

**Gender-Based Violence and HIV Risk among Female Sex Workers  
in Iringa, Tanzania: Implications for a Community Empowerment  
Response**

by  
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## **Abstract**

**Background:** Globally, female sex workers (FSWs) bear a disproportionate burden of GBV and HIV. Prior work has demonstrated how substance use overlaps with GBV and HIV to further increase FSWs' risk for negative health outcomes. This dissertation explored how aspects of the sex work environment, including physical, social, economic, and political factors, facilitate alcohol consumption and influence FSWs' risk for GBV and HIV in Iringa, Tanzania. The ways in which sex workers collectively mobilize to address these factors and access their health and human rights was also explored. Additionally, this dissertation examined FSWs' experiences accessing justice for violence perpetrated against them.

**Methods:** This study was nested within a community-randomized controlled trial of a combination HIV prevention intervention among FSWs in Iringa, Tanzania. Utilizing baseline data from the parent study, this dissertation first conducted logistic regressions to assess the relationship between substance use, GBV, and consistent condom use with clients among a cohort of 496 FSWs. Additionally, 24 FSWs were purposively sampled to participate in in-depth interviews (IDIs) which aimed to gain a nuanced understanding of the role alcohol plays in both HIV and GBV-related risk in the context of venue-based female sex work, as well as women's experiences accessing justice for violence perpetrated against them. Qualitative data analysis was facilitated through the framework approach, in which the researcher begins analysis with a list of a priori codes, informed by the literature, while allowing for other domains to emerge from the data.

**Results:** Quantitative results suggest that intoxication during sex work is associated with significantly increased odds of GBV (aOR: 1.67, 95% CI: 1.08, 2.59) and reduced odds of consistent condom use with clients (aOR: 0.59, 95% CI: 0.37, 0.95). Qualitative analysis suggests

that routine interactions between FSWs and their clients at specific moments in time and space during the sex exchange process facilitate alcohol consumption and increase FSWs' risk for GBV and HIV. Furthermore, participants revealed how they mobilize their collective agency to address these environmental factors to limit alcohol consumption, prevent GBV, and promote condom use among their colleagues. Finally, qualitative results suggest that FSWs are routinely denied access to justice for violence perpetrated against them due to their occupation, and face human rights abuses at the hands of the police when they report violence to the authorities.

**Conclusion:** Findings from this dissertation highlight the need for community empowerment approaches for HIV prevention among FSWs to address the intersection between alcohol consumption, GBV, and unprotected sex. Such models should provide FSWs with the opportunity to mobilize their collective agency to disrupt aspects of the sex work environment that facilitate alcohol use and increase FSWs' risk for GBV and HIV. Finally, this study suggests that future community empowerment interventions should also provide FSWs with the skills and knowledge to join together in solidarity, in tandem with key stakeholders, to demand access to justice for violence perpetrated against them. It is possible that such an approach could reduce violence and HIV among FSWs in Tanzania and in similar settings.

Dissertation Committee Members

Assistant Professor Carol Underwood (Advisor)  
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# **I. Introduction & Study Setting**

## **Study objectives**

Female sex workers (FSWs) bear a disproportionate burden of HIV globally. In low and middle-income countries, FSWs have 13.5 times the odds of HIV infection compared to the general female population.<sup>1</sup> FSWs in sub-Saharan Africa (SSA) have the highest burden of HIV, with an HIV prevalence of 29.3% (25.9–33.8).<sup>2</sup> It is estimated that the average national HIV prevalence among FSWs in Tanzania is 26.6%, compared to 6.2% in the general female population.<sup>3,4</sup> FSWs in the region of Iringa have an HIV prevalence of 32.9%, which is one of the highest in the country.<sup>3,4</sup>

High rates of HIV acquisition and transmission among FSWs have been attributed to structural factors including criminalization, stigma and discrimination, and poverty, which inhibit HIV protective behaviors such as protected sex.<sup>5-9</sup> Condom use significantly reduces the risk of HIV transmission,<sup>10,11</sup> yet it is estimated that only 33% of FSWs in Tanzania practice consistent condom use with their clients, placing them at increased risk for HIV infection.<sup>3</sup>

Additionally, FSWs experience very high levels of gender-based violence (GBV) (i.e. physical or sexual violence).<sup>12-14</sup> In SSA, it is estimated that 49-82% of FSWs have experienced some form of GBV (i.e. sexual, physical or emotional) from a client in the past 6 months.<sup>15,16</sup> On average, 52% of FSWs in Tanzania have experienced physical violence in the past 6 months, while 47% experienced sexual violence (i.e. forced sex) in the past 6 months.<sup>3</sup> Violence can increase women's risk for HIV directly through sexual assault/ forced sex, and indirectly through increased risk behaviors including unprotected sex.<sup>6,17-20</sup> Previous studies have shown that FSWs who experience GBV are significantly less likely to use condoms with their sexual partners, and are more likely to be infected with HIV.<sup>14,15,17,18,21-31</sup> Substance use, specifically alcohol use and abuse, has been shown to increase FSWs' risk for both GBV and unprotected sex in SSA.<sup>32,33</sup> Alcohol use is common among FSWs in Tanzania, and FSWs in Iringa have the highest rate of

daily alcohol consumption in the country.<sup>3</sup> However, limited research has explored the relationship between alcohol use, GBV, and HIV risk among FSWs in Tanzania. Research is needed to explore the link between these intersecting factors in order to gain insight into potential avenues for intervention.

Furthermore, given the high rates of GBV perpetrated against FSWs in this context, it is important to appreciate their experiences accessing justice for these crimes. Prior work from other settings has demonstrated that FSWs face a number of barriers to accessing justice, including stigma and discrimination towards sex workers, as well as unsatisfactory GBV laws and limited enforcement of such laws, which allow violence to be perpetrated against FSWs with impunity.<sup>7,34</sup> When governments fail to hold perpetrators accountable for violence, they send the message of tolerance for abuse.<sup>7</sup> However, it is possible that efforts to ensure FSWs' access to justice, including equal access to redress for violence, as defined by law, could significantly reduce or prevent future violence against this population. Research is needed to explore these dynamics in Tanzania to gain insight into ways FSWs can improve their access to justice for violence perpetrated against them.

This study utilizes a cross-sectional study design, using both quantitative and qualitative methods to assess the interplay between alcohol use, GBV, and consistent condom use among FSWs in Iringa, Tanzania, as well as their experiences accessing justice for violence perpetrated against them. Building on existing research infrastructure and baseline data from an ongoing study, which includes a cohort of 496 FSWs in Iringa, Tanzania, the objectives of the present study are to:

1. Quantitatively examine the relationship between substance use, GBV, and consistent condom use between FSWs and their clients.
2. Qualitatively describe the role alcohol plays in both HIV and GBV-related risk in the context of venue-based female sex work.

3. Qualitatively explore FSWs' experiences accessing justice for violence perpetrated against them.

The present research is embedded within a NIMH/NIAID-funded Phase II trial of a community-based combination HIV prevention intervention among venue-based FSWs in Iringa, Tanzania (Grant #: 5R01MH104044; PI: Deanna Kerrigan). The parent study aims to improve HIV outcomes among FSWs in the region through a community empowerment-based combination HIV prevention and care intervention package, which provides FSWs with HIV services tailored to their specific needs, and stimulates internal social cohesion and community mobilization to reduce stigma, discrimination, and violence against FSWs.

### **Study Setting**

The Iringa region is located in the Southern Highlands of Tanzania along the Tanzanian-Zambian (Tanzam) highway, which connects the port of Dar es Salaam in Tanzania to the landlocked countries of Zambia, Malawi, and the Democratic Republic of the Congo (Appendix 1). The region is also home to a number of plantations, which grow various crops including tomatoes, maize, bamboo, and tea, just to name a few. These characteristics bring truck drivers and seasonal migrant workers through the region, which increases the demand for sex work.<sup>35</sup> Given these dynamics, the portion of the Tanzam highway in Iringa is lined with guesthouses for passing truck drivers and migrant workers as well as modern and traditional bars that sell bottled and locally brewed alcohol.

The majority of FSWs in this region are employed as barmaids in the modern or traditional bars that line the Tanzam highway. Although women earn a wage from selling alcohol in these establishments, it is often not enough to support them and their families.<sup>36,37</sup> As a consequence, these women often engage in sex work to augment their low wages.<sup>36,37</sup> In this context, sex work is conducted independently, without the use of managers or pimps-- sex workers identify clients on their own, and keep all the money they earn for themselves.

Modern bars (*Baa*) in Iringa are larger venues that sell bottled beer and liquor to customers and are run by bar managers/owners, who employ women as barmaids (Appendix 2.1). Barmaids who work in these establishments are often mobile—moving to bars in different regions, depending on the agricultural season. As a result, some modern bars have rooms in the back to accommodate barmaids who might not have anywhere else to stay. Some women conduct sex work in these rooms. Modern bars can also be connected to guesthouses, which rent out short-term rooms for passing truck drivers (Appendix 2.2).<sup>38</sup> Women can also use these rooms to conduct sex work.

Traditional bars or *vilabu* (singular *kilabu*) are small informal bars that sell locally brewed alcohols such as *ulanzi* (bamboo wine) or *komoni* (maize beer) (Appendix 2.3).<sup>38</sup> *Ulanzi* is made from fermented bamboo sap/juice and has an alcohol content of about 5% (Appendix 2.4).<sup>39</sup> It is consumed by the liter, which costs approximately 500 Tsh (~22 cents USD).<sup>38</sup> *Ulanzi* is particularly popular in the Iringa region and every village has a number of bamboo groves for the purpose of brewing and selling this alcohol. Bamboo trees provide the most sap/juice during the rainy season (January-May) in Iringa, making *ulanzi* plentiful and cheap at this time. As a consequence, this season is associated with drunkenness, sex, and increased rates of STIs.<sup>38</sup> *Komoni* is made from fermented maize and has an alcohol content of around 2-8%.<sup>39</sup> This alcohol is also commonly sold at *vilabu*.

Women who work in *vilabu* often run their own stalls, which can be located in the back of a woman's house, or in an open space with a number of individual stalls where women make and sell their own brew.<sup>38</sup> It is in this context that women can also meet their sex work clients. Depending on the location of the *vilabu*, sex work either occurs in the woman's house or in a nearby guesthouse.

