internalized stigma</i>				
Sex work	0.75	0.34	1.66	.48
HIV	2.24	1.05	4.78	<b>.04</b>
<i>Controls</i>				
Educational attainment	0.69	0.28	1.73	.43
Age	0.98	0.94	1.03	.51
Civil status:				
<i>Cohabiting steady partner (vs no partner)</i>	4.63	0.97	22.18	.06
<i>Non-cohabiting steady partner (vs no partner)</i>	2.40	0.49	11.73	.28
Number of sexual partners per month	1.01	0.96	1.06	.81
Baseline IPV	6.15	2.28	16.59	<b>&lt;.001</b>
Intervention exposure intensity	0.90	0.35	2.32	.83

## REFERENCES

1. Devries K, Watts C, Yoshihama M, et al. Violence against women is strongly associated with suicide attempts: Evidence from the WHO multi-country study on women's health and domestic violence against women. *Soc Sci Med* 2011; **73**(1): 79-86.
2. Hong Y, Zhang C, Li X, Liu W, Zhou Y. Partner Violence and Psychosocial Distress among Female Sex Workers in China. *PLoS ONE* 2013; **8**(4).
3. Ulibarri MD, Hiller SP, Lozada R, et al. Prevalence and characteristics of abuse experiences and depression symptoms among injection drug-using female sex workers in Mexico. *J Environ Public Health* 2013; **2013**.
4. Chuang CH, Cattoi AL, McCall-Hosenfeld JS, Camacho F, Dyer AM, Weisman CS. Longitudinal association of intimate partner violence and depressive symptoms. *Ment Health Fam Med*; 2012: 107-14.
5. Pallitto CC, García-Moreno C, Jansen HAFM, Heise L, Ellsberg M, Watts C. Intimate partner violence, abortion, and unintended pregnancy: Results from the WHO Multi-country Study on Women's Health and Domestic Violence. *Int J Gynecol Obstet* 2013; **120**(1): 3-9.
6. Maman S, Mbwambo JK, Hogan NM, et al. HIV-positive women report more lifetime partner violence: findings from a voluntary counseling and testing clinic in Dar es Salaam, Tanzania. *American journal of public health* 2002; **92**(8): 1331-7.
7. Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: directions for future research and interventions. *Social science & medicine* 2000; **50**(4): 459-78.
8. Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet* 2004; **363**(9419): 1415-21.
9. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet* 2010; **376**(9734): 41-8.
10. Lyons C, Ketende S, Drame F, et al. Physical and sexual violence affecting female sex workers in Abidjan, Cote d'Ivoire: Prevalence, and the relationship between violence, the work environment, HIV and access to health services. *J Acquir Immune Defic Syndr* 2017.
11. Loxton D, Dolja-Gore X, Anderson AE, Townsend N. Intimate partner violence adversely impacts health over 16 years and across generations: A longitudinal cohort study. *PLOS ONE* 2017; **12**(6): e0178138.
12. Black M. Intimate partner violence and adverse health consequences: Implications for clinicians. *American Journal of Lifestyle Medicine* 2011; **5**(5): 428-39.

13. Ellsberg M, Jansen HA, Heise L, Watts CH, Garcia-Moreno C. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet* 2008; **371**(9619): 1165-72.
14. Campbell JC. Health consequences of intimate partner violence. *Lancet* 2002; **359**(9314): 1331-6.
15. Mendoza C, Barrington C, Donastorg Y, et al. Violence From a Sexual Partner is Significantly Associated With Poor HIV Care and Treatment Outcomes Among Female Sex Workers in the Dominican Republic. *J Acquir Immune Defic Syndr* 2017; **74**(3): 273-8.
16. Hatcher AM, Smout EM, Turan JM, Christofides N, Stöckl H. Intimate partner violence and engagement in HIV care and treatment among women: A systematic review and meta-analysis. *AIDS* 2015; **29**(16): 2183-94.
17. Barreto DF. The impact of structural inequities and interpersonal violence on food security and HIV care among women living with and affected by HIV in a Canadian setting. Vancouver: University of British Columbia; 2017.
18. Wilson KS, Wanje G, Yuhas K, et al. A prospective study of intimate partner violence as a risk factor for detectable plasma viral load in HIV-positive women engaged in transactional sex in Mombasa, Kenya. *AIDS and behavior* 2016; **20**(9): 2065-77.
19. Castilla J, Del Romero J, Hernando V, Marinovich B, García S, Rodríguez C. Effectiveness of highly active antiretroviral therapy in reducing heterosexual transmission of HIV. *Journal of acquired immune deficiency syndromes (1999)* 2005; **40**(1): 96-101.
20. Quinn TC, Wawer MJ, Sewankambo N, et al. Viral load and heterosexual transmission of human immunodeficiency virus type 1. Rakai Project Study Group. *The New England journal of medicine* 2000; **342**(13): 921-9.
21. Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. *The New England journal of medicine* 2011; **365**(6): 493-505.
22. Baggaley RF, White RG, Hollingsworth TD, Boily M-C. Heterosexual HIV-1 infectiousness and antiretroviral use: systematic review of prospective studies of discordant couples. *Epidemiology (Cambridge, Mass)* 2013; **24**(1): 110-21.
23. Donnell D, Baeten JM, Kiarie J, et al. Heterosexual HIV-1 transmission after initiation of antiretroviral therapy: a prospective cohort analysis. *Lancet (London, England)* 2010; **375**(9731): 2092-8.
24. World Health Organization. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and nonpartner sexual violence. Geneva: World Health Organization, 2013.

25. World Health Organization. WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses. Geneva: World Health Organization, 2005.
26. World Health Organization. Understanding and addressing violence against women: Intimate partner violence. Geneva: World Health Organization, 2012.
27. Argento E, Muldoon KA, Duff P, Simo A, Deering KN, Shannon K. High prevalence and partner correlates of physical and sexual violence by intimate partners among street and off-street sex workers. *PLoS ONE* 2014; **9**(7).
28. Deering KN, Amin A, Shoveller J, et al. A systematic review of the correlates of violence against sex workers. *American journal of public health* 2014; **104**(5): e42-e54.
29. Watts C, Zimmerman C. Violence against women: Global scope and magnitude. *Lancet* 2002; **359**(9313): 1232-7.
30. Saggurthi N, Jain AK, Sebastian MP, et al. Indicators of mobility, socio-economic vulnerabilities and HIV risk behaviours among mobile female sex workers in India. *AIDS and behavior* 2012; **16**(4): 952-9.
31. Reed E, Gupta J, Biradavolu M, Devireddy V, Blankenship KM. The role of housing in determining HIV risk among female sex workers in Andhra Pradesh, India: Considering women's life contexts. *Soc Sci Med* 2011; **72**(5): 710-6.
32. Shannon K, Kerr T, Strathdee SA, Shoveller J, Montaner JS, Tyndall MW. Prevalence and structural correlates of gender based violence among a prospective cohort of female sex workers. *BMJ (Online)* 2009; **339**(7718): 442-4.
33. Ngale K, Cummings B, Horth R. Unseen, unheard and unprotected: prevalence and correlates of violence among female sex workers in Mozambique. *Cult Health Sex* 2019; **21**(8): 898-913.
34. Hail-Jares K, Chang RCF, Choi S, Zheng H, He N, Huang ZJ. Intimate-partner and client-initiated violence among female street-based sex workers in China: Does a support network help? *PLoS ONE* 2015; **10**(9).
35. Heylen E, Shamban E, Steward W, et al. Alcohol use and experiences of partner violence among female sex workers in coastal Andhra Pradesh, India. *Violence Against Women* 2018: 1-23.
36. El-Bassel N, Witte SS, Wada T, Gilbert L, Wallace J. Correlates of partner violence among female street-based sex workers: Substance abuse, history of childhood abuse, and HIV risks. *AIDS patient care and STDs* 2001; **15**(1): 41-51.
37. Logie C, Wang Y, Marcus N, Lalor P, Williams D, Levermore K. Pathways from police, intimate partner, and client violence to condom use outcomes among sex workers in Jamaica. *International Journal of Behavioral Medicine* 2020: 1-11.

38. Platt L, Grenfell P, Meiksin R, et al. Associations between sex work laws and sex workers' health: A systematic review and meta-analysis of quantitative and qualitative studies. *PLOS Medicine* 2018; **15**(12): e1002680.
39. Heise LL. Violence against women: An integrated, ecological framework. *Violence Against Women* 1998; **4**(3): 262-90.
40. Ulibarri MD, Strathdee SA, Lozada R, et al. Intimate partner violence among female sex workers in two Mexico-U.S. border cities: Partner characteristics and hiv risk behaviors as correlates of abuse. *Psychol Trauma Theory Res Pract Policy* 2010; **2**(4): 318-25.
41. Luchters S, Richter ML, Bosire W, et al. The Contribution of Emotional Partners to Sexual Risk Taking and Violence among Female Sex Workers in Mombasa, Kenya: A Cohort Study. *PLoS ONE* 2013; **8**(8).
42. Ulibarri MD, Roesch S, Rangel MG, Staines H, Amaro H, Strathdee SA. "Amar te Duele" ("Love Hurts"): Sexual Relationship Power, Intimate Partner Violence, Depression Symptoms and HIV Risk Among Female Sex Workers Who Use Drugs and Their Non-commercial, Steady Partners in Mexico. *AIDS and behavior* 2014; **19**(1): 9-18.
43. STRIVE Research Consortium. Addressing the structural drivers of HIV: A STRIVE synthesis. UK: London School of Hygiene & Tropical Medicine, 2019.
44. Shannon K, Strathdee SA, Goldenberg SM, et al. Global epidemiology of HIV among female sex workers: Influence of structural determinants. *Lancet* 2015; **385**(9962): 55-71.
45. Shannon K, Goldenberg SM, Deering KN, Strathdee SA. HIV infection among female sex workers in concentrated and high prevalence epidemics: Why a structural determinants framework is needed. *Curr Opin HIV AIDS* 2014; **9**(2): 174-82.
46. Decker MR, Wirtz AL, Pretorius C, et al. Estimating the Impact of Reducing Violence Against Female Sex Workers on HIV Epidemics in Kenya and Ukraine: A Policy Modeling Exercise. *Am J Reprod Immunol* 2013; **69**(SUPPL.1): 122-32.
47. Scorgie F, Vasey K, Harper E, et al. Human rights abuses and collective resilience among sex workers in four African countries: A qualitative study. *Globalization and Health* 2013; **9**(1).
48. Zulliger R, Maulsby C, Barrington C, et al. Retention in HIV care among female sex workers in the Dominican Republic: Implications for research, policy and programming. *AIDS and behavior* 2015; **19**: 715-22.
49. Zulliger R, Barrington C, Donastorg Y, Perez M, Kerrigan D. High drop-off along the HIV care continuum and ART interruption among female sex workers in the dominican Republic. *J Acquired Immune Defic Syndr* 2015; **69**(2): 216-22.
50. Rael CT, Davis A. Depression and key associated factors in female sex workers and women living with HIV/AIDS in the Dominican Republic. *International Journal of STD & AIDS* 2017; **28**(5): 433-40.