Alcohol production is traditionally defined as women's work in Tanzanian society.<sup>39</sup> This dates back to pre-colonial times when women were tasked with making alcohol for rituals led by male elders and for work parties where local men gathered to share food and drink after

cultivating land for planting or assisting with the harvest.<sup>39</sup> During colonial times, selling locally brewed alcohol emerged as one of the few ways women could earn money given that wage labor was primarily reserved for men by the colonial state.<sup>39</sup> Furthermore, colonial officials prohibited the sale of European spirits (i.e. grape wine, hopped beer and spirits) to East Africans, based on their belief that such beverages were too intoxicating for East Africans, and could interfere with the colonial labor supply and increase African perpetrated violence and crime.<sup>39</sup> Consequently, “traditional brew” was the only alcoholic beverage available to East Africans during colonial times, and many women capitalized on this by opening their own stalls where they made and sold grain-based alcohol and exchanged sex to earn money to support themselves and their families.<sup>39</sup> The distinction between modern bars and traditional *vilabu* date back to these times when colonials drank European spirits in more formal “modern” bars and East Africans consumed local brew in the informal stalls owned by women.<sup>39</sup> Although there are no longer restrictions on who can consume bottled beer and liquor, the alcohol sold in modern bars is more expensive than local brew, and therefore draws clientele that have more money for alcohol and sex.<sup>38</sup>

## **Legal context in Tanzania**

### Laws related to sex work

The Tanzanian Penal Code of 1981 stipulates the policies related to sex work in the country.<sup>40</sup> Importantly, this law does not explicitly prohibit exchanging sex for money. Instead, it prohibits actions undertaken by pimps and brothel/bar managers/owners.<sup>40</sup> For example, the Penal Code forbids any person to “*exercise control, direction or influence over the movements of a prostitute in such manner as to show that he/she is aiding, abetting or compelling her prostitution with any other person*”.<sup>40</sup> This law also prohibits the owners of bars, hotels, houses, rooms, or any places that sell food or beverages of any kind, to allow sex work to occur on their premises.<sup>40</sup> Despite the fact that, legally, the act of exchanging sex for money is not prohibited, sex workers remain a marginalized population in Tanzania and are believed to engage in immoral behavior.<sup>41</sup>

As a consequence, sex workers face a great deal of stigma and discrimination in Tanzanian society.<sup>41</sup>

#### Laws related to Gender-Based Violence

Tanzania has no comprehensive law(s) related to GBV.<sup>42</sup> Instead, aspects of GBV are addressed through a number of different policies.<sup>42,43</sup> The three laws that are most relevant to GBV include: The Constitution of the United Republic of Tanzania of 1977 (Articles 12-29); the Law of Marriage Act (2002); and the Sexual Offences Special Provisions Act (SOSPA) (1998).<sup>42</sup> The Tanzanian Constitution includes language that prohibits discrimination against individuals based on their gender, and also recognizes the human rights of all Tanzanian citizens, including “equal protection under the law” and the right to “personal security.”<sup>42,43</sup> Therefore, although GBV is not explicitly mentioned, the Constitution provides sufficient mandate to enforce laws against GBV.

The Law of Marriage Act prohibits spousal corporal punishment, however, “corporal punishment” is not defined, leaving this term open to interpretation.<sup>42,43</sup> Furthermore, specific legal actions to take against such crimes are not explicitly outlined.<sup>42,43</sup> This law also does not recognize marital rape as a crime. As a result, domestic violence often occurs with impunity in Tanzania.<sup>42,43</sup>

SOSPA classifies a variety of forms of GBV as illegal including rape, gang rape, defilement, sodomy, human trafficking, sexual assault, sexual harassment, socio-economic denial, psychological/emotional abuse, and physical violence against women and children.<sup>42,43</sup> Like the Law of Marriage act, SOSPA does not recognize marital rape as a crime. SOSPA does however include specific punishments for sexual offences, including a minimum sentence of 30 years imprisonment and compensation to a survivor of sexual violence, as well as life imprisonment if the girl raped is less than 10 years old.<sup>42,43</sup> Gang rape is also recognized as a special crime

punishable with life imprisonment for each person in the group, regardless of that person's role in the rape.<sup>42,43</sup>

## **II. Relevant Literature and Theoretical Framework**

### **HIV in Tanzania**

Tanzania has a generalized HIV epidemic, with an adult (15-49 years) HIV prevalence of 5.1% in 2012.<sup>4</sup> Over the past decade, Tanzania's HIV prevalence has declined from 7% to 5%, and AIDS-related mortality declined by 25-49%.<sup>4,44</sup> Some evidence suggests that this downtrend may be due to increased HIV testing and prevention behaviors such as condom use at last sex.<sup>4,44</sup> Additionally, Tanzania has scaled up their HIV care and treatment services in the past decade, which has facilitated increased initiation and engagement in HIV care and treatment among HIV-infected individuals.<sup>45</sup> Despite these improvements, HIV still remains a significant health concern, particularly for vulnerable populations such as FSWs.

The HIV prevalence in the Iringa region of Tanzania (9.1%) is significantly higher than the national average for the country (5.1%).<sup>4</sup> In this setting, women are disproportionately infected with HIV than men, with an HIV prevalence of 11% among adult women, compared to 7% among adult men.<sup>4</sup> This disparity is heightened among youth (15-24) where 7% of young women are HIV-infected compared to 1.5% of young men.<sup>4</sup> It is thought that Iringa's location along the Tanzam highway contributes to these high rates of HIV and gender disparities in HIV-infection, by creating high levels of mobility and migration in the region and increasing the demand for sex work.<sup>35,37</sup>

### **HIV Among FSWs in Tanzania**

FSWs in SSA, in general, and Tanzania, in particular, are disproportionately affected by HIV. In SSA, 29.3% (25.9–33.8) of FSWs are infected with HIV, which is the highest prevalence of HIV among FSWs globally.<sup>2</sup> Recent estimates indicate that the national HIV prevalence



among FSWs in Tanzania is 26.6%, which is more than four times the prevalence of the general female population (6.2%).<sup>3,4</sup> FSWs in Iringa have an even higher HIV prevalence of 32.9%.<sup>3,4</sup> Again, these high levels of HIV-infection among FSWs in Iringa may be due to their location along the Tanzam highway.<sup>37</sup> While there is little known about the correlates of HIV among FSWs in Iringa, other studies have shown that the HIV prevalence among FSWs working in bars and hotels along major transit routes is between 26.3% and 68%.<sup>46-48</sup> A study conducted in 2000-2002 among FSWs in Mbeya, a region next to Iringa and also located along the Tanzanian-Zambian highway found an HIV prevalence of 68%, and a HIV incidence of 13.9/100 person-years among bar-based FSWs.<sup>46</sup>

#### Condom use and HIV among FSWs

When used consistently and correctly, condoms can prevent HIV transmission.<sup>10,11</sup> Yet, evidence suggests that FSWs in SSA and Tanzania have low levels of consistent condom use with their sexual partners, placing them at increased risk for HIV.<sup>3,28,49-52</sup> One study among FSWs in Uganda found that 45% of FSWs used condoms consistently (e.g. 100% of the time) in the past month.<sup>51</sup> National estimates suggest that 32.6% of FSWs in Tanzania consistently use condoms with their sexual partners.<sup>3</sup> The region of Iringa has one of the lowest rates of consistent condom use among FSWs, with only 12.6% reporting consistent condom use with all of their sexual partners.<sup>3</sup>

Studies have shown that rates of condom use among FSWs vary by partner type. Specifically, FSWs are more likely to use condoms with their new and non-regular clients, but are less likely to use condoms with their regular clients and non-paying partners.<sup>24,28,53-60</sup> For example, a study among FSWs in Kenya found that the total number of unprotected sex acts per week was 5-6 times higher with non-paying partners, as compared to clients.<sup>28</sup> Another study in Swaziland found that compared to new clients, FSWs had significantly reduced odds of consistent condom

use with regular clients (aOR: 0.30, 95%CI: 0.19, 0.47) and non-paying partners (aOR: 0.15, 95%CI: 0.09, 0.24).<sup>61</sup>

### Correlates of HIV and condom use among FSWs

High rates of HIV among FSWs in sub-Saharan and Western Africa have been attributed to structural factors including poverty, criminalization, stigma and discrimination, and GBV.<sup>5,7,8,14,21,41,62,63</sup> FSWs' engagement in high-risk sexual behaviors including frequent sex, unprotected sex, multiple concurrent partnerships, which are magnified by heavy alcohol consumption, must be understood within the broader social and structural context described above.<sup>5,6,8,48,64</sup>

Evidence suggests that one of the main reasons women go into sex work is because of poverty.<sup>29,65,66</sup> In qualitative studies from Swaziland, the Dominican Republic, the Democratic Republic of the Congo, FSWs noted that their economic need and that of their children, served as catalysts for going into sex work.<sup>29,65,66</sup> Once in sex work, FSWs report engaging in HIV risk behaviors, such as unprotected sex, in order to earn enough money to meet their basic needs.<sup>36,50,59,67,68</sup> Indeed, unprotected sex earns FSWs more money than protected sex, making it difficult for women to refuse it when they have financial difficulties.<sup>36,50,59,67</sup> Additionally, FSWs in such situations may be more willing to have unprotected sex with a client, when refusing to have unprotected sex could result in losing that client.<sup>67,68</sup> These behaviors ultimately place them at risk for HIV.<sup>11,69</sup>

Criminalization of sex work also increases FSWs' HIV risk by limiting their ability to carry condoms and advocate for their rights.<sup>7,34,70-72</sup> Sex work is criminalized in many countries throughout the world, including Tanzania.<sup>41</sup> In some countries, sex workers fear carrying condoms because they can be used by police as "evidence" of their involvement in sex work and provide grounds for their arrest.<sup>7,34,70-72</sup> There are also reports of police confiscating condoms from sex workers and destroying them.<sup>7,34,70-72</sup> As a consequence, venue owners often avoid

providing condoms for sex workers to use with their clients.<sup>7</sup> Evidence suggests that police confiscation of condoms is associated with inconsistent condom use and STI symptoms among FSWs.<sup>71</sup> Criminalization of sex work also contributes to high levels of GBV against FSW by creating an environment that fosters stigma and discrimination towards FSWs, and allows violence against FSWs to go unchecked.<sup>41,73</sup> As will be discussed in more detail below, GBV among FSWs has also been found to be associated with inconsistent condom use, unprotected sex, and HIV incidence and prevalence.<sup>14,15,17,18,21-25,27-31,74</sup>