51. Campbell C. Selling sex in the time of AIDS: The psycho-social context of condom use by sex workers on a Southern African mine. *Soc Sci Med* 2000; **50**(4): 479-94.
52. Decker MR, Crago AL, Chu SKH, et al. Human rights violations against sex workers: Burden and effect on HIV. *Lancet* 2015; **385**(9963): 186-99.
53. Lazarus L, Deering KN, Nabess R, Gibson K, Tyndall MW, Shannon K. Occupational stigma as a primary barrier to health care for street-based sex workers in Canada. *Cult Health Sex* 2012; **14**(2): 139-50.
54. World Health Organization, United Nations Population Fund, Joint United Nations Programme on HIV/AIDS, Global Network of Sex Work Projects, The World Bank. Implementing comprehensive HIV/STI programmes with sex workers: practical approaches from collaborative interventions. Geneva: World Health Organization, 2013.
55. Red de Trabajadores Sexuales de Latinoamérica y el Caribe (RedTraSex). Ten years of action (1997-2007): the experience of organizing the Network of Sex Workers from Latin America and the Caribbean. Buenos Aires, Argentina: RedTraSex, 2007.
56. Global Network of Sex Work Projects. Global report: good practice in sex worker-led HIV programming, 2014.
57. Amnesty International. Amnesty International policy on state obligations to respect, protect and fulfill the human rights of sex workers. Amnesty International; 2016.
58. Pheterson G. The Whore Stigma: Female Dishonor and Male Unworthiness. *Social Text* 1993; **Winter**(37): 39-64.
59. Kerrigan D, Kennedy CE, Morgan-Thomas R, et al. A community empowerment approach to the HIV response among sex workers: effectiveness, challenges, and considerations for implementation and scale-up. *Lancet* 2015; **385**(9963): 172-85.
60. Parker R, Aggleton P. HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. *Social science & medicine* 2003; **57**(1): 13-24.
61. Scambler G, Paoli F. Health work, female sex workers and HIV/AIDS: global and local dimensions of stigma and deviance as barriers to effective interventions. *Social science & medicine* 2008; **66**(8): 1848-62.
62. Logie CH, James L, Tharao W, Loutfy MR. HIV, gender, race, sexual orientation, and sex work: a qualitative study of intersectional stigma experienced by HIV-positive women in Ontario, Canada. *PLoS Med* 2011; **8**(11): e1001124.
63. Berger M. Workable sisterhood: the political journey of stigmatized women with HIV/AIDS. *Workable sisterhood : the political journey of stigmatized women with HIV/AIDS*. Princeton, N.J. ; Woodstock: Princeton University Press; 2006.

64. Bowleg L. The Problem With the Phrase Women and Minorities: Intersectionality—an Important Theoretical Framework for Public Health. *American journal of public health* 2012; **102**(7): 1267-73.
65. Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a fundamental cause of population health inequalities. *American journal of public health* 2013; **103**(5): 813-21.
66. Earnshaw VA, Smith LR, Chaudoir SR, Amico KR, Copenhaver MM. HIV stigma mechanisms and well-being among PLWH: a test of the HIV stigma framework. *AIDS and behavior* 2013; **17**(5): 1785-95.
67. Sweeney S, Venable P. The association of HIV-Related stigma to HIV medication adherence: A systematic review and synthesis of the literature. *AIDS and behavior* 2016; **20**(1): 29-50.
68. Heise LL. What works to prevent partner violence: An evidence overview: STRIVE Research Consortium, 2011.
69. Dutton DG. The domestic assault of women: Psychological and criminal justice perspectives. Vancouver, BC: UBC Press; 1995.
70. Donastorg Y, Barrington C, Perez M, Kerrigan D. Abriendo Puertas: Baseline findings from an integrated intervention to promote prevention, treatment and care among FSW living with HIV in the Dominican Republic. *PLoS ONE* 2014; **9**(2).
71. Kerrigan D, Barrington C, Donastorg Y, Perez M, Galai N. Abriendo Puertas: Feasibility and effectiveness a multi-level intervention to improve HIV outcomes among female sex workers living with HIV in the Dominican Republic. *AIDS and behavior* 2016; **20**(9): 1919-27.
72. Schraiber LB, Latorre Mdo R, Franca I, Jr., Segri NJ, D'Oliveira AF. Validity of the WHO VAW study instrument for estimating gender-based violence against women. *Rev Saude Publica* 2010; **44**(4): 658-66.
73. Weitzer R. Sociology of sex work. *Annual Review of Sociology* 2009; **35**(1): 213-34.
74. MacKinnon CA. Trafficking, prostitution, and inequality. *Harvard Civil Rights Civil Liberties Law Review* 2011; **46**.
75. Bernstein E. What's wrong with prostitution? What's right with sex work? Comparing Markets in female sexual labor. *Hastings Women's Law Journal* 1999; **10**(1): 91-117.
76. Alexander P. Feminism, sex workers and human rights. In: Nagle J, ed. *Whores and Other Feminists*. New York: Routledge; 1997: 83-97.
77. Anderson SA. Prostitution and sexual autonomy: Making sense of the prohibition of prostitution. *Ethics* 2002; **112**(4): 748-80.

78. Cole S. Sexual politics: contradictions and explosions. In: Bell L, ed. Good girls/bad girls: Feminists and sex trade workers face-to-face. Toronto: Women's Press; 1987: 33-6.
79. Dworkin A. Intercourse. New York: Free Press; 1987.
80. Pateman C. The sexual contract. Stanford: Stanford University Press; 1988.
81. Overall C. What's Wrong with Prostitution? Evaluating Sex Work. *Signs* 1992; **17**(4): 705-24.
82. Bernstein E. What's Wrong with Prostitution? What's Right with Sex Work? Comparing Markets in Female Sexual Labor *Hastings Women's Law Journal* 1999; **10**(1): 91-117.
83. Scambler G. Sex work stigma: Opportunist migrants in London. *Sociology* 2007; **41**(6): 1079 - 96.
84. Link B, Phelan J. Conceptualizing stigma. *Annual Review of Sociology* 2001; **27**: 363-85.
85. Beattie TS, Bhattacharjee P, Isac S, et al. Declines in violence and police arrest among female sex workers in Karnataka state, south India, following a comprehensive HIV prevention programme. *Journal of the International AIDS Society* 2015; **18**(1).
86. International Labour Organization. HIV and AIDS recommendation: Recommendation concerning HIV and AIDS and the world of work.; 2010. p. 200.
87. Cabezas AL. Between Love and Money: Sex, Tourism, and Citizenship in Cuba and the Dominican Republic. *Signs: Journal of Women in Culture and Society* 2004; **29**(4).
88. Cabezas A. Economies of desire: sex and tourism in Cuba and the Dominican Republic. Philadelphia, PA: Temple University Press; 2009.
89. Cabezas A. Between love and money: Sex, tourism, and citizenship in Cuba and the Dominican Republic. *Signs: Journal of Women in Culture and Society* 2004; **29**(4).
90. Kempadoo K. Sexing the Caribbean: gender, race, and sexual labor. New York, N.Y.: Routledge; 2004.
91. Kerrigan D, Moreno L, Rosario S, Sweat M. Adapting the Thai 100% condom programme: Developing a culturally appropriate model for the Dominican Republic. *Culture, Health and Sexuality* 2001; **3**(2): 221-40.
92. Brennan D. What's love got to do with it?: transnational desires and sex tourism in the Dominican Republic. Durham: Duke University Press; 2004.
93. Gregory S. The devil behind the mirror: Globalization and politics in the Dominican Republic. Berkeley and Los Angeles: The University of California Press; 2007.



94. Stoebenau K, Hindin MJ, Nathanson CA, Rakotoarison PG, Razafintsalama V. "...but then he became my sipa": The implications of relationship fluidity for condom use among women sex workers in Antananarivo, Madagascar. 2009; **99**(5): 811-9.
95. Mbonye M, Nakamanya S, Nalukenge W, King R, Vandepitte J, Seeley J. 'It is like a tomato stall where someone can pick what he likes': Structure and practices of female sex work in Kampala, Uganda. *BMC Public Health* 2013; **13**(1).
96. Panchanadeswaran S, Johnson SC, Sivaram S, et al. Intimate partner violence is as important as client violence in increasing street-based female sex workers' vulnerability to HIV in India. *Int J Drug Policy* 2008; **19**(2): 106-12.
97. Pauw I, Brener L. 'You are just whores - You can't be raped': Barriers to safer sex practices among women street sex workers in Cape Town. *Cult Health Sexual* 2003; **5**(6): 465-81.
98. Kempadoo K, Doezema J, editors. Global sex workers: rights, resistance, and redefinition. New York: Routledge; 1998.
99. Cabezas A. Latin American and Caribbean sex workers: Gains and challenges in the movement. *Anti-Trafficking Review* 2019; (12): 37-56.
100. OTRASEX. Nuestra Historia. 2020. <https://www.redtralsex.org/-Republica-Dominicana-> (accessed February 24 2020).
101. International Labour Organization (ILO). HIV and AIDS recommendation: Recommendation concerning HIV and AIDS and the world of work.; 2010. p. 200.
102. Open Society Foundations. Understanding sex work in an open society. 2017. <https://www.opensocietyfoundations.org/explainers/understanding-sex-work-open-society> (accessed September 19, 2017).
103. Murray L. Um beijo para Gabriela. Brazil: Miríade Filmes in association with Rattapallax; 2013. p. 29 minutes.
104. Raven L, Daniella, Velvet M, et al. International Whores Day 2020 zine: Kink Out, 2020.
105. Pack AP, L'Engle K, Mwarogo P, Kingola N. Intimate partner violence against female sex workers in Mombasa, Kenya. *Cult Health Sexual* 2014; **16**(3): 217-30.
106. Mahapatra B, Battala M, Porwal A, Saggurti N. Non-disclosure of violence among female sex workers: Evidence from a large scale cross-sectional survey in India. *PLoS ONE* 2014; **9**(5).
107. Deering KN, Bhattacharjee P, Mohan HL, et al. Violence and HIV risk among female sex workers in Southern India. *Sex Transm Dis* 2013; **40**(2): 168-74.

108. Lippman SA, Chinaglia M, Donini AA, Diaz J, Reingold A, Kerrigan DL. Findings from Encontros: a multilevel STI/HIV intervention to increase condom use, reduce STI, and change the social environment among sex workers in Brazil. *Sex Transm Dis* 2012; **39**(3): 209-16.
109. Brock D. Making work, making trouble: Prostitution as a social problem. Toronto: University of Toronto Press; 1998.
110. Panchanadeswaran S, Johnson SC, Sivaram S, et al. A descriptive profile of abused female sex workers in India. *J Health Popul Nutr* 2010; **28**(3): 211-20.
111. Mayhew S, Collumbien M, Qureshi A, et al. Protecting the unprotected: Mixed-method research on drug use, sex work and rights in Pakistan's fight against HIV/AIDS. *Sexually Transmitted Infections* 2009; **85**(SUPPL. 2): ii31-ii6.
112. Cohan D, Lutnick A, Davidson P, et al. Sex worker health: San Francisco style. *Sexually Transmitted Infections* 2006; **82**(5): 418-22.
113. Jackson LA, Augusta-Scott T, Burwash-Brennan M, Karabanow J, Robertson K, Sowinski B. Intimate relationships and women involved in the sex trade: perceptions and experiences of inclusion and exclusion. *Health (London)* 2009; **13**(1): 25-46.
114. Strathdee SA, Crago AL, Butler J, Bekker LG, Beyrer C. Dispelling myths about sex workers and HIV. *Lancet* 2015; **385**(9962): 4-7.
115. Open Society Foundations. Laws and policies affecting sex work. New York: Open Society Foundations, 2012.
116. Abdullah MA, Basharat Z, Kamal B, et al. Is social exclusion pushing the Pakistani Hijras (Transgenders) towards commercial sex work? a qualitative study. *BMC Int Health Hum Rights* 2012; **12**: 32.
117. Krug E, Dahlberg L, Mercy J, Zwi A, Lozano R. World report on violence and health. Geneva: World Health Organization, 2002.
118. Abrahams N, Jewkes R, Martin L, Mathews S, Vetten L, Lombard C. Mortality of women from intimate partner violence in South Africa: A national epidemiological study. *Violence Victims* 2009; **24**(4).
119. Lloyd S, Taluc N. The effects of male violence on female employment. *Violence Against Women* 1999; **5**(4): 370-92.
120. Max W, Rice DP, Finkelstein E, Bardwell RA, Leadbetter S. The economic toll of intimate partner violence against women in the United States. *Violence Vict* 2004; **19**(3): 259-72.
121. Peterson C, Kearns MC, McIntosh WL, et al. Lifetime economic burden of intimate partner violence among U.S. adults. *Am J Prev Med* 2018; **55**(4): 433-44.

122. Jewkes R, Dunkle K, Jama-Shai N, Gray G. Impact of exposure to intimate partner violence on CD4+ and CD8+ T cell decay in HIV infected women: longitudinal study. *PLoS One* 2015; **10**(3): e0122001.
123. Robertson AM, Syvertsen JL, Martinez G, et al. Acceptability of vaginal microbicides among female sex workers and their intimate male partners in two Mexico-US border cities: a mixed methods analysis. *Glob Public Health* 2013; **8**(5): 619-33.
124. Larsen M. Theoretical and empirical perspectives on intimate partner violence: The role of social policy in the United States, Germany, and Norway. Health inequities related to intimate partner violence against women. Switzerland: Springer International Publishing; 2016.
125. Goode WJ. Force and violence in the family. *Journal of Marriage and the Family* 1971; **33**(4): 624–36.
126. MacMillan R, Gartner R. When she brings home the bacon: Labor-force participation and the risk of spousal violence against women. *Journal of Marriage and the Family* 1999; **61**(4): 947-58.
127. Atkinson MP, Greenstein TN, Lang MM. For women, breadwinning can be dangerous: Gendered resource theory and wife abuse. *Journal of Marriage and Family* 2005; **67**(5): 1137-48.
128. Dobash RE, Dobash R. Violence against wives: a case against the patriarchy. New York: Free Press; 1979.
129. Heise L. Determinants of partner violence in low and middle-income countries: exploring variation in individual and population level risk. London, UK: London School of Hygiene Tropical Medicine.; 2012.
130. Gelles RJ. Family Violence. *Annual Review of Sociology* 1985; **11**(1): 347-67.
131. Anderson KL. Gender, status and domestic violence: An integration of feminist and family violence approaches. *Journal of Marriage and the Family* 1997; **59**(3): 655-69.
132. Johnson MP. Gender and types of intimate partner violence: A response to an anti-feminist literature review. *Aggression Violent Behav* 2011; **16**(4): 289-96.
133. Capaldi D, Knoble N, Shortt J, Kim H. A systematic review of risk factors for intimate partner violence. *Partner Abuse* 2012; **3**(2): 231-80.
134. Stith SM, Smith DB, Penn CE, Ward DB, Tritt D. Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression Violent Behav* 2004; **10**(1): 65-98.
135. Jewkes R. Intimate partner violence: causes and prevention. *The Lancet* 2002; **359**(9315): 1423-9.

136. Parkhurst JO. Structural approaches for prevention of sexually transmitted HIV in general populations: definitions and an operational approach. *J Int AIDS Soc*; 2014.
137. Burke NJ, Joseph G, Pasick RJ, Barker JC. Theorizing social context: rethinking behavioral theory. *Health Educ Behav* 2009; **36**(5 Suppl): 55s-70s.
138. Giddens A. The constitution of society: Outline of the theory of structuration. Berkeley, CA: University of California Press; 1984.
139. Beattie TS, Bhattacharjee P, Ramesh B, et al. Violence against female sex workers in Karnataka state, south India: Impact on health, and reductions in violence following an intervention program. *BMC Public Health* 2010; **10**.
140. Blankenship KM, Biradavolu MR, Jena A, George A. Challenging the stigmatization of female sex workers through a community-led structural intervention: learning from a case study of a female sex worker intervention in Andhra Pradesh, India. *AIDS Care* 2010; **22 Suppl 2**: 1629-36.
141. Abramsky T, Watts CH, Garcia-Moreno C, et al. What factors are associated with recent intimate partner violence? findings from the WHO Multi-country Study on women's Health and Domestic Violence. *BMC Public Health* 2011; **11**.
142. Hindin MJ, Kishor S, Ansara DL. Intimate partner violence among couples in 10 DHS countries: Predictors and health outcomes. Calverton, Maryland, USA: Macro International Inc., 2008.
143. Bacchus LJ, Ranganathan M, Watts C, Devries K. Recent intimate partner violence against women and health: a systematic review and meta-analysis of cohort studies. *BMJ Open* 2018; **8**(7): e019995.
144. Beyer K, Wallis AB, Hamberger LK. Neighborhood environment and intimate partner violence: A systematic review. *Trauma Violence Abuse* 2015; **16**(1): 16-47.
145. Heise LL, Kotsadam A. Cross-national and multilevel correlates of partner violence: An analysis of data from population-based surveys. *Lancet Global Health* 2015; **3**(6): e332-e40.
146. Vanderende KE, Yount KM, Dynes MM, Sibley LM. Community-level correlates of intimate partner violence against women globally: a systematic review. *Social science & medicine (1982)* 2012; **75**(7): 1143-55.
147. Ulibarri MD, Semple SJ, Rao S, et al. History of abuse and psychological distress symptoms among female sex workers in two Mexico-U.S. border cities. *Violence Vict* 2009; **24**(3): 399-413.
148. Hong Y, Li X, Fang X, Zhao R. Correlates of suicidal ideation and attempt among female sex workers in China. *Health Care Women Int* 2007; **28**(5): 490-505.