In addition to the structural factors discussed above, condom use among FSWs and their sexual partners is also influenced by interpersonal and individual level factors including relationship dynamics and substance use.<sup>3,28,32,53,56,59,72,75-81</sup> As discussed earlier, evidence suggests that FSWs are more likely to use condoms with their new and non-regular clients, but are less likely to use condoms with their regular clients and non-paying partners.<sup>24,28,53-61,82,83</sup> Trust and intimacy are often cited as reasons for not using condoms with regular clients and non-paying partners.<sup>28,53,56,59,72,75,76</sup> Qualitative data suggests that FSWs and their regular clients and non-paying partners view unprotected sex as a way to establish and demonstrate trust, and increase intimacy in a relationship.<sup>28,53,56,59,72</sup> For example, sex workers in India noted that regular clients brought up issues of trust in order to refuse condoms when women requested them.<sup>56</sup> The same sample of women also noted that they had unprotected sex with their non-paying partners because condoms represented distrust and lack of intimacy.<sup>56</sup> The belief that condoms represent distrust, infidelity, and lack of intimacy has also been found in studies among heterosexual couples in the general population.<sup>84</sup>

### **Gender-Based Violence (GBV) Against FSWs**

The United Nations defines Gender-Based Violence (GBV) as any act of violence that “results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in

public or in private life.”<sup>85</sup> In Tanzania, where rates of GBV are already high among women in the general population,<sup>86</sup> FSWs are disproportionately affected by GBV.<sup>3</sup> Estimates suggest 22.3% of Tanzanian women experienced physical violence in the past 12 months, while 8.7% experienced sexual violence in the past 12 months.<sup>86</sup> In contrast, 50% of FSWs in Tanzania have experienced physical violence, while 37% experienced sexual violence (i.e. forced sex) by any partner in the past 6 months.<sup>3</sup> In Iringa, rates of violence are even higher among FSWs with 51.8% (43.7-60.1%) reporting physical violence, and 47.4% (40.2-55.3%) reporting forced sex by any partner in the past 6 months.<sup>3</sup>

Of the FSWs who experienced physical violence, 56% reported that a client was the perpetrator, and 58% reported that another person (i.e. non-paying partner, police, or stranger) was the perpetrator.<sup>a,3</sup> Among the FSWs who experienced forced sex, 57% reported that a client was the perpetrator, while 30.7% reported that another person was the perpetrator.<sup>a,3</sup> These findings are consistent with studies from other countries, which have found that FSWs experience violence from clients as well as other perpetrators including non-paying intimate partners, strangers, and police.<sup>7,15,20,23,28,29,41,53,87</sup> Research has also demonstrated that both physical and sexual violence against FSW often occur under the influence of alcohol<sup>24,32,53,87-89</sup> and/or in the context of negotiating condom use.<sup>7,29,65,67,74,90,91</sup>

High levels of violence against FSWs have been attributed to inequitable gender norms, criminalization of sex work, as well as stigmatization and discrimination of FSWs.<sup>92-94</sup> Hegemonic masculine norms, which value male “toughness,” virility, and dominance over women, are hypothesized to perpetuate gender inequality and sanction violence against women.<sup>92,94,95</sup> Violence is seen as a way that men are able to exert control over women and confirm their masculinity.<sup>92,94</sup> Indeed, studies have shown that men who endorse hegemonic masculine norms are more likely to be violent towards women.<sup>96-98</sup> For example, evidence from South Africa, Swaziland and Botswana suggests that men who endorse hegemonic masculine

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<sup>a</sup> Categories were not mutually exclusive (multiple response options were allowed)

norms are more likely to have raped a woman, compared to men who hold more equitable views on gender relations.<sup>96,98</sup>

Criminalization of sex work also contributes to high levels of GBV against FSWs by creating an environment that fosters stigma and discrimination towards FSWs, and allows violence against FSWs to go unchecked.<sup>7,41,73</sup> FSWs who experience violence at the hands of their clients or non-paying intimate partners often do not report it to the authorities because of the stigma and blame associated with sex work and GBV, and fears of further violence at the hands of police.<sup>7,41</sup> Sex workers who do report experiences of GBV to the police risk being subjected to further physical abuse, humiliation, and severe sexual violence including gang rape and forced unprotected sex by police officers.<sup>7,41,73</sup> Thus, criminalization of sex work ultimately fosters an environment that implicitly condones violence against FSWs by allowing clients, partners, and police to perpetrate physical and sexual abuse against FSWs with little or no legal repercussions.<sup>7,41,73</sup>

#### Limited Access to Justice for GBV among FSWs

While laws do exist to protect survivors of GBV, as outlined above, these laws are not comprehensive and are rarely enforced.<sup>42,43</sup> Such dynamics foster a culture of impunity for violence against women and limit women's access to justice.<sup>42,43</sup> In this dissertation, justice is defined as access to international standards of justice process including the investigation and prosecution of perpetrators of violence, as well as prompt redress for the harms suffered as a result of violence, as outlined by Tanzanian law.<sup>99</sup>

Due to the culture of impunity for GBV, reporting experiences of violence to authorities is often viewed as a futile endeavor, and as a result, violence regularly goes unreported in Tanzania and similar contexts.<sup>41,43</sup> Fear of retribution from the abuser, being blamed by family and community members for provoking the violence, as well as the stigma and shame associated with reporting violence are other barriers women face in reporting violence to authorities.<sup>100</sup>

Additionally, the penalty of 30 years imprisonment for rape, as stipulated by SOSPA, often prevents women from reporting intimate partner violence, as many women are financially dependent on their intimate partners.<sup>42</sup>

Due to their marginalized status in society, FSWs face additional barriers to accessing justice for violence perpetrated against them. As described above, sex work is criminalized in Tanzania, which fosters an environment of stigma and discrimination towards FSWs, and ultimately limits their ability to access justice for crimes perpetrated against them.<sup>7</sup> Prior work suggests that FSWs who experience violence at the hands of their clients or non-paying intimate partners often do not report it to the authorities because of the stigma and blame associated with sex work and GBV, and fears of further violence at the hands of police.<sup>41</sup> Indeed, sex workers who do report experiences of GBV to the police risk being subjected to further physical abuse, humiliation, and severe sexual violence including gang rape and forced unprotected sex by police officers.<sup>7,41,73</sup> When local law enforcement fails to protect FSW survivors of GBV and hold perpetrators of violence accountable for their crimes, they implicitly condone violence against FSWs and allow such acts of violence to continue with impunity.<sup>7,41,73</sup>

Access to justice for violence is not only the right of all Tanzanian citizens; it also has important implications for the health of survivors.<sup>101-103</sup> A substantial body of literature has demonstrated the negative impact GBV has on women's health, including increased risk for death and injury, HIV and other sexually transmitted infections, mental health disorders (i.e. anxiety and depression), and chronic pain, just to name a few.<sup>104,105</sup> When the state fails to hold perpetrators accountable for violence, they perpetuate a climate of tolerance towards violence against women and enable abuses towards women to continue.<sup>102</sup> As a consequence, women are placed at increased risk for the aforementioned negative health outcomes. In contrast, access to justice has the potential to prevent future violence by demonstrating intolerance of GBV through the enforcement of legal consequences for perpetrators, such as imprisonment. Yet, few studies have explored FSWs' experiences accessing justice for violence perpetrated against them. Further

research is needed to explore these dynamics in Tanzania to gain insight into ways FSWs' can improve their access to justice for violence perpetrated against them.

### **The Intersection of GBV and HIV Among FSW**

Evidence suggests a bidirectional link between HIV and GBV. First, GBV is associated with increased prevalence of HIV among FSWs and the general female population.<sup>12-14,21,22,63,106,107</sup> A study from Benin found a significant association between physical and sexual violence and HIV prevalence among FSWs (physical violence adjusted prevalence ratio (APR)=1.45; sexual violence APR=1.42).<sup>14</sup> A cross-sectional study among women from the general population, attending a voluntary counseling and testing clinic in Dar es Salaam, Tanzania found that HIV-infected women had more than twice the odds of experiencing at least one violent event perpetrated by their current partner, as compared to HIV-uninfected women (physical violence OR: 2.63, 95%CI: 1.23, 5.63; sexual violence OR: 2.39, 95%CI: 1.21, 4.73).<sup>107</sup> Recent estimates from Kenya suggest that a reduction in violence against FSWs could prevent 5,300 new infections (7.6%) among FSWs and up to 10,000 new infections (3%) in the general population in a four-year period.<sup>8,108</sup>

Additionally, there is some evidence from the general female population that demonstrates GBV is also associated with incident HIV infection.<sup>109,110</sup> Violence can increase women's risk for HIV directly through sexual assault/ forced sex, and indirectly through increased risk behaviors including unprotected sex.<sup>6,17-20</sup> Specifically, violence limits women's ability to negotiate and determine the timing and terms of sex, which can lead to unprotected sex and forced or unwanted sex.<sup>17,18,20,25,28,62</sup> A number of studies from around the world have demonstrated a positive relationship between experiences of GBV and inconsistent condom use, unprotected sex and condom failure (i.e. breakage) among FSWs and their sexual partners.<sup>14,15,17,18,20,22,23,25-28,30,60,62,74,79,111,112</sup> Evidence also suggests that men who perpetrate GBV are

more likely to be infected with HIV than men who do not, providing a further explanation of the link between GBV and HIV infection.<sup>113</sup>

Conversely, HIV sero-positivity is associated with increased risk of GBV.<sup>88,107,114-117</sup> Evidence from qualitative studies among the general female population in SSA suggest that male partners resort to violence because they perceive infidelity and blame the woman for bringing HIV into the relationship.<sup>116,117</sup> Several studies have found that fear of a violent reaction from a partner is one of the main reasons women refrain from disclosing their HIV status to their partner, which has implications for their ability to access HIV care and treatment services.<sup>114,116,118,119</sup> It is important to note that while a number of studies have examined and found a positive relationship between GBV and HIV prevalence, inconsistent condom use, unprotected sex and condom failure among FSWs, the majority of these studies are from Asia,<sup>8,18,22,23,27,62,79,112,120</sup> while fewer are from East Africa.<sup>15,16,108,121</sup>