149. Decker MR, Lyons C, Billong SC, et al. Gender-based violence against female sex workers in Cameroon: Prevalence and associations with sexual HIV risk and access to health services and justice. *Sexually Transmitted Infections* 2016.
150. Reed E, Erausquin JT, Groves AK, Salazar M, Biradavolu M, Blankenship KM. Client-perpetrated and husband-perpetrated violence among female sex workers in Andhra Pradesh, India: HIV/STI risk across personal and work contexts. *Sexually Transmitted Infections* 2016; **92**(6): 424-9.
151. Mountain E, Boily MC, Bhattacharjee P, et al. Burden and determinants of violence and negative police interactions among young women who self-identify as sex workers in Mombasa, Kenya. 9th International AIDS Society (IAS) Conference on HIV Science (IAS 2017); 2017 23-26 July 2017; Paris, France; 2017.
152. Chersich MF, Luchters SMF, Malonza IM, Mwarogo P, King'ola N, Temmerman M. Heavy episodic drinking among Kenyan female sex workers is associated with unsafe sex, sexual violence and sexually transmitted infections. *Int J STD AIDS* 2007; **18**(11): 764-9.
153. Chersich MF, Bosire W, King'ola N, Temmerman M, Luchters S. Effects of hazardous and harmful alcohol use on HIV incidence and sexual behaviour: A cohort study of Kenyan female sex workers. *Globalization and Health* 2014; **10**(1).
154. Li Q, Li X, Stanton B. Alcohol use among female sex workers and male clients: An integrative review of global literature. *Alcohol Alcohol* 2010; **45**(2): 188-99.
155. Karandikar S, Gezinski LB. 'Without us, sex workers will die like weeds': sex work and client violence in Kamathipura. *Indian J Gender Stud* 2012; **19**(3): 351-71.
156. Zhang C, Li X, Su S, et al. Violence against chinese female sex workers from their stable partners: A hierarchical multiple regression analysis. *Health Care Woman Int* 2015; **36**(7): 797-815.
157. Javalkar P, Platt L, Prakash R, et al. What determines violence among female sex workers in an intimate partner relationship? Findings from North Karnataka, south India. *BMC Public Health* 2019; **19**(1): 350.
158. Go VF, Srikrishnan AK, Parker CB, et al. High prevalence of forced sex among non-brothel based, wine shop centered sex workers in Chennai, India. *AIDS and behavior* 2011; **15**(1): 163-71.
159. Benoit C, Roth E, Hallgrimsdottir H, Jansson M, Ngugi E, Sharpe K. Benefits and constraints of intimate partnerships for HIV positive sex workers in Kibera, Kenya. *Int J Equity Health* 2013; **12**(1).
160. Shannon K, Kerr T, Allinott S, Chettiar J, Shoveller J, Tyndall MW. Social and structural violence and power relations in mitigating HIV risk of drug-using women in survival sex work. *Soc Sci Med* 2008; **66**(4): 911-21.

161. Ulibarri MD, Salazar M, Syvertsen JL, et al. Intimate partner violence among female sex workers and their noncommercial male partners in Mexico: A mixed-methods study. *Violence Against Women* 2019; **25**(5): 549-71.
162. Syvertsen JL, Robertson AM, Rolon ML, et al. "Eyes that don't see, heart that doesn't feel": coping with sex work in intimate relationships and its implications for HIV/STI prevention. *Social science & medicine* 2013; **87**: 1-8.
163. Syvertsen JL, Robertson AM, Palinkas LA, Rangel MG, Martinez G, Strathdee SA. 'Where sex ends and emotions begin': love and HIV risk among female sex workers and their intimate, non-commercial partners along the Mexico-US border. *Cult Health Sex* 2013; **15**(5): 540-54.
164. Decker MR, Pearson E, Illangasekare SL, Clark E, Sherman SG. Violence against women in sex work and HIV risk implications differ qualitatively by perpetrator. *BMC Public Health* 2013; **13**(1).
165. Karandikar S, Próspero M. From client to pimp: Male violence against female sex workers. *J Interpers Violence* 2010; **25**(2): 257-73.
166. Argento E, Shannon K, Nguyen P, Dobrer S, Chettiar J, Deering KN. The role of dyad-level factors in shaping sexual and drug-related HIV/STI risks among sex workers with intimate partners. *Drug Alcohol Depend* 2015; **157**: 166-73.
167. Wirtz AL, Schwartz S, Ketende S, et al. Sexual violence, condom negotiation, and condom use in the context of sex work: Results from two West African countries. *J Acquired Immune Defic Syndr* 2015; **68**: S171-S9.
168. Oldenburg C, Chanda M, Ortblad K, et al. Intimate partner violence, sex work-related stigma, and risk of HIV acquisition among female sex workers in Zambia. 9th International AIDS Society (IAS) Conference on HIV Science (IAS 2017). Paris, France; 2017.
169. Pando MA, Coloccini RS, Reynaga E, et al. Violence as a barrier for HIV prevention among female sex workers in Argentina. 2013; **8**(1).
170. Argento E, Reza-Paul S, Lorway R, et al. Confronting structural violence in sex work: Lessons from a community-led HIV prevention project in Mysore, India. *AIDS Care Psychol Socio-Med Asp AIDS HIV* 2011; **23**(1): 69-74.
171. Heise L, McGrory E. Violence against women and girls and HIV: Report on a high level consultation on the evidence and its implications. 2015 12–14 May 2015; Greentree Estate: STRIVE Research Consortium, London School of Hygiene and Tropical Medicine; 2015.
172. Ulibarri MD, Salazar M, Robertson AM. Relationship conflict among female sex workers and their intimate partners. 19th International Conference and Summit on Violence, Abuse, and Trauma. San Diego, CA; 2014.

173. Syvertsen JL, Bazzi AR. Sex Work, Heroin Injection, and HIV Risk in Tijuana: A Love Story. *Anthropol Conscious* 2015; **26**(2): 182-94.
174. Hiller SP, Syvertsen JL, Lozada R, Ojeda VD. Social support and recovery among Mexican female sex workers who inject drugs. *J Subst Abuse Treat* 2013; **45**(1): 44-54.
175. Erickson M, Goldenberg SM, Master A, et al. Interpersonal and structural contexts of intimate partner violence among female sex workers in conflict-affected Northern Uganda. *Women & Health* 2018; **58**(7): 759-73.
176. Dunkle KL, Decker MR. Gender-based violence and HIV: Reviewing the evidence for links and causal pathways in the general population and high-risk groups. *Am J Reprod Immunol* 2013; **69**(SUPPL.1): 20-6.
177. Gupta J, Reed E, Kershaw T, Blankenship KM. History of sex trafficking, recent experiences of violence, and HIV vulnerability among female sex workers in coastal Andhra Pradesh, India. *Int J Gynecol Obstet* 2011; **114**(2): 101-5.
178. Silverman JG, Raj A, Cheng DM, et al. Sex trafficking and initiation-related violence, alcohol use, and HIV risk among HIV-infected female sex workers in Mumbai, India. *J Infect Dis* 2011; **204**(SUPPL. 5): S1229-S34.
179. Decker MR, Benning L, Weber KM, et al. Physical and sexual violence predictors: 20 Years of the women's interagency HIV study cohort. *AM J PREV MED* 2016; **51**(5): 731-42.
180. Iverson KM, Litwack SD, Pineles SL, Suvak MK, Vaughn RA, Resick PA. Predictors of intimate partner violence revictimization: the relative impact of distinct PTSD symptoms, dissociation, and coping strategies. *J Trauma Stress* 2013; **26**(1): 102-10.
181. Kuijpers KF, van der Knaap LM, Winkel FW. Risk of revictimization of intimate partner violence: The role of attachment, anger and violent behavior of the victim. *Journal of Family Violence* 2012; **27**(1): 33-44.
182. Pulerwitz J, Gortmaker SL, DeJong W. Measuring sexual relationship power in HIV/STD research. *Sex Roles* 2000; **42**(7/8): 637-60.
183. Muldoon KA, Deering KN, Feng CX, Shoveller JA, Shannon K. Sexual relationship power and intimate partner violence among sex workers with non-commercial intimate partners in a Canadian setting. *AIDS Care Psychol Socio-Med Asp AIDS HIV* 2015; **27**(4): 512-9.
184. Caridad Bueno C, Henderson EA. Bargaining or backlash? Evidence on intimate partner violence from the Dominican Republic. *Fem Econ* 2017; **23**(4): 1-27.
185. Karandikar S, Frost C. Exploring patriarchy in sex workers' intimate relationships a case study from Mumbai. *Indian J Soc Work* 2012; **73**(4): 541-62.
186. Evens E, Lanham M, Santi K, et al. Experiences of gender-based violence among female sex workers, men who have sex with men, and transgender women in Latin America and the

- Caribbean: a qualitative study to inform HIV programming. *BMC Int Health Hum Rights* 2019; **19**(1): 1-14.
187. Blanchard AK, Mohan HL, Shahmanesh M, et al. Community mobilization, empowerment and HIV prevention among female sex workers in south India. *BMC Public Health* 2013; **13**(1).
188. Reed E, Gupta J, Biradavolu M, Devireddy V, Blankenship KM. The context of economic insecurity and its relation to violence and risk factors for HIV among female sex workers in Andhra Pradesh, India. *Public Health Rep* 2010; **125**(SUPPL. 4): 81-9.
189. Reed E, Gupta J, Biradavolu M, Blankenship KM. Migration/mobility and risk factors for HIV among female sex workers in Andhra Pradesh, India: Implications for HIV prevention. *Int J STD AIDS* 2012; **23**(4): e7-e13.
190. Patterson TL, Mausbach B, Lozada R, et al. Efficacy of a brief behavioral intervention to promote condom use among female sex workers in Tijuana and Ciudad Juarez, Mexico. *American journal of public health* 2008; **98**(11): 2051-7.
191. Strathdee SA, Lozada R, Martinez G, et al. Social and structural factors associated with HIV infection among female sex workers who inject drugs in the Mexico-US border region. *PLoS One* 2011; **6**(4): e19048.
192. Syvertsen JL, Robertson AM, Abramovitz D, et al. Study protocol for the recruitment of female sex workers and their non-commercial partners into couple-based HIV research. *BMC Public Health* 2012; **12**: 136.
193. Bellhouse C, Crebbin S, Fairley CK, Bilardi JE. The impact of sex work on women's personal romantic relationships and the mental separation of their work and personal lives: A mixed-methods study. *PLoS One*; 2015.
194. Warr DJ, Pyett PM. Difficult relations: sex work, love and intimacy. *Sociology of Health & Illness* 1999; **21**: 290-309.
195. Ulibarri MD, Strathdee SA, Lozada R, et al. Prevalence and correlates of client-perpetrated abuse among female sex workers in two Mexico-U.S. border cities. *Violence Against Women* 2014; **20**(4): 427-45.
196. Rock A, Barrington C, Loya-Montiel I, Paz-Bailey OA, Morales-Miranda S. 'La Vida Es Bonita, Media Vez Uno La Sepa Vivir' (Life Is Beautiful Once You Know How to Live It): Resilience among Female Sex Workers Receiving Treatment and Care for HIV and AIDS in Guatemala City. In progress.
197. Scorgie F, Nakato D, Harper E, et al. 'We are despised in the hospitals': sex workers' experiences of accessing health care in four African countries. *Cult Health Sex* 2013; **15**(4): 450-65.