### **The Intersection of Alcohol Use, GBV, and HIV Among FSWs**

Substance use, specifically alcohol use and abuse, has been found to increase FSWs' risk for HIV (through inconsistent condom use)<sup>3,32,53,72,77-81</sup> and GBV.<sup>16,32,87</sup> Alcohol use is common among FSWs in Tanzania, and FSW in Iringa have the highest rate of daily alcohol consumption compared FSW in other regions of the country.<sup>3</sup> Sixty-five percent of FSWs in Iringa drink alcohol on a daily basis.<sup>3</sup> In contrast, drug use is relatively uncommon among FSWs in Tanzania.<sup>3</sup> Nationally, only 11% of FSWs report using any drugs.<sup>3</sup> Drug use is even lower among FSWs in Iringa, with 1.83% reporting daily drug use and 8.2% reporting weekly/occasional drug use.<sup>3</sup> Such high rates of alcohol use among FSWs in this region may be due to the fact that the majority of FSWs are employed as barmaids in the modern and traditional bars that line the Tanzam highway.<sup>37</sup> Indeed, estimates indicate that 81% of FSWs in Tanzania, who report using any alcohol, consume alcohol during work.<sup>3</sup> Furthermore, prior work in Iringa has found that both clients and bar managers/owners expect FSWs to consume alcohol during work.<sup>37</sup> Specifically,



clients often buy FSWs alcohol to signal their interest in engaging a woman's services later in the evening.<sup>37</sup> Understanding these dynamics, the managers/owners of modern bars often encourage the women working in their bars to drink alcohol during work to bring more business to the bar.<sup>37</sup> Other studies have documented that FSWs consume high quantities of alcohol as a way to cope with the hardships of life, including poverty and stigma and discrimination, and to facilitate sex work.<sup>33,122</sup>

Evidence suggests that alcohol consumption before or during sex greatly limits FSWs' ability to successfully negotiate and use condoms.<sup>3,32,53,78,80</sup> A national survey among FSWs in Tanzania found that FSWs who reported using alcohol during sex work had significantly lower consistent condom use (24%), compared to those who did not (45%).<sup>3</sup> Studies from other countries have also documented high levels of alcohol consumption among FSWs and its negative association with consistent condom use.<sup>32,55,78,80</sup>

Additionally, evidence suggests that FSWs who use alcohol are at increased risk for physical and sexual violence.<sup>16,32,87</sup> Qualitative studies have found that when FSWs drink to the point where they lose consciousness, clients rape them.<sup>53,122</sup> Furthermore, evidence suggests that alcohol limits FSWs' ability to detect risk for violence and avoid or escape a risky situation.<sup>33</sup>

### **Theoretical Underpinnings**

The Risk Environment Framework,<sup>123</sup> Structuration Theory,<sup>124</sup> and the construct of Social Capital informed the development of this dissertation.

#### The Risk Environment Framework

The risk environment framework was one of the first models to shift away from individual-level approaches to harm-reduction for injection drug use, and instead, focus on the social and structural factors that shape individual's risk for drug use and HIV.<sup>123</sup> Specifically, this framework views drug-related harm as a "product of the social situations and environments in

which individuals participate.”<sup>123</sup> In other words, this framework shifts the “responsibility for drug harm” away from the individual and towards aspects of the physical and socio-political environment that contribute to “harm production.”<sup>123</sup> As a consequence, Rhodes makes the case for public health models of harm reduction to move away from the traditional individual-level approaches to models that address the structural factors that influence drug use. Although this framework was originally conceptualized as a way to understand harm production and reduction for drug users, the main aspects of this framework can be used to understand other health issues such as the intersection of alcohol use, GBV, and HIV among FSWs. This dissertation draws upon the core principles of the Risk Environment Framework, such as the need to focus on how aspects of the physical, social, economic, and political environment shape FSWs’ risk for alcohol use, GBV, and HIV, and how such aspects of the environment can be altered to prevent these negative health outcomes.<sup>123</sup> Importantly, by applying this framework, I am not suggesting that sex work is inherently harmful. Instead, I recognize that sex work is a legitimate form of work, entitled to a safe and supportive working environment, as defined by the International Labor Organization (ILO), including safety from violence and access to condoms for HIV prevention.<sup>125</sup> In this dissertation, I seek to understand how environmental factors threaten sex workers’ right to a safe and supportive work environment, and to gain insight into different approaches FSWs can take to address these aspects of the environment to realize their labor rights.

### Structuration Theory

In his theory of structuration, Giddens conceptualizes the interplay between structure and individual agency to shed light on how social systems are maintained and adapted over time.<sup>124</sup> In this theory, Giddens posits that social systems are reflected in the routine behaviors and interactions between certain populations across time and space.<sup>124</sup> In other words, individuals’ behavior and their ability to make decisions about their lives (agency) are shaped by existing social structures. Such a theory allows us to consider how social and environmental factors, such

as poverty, gender inequity, and stigma and discrimination against sex workers, place FSWs at increased risk for GBV and HIV and prevent them from accessing justice for violence perpetrated against them. Structuration theory also posits that individuals have the capacity to either maintain or adapt social structures through their own agency.<sup>124</sup> Drawing upon this concept, we can begin to think about strategies FSWs can use to mobilize their collective agency to shift social and structural factors to better improve their health outcomes and access to justice for violence perpetrated against them.

### Social Capital

This dissertation also draws upon the construct of social capital. Social capital refers to the relationships among individuals within and between groups, and the potential material and social benefits and obligations associated with those relationships.<sup>126-128</sup> The literature on social capital distinguishes three key forms of social relationships that determine the amount of social capital a community has: bonding, bridging, and linking social capital.<sup>129</sup> Bonding social capital (also known as social cohesion) refers to the trust, solidarity, and mutual-support among members of a group who share a similar social identity.<sup>128,129</sup> Bridging social capital describes relationships characterized by respect and support between individuals of different social identities or social status.<sup>128,129</sup> Social groups with bridging social capital are able to mobilize their group resources to enhance the group position and access additional resources held by another social group. Linking social capital refers to relationships of mutual respect and trust among people across levels of institutionalized power or authority.<sup>129</sup> Examples of linking social capital can be found in relationships between marginalized communities and members of law enforcement or the health care sector. From this perspective, in order for marginalized groups to mobilize their collective agency and resources to achieve their mutual goals, they must first come together to form a collective identity and bonding social capital.<sup>126,130</sup> Then, by forming social relationships characterized by respect and reciprocity with members of other social groups and institutions of

power, the marginalized community can work to achieve their collective goals. This last step recognizes that marginalized groups may face structural barriers to achieving their goals on their own, and may need to draw on support from members of non-marginalized groups to overcome these constraints.

### Community empowerment approaches

Community empowerment approaches acknowledge the structural factors that increase FSWs' risk for GBV and HIV and mobilize FSWs and other stakeholders to address these factors to ultimately improve FSWs' access to their health and human rights. These approaches recognize the human rights of all sex workers, including their right to work, and emphasize collective ownership of the program among sex workers to ensure the activities are shaped by their needs and desires.<sup>131</sup> Drawing from structuration theory and the construct of social capital, community empowerment approaches facilitate the opportunity for sex workers to come together as a community to mobilize their collective agency to challenge social systems and structures and demand their rights, including access to quality HIV prevention and treatment, a life free of violence, and justice for perpetrators of violence.<sup>131</sup> As a first step in the mobilization process, such efforts seek to increase bonding social capital (social cohesion) among FSWs through the formation of FSW-only support groups, quasi-trade unions, drop-in centers, or community organizations.<sup>26,132-134</sup> Through this process, FSWs are able to establish mutual support for HIV prevention behaviors, such as consistent condom use, take collective action to address and prevent violence and discrimination against fellow FSWs, and ensure access to their human rights and justice.<sup>26,31,135-137</sup> Additionally, these approaches facilitate bridging and linking social capital by providing opportunities for sex workers to partner with bar managers/owners or brothel madams (bridging social capital) and members of institutional bodies such as police, health care providers and non-governmental organizations (NGOs), to achieve the common goal of HIV and GBV prevention.

Community empowerment approaches for HIV prevention among FSWs have emerged around the world, and have proven successful in increasing condom use among sex workers and their clients.<sup>131</sup> These approaches have also aimed to prevent violence and improve access to justice among FSWs.<sup>27,137,138</sup> For example, the Sonagachi Project in Kolkata, India, utilized peer outreach workers to provide sex workers with HIV prevention education, condom negotiation skills, and assistance with other issues women faced, including violence.<sup>132</sup> Through this work, the outreach workers not only offered social and physical support to fellow sex workers in their community, they also built a strong sense of trust and cohesion among themselves (bonding social capital).<sup>132</sup> These relationships made it possible for FSWs to organize and mobilize their collective power to advocate for their right to sexual and physical health.<sup>132</sup> For example, FSWs in the Sonagachi Project developed a collective and individual responsibility to practice safe sex, and were better able to effectively negotiate condom use, which led to increased condom use among them and their clients.<sup>132,139</sup> FSWs in this project also worked with brothel madams (i.e. older sex workers and owners of brothels), to establish safe and supportive environments for brothel-based sex workers.<sup>140</sup> Overtime, the madams began to take responsibility for the health and safety of FSWs in their establishment by promoting condom use, and mobilizing other sex workers to intervene when a client became violent.<sup>141</sup> Additionally, in order to promote condom use and prevent violence, which often occurred during condom negotiation or price negotiation, FSWs worked with madams in the brothels associated with Sonagachi to establish a stable and fixed menu of prices for services.<sup>141</sup> This made it impossible for clients to bargain prices, and helped to institutionalize condom use in these brothels.<sup>141</sup>

Other community empowerment approaches such as Avahan, also in India, established Drop-in-Centers where sex workers could safely congregate to share the challenges they face and work together to identify strategies to overcome them.<sup>142</sup> Overtime, sex workers engaged in the program began to form a collective identity and mobilize to tackle issues that affected them such as violence HIV.<sup>143</sup> Sex workers engaged with Avahan also developed a collective and individual

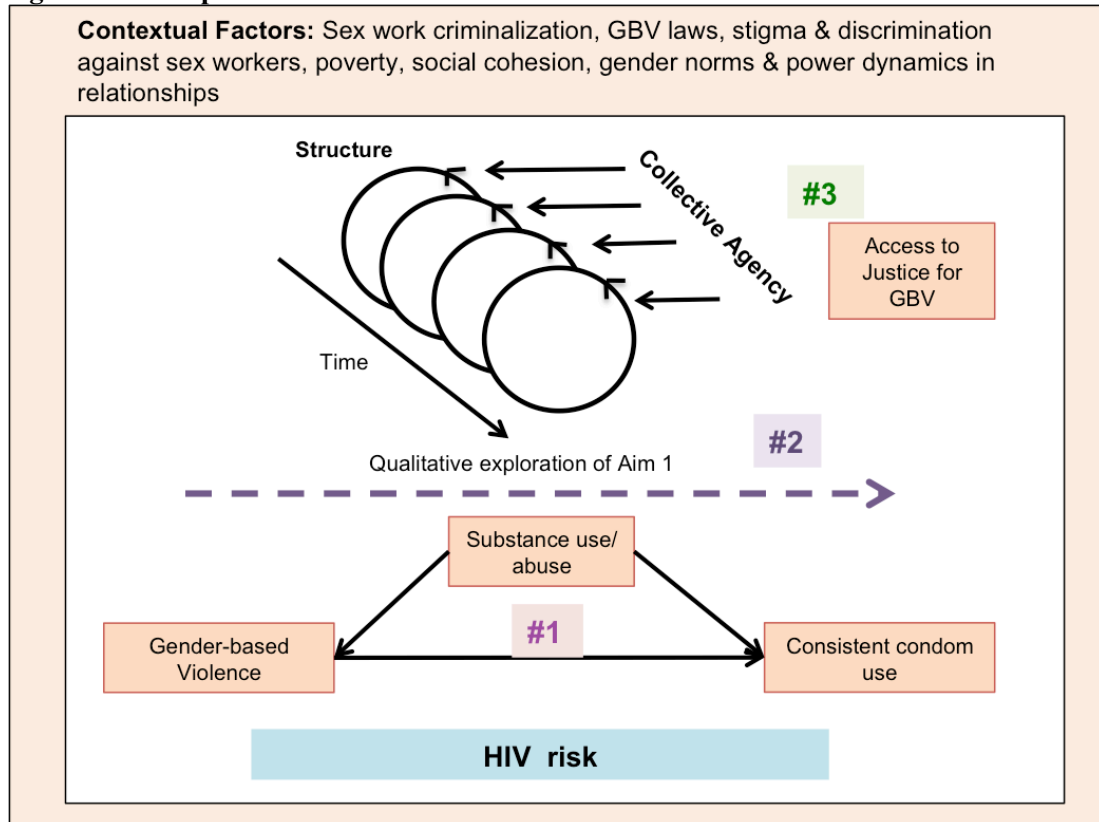
responsibility to practice safe sex, which allowed them to more easily negotiate and use condoms with their clients because they no longer had to worry about losing a potential client to other FSWs who may agree to have unprotected sex.<sup>22,136,141,144,145</sup> The Avahan program also facilitated community mobilization around violence prevention. Understanding the importance of buy-in from key stakeholders such as police officials, brothel madams, and lodge owners, Avahan conducted sensitivity trainings with these stakeholders about sex worker rights and partnered with them to promote condom use among FSWs and their clients and prevent violence.<sup>31,146</sup> Additionally, Avahan provided FSWs with legal literacy training to help them become knowledgeable about laws related to sex work, violence, and their basic human rights.<sup>137,146</sup> Such trainings empowered sex workers to fight for their rights and access to justice, as dictated by law.<sup>137,146</sup> As a result of these efforts FSWs reported fewer negative police interactions, including reduced reports of bribes, workplace raids, and arbitrary arrests.<sup>138</sup> Furthermore, police began enforcing laws that had previously not been implemented.<sup>137</sup> Such projects provide powerful examples of how sex workers can mobilize their collective agency and partner with key stakeholders to alter aspects within their environment that increase their risk for HIV and GBV, and allow violence to be perpetrated against them with impunity. It is possible that a community mobilization approach can serve useful in addressing the intersection between alcohol use, GBV, and HIV, as well as access to justice among FSWs in Tanzania and similar contexts.

### **Conceptual Framework**

The conceptual framework displayed in Figure 1 provides a visual representation of the relationships and dynamics explored through this dissertation. Drawing on the risk environment framework<sup>123</sup> as well as structuration theory,<sup>124</sup> this conceptual model acknowledges that structural factors such as poverty,<sup>29,36,50,59,65-68</sup> criminalization of sex work,<sup>7,34,41,70-72</sup> stigma and discrimination towards sex workers,<sup>7,41,73</sup> inequitable gender norms,<sup>92,94,95,109</sup> and laws related to

GBV<sup>42</sup> shape FSWs' behaviors including alcohol consumption and consistent condom use, their risk for GBV, and their access to justice for violence perpetrated against them.

**Figure 1. Conceptual framework**



The three orange boxes at the bottom of Figure 1 represent the hypothesis explored in aim 1 of this dissertation. As described earlier, prior research suggests that substance use, specifically alcohol use and abuse, is associated with inconsistent condom use<sup>3,32,77</sup> and GBV among FSWs in SSA.<sup>16,32,87</sup> Furthermore, evidence has demonstrated the negative relationship between GBV and consistent condom use.<sup>14,18,20,23,28,74,111</sup> Thus, it was hypothesized that substance use, (operationalized as frequency of intoxication from drugs or alcohol during sex work in the past 30 days) would be associated increased odds of GBV and reduced odds of consistent condom use. Additionally, it was hypothesized that GBV would also be associated with reduced odds of consistent condom use. In other words, we hypothesized that GBV mediated the relationship

between substance use and consistent condom use. Drawing from the risk environment framework, Aim 1 also considers how aspects of the sex work environment, including the physical, social, policy, and economic environment contribute to FSWs' risk for GBV and HIV.

The purple dotted line above the three orange boxes represents aim 2, which sought to gain a more nuanced understanding of the relationship between substance use, GBV, and consistent condom use through qualitative methods. As noted earlier, structuration theory posits that social structures and institutions shape the normative practices and interactions that occur across moments of time and space.<sup>124</sup> This is depicted in Figure 1 by the concentric circles with arrows representing the repetition of interactions across time and space. Drawing from this theory, aim 2 qualitatively explored how interactions between FSWs and their clients occur at specific moments of time and space during the sex exchange process to facilitate alcohol consumption and increase FSWs' risk for GBV and HIV. Ultimately, it was anticipated that exploring these interactions in detail would shed light on the larger social and structural factors that shape FSWs' risk for GBV and HIV in this context.

Structuration theory also postulates that while structure influences individual behavior and agency, individuals also have the capacity to draw upon their agency to maintain or adapt structures.<sup>124</sup> As described earlier, in order for FSWs to mobilize their collective agency and resources, they must first form a collective identity and relationships characterized by trust, solidarity and reciprocity (bonding social capital).<sup>126,129,130</sup> Furthermore, forging social relationships with key stakeholders such as bar managers/owners and health care providers can facilitate the process of adapting social structures (bridging and linking social capital).<sup>126,129,130</sup> As such, Aim 2 also explored how FSWs mobilize their collective agency and garner support from other stakeholders, including bar managers/owners, to address aspects of the sex work environment that place them at increased risk for alcohol abuse, GBV, and HIV. This concept is depicted in Figure 1 by the arrows pointing towards the concentric circles, representing FSWs' collective agency interrupting the routine patterns of behavior shaped by structural forces.



Aim 3 sought to explore FSWs' experiences accessing justice for violence perpetrated against them. As mentioned earlier, this dissertation defines justice as access to international standards of justice process including the investigation and prosecution of perpetrators of violence, as well as prompt redress for the harms suffered as a result of violence, as outlined by Tanzanian law.<sup>99</sup> Prior work suggests that although Tanzanian laws against GBV are extant, they are not systematically enforced, which allows violence to occur with impunity.<sup>43</sup> FSWs face additional barriers to accessing justice for violence perpetrated against them due to their marginalized status in society. Evidence suggests that FSWs who report experiences of GBV to the police rarely receive help from the authorities in bringing their perpetrators to justice, and risk being subjected to further physical abuse, humiliation, and sexual violence including forced unprotected sex by police officers.<sup>41</sup> As a result, violence often goes unreported in this context and FSWs rarely access justice for violence perpetrated against them.<sup>41</sup> When the state fails to hold perpetrators accountable for violence, they perpetuate a climate of tolerance towards violence against FSWs and allow abuses towards these women to continue.<sup>102</sup> In contrast, it is possible that the systematic enforcement of legal consequences for perpetrators of violence against FSWs, such as imprisonment, will deter people from perpetrating violence against this population in the future. As such, justice for violence can be considered a key component of GBV prevention. Ultimately, preventing violence against FSWs has implications for HIV risk. Indeed, statistical modeling has demonstrated that preventing GBV among FSWs would avert new HIV infections not only among FSWs, but the general adult population as well.<sup>108</sup>

Employing the lens of structuration theory, structural factors such as criminalization of sex work, stigma and discrimination towards FSWs, and gender inequality shape FSWs' ability to access justice for GBV. By exploring women's experiences accessing justice for violence, Aim 3 sought to gain insight into the structural factors shaping these experiences. Furthermore, drawing on structuration theory and social capital, FSWs have the capacity to mobilize their collective

agency and forge reciprocal relationships with stakeholders such as police and NGOs to challenge and shift the structural factors that constrain their access to justice. Manuscript 3 considers models FSWs could use to come together with each other and key stakeholders to hold Tanzanian authorities accountable for implementing international standards of justice process and providing FSWs with prompt redress for harms they suffered as a result of violence. Ultimately, such actions would not only improve FSWs' access to justice for violence perpetrated against them, but have the potential to reduce or prevent future violence against FSWs by demonstrating intolerance to GBV through the enforcement of legal consequences for perpetrators.

Finally, the light blue box at the bottom of the figure represents the idea that the exploration of the relationships and dynamics between substance use, GBV, and consistent condom use, as well as access to justice for violence has implications for HIV risk among FSWs. As discussed earlier, condoms can prevent HIV transmission when they are used consistently and correctly.<sup>10,11</sup> Thus, by exploring the dynamics within the sex work environment that prevent FSWs from engaging in consistent condom use, such as substance use and GBV, this study sheds light on factors that increase FSWs' risk for HIV. Furthermore, given that justice is a key component of violence prevention, and evidence suggesting that preventing violence against FSWs can reduce HIV incidence among this population, this dissertation's exploration FSWs' experiences accessing justice for violence has implications for their HIV risk.

### **III. Methods**

This research is embedded within the NIMH/NIAID-funded parent study of a Phase II community randomized controlled trial of a combination HIV prevention intervention among FSWs in Iringa, Tanzania, entitled Project Shikamana (Kiswahili for 'Stick Together'). The overall objective of this dissertation was to gain a nuanced understanding of the multi-level factors that place FSWs at risk for GBV and HIV and to gain insight into prevention strategies.

This overarching research question was addressed through three papers with the following specific aims:

Aim 1. To quantitatively examine the relationship between substance use, GBV, and consistent condom use between FSWs and their clients.

Aim 2. To qualitatively describe the role alcohol plays in both HIV and GBV-related risk in the context of venue-based female sex work.

Aim 3. To qualitatively explore FSWs' experiences accessing justice for violence perpetrated against them.