198. Ma PHX, Chan ZCY, Loke AY. The socio-ecological model approach to understanding barriers and facilitators to the accessing of health services by sex workers: A systematic review. *AIDS and behavior* 2017; **21**: 2412–38.
199. Mtetwa S, Busza J, Chidiya S, Mungofa S, Cowan F. "You are wasting our drugs": health service barriers to HIV treatment for sex workers in Zimbabwe. *BMC public health* 2013; **13**(1): 698-.
200. Nyblade L, Stangl A, Weiss E, Ashburn K. Combating HIV stigma in health care settings: what works? *J Int AIDS Soc*; 2009: 15.
201. Shannon K, Rusch M, Shoveller J, Alexson D, Gibson K, Tyndall MW. Mapping violence and policing as an environmental-structural barrier to health service and syringe availability among substance-using women in street-level sex work. *Int J Drug Policy* 2008; **19**(2): 140-7.
202. Renzaho A, Pallotta-Chiarolli M. Commercial sex work, survival sex, sexual violence and HIV/AIDS prevention in Arumeru district, Arusha region of Tanzania. *Open Trop Med J* 2009; **2**: 27–38.
203. Collins SP, Goldenberg SM, Burke NJ, Bojorquez-Chapela I, Silverman JG, Strathdee SA. Situating HIV risk in the lives of formerly trafficked female sex workers on the Mexico-US border. *AIDS Care Psychol Socio-Med Asp AIDS HIV* 2013; **25**(4): 459-65.
204. Cabezas AL. Economies of desire : sex and tourism in Cuba and the Dominican Republic. Philadelphia, PA: Temple University Press; 2009.
205. Mbonye M, Rutakumwa R, Weiss H, Seeley J. Alcohol consumption and high risk sexual behaviour among female sex workers in Uganda. *African Journal of AIDS Research* 2014; **13**(2): 145-51.
206. Onyango MA, Adu-Sarkodie Y, Agyarko-Poku T, et al. "It's all about making a life": Poverty, HIV, violence, and other vulnerabilities faced by young female sex workers in Kumasi, Ghana. *JAIDS Journal of Acquired Immune Deficiency Syndromes* 2015; **68**: S131-S7.
207. Rhodes T, Simić M, Baroš S, Platt L, Žikić B. Police violence and sexual risk among female and transvestite sex workers in Serbia: Qualitative study. *BMJ* 2008; **337**(7669): 560-3.
208. Global Network of Sex Work Projects. Briefing paper: stigma & discrimination experienced by sex workers living with HIV. Edinburgh, Scotland: NSWP, 2015.
209. Okal J, Chersich MF, Tsui S, Sutherland E, Temmerman M, Luchters S. Sexual and physical violence against female sex workers in Kenya: A qualitative enquiry. *AIDS Care Psychol Socio-Med Asp AIDS HIV* 2011; **23**(5): 612-8.
210. Yuen WW-Y, Wong WC-W, Holroyd E, Tang CS-K. Resilience in work-related stress among female sex workers in Hong Kong. *Qualitative health research* 2014; **24**(9): 1232-41.

211. Decker MR, Wirtz AL, Moguilnyi V, et al. Female sex workers in three cities in Russia: HIV prevalence, risk factors and experience with targeted HIV prevention. *AIDS and behavior* 2014; **18**(3): 562-72.
212. Witte SS, Batsukh A, Chang M. Sexual risk behaviors, alcohol abuse, and intimate partner violence among sex workers in Mongolia: Implications for HIV prevention intervention development. *J Prev Intervention Community* 2010; **38**(2): 89-103.
213. Karandikar S, Frost C, Gezinski L. Patriarchy and gender-based violence: Experiences of female sex workers in India. *International Journal of Social Work* 2014; **1**(1).
214. Benoit C, Smith M, Jansson M, Magnus S, Flagg J, Maurice R. Sex work and three dimensions of self-esteem: self-worth, authenticity and self-efficacy. *Culture, Health & Sexuality* 2017; **20**(1).
215. Beattie TS, Isac S, Bhattacharjee P, et al. Reducing violence and increasing condom use in the intimate partnerships of female sex workers: Study protocol for Samvedana Plus, a cluster randomised controlled trial in Karnataka state, south India. *BMC Public Health* 2016; **16**(1).
216. Javalkar P, Platt L, Prakash R, et al. Effectiveness of a multilevel intervention to reduce violence and increase condom use in intimate partnerships among female sex workers: cluster randomised controlled trial in Karnataka, India. *BMJ Glob Health* 2019; **4**(6): e001546.
217. Beattie TSH, Bhattacharjee P, Ramesh BM, et al. Violence against female sex workers in Karnataka state, south India: impact on health, and reductions in violence following an intervention program. *BMC public health* 2010; **10**: 476-.
218. Biradavolu MR, Burris S, George A, Jena A, Blankenship KM. Can sex workers regulate police? Learning from an HIV prevention project for sex workers in southern India. *Social science & medicine* 2009; **68**(8): 1541-7.
219. Jana S, Basu I, Rotheram-Borus MJ, Newman PA. The Sonagachi Project: a sustainable community intervention program. *AIDS education and prevention : official publication of the International Society for AIDS Education* 2004; **16**(5): 405-14.
220. Bhattacharjee P, Prakash R, Pillai P, et al. Understanding the role of peer group membership in reducing HIV-related risk and vulnerability among female sex workers in Karnataka, India. *AIDS Care Psychol Socio-Med Asp AIDS HIV* 2013; **25**(SUPPL.1): S46-S54.
221. Wechsberg WM, Zule WA, Luseno WK, et al. Effectiveness of an adapted evidence-based Woman-Focused intervention for sex workers and non-sex workers: The women's health coop in South Africa. *J Drug Issues* 2011; **41**(2): 233-52.
222. Wechsberg WM, Luseno WK, Lam WKK, Parry CDH, Morojele NK. Substance use, sexual risk, and violence: HIV prevention intervention with sex workers in Pretoria. *AIDS and behavior* 2006; **10**(2): 131-7.

223. United Nations Development Program. Human Development Report 2016: Dominican Republic: United Nations Development Program, 2016.
224. The World Bank. Dominican Republic country profile. 2020. <https://data.worldbank.org/country/dominican-republic> (accessed March 5 2020).
225. The World Bank. Dominican Republic overview: context. 2018. <http://www.worldbank.org/en/country/dominicanrepublic/overview#1> (accessed November 8, 2017).
226. Parra Osorio J. Poverty and equity brief, Latin America and the Caribbean: Dominican Republic: World Bank Group, 2019.
227. Lavigne M, Vargas LH. Social protection systems in Latin America and the Caribbean: Dominican Republic. Santiago, Chile: Economic Commission for Latin America and the Caribbean, 2013.
228. United Nations Development Program. Human development report 2019: Dominican Republic: United Nations Development Program, 2019.
229. Consejo Nacional para el VIH y el SIDA. Segunda encuesta de vigilancia de comportamiento con vinculación serológica en poblaciones claves: gays, trans y hombres que tienen sexo con hombres, trabajadoras sexuales, usuarios de drogas. Santo Domingo, Dominican Republic: Ministerio de Salud Pública y Asistencia Social, CONAVIHSIDA, Dirección General de Control de Infecciones de Transmisión Sexual y SIDA (DIGECITSS) Instituto, IDCP, USAID, CDC, Programa, UNAIDS, Global Fund, CESDEM, Amigos Siempre Amigos (ASA), Transsa Dominicana, Alianza Nacional de Hombres Gay, Trans y otros Hombres que tienen sexo con Hombres, COIN, MODEMU, Hogar Crea Dominicano Incorporado, CEPROSH, 2012.
230. UNAIDS. Country factsheet: Dominican Republic 2018. Geneva: UNAIDS, 2018.
231. Centro de Estudios Sociales y Demográficos (CESDEM), ICF International. Encuesta Demográfica y de Salud 2013. Santo Domingo, República Dominicana: CESDEM y ICF International, 2014.
232. Lambert V. Gender assessment USAID/Dominican Republic: DevTech Systems, Inc., 2009.
233. Casado W, Skewes R. Domestic violence in San Jose De Ocoa, Dominican Republic 2008–2011. *Injury Prevention* 2012; **18**(Suppl 1): A180-A.
234. Essayag S. From commitment to action: Policies to end violence against women in Latin America and the Caribbean. Regional analysis document. Panama: UNDP and UN Women, 2017.
235. UN Women. Dominican Republic. 2018. <http://lac.unwomen.org/en/donde-estamos/republica-dominicana> (accessed March 20, 2018).

236. Dominican Today. Justice Ministry unveils 22-point plan to fight gender violence. Dominican Today. 2017 November 9, 2017.
237. United Nations. International Day for the Elimination of Violence against Women, 25 November. n.d. <http://www.un.org/en/events/endviolenceday/background.shtml> (accessed March 12, 2018).
238. Universo E. La tragedia de las hermanas Mirabal: cómo el asesinato de 3 mujeres dominicanas dio origen al día mundial de la no violencia contra la mujer. El Universo. 2017 November 25, 2017.
239. notimérica. El asesinato de las hermanas Mirabal, origen del Día Contra la Violencia de Género. notimérica. 2017 March 10, 2017.
240. Marte G. Las Hermanas Mirabal: tres mariposas que desafiaron a Trujillo. El Dia. 2017 November 24, 2017.
241. Daniela F, Álvarez A. Las hermanas Mirabal, símbolo de organización y lucha. La Izquierda Diario. 2017 November 25, 2017.
242. United Nations. International Day for the Elimination of Violence against Women, 25 November. n.d. <http://www.un.org/en/events/endviolenceday/background.shtml> (accessed March 12, 2018)
243. United Nations General Assembly. Resolution Adopted by the General Assembly: International Day for the Elimination of Violence against Women. Geneva: United Nations; 2000.
244. Caridad Bueno C. A knife hidden in roses: Development and gender violence in the Dominican Republic: University of Massachusetts - Amherst; 2013.
245. Breitbart V, Morales H, Brown J, Betances B, Kahalnik F. Con un pie en dos islas: Cultural bridges that inform sexual and reproductive health in the Dominican Republic and New York. *Cult Health Sexual* 2010; **12**(5): 543-54.
246. Viswanathan N, Carretero L, Afzal O, Rodriguez SI, Shirazian T. Understanding the challenges of addressing intimate partner violence in the Dominican Republic. *Int J Gynecol Obstet* 2016; **133**(1): 120-4.
247. FHI360. Everyone deserves to live free of violence: Assessing a model to increase access to holistic GBV-response services in Puerto Plata, Dominican Republic. Final Draft. Durham, North Carolina: USAID PEPFAR Linkages Across the Continuum of HIV Services for Key Populations Affected by HIV (LINKAGES), 2017.
248. Centro de Estudios de Género, Instituto Tecnológico de Santo Domingo. Sistema de atención a la violencia contra las mujeres: Alcances y desafíos. República Dominicana, 2013.

249. Caplan S, Little TV, Reyna P, et al. Mental health services in the Dominican Republic from the perspective of health care providers. *Global Public Health* 2016: 1-25.
250. Kishor S, Johnson K. Reproductive health and domestic violence: Are the poorest women uniquely disadvantaged? *Demography* 2006; **43**(2): 293-307.
251. Flake DF, Forste R. Fighting families: Family characteristics associated with domestic violence in five Latin American countries. *Journal of Family Violence* 2006; **21**(1): 19-29.
252. Amnesty International. "If they can have her, why can't we?" Gender-based torture and other ill-treatment of women engaged in sex work in the Dominican Republic." London: Amnesty International, 2019.
253. Deschamps MM, Metch B, Morgan CA, et al. Feasibility of identifying a female sex worker cohort at high risk of HIV infection in the Caribbean for HIV vaccine efficacy trials: Longitudinal results of HVTN 907. *J Acquired Immune Defic Syndr* 2016; **71**(1): 70-7.
254. MEASURE Evaluation. Size of key populations in the Dominican Republic - 2016 estimates. Chapel Hill: MEASURE Evaluation, 2017.
255. Safa H. The myth of the male breadwinner: Women and industrialization in the Caribbean. New York: Taylor & Francis; 1995.
256. Safa HI. Free markets and the marriage market: structural adjustment, gender relations, and working conditions among Dominican women workers. *Environment & planning A* 1999; **31**(2): 291-304.
257. Caridad Bueno C. Stratification economics and grassroots development: The case of low-income black women workers in Santo Domingo, Dominican Republic. *The Review of Black Political Economy* 2015; **42**(1-2): 35-55.
258. Carrasco MA, Barrington C, Kennedy C, Perez M, Donastorg Y, Kerrigan D. 'We talk, we do not have shame': addressing stigma by reconstructing identity through enhancing social cohesion among female sex workers living with HIV in the Dominican Republic. *Cult Health Sex* 2016: 1-14.
259. Cabezas A. Women's work is never done: Sex tourism in Sosúa, the Dominican Republic. In: Kempadoo K, ed. Sun, sex, and gold: Tourism and sex work in the Caribbean. Lanham, MD: Rowman & Littlefield; 1999: 93-123.
260. Heravian A, Solomon R, Krishnan G, et al. Alcohol consumption patterns and sexual risk behavior among female sex workers in two South Indian communities. *Int J Drug Policy* 2012; **23**(6): 498-504.
261. Leddy AM, Kerrigan D, Kennedy CE, Mbwambo J, Likindikoki S, Underwood CR. 'You already drank my beer, I can decide anything': using structuration theory to explore the dynamics of alcohol use, gender-based violence and HIV risk among female sex workers in Tanzania. *Cult Health Sex* 2018: 1-15.

262. Fleming PJ, Barrington C, Perez M, Donastorg Y, Kerrigan D. Amigos and amistades: the role of men's social network ties in shaping HIV vulnerability in the Dominican Republic. *Cult Health Sexual* 2014; **16**(8): 883-97.
263. Barrington C. Social networks, norms, and HIV-related behaviors among the male partners of female sex workers in La Romana, Dominican Republic. ProQuest Dissertations Publishing: The Johns Hopkins University; 2008.
264. Barrington C, Latkin C, Sweat MD, Moreno L, Ellen J, Kerrigan D. Talking the talk, walking the walk: Social network norms, communication patterns, and condom use among the male partners of female sex workers in La Romana, Dominican Republic. *Soc Sci Med* 2009; **68**(11): 2037-44.
265. Rock A, Barrington C, Gomez H, Perez M, Donastorg Y, Kerrigan D. Sexual partner violence and HIV treatment and care among female sex workers participating in a multilevel HIV intervention in Santo Domingo, Dominican Republic. 9th International AIDS Society (IAS) Conference on HIV Science (IAS 2017); 2017 23-26 July 2017; Paris, France; 2017.
266. Deschamps MM, Zorrilla CD, Morgan CA, et al. Recruitment of Caribbean female commercial sex workers at high risk of HIV infection. *Rev Panam Salud Publica Pan Am J Public Health* 2013; **34**(2): 92-8.
267. Kennedy C, Barrington C, Donastory Y, et al. Exploring the positive health, dignity and prevention needs of female sex workers, men who have sex with men and transgender women in the Dominican Republic and Swaziland. Baltimore: USAID - Project Search: Research to Prevention, 2013.
268. Caribbean Sex Work Collective. United Women's Movement (MODEMU). N.D. <http://caribbeansexworkcollective.org/index.php/en/the-collective/81-the-collective/78-united-women-s-movement-modemu> (accessed March 12 2018).
269. Zulliger R, Kennedy C, Barrington C, Perez M, Donastorg Y, Kerrigan D. A multi-level examination of the experiences of female sex workers living with HIV along the continuum of care in the Dominican Republic. *Glob Public Health* 2017: 1-15.
270. Kerrigan D, Barrington C, Carrasco M, et al. Chapter 5: Abriendo Puertas: A multi-level intervention to improve HIV outcomes by addressing stigma and discrimination among female sex workers in the Dominican Republic. In: Kerrigan D, Barrington C, eds. Structural dynamics of HIV: risk, resilience and response. Cham, Switzerland: Springer International Publishing; 2018.
271. Barrington C, Fleming PJ, Moya M, et al. Emotional Men and Pragmatic Women? Relationship and gender dynamics between female sex workers and their regular partners in the Dominican Republic. International AIDS Society Conference. Washington DC; 2012.
272. Holzemer WL, Uys LR, Chirwa ML, et al. Validation of the HIV/AIDS Stigma Instrument - PLWA (HASI-P). *AIDS Care* 2007; **19**(8): 1002-12.

273. Fife BL, Wright ER. The dimensionality of stigma: a comparison of its impact on the self of persons with HIV/AIDS and cancer. *J Health Soc Behav* 2000; **41**(1): 50-67.
274. Rael CT. Perceptions of sex work-related stigma in female sex workers from the Dominican Republic: Implications for HIV interventions. *Sex Cult* 2015; **19**(4): 674-84.
275. Rael CT, Carballo-Diéguéz A, Norton R, et al. Identifying strategies to cope with HIV-related stigma in a group of women living with HIV/AIDS in the Dominican Republic: A qualitative study. *AIDS and behavior* 2016; **21**: 2589–99.
276. Rael CT, Hampanda K. Understanding internalized HIV/AIDS-related stigmas in the Dominican Republic: a short report. *AIDS Care* 2016; **28**(3): 319-24.
277. Human Rights Watch. Discrimination against Women Living with HIV in the Dominican Republic: Human Rights Watch, 2004.
278. Kleinman A. The illness narratives: Suffering, healing, and the human condition. New York: Basic Books; 1988.
279. Dayton R, Alvarez B, Morales GJ, et al. Assessing an inclusive model to increase access to comprehensive gender-based violence response services and improve HIV outcomes in Puerto Plata, Dominican Republic. *Cult Health Sex* 2019: 1-17.
280. Barrington C, Acevedo R, Donastorg Y, Perez M, Kerrigan D. ‘HIV and work don't go together’: Employment as a social determinant of HIV outcomes among men who have sex with men and transgender women in the Dominican Republic. *Global Public Health* 2016: 1-16.
281. Cáceres Ureña FI. Dominican Republic: stigma and discrimination in people living with HIV: Asociación Dominicana Pro Bienestar de la Familia (Profamilia), Instituto de Estudios de Población y Desarrollo (IEPD), 2009.
282. Pheterson G. Stigma. In: Ditmore MH, ed. Encyclopedia of prostitution and sex work. Westport, CT: Greenwood Publishing Group; 2006: 461-2.
283. Collins PY, von Unger H, Armbrister A. Church ladies, good girls, and locas: Stigma and the intersection of gender, ethnicity, mental illness, and sexuality in relation to HIV risk. *Social science & medicine* 2008; **67**(3): 389-97.
284. Chant S, Craske N. Gender in Latin America. New Brunswick, New Jersey: Rutgers University Press; 2003.
285. Earnshaw VA, Chaudoir SR. From conceptualizing to measuring HIV stigma: A review of HIV stigma mechanism measures. *AIDS and behavior* 2009; **13**(6): 1160-77.
286. Friedemann-Sánchez G. Assets in intrahousehold bargaining among women workers in Colombia's cut-flower industry. *Fem Econ* 2006; **12**(1-2): 247-69.