This dissertation utilized both quantitative and qualitative methods in order to gain a nuanced understanding of the research questions at hand. Specifically, quantitative analysis was first conducted, using Baseline data from the Project Shikamana cohort, to determine the statistical association between substance use, GBV, and consistent condom use (Aim 1 & Manuscript 1). Qualitative analysis was then conducted, utilizing in-depth semi-structured interviews, to gain a deeper understanding of the relationships that emerged in the quantitative analysis (Aim 2 & Manuscript 2). Additional qualitative analysis was then conducted to understand women's experiences accessing justice for violence perpetrated against them (Aim 3 & Manuscript 3).

### **Description of Project Shikamana**

As mentioned above, this dissertation research is nested within the parent study, Project Shikamana, which is a Phase II community-randomized controlled trial of a combination HIV prevention intervention among FSWs in Iringa, Tanzania. The aim of this two-arm community-randomized trial is to determine the effect of community-based combination prevention intervention on HIV incidence as well as the feasibility, acceptance, and safety of this model. The two study communities, Illula (intervention community) and Mafinga (control community) were

matched on demographic and HIV risk characteristics and randomized to receive the intervention or control (local standard of care). Venue-based time location sampling (TLS) was used to enroll a cohort consisting of 203 HIV-infected and 293 HIV-uninfected FSW for a total of 496 participants. Eligible participants were tested for HIV (with viral load assessment as relevant) and completed the baseline survey, and will be tested again and complete the 12-month follow-up survey in Spring 2017.

Project Shikamana consists of six intervention components that seek to address both HIV prevention and engagement in HIV care and treatment, in line with the combination intervention approach. The intervention components include: 1) Venue-based peer education; 2) Venue-based HIV testing and counseling (HTC); 3) SMS reminders for HIV treatment and prevention; 4) Peer service navigation for both HIV-uninfected and HIV-infected participants; 5) Health care provider training to sensitize them to the unique health needs of FSWs; and 6) a Drop-in-Center (DIC), which is a safe place where women can come together to discuss the challenges they face in accessing their health and human rights, and work together to problem solve and tackle such issues. The activities in the DIC are meant to facilitate the development of social cohesion among FSWs so they can begin to take collective action to promote the health and human rights of FSWs in their community. Importantly, Project Shikamana emphasizes FSW ownership over the project and provides opportunities for FSWs to shape and lead the activities and initiatives of the project.

### **Quantitative Research Methods**

As described earlier, this dissertation utilized baseline data from the parent study to quantitatively analyze the relationship between substance use, GBV, and consistent condom use among FSWs in Iringa, Tanzania (Aim 1 & Manuscript 1).

### Sampling and Recruitment

The parent study first mapped all entertainment venues where sex work is known to occur in each of the study communities, including bars, guesthouses, groceries/mini-bars/pubs, and clubs, and recruited participants from these venues. Venue-based time location sampling (TLS) was used to enroll 203 HIV-infected and 293 HIV-uninfected FSW for a total of 496 participants. Venue-based TLS is a sampling method that is used to identify hard-to-reach populations, such as sex workers, in which a sampling frame of individual members of the target population does not exist, or is difficult to create.<sup>147</sup> This strategy approximates probability sampling by identifying the “universe” of all possible venues/locations, days and times when the target population can be reached, and constructing a sampling frame that consists of 4-hour blocks of time for each location (i.e. venues and day-time units (VDTs)) as the sampling units.<sup>147</sup> Each month during the recruitment period, VDTs were randomly selected and visited by study staff and potential participants were approached and screened for eligibility in a private location either in or near the venue, or at the study’s local office, based on the preference of the participant. In order to be eligible to participate in the parent study, women had to meet the following eligibility criteria:  $\geq 18$  years, report exchanging sex for money in the last month, and work at an identified venue in one of the two study communities. Women that did not meet the eligibility criteria or were unable to provide informed consent were excluded from the study.

### Data Collection

Quantitative baseline data collection was carried out in sex work venues within the two study communities in Iringa, Tanzania. Surveys took place in a private location either in or near the venue where the participant worked, or at the Drop-in-Center, based on the preference of the participant. Interviewers first obtained informed consent from each participant, tested them for HIV (and viral load where relevant) and administered the baseline survey- entering all responses

onto a secure tablet. After completing the HIV test and survey, participants were given 5,000 Tsh (\$2.24 USD) to compensate them for their time.

### Quantitative Measures

#### *Outcome Variables*

The two outcome variables of interest were experiences of physical or sexual GBV from any perpetrator (client, boyfriend, main partner, casual partner) in the past 6 months and consistent condom use with all clients (new and regular) in the past 30 days. GBV was measured using the previously validated 16-item World Health Organization (WHO) scale measuring experiences of physical and sexual violence against women,<sup>148</sup> adapted for the Tanzanian context based on our formative work. The scale measured 7 types of physical violence, ranging from “moderate violence” (being slapped, pushed/shoved) to “severe violence” (being hit with a fist, kicked/dragged/beaten up, choked or burnt on purpose, threatened with a weapon, and having a weapon used against you). For each type of physical violence, participants were asked if they had experienced that type of violence ever, in the past 6 months, and the frequency in which they experienced it in the past 6 months. The same follow up questions were asked of participants who reported sexual violence. Responses to items regarding experiences of physical or sexual violence in the past 6 months were summed. The variable was then dichotomized to represent no experiences of violence in the past 6 months and experiences with either physical or sexual violence in the past 6 months.

Consistent condom use was measured using two questions adapted from the previously validated assessment from the NIMH-Project Accept Study on HIV risk behaviors and HIV Testing and Counseling (HTC).<sup>149</sup> Participants were asked to rate on a scale of 0 (never) to 4 (always) how often they use condoms during vaginal sex with new and regular clients in the past 30 days. Responses for regular and new clients were summed to create a summary variable and

then dichotomized to represent Inconsistent condom use (less than always) and consistent condom use (always) with all client types.

#### *Independent Variable of Interest*

The independent variable of interest was frequency of intoxication during sex work in the past 30 days. This was measured by the question “In the past 30 days, out of all the times you exchanged money for sex, how often were you intoxicated (i.e. drunk or high)?” Participants answered using a 6-point Likert scale ranging from 0 (Never)- 5(Always). The variable was dichotomized to Never/Rarely/Sometimes (0) and Almost always/Always (1).

#### *Socio-Demographic and Sex Work Environment Variables*

Age was measured using a continuous variable, while education was measured using a categorical variable (no formal schooling (0), some primary school (1), and some secondary school (2)). Participants were asked to report their average monthly income from any source (i.e. not just sex work). The rationale for using this variable, instead of monthly income from sex work, was that the majority of sex workers in this context are also employed as barmaids in modern and traditional bars. Thus a measure of average monthly income from sex work alone would not truly reflect women’s economic status. The monthly income variable was dichotomized at the median to represent  $<120,000$  Tsh/ \$55 USD (0) and  $\geq 120,000$  Tsh (1). Relationship status was measured through a categorical variable (single, in a steady relationship but not married, and married), as was frequency of sex work (once a week or less (0), a few times a week by not every day (1), and once a day or more (3)). Participants were asked how many children they were responsible for, including children they bore or did not bear, who they live with. This continuous variable was dichotomized to represent none (0) and one or more children (1), based on the distribution of the continuous variable. HIV status was determined through the HIV test at baseline.

Participants were asked to identify the type of venue where they conducted sex work. This variable was dichotomized to represent venues that do not sell alcohol (0) and venues that do

sell alcohol (1). Women were also asked how often clients expect them to consume alcohol during sex work. This variable was dichotomized to represent no expectations (0) or any client expectations to drink during sex work (1). Denial of payment for sex work was assessed by a binary variable that captured whether participants had ever not been paid for sex work they had already completed. Participants were also asked where they met their clients. A dichotomous variable was created from this measure to represent meeting clients in places other than bars (0) and meeting clients in either a modern or a traditional bar (1). Women were asked how much clients pay them, on average, per sexual act. This continuous variable was dichotomized at the median to represent <15,000 Tsh/ \$7 USD (0) and  $\geq$ 15,000 Tsh (1). Access to condoms was measured by asking women if they felt they had access to condoms when they needed them in the past 6 months. This variable was dichotomized to represent difficult or no access (0) and somewhat easy access (1), based on the distribution of the original categorical variable.

Internalized sex work stigma ( $\alpha=0.86$ ) was assessed using a measure adapted from an internalized HIV stigma measure informed by the work of Berger.<sup>150</sup> The same questions asked in the HIV self-stigma measure were re-worded in relation to sex work. Thirteen items measured participants' feelings about themselves related to their sex work (range: 13-52). Participants rated how much they agreed with each statement using a 4-point Likert scale. Scores on each item were summed to obtain the overall sex work stigma score. This measure was previously validated among FSWs in the Dominican Republic.<sup>151</sup>

Social cohesion ( $\alpha=0.86$ ) was measured using a reliable 9-item scale (range: 9-36) previously validated among FSWs in Brazil.<sup>26,135</sup> Participants rated their agreement with statements related to mutual aid, support, and trust among their sex worker colleagues, using a 4-point Likert scale. Scores on each item were summed to obtain the overall social cohesion score.



## Data Analysis

Two separate analyses were conducted to explore the relationship between substance use, violence, and consistent condom use among FSWs. The first model examined the association between the frequency of intoxication during sex work on experiences of GBV in the past six months. The second model explored the association between frequency of intoxication during sex work and GBV in the past six months on consistent condom use with all clients in the past 30 days.

Exploratory data analysis was first conducted to assess the distribution of the data, and descriptive statistics for the variables in each model were calculated. Next, bivariate logistic regression models were used to determine the association between the independent variables and the outcomes of interest in each model. GBV in the past six months was not found to be significantly associated with consistent condom use with clients in the past 30 days in the bivariate analysis, and thus we were unable to conduct a mediation analysis in model 2 between substance use, GBV (mediator) and consistent condom use.<sup>152</sup> An interaction term between frequency of intoxication during sex work and GBV in the past 6 months was also included in the second model in order to assess whether GBV modified the relationship between intoxication during sex work and consistent condom use with all clients. The interaction term was not significant in the bivariate analysis, and was therefore not included in the multivariable model.

Next, the two multivariable models were run, controlling for socio-demographic characteristics, sex work stigma, and social cohesion. Community was included in the multivariable models because the study design was based on the purposive selection of the two communities.

Sensitivity analysis was also conducted to assess whether the findings varied by demographic characteristics, as well as severity of violence and frequency of violence experienced. The sensitivity analysis did not yield significant results and is therefore not reported.