287. Deere C, Doss C. The gender asset gap: What do we know and why does it matter? *Fem Econ* 2006; **12**(1-2): 1-50.
288. Castro A, Farmer P. Understanding and addressing AIDS-related stigma: from anthropological theory to clinical practice in Haiti. *American journal of public health* 2005; **95**(1): 53-9.
289. Scambler G. Health-related stigma. *Sociol Health Illn* 2009; **31**(3): 441-55.
290. Sandelowski M, Lambe C, Barroso J. Stigma in HIV-positive women. *Journal of Nursing Scholarship* 2004; **36**(2): 122-8.
291. Lawless S, Kippax S, Crawford J. Dirty, diseased and undeserving: the positioning of HIV positive women. *Social science & medicine* 1996; **43**(9): 1371-7.
292. Douglas M. Powers and Dangers. Purity and Danger: An Analysis of the Concepts of Pollution and Taboo. New York: Routledge & Kegan Paul; 1966.
293. Downe PJ. Constructing a complex of contagion: The perceptions of AIDS among working prostitutes in Costa Rica. *Soc Sci Med* 1997; **44**(10): 1575-83.
294. Aggleton P, Parker R, Maluwa M. Stigma, discrimination, and HIV/AIDS in Latin America and the Caribbean. Washington, D.C.: Inter-American Development Bank, 2003.
295. Earnshaw VA, Smith LR, Cunningham CO, Copenhaver MM. Intersectionality of internalized HIV stigma and internalized substance use stigma: Implications for depressive symptoms. *J Health Psychol* 2015; **20**(8): 1083-9.
296. Katz IT, Ryu AE, Onuegbu AG, et al. Impact of HIV-related stigma on treatment adherence: systematic review and meta-synthesis. *Journal of the International AIDS Society* 2013; **16**(3 Suppl 2).
297. Link BG, Phelan J. Social conditions as fundamental causes of disease. *J Health Soc Behav* 1995; **Spec No**: 80-94.
298. Rueda S, Mitra S, Chen S, et al. Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. 2016.
299. Lyons CE, Schwartz SR, Murray SM, et al. The role of sex work laws and stigmas in increasing HIV risks among sex workers. *Nature Communications* 2020; **11**(1): 773.
300. Vanable PA, Carey MP, Blair DC, Littlewood RA. Impact of HIV-related stigma on health behaviors and psychological adjustment among HIV-positive men and women. *AIDS and behavior* 2006; **10**(5): 473-82.
301. Lee RS, Kochman A, Sikkema KJ. Internalized stigma among people living with HIV/AIDS. *AIDS and behavior* 2002; **6**(4): 309-19.



302. Mak WW, Poon CY, Pun LY, Cheung SF. Meta-analysis of stigma and mental health. *Social science & medicine* 2007; **65**(2): 245-61.
303. Logie CH, Lacombe-Duncan A, Wang Y, et al. Pathways from HIV-related stigma to antiretroviral therapy measures in the HIV care cascade for women living with HIV in Canada. *J Acquir Immune Defic Syndr* 2018; **77**(2): 144-53.
304. Carlson C. The impact of violence, perceived stigma, and other work-related stressors on depressive symptoms among women engaged in sex work. *Global Social Welfare* 2017; **4**(2): 51-7.
305. Liao M, Kang D, Tao X, et al. Alcohol use, stigmatizing/discriminatory attitudes, and HIV high-risk sexual behaviors among men who have sex with men in China. *Biomed Res Int* 2014; **2014**.
306. Chen Y, Li X, Shen Z, Zhou Y, Tang Z. Drinking reasons and alcohol problems by work venue among female sex workers in Guangxi, China. *Subst Use Misuse* 2015; **50**(5): 642-52.
307. Nachege JB, Morroni C, Zuniga JM, et al. HIV-related stigma, isolation, discrimination, and serostatus disclosure: A global survey of 2035 HIV-infected adults. *J Int Assoc Phys AIDS* 2012; **11**(3): 172-8.
308. Berger BO, Grosso A, Adams D, et al. The prevalence and correlates of physical and sexual violence affecting female sex workers in Swaziland. *J Interpers Violence* 2018; **33**(17): 2745-66.
309. Arregui M. Living with HIV in the Dominican Republic. *Interamerican Journal of Psychology* 2007; **41**(1): 31-40.
310. Cooper ML, Frone MR, Russell M, Mudar P. Drinking to regulate positive and negative emotions: a motivational model of alcohol use. *J Pers Soc Psychol* 1995; **69**(5): 990-1005.
311. Berger BE, Ferrans CE, Lashley FR. Measuring stigma in people with HIV: psychometric assessment of the HIV stigma scale. *Research in nursing & health* 2001; **24**(6): 518-29.
312. Zelaya CE, Sivaram S, Johnson SC, Srikrishnan AK, Solomon S, Celentano DD. HIV/AIDS stigma: reliability and validity of a new measurement instrument in Chennai, India. *AIDS and behavior* 2008; **12**(5): 781-8.
313. Earnshaw VA, Bogart LM, Dovidio JF, Williams DR. Stigma and racial/ethnic HIV disparities: moving toward resilience. *Am Psychol* 2013; **68**(4): 225-36.
314. Liu SH, Srikrishnan AK, Zelaya CE, Solomon S, Celentano DD, Sherman SG. Measuring perceived stigma in female sex workers in Chennai, India. *AIDS Care* 2011; **23**(5): 619-27.

315. Fitzgerald-Husek A, Van Wert MJ, Ewing WF, et al. Measuring stigma affecting sex workers (SW) and men who have sex with men (MSM): A systematic review. *PLOS ONE* 2017; **12**(11): e0188393.
316. Kerrigan D, Karver T, Barrington C, et al. Development of the experiences of sex work stigma scale using item response theory: Implications for research on the social determinants of HIV. *Under review* 2020.
317. DeVellis RF. Designing multi-item scales. Designing multi-item scales short course; 2016 March 24, 2016; Chapel Hill, NC: H.W. Odum Institute; 2016.
318. DeVellis RF. Scale development: Theory and applications. 4th ed. Thousand Oaks: Sage Publications; 2003.
319. Heckert D, Gondolf E. Battered women's perceptions of risk versus risk factors and instruments in predicting repeat reassault. *J Interpers Violence* 2016; **19**(7): 778-800.
320. Sandberg D, Valdez C, Engle J, Menghrajani E. Attachment anxiety as a risk factor for subsequent intimate partner violence victimization: A 6-month prospective study among college women. *J Interpers Violence* 2016; **34**(7): 1410-27.
321. Carrasco MA, Nguyen TQ, Barrington C, Perez M, Donastorg Y, Kerrigan D. HIV stigma mediates the association between social cohesion and consistent condom use among female sex workers living with HIV in the Dominican Republic. *Arch Sex Behav* 2018; **47**(5).
322. Pan American Health Organization. Unhappy hours: Alcohol and partner aggression in the Americas. Washington, D.C.: PAHO, 2008.
323. Devries KM, Child JC, Bacchus LJ, et al. Intimate partner violence victimization and alcohol consumption in women: A systematic review and meta-analysis. *Addiction* 2014; **109**(3): 379-91.
324. Kutner M, Nachtsheim C, Neter J. Applied linear regression models. 4th ed: McGraw Hills/Irwin; 2004.
325. White IR, Carlin JB. Bias and efficiency of multiple imputation compared with complete-case analysis for missing covariate values. *Stat Med* 2010; **29**: 2920- 31.
326. Kline RB. Principles and practice of structural equation modeling. Third Edition ed. New York: Guilford Publications; 2011.
327. Bauer DJ, Curran PJ. Structural equation modeling course notes. Chapel Hill, NC: Curran-Bauer Analytics; 2017.
328. Bollen KA. Structural equations with latent variables. New York: John Wiley and Sons, Inc.; 1989.

329. Brown TA. *Confirmatory Factor Analysis for Applied Research*. Second ed. New York: The Guilford Press; 2015.
330. Flora DB, Curran PJ. An Empirical Evaluation of Alternative Methods of Estimation for Confirmatory Factor Analysis With Ordinal Data. *Psychol Methods* 2004; **9**(4): 466-91.
331. Muthén LK, Muthén BO. *Mplus User's Guide*. 8th Edition ed. Los Angeles, CA: Muthén & Muthén; 1998-2017.
332. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 1999; **6**: 1-55.
333. Browne MW, Cudek R. Alternate ways of assessing model fit. In: Bollen KA, Long JS, eds. *Testing structural equation models*. Newbury Park, CA: Sage; 1993: 136–62.
334. Menard S. *Longitudinal Research*: SAGE Publications Inc; 2002.
335. MacKinnon D. *Introduction to statistical mediation analysis*. Mahwah, NJ: Erlbaum; 2008.
336. Bollen KA. Total, Direct, and Indirect Effects in Structural Equation Models. *Sociological Methodology* 1987; **17**: 37-69.
337. McNaughton Reyes HL, Foshee VA, Fortson BL, Valle LA, Breiding MJ, Merrick MT. Longitudinal Mediators of Relations Between Family Violence and Adolescent Dating Aggression Perpetration. *J Marriage Fam* 2015; **77**(7): 1016-30.
338. Valeri L, Vanderweele TJ. Mediation analysis allowing for exposure-mediator interactions and causal interpretation: theoretical assumptions and implementation with SAS and SPSS macros. *Psychol Methods* 2013; **18**(2): 137-50.
339. Cole DA, Maxwell SE. Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of abnormal psychology* 2003; **112**(4): 558-77.
340. Preacher KJ. Advances in mediation analysis: a survey and synthesis of new developments. *Annu Rev Psychol* 2015; **66**: 825-52.
341. Potterat JJ, Brewer DD, Muth SO, et al. Mortality in a long-term open cohort of prostitute women. *Am J Epidemiol* 2004; **159**(8): 778-85.
342. Crofford LJ. Violence, stress, and somatic syndromes. *Trauma Violence Abuse* 2007; **8**(3): 299-313.
343. Leserman J, Drossman DA. Relationship of abuse history to functional gastrointestinal disorders and symptoms: some possible mediating mechanisms. *Trauma Violence Abuse* 2007; **8**(3): 331-43.