Model fit was assessed using the Hosmer-Lemeshow goodness of fit test, with a non-significant ( $p > 0.05$ ) result indicating that the model fits the data well. Finally, the generalized estimating equation (GEE) method with robust variance estimates was used for all models to estimate the logistic regression coefficients, adjusting for the within-venue, intra-class correlation related to our outcomes of interest within venues<sup>153,154</sup> This was done because failing to account for such correlations would under-estimate the standard error of the outcomes of interest, which would increase the likelihood of a Type I error (i.e. rejecting the null hypothesis when it is true).<sup>153,154</sup> Data analysis was conducted using STATA 13.<sup>155</sup>

### Quality Assurance

Many of the quality assurance and quality control measures were constructed through the parent study. These included (1) the use of trained data collection personnel with experience working with FSWs in Iringa; (2) supervision of data collection practices by the local field coordinator and the data reviewed by the local data manager on a daily basis; (3) weekly field reports and team meetings to document any problems in the field; and (4) weekly data reports to document any missing or problematic data fields so that can be corrected prior to use in analysis. Additionally, the baseline survey included valid and reliable measures for the dependent variables (e.g. GBV and consistent condom use) and other important variables included in the analysis (e.g. social cohesion and internalized sex work stigma).<sup>26,62,134,135,149</sup>

### **Qualitative Research Methods**

Qualitative methods were utilized in manuscript 2 to gain a more nuanced understanding of the quantitative results in manuscript 1, as well as to explore women's experiences accessing justice for violence perpetrated against them (manuscript 3).

### Sampling and Recruitment

A total of 24 FSWs from the intervention community cohort were recruited to participate in in-depth semi-structured interviews from August-October 2016. The sample was restricted to women from the intervention community because they were exposed to intervention activities associated with the parent study, which aimed to facilitate community mobilization to prevent and address GBV and HIV among FSWs. Focusing on this group allowed us to more deeply explore the interplay between structure and agency as it relates to GBV and HIV among FSWs in Iringa, Tanzania. Specifically, this recruitment strategy allowed us to explore how aspects of the work environment shape women's risk for GBV and HIV, and how women are able to mobilize their collective agency to address these factors.

Additionally, in order to facilitate comparisons, participants were purposively sampled based on the following characteristics: HIV status (n= 12 HIV infected & 12 HIV uninfected), work venue (n=12 modern bar & 12 traditional bar), and level of engagement in the intervention (n=12 low engagement & 12 high engagement). In this study, low engagement in Project Shikamana was defined as participating in none or one workshop in the DIC and refusing peer navigator services. High engagement was defined as participating in at least one workshop and accepting peer navigator services. Baseline data and intervention tracking information from the parent study were utilized to identify participants. Participants were contacted over the phone and asked if they were interested in participating in the qualitative sub-study. To ensure confidentiality and safety of the participants, recruiters framed the study as one that was focused on participants' health and life experiences.<sup>156</sup>

### Data Collection

Eligible participants arrived at the Drop-in-Center affiliated with the parent study and were lead to a private room by a female interviewer to complete the in-depth interview. Once informed consent was obtained, participants completed the in-depth interview in Kiswahili.

Interviewers followed a semi-structured interview guide in order to ensure consistency across all interviews.

The interview guide consisted of broad, open-ended questions meant to elicit FSWs' thoughts and perspectives on the role alcohol use plays in the sex work environment, and how alcohol use is related to experiences with violence and HIV prevention behaviors. The guide also included questions that explored the strategies FSWs employ to address factors in the sex work environment that increase their risk for GBV and HIV. Other questions explored women's experiences accessing justice for violence perpetrated against them. Questions in the guide were informed by findings from the quantitative analysis in Aim 1, as well as prior research on these topics and social behavioral theory including structuration theory and the construct of social capital. The interview guide was first written in English, translated into Kiswahili, back translated, and piloted to ensure the questions made sense to participants.

### Data Analysis

All interviews were audio-recorded, transcribed and translated into English, and uploaded into Atlas.ti<sup>157</sup> qualitative analysis software for coding. Qualitative analysis was conducted using the framework approach. This approach was developed for applied research, in which the objectives of a qualitative study are established in advance and driven by the need to inform the development of a health program or to further explore quantitative findings.<sup>158</sup> In contrast to grounded theory, where a researcher approaches the analytic process with a blank slate and allows themes and categories to emerge from the data (inductive), researchers who utilize the framework approach begin the analysis process with a set of *a priori* themes and codes they intend to explore (deductive), while also allowing for other domains to emerge from the data.<sup>158</sup> The framework approach was chosen for this analysis to enable a more direct analytical process, allowing the student researcher to hone in on questions that arose from the quantitative findings as well as prior research.

Analysis was facilitated by immersion in the data, through multiple readings of the transcripts and memo writing to highlight emergent themes and insights. Drawing on the framework approach,<sup>158</sup> an initial coding schema was developed based on *a priori* codes (e.g. informed by the key research questions and findings from the quantitative analysis as well as the literature), and were iteratively revised by adding new codes that reflected additional domains, topics and frames that emerged from the data. The codes were then systematically applied across all the transcripts, using memos to elaborate upon the codes and their application. Next, the data was organized into a chart format, with a chart for each key theme and summaries of different perspectives and experiences from several participants.<sup>158</sup> This method allowed data to be compared and contrasted across different themes and perspectives, and facilitated the identification of associations between themes, which offered explanations for the findings.<sup>158</sup>

### Quality Assurance

The qualitative research conducted as part of this dissertation was informed by a constructivist epistemology, which rejects the notion that there is one objective “truth” waiting for us to discover.<sup>159</sup> Instead, a constructionist recognizes that there are multiple “truths” or realities in the world, and that “truth” or meaning is created through interactions.<sup>159</sup> As such, instead of drawing up on the objectivist concepts of validity and reliability, this study was concerned with establishing credibility (validity) and dependability (reliability).<sup>160</sup>

Credibility refers to the extent to which the interpretations of the data are representative of and faithful to the participant’s lived experience.<sup>161</sup> Since the investigators’ own identity, experiences, values, and beliefs influence the data they receive and their interpretations of that data, investigators can enhance credibility by remaining reflexive throughout the research process.<sup>161</sup> In the present study, both the interviewers and the investigator wrote detailed memos throughout the research process to reflect upon the ways their experiences, values, and beliefs may have influence the data received, and their interpretation of that data.

Additionally, the interviewers were trained to clarify their understanding of points participants made during the interview and ask for feedback from the participant.<sup>162</sup> This allowed participants to clarify the meaning behind what they were saying, and improved the ability of the researchers to more accurately interpret the data in a way that was faithful to the participant's experience. In a similar vein, after the data was analyzed, the student investigator and interviewers shared the qualitative findings with a sub-sample of the participants to elicit their feedback on the emergent themes and whether or not the themes resonated with them.<sup>160</sup> During this exercise, it became clear that the findings rang true to the participant's lived experience.

The credibility of the data may also be influenced by the quality of the transcription and translation of the interviews.<sup>160,163</sup> If the interview is not accurately transcribed, or the translation does not capture the original meaning expressed by the participants, it is unlikely that the interpretations of the data will be credible. In order to address this potential threat to credibility, the investigator and the interviewers debriefed after each interview to discuss how the interview went, including the main themes that emerged, the tone of the interview, as well as any concerns that arose during the interview. These debriefing notes served as a check to ensure that the tone of the interview and the main themes were captured in the transcription and translation.

Dependability (reliability) is concerned with clearly documenting the decisions and methods used throughout the research process so they can be examined or critiqued by other researchers if necessary.<sup>160,161</sup> The dependability of the data in the present study was established through the creation of semi-structured interview guides, data analysis plans, coding schemas, memo writing, debriefing notes, and the diligent documentation of all procedures.

### **Ethical Considerations**

This study received human subjects research approval from the Institutional Review Boards (IRBs) of the Johns Hopkins Bloomberg School of Public Health, the Muhimbili

University of Health and Allied Sciences Directorate of Research and Publications, and the National Institute for Medical Research of Tanzania.

### Informed Consent

Prior to engaging in any study activity, study staff read the consent forms aloud to participants. After reading the consent forms, interviewers asked participants to summarize the study and explain the reasons why they want to participate in order to ensure the participants' understanding. Oral consent was used due to the marginalized status of the study population, and documenting their signature may have created additional possible risk. This research study utilized two consent forms: the parent study consent form for the baseline survey (Aim 1), and a separate consent form for the qualitative interview (Aim 2 & 3). Both consent forms were developed in accordance with current community standards of practice in Tanzania, and were approved by the MUHAS IRB, as well as the JHSPH IRB.

The consent form for the qualitative interview included language about the possible discomfort that may arise from discussing experiences with GBV and emphasized the steps taken to ensure the confidentiality of the participants. The informed consent procedures for this study were designed to maximize understanding of potential risks to participants. All consent forms were translated into the local language and certified by a translator to ensure correct use of the language. All participants were provided with a copy of their consent form in an envelope if they so desired and an extensive list of community resources including health clinics, hospitals, legal services, as well as counseling services related to GBV. All women who reported GBV during the baseline study and those who participated in the qualitative study were directed to clinics and counseling services that specialize in GBV. The study contact information was also included on this information page for participants to report any adverse events associated with their participation in the research. Additionally, the Drop-in-Center affiliated with the parent study offers workshops and trainings on violence prevention for FSWs and supports women who experience violence.

### Confidentiality

In order to ensure the confidentiality and comfort of the participants during the study, all study staff, particularly recruiters and interviewers, engaged in an extensive human subjects training. This training emphasized the importance of maintaining the confidentiality of each participant, and the protocols and procedures in place to achieve this goal. Staff was trained on the importance of finding a private location to conduct all interviews, and how to seamlessly change the subject should the interview be interrupted.<sup>156</sup> They were also trained on the importance of ensuring that individuals provide voluntary informed consent. Additionally, in accordance with the WHO guidelines for conducting research on GBV, all interviewers received specialized training on GBV, including an introduction to GBV issues among FSWs, and concepts of gender, and gender inequality.<sup>156</sup> The training also provided interviewers a space to recognize and challenge their own biases related to gender and GBV, as well as any experiences they or someone they know have had with violence or abuse. Finally, interviewers engaged in extensive training related to establishing rapport and respect with the participant and asking questions in an accepting, open, and non-judgmental manner in order to minimize any possible distress that the research may cause.<sup>156</sup> They were also trained to sensitively and appropriately terminate an interview if the participant became too distressed.