344. World Health Organization, Fund UNP, HIV/AIDS JUNPo, Projects GNoSW, Bank TW. Implementing comprehensive HIV/STI programmes with sex workers: practical approaches from collaborative interventions. Geneva: World Health Organization, 2013.
345. Global Network of Sex Work Projects (NSWP). Global Report: Good Practice in Sex Worker-Led HIV Programming, 2014.
346. Loutfy M, Tharao W, Logie C, et al. Systematic review of stigma reducing interventions for African/Black diasporic women. *J Int AIDS Soc* 2015; **18**: 19835.
347. Turan B, Hatcher AM, Weiser SD, Johnson MO, Rice WS, Turan JM. Framing Mechanisms Linking HIV-Related Stigma, Adherence to Treatment, and Health Outcomes. *American journal of public health* 2017; **107**(6): 863-9.
348. UNAIDS. Epidemiological Fact Sheet on HIV and AIDS: Dominican Republic. Geneva, Switzerland: UNAIDS, 2013.
349. Butler J. Performativity, Precarity and Sexual Politics. *AIBR Revista de Antropología Iberoamericana* 2009; **04**: I-XIII.
350. Kalleberg AL. Precarious Work, Insecure Workers: Employment Relations in Transition. *American Sociological Review* 2009; **74**(1): 1-22.
351. International Labour Organization. Individual Case (CAS) - Discussion: 2014, Publication: 103rd ILC session (2014). Geneva: ILO; 2014.
352. United States Department of State. Dominican Republic 2019 Human Rights Report. Washington DC: United States Department of State, Bureau of Democracy, Human Rights and Labor, 2019.
353. Rael CT, Carballo-Diéguéz A, Norton R, et al. Identifying Strategies to Cope with HIV-Related Stigma in a Group of Women Living with HIV/AIDS in the Dominican Republic: A Qualitative Study. *AIDS and behavior* 2016: 1-11.
354. Pearlin LI. The sociological study of stress. *J Health Soc Behav* 1989; **30**(3): 241-56.
355. Meyer I. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychol Bull* 2003; **129**(5): 674-97.
356. Straus MA. Physical violence in American families: Risk factors and adaptations to violence in 8,145 families. New Brunswick, NJ: Transaction Publishers; 1990.
357. Neff LA, Karney BR. Acknowledging the elephant in the room: How stressful environmental contexts shape relationship dynamics. *Current opinion in psychology* 2017; **13**: 107-10.
358. Rosenblatt P, Keller L. Economic vulnerability and economic stress in farm couples. *Family Relations* 1983; **32**(4): 567-73.

359. Díaz RM, Ayala G, Bein E, Henne J, Marin BV. The impact of homophobia, poverty, and racism on the mental health of gay and bisexual Latino men: findings from 3 US cities. *American journal of public health* 2001; **91**(6): 927-32.
360. Story LB, Bradbury TN. Understanding marriage and stress: essential questions and challenges. *Clinical psychology review* 2004; **23**(8): 1139-62.
361. Bodenmann G, Ledermann T, Bradbury TN. Stress, sex, and satisfaction in marriage. *Personal Relationships* 2007; **14**(4): 551-69.
362. Logie CH, Marcus N, Wang Y, et al. A longitudinal study of associations between HIV-related stigma, recent violence and depression among women living with HIV in a Canadian cohort study. *J Int AIDS Soc* 2019; **22**(7): e25341.
363. Doyle DM, Molix L. Social stigma and sexual minorities' romantic relationship functioning: A meta-analytic review. *Pers Soc Psychol Bull* 2015; **41**(10): 1363-81.
364. Lewis R, Milletich R, Derlega V, Padilla M. Sexual minority stressors and psychological aggression in lesbian women's intimate relationships. *Psychol Women Q* 2014; **38**(4): 535-50.
365. Willan S, Nolwazi N, Gibbs A, Jewkes R. Exploring young women's constructions of love and strategies to navigate violent relationships in South African informal settlements. *Culture, Health & Sexuality* 2019; **21**(11): 1225-39.
366. Dillon G, Hussain R, Loxton D, Rahman S. Mental and physical health and intimate partner violence against women: A review of the literature. *International Journal of Family Medicine* 2013; **2013**.
367. Kennedy AC, Prock KA. "I still feel like I am not normal": A review of the role of stigma and stigmatization among female survivors of child sexual abuse, sexual assault, and intimate partner violence. *Trauma Violence Abuse* 2018; **19**(5): 512-27.
368. Munson A, Davis D, Barrington C. 'There are no other options for us because of who we are': employment and retention in care among gay and bisexual men and transgender women living with HIV in Guatemala. *Cult Health Sex* 2020.
369. Oldenburg CE, Ortblad KF, Chanda MM, et al. Brief report: intimate partner violence and antiretroviral therapy initiation among female sex workers newly diagnosed with HIV in Zambia: A prospective study. *J Acquir Immune Defic Syndr* 2018; **79**(4): 435-9.
370. Moore J, Stinson L, Welniak E. Income measurement error in surveys: A review. *Journal of Official Statistics* 2000; **16**.
371. Nugawela M, Langley T, Szatkowski L, Lewis S. Measuring alcohol consumption in population surveys: A review of international guidelines and comparison with surveys in England. *Alcohol Alcohol* 2016; **51**(1).

372. Vonghia L, Leggio L, Ferrulli A, Bertini M, Gasbarrini G, Addolorato G. Acute alcohol intoxication. *European journal of internal medicine* 2008; **19**(8).
373. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. ed. Arlington: American Psychiatric Publishing; 2013.
374. Elliott DM. Traumatic events: Prevalence and delayed recall in the general population. *J Consult Clin Psychol* 1997; **65**(5): 811-20.
375. Roberts ST, Flaherty BP, Deya R, et al. Patterns of gender-based violence and associations with mental health and HIV risk behavior among female sex workers in Mombasa, Kenya: A latent class analysis. *AIDS and behavior* 2018; **22**(10): 3273-86.
376. Buller AM, Hidrobo M, Peterman A, Heise L. The way to a man's heart is through his stomach?: A mixed methods study on causal mechanisms through which cash and in-kind food transfers decreased intimate partner violence. *BMC Public Health* 2016; **16**(1).
377. Hidrobo M, Peterman A, Heise L. The effect of cash, vouchers, and food transfers on intimate partner violence: Evidence from a randomized experiment in Northern Ecuador. *Am Econ J Appl Econ* 2016; **8**(3): 284-303.
378. Buller AM, Peterman A, Ranganathan M, Bleile A, Hidrobo M, Heise L. A mixed-method review of cash transfers and intimate partner violence in low- and middle-income countries. *The World Bank Research Observer* 2018; **33**(2): 218-58.
379. Lippman SA, Donini A, Diaz J, Chinaglia M, Reingold A, Kerrigan D. Social-environmental factors and protective sexual behavior among sex workers: the Encontros intervention in Brazil. *American journal of public health* 2010; **100 Suppl 1**: S216-23.
380. Fonner VA, Kerrigan D, Mnisi Z, Ketende S, Kennedy CE, Baral S. Social cohesion, social participation, and HIV related risk among female sex workers in Swaziland. *PLoS One* 2014; **9**(1): e87527.
381. Kerrigan D, Barrington C, editors. Structural dynamics of HIV: risk, resilience and response. Cham, Switzerland: Springer International Publishing; 2018.
382. Marmot M. The influence of income on health: Views of an epidemiologist. *Health Affairs* 2002; **21**(2: The Determinants of Health): 31-46.
383. Parliamentarians for Global Action (PGA). Field Mission to follow up on Project of General Law on Equality and Non-Discrimination, Santo Domingo, Dominican Republic. New York: PGA, 2016.
384. United Nations Development Programme, Parliamentarians for Global Action. Advancing the human rights and inclusion of LGBTI people: A handbook for parliamentarians. New York: UNDP, 2017.

385. Stangl AL, Lloyd JK, Brady LM, Holland CE, Baral S. A systematic review of interventions to reduce HIV-related stigma and discrimination from 2002 to 2013: how far have we come? *Journal of the International AIDS Society* 2013; **16**(3 Suppl 2): 18734-.
386. United Nations Committee on the Elimination of Discrimination against Women. Concluding observations on the combined sixth and seventh periodic reports of the Dominican Republic. New York: United Nations; 2013.
387. U.S. Bureau of Democracy Human Rights and Labor. Country reports on human rights practices for 2016: Dominican Republic. 2016.  
<http://www.state.gov/j/drl/rls/hrrpt/humanrightsreport/index.htm?year=2016&dliid=265582>  
(accessed November 24, 2017).
388. Amnesty International. Amnesty International report 2014/15: The state of the world's human rights. London: Amnesty International, 2015.
389. Kerrigan DL, Fonner VA, Stromdahl S, Kennedy CE. Community empowerment among female sex workers is an effective HIV prevention intervention: A systematic review of the peer-reviewed evidence from low- and middle-income countries (Review). *AIDS and behavior* 2013; **17**(6): 1926-40.