### Protocols for Confidential and Secure Data Collection and Storage

To ensure the privacy of participants, all informed consents and interviews were conducted in private and quiet locations in or nearby the venue where the participant was recruited, or in the study's local office, based on the preference of the participant. Participants were assigned unique identification numbers (IDs), all data was de-identified, and the document that links the IDs to participants' names was stored on the secure database server managed by SopanTech, a data management center in India. Furthermore, all consent, locator, and adverse event forms were de-identified and stored in a locked file cabinet in the Iringa office, separate



from the electronic data files. The tablets were also stored in a separate locked file cabinet in the Iringa office. All completed survey interview data captured by the tablets was uploaded to the database server on a daily basis using a secure protocol. The data sent to the data management center in India only included participant IDs, with no other identifying information. Once survey data was successfully transmitted and validated, it was removed from the tablets. Access to all study databases was password protected to ensure the confidentiality of participants.

In accordance with the WHO guidelines, the recordings from the qualitative in-depth interviews were de-identified and stored on a password-protected computer in the Iringa office, and were destroyed following transcription and translation.<sup>156</sup> Transcripts and notes from interviews were also stored on a password-protected computer in the Iringa office. Only a limited number of key personnel had access to the recordings, transcripts, and notes from the qualitative interviews. Qualitative transcripts were transcribed and translated in Tanzania and sent electronically to the student investigator in Baltimore in a secure manner. In-depth interview transcripts will be destroyed once all data analysis is complete.

#### Reporting of Adverse Events

Subjects participating in all aspects of the research were regularly monitored for adverse events. Adverse events include physical harms including mortality, suicide, accidents and violence, as well as social harms such as arrest, incarceration, harassment by the police, and discrimination. Staff was trained to assess for possible adverse effects of the research on participants. Procedures for assessment, monitoring, and reporting of adverse events have been outlined in the data safety monitoring plan of the parent study and approved by the IRB. The same was done for the qualitative component of the study. The student investigator, with help from one of the interviewers, also compiled a list of referral services for other needs including mental health, gender-based violence, and legal services for all study participants. Participants were not

obligated to receive a referral, and no copies of referrals issued were kept in order to protect participant confidentiality.

## **IV. Results**

### **Paper 1: Substance Use, Gender-Based Violence, and HIV Risk Behaviors among Female Sex Workers in Iringa, Tanzania: Implications for a rights-based response to HIV**

#### **Abstract**

Female sex workers (FSWs) in Tanzania are disproportionately affected by HIV and gender-based violence (GBV). Such disparities are attributed to structural factors including criminalization of sex work, stigma and discrimination towards FSWs, poverty, and gender inequality. Prior research suggests that substance use overlaps with these co-occurring epidemics to further increase FSWs' risk for negative health outcomes. Utilizing baseline data from a cohort of 496 FSWs in Iringa, Tanzania, we sought to explore how aspects of the sex work environment promote alcohol consumption among FSWs and increase their risk for GBV and HIV. Results demonstrate high levels of substance use and GBV among FSWs in Iringa, and low levels of consistent condom use with clients. Specifically, 42% reported almost always/always being intoxicated during sex work, 42% reported experiencing physical or sexual GBV in the past 6 months, while 32% reported consistent condom use with clients in the past 30 days. Intoxication during sex work was associated with increased odds of GBV (aOR: 1.67, 95% CI: 1.08, 2.59) and reduced odds of consistent condom use with clients (aOR: 0.59, 95% CI: 0.37, 0.95). We adapt the Risk Environment Framework to contextualize our findings in the social and structural context and gain insight into how social situations and structures can be altered to limit substance use, and prevent GBV and HIV among FSWs in Iringa, Tanzania. Ultimately, we argue that intervention approaches, which promote the labor rights of sex workers, are needed to address the intersecting challenges of substance use, GBV, and HIV among this population.

## Background

Female sex workers (FSWs) bear a disproportionate burden of HIV globally. In low and middle-income countries, FSWs have 13.5 times the odds of HIV infection compared to the general female population.<sup>1</sup> FSWs in sub-Saharan Africa (SSA) have the highest burden of HIV, with an HIV prevalence of 29.3% (25.9–33.8).<sup>2</sup> These trends hold true in Tanzania, where the average national HIV prevalence among FSWs is 26.6%, compared to 6.2% in the general female population.<sup>3,4</sup> FSWs in the region of Iringa, Tanzania have an HIV prevalence of 32.9%, which is one of the highest in the country.<sup>3,4</sup>

The high burden of HIV among FSWs in Tanzania is shaped by the social and structural context in which sex work occurs. Sex work is criminalized in Tanzania, which creates an environment that fosters stigma and discrimination towards FSWs,<sup>5-7</sup> and limits FSWs' ability to access their human rights, including the right to quality health services<sup>8,9</sup> and a safe and supportive working environment.<sup>5,6,10</sup> This, along with other structural factors, including poverty,<sup>11-13</sup> and gender inequality,<sup>14,15</sup> inhibit HIV preventative behaviors such as condom use.<sup>6,16</sup> Condom use significantly reduces the risk of HIV transmission,<sup>17,18</sup> yet it is estimated that only 33% of FSWs in Tanzania practice consistent condom use with their clients, placing them at increased risk for HIV infection.<sup>3</sup>

High rates of gender-based violence (GBV) (i.e. physical or sexual violence) against FSWs may also contribute to increased risk for HIV among this population.<sup>19,20</sup> In Tanzania, where the rates of violence against women in the general population are already high,<sup>21</sup> FSWs experience a disproportionate burden of violence. In 2013, 52% of FSWs reported experiencing physical violence and 49% reported experiencing sexual violence in the past 6 months.<sup>3</sup> Violence against FSWs is likely influenced by stigma and discrimination against sex workers and gender inequality.<sup>5,6,22</sup> Violence can increase FSWs' risk for HIV directly, through sexual assault/ forced sex, and indirectly through increased HIV risk behaviors including unprotected sex.<sup>23,24</sup> Previous

studies have shown that FSWs who experience GBV are significantly less likely to use condoms with their sexual partners, and are more likely to be infected with HIV.<sup>19,20,25,26</sup>

Substance use, specifically alcohol use and abuse, has been shown to increase FSWs' risk for both GBV and unprotected sex in SSA.<sup>27,28</sup> Alcohol use is common among FSWs in Tanzania, and FSWs in Iringa have the highest rate of daily alcohol consumption in the country.<sup>3</sup> In contrast, drug use is relatively uncommon among FSWs in Tanzania.<sup>3</sup>

Iringa is located along the Tanzanian-Zambian highway, which brings high levels of mobility and migration through the region, and increases the demand for sex work.<sup>29</sup> The majority of FSWs in this region are employed as barmaids in the bars that line the highway and sell bottled and/or locally brewed alcohol to the truck drivers and migrant workers passing through. It is in this context that FSWs also meet their clients. Such dynamics likely contribute to the high rates of alcohol use among FSWs in Iringa. Indeed, prior research suggests that alcohol plays a central role in the sex work process in Iringa, with clients purchasing alcohol for sex workers as a way to engage their services.<sup>30</sup> Estimates indicate that among the FSWs in Tanzania who report using any alcohol, 81% consume alcohol during sex work.<sup>3</sup> A number of studies have found that alcohol consumption greatly limits FSWs' ability to successfully negotiate and use condoms, ultimately increasing their risk for HIV.<sup>27,28</sup>

Research from SSA also suggests that FSWs who use or abuse alcohol have an increased risk for GBV.<sup>27,31,32</sup> Qualitative studies describe how clients expect, and sometimes force, FSWs to drink to the point where they lose consciousness so clients can take advantage of them.<sup>33,34</sup> Evidence also suggests that alcohol use might impair FSWs' ability to detect the risk for physical or sexual violence and avoid or escape a risky situation.<sup>28</sup>

Although prior studies have explored the link between substance use and FSWs' risk for GBV, as well as HIV, most of these studies have focused solely on either GBV or HIV outcomes. Few studies among FSWs have examined how substance use, GBV, and HIV risk behaviors intersect to further increase FSWs' risk for negative health outcomes. The risk environment

framework<sup>35</sup> offers a useful lens to explore this gap in the literature.

### *The Risk Environment Framework*

The Risk Environment Framework was originally developed by Tim Rhodes to address the growing need for public health models of harm reduction for injection drug use to shift from individual-level models to models that address the social and structural factors that shape individual's risk for drug use and HIV.<sup>35</sup> This framework views drug-related harms as a “product of the social situations and environments in which individuals participate.”<sup>35</sup> As such, Rhodes shifts the “responsibility for drug harm” and public health approaches for harm reduction away from the individual and towards aspects of the physical and socio-political environment that contribute to “harm production.”<sup>35</sup> Although Rhodes originally conceptualized this framework as a way to understand harm production and reduction for drug users, the core principles of this framework can be applied to understand other health issues. We adapt the risk environment framework to contextualize our findings in the broader social and structural environment and gain insight into how social situations and structures can be altered to limit substance use, and prevent GBV, and HIV among FSWs in Tanzania.<sup>35</sup> It is important to note that by adapting this framework, we are *not* suggesting that sex work is inherently harmful. Sex work is a legitimate form of work recognized by the International Labor Organization (ILO) under labor code 200, and when FSWs are able to access their right to a safe and supportive working environment, they can engage in sex work safely.<sup>10</sup> It is only when social and structural factors compromise the safety of the sex work environment that FSWs are placed at increased risk for negative health outcomes.

In this paper, we first examine the relationship between substance use and GBV among FSWs in Iringa, Tanzania. We then determine the influence of substance use and GBV on consistent condom use with all clients among FSWs. Finally, we apply an adapted risk environment framework to our findings to understand how aspects of the sex work environment intersect to increase risk or protective factors for substance use, GBV, and HIV among FSWs.

## **Methods**

This study utilized baseline data from 496 FSWs enrolled in a phase II community-randomized controlled trial of a community-based combination HIV prevention model, Project Shikamana (Swahili for “Stick together”), in Iringa, Tanzania.<sup>36</sup>

### *Sampling*

Two communities, matched on demographic and HIV risk characteristics, were purposively sampled to the intervention and control condition. Participants were recruited from entertainment venues in one of two participating communities, including bars, guesthouses, and clubs. Venue-based time location sampling (TLS) was used to enroll a cohort of 203 HIV-infected and 293 HIV-uninfected women. Women were eligible to participate in the study if they were:  $\geq 18$  years, reported exchanging sex for money in the last month, and worked at an identified venue in one of the two study communities. Women who did not meet the eligibility criteria or were unable to provide informed consent were excluded from the study.

### *Data collection*

Eligible participants completed baseline surveys in a private location in or near the venue where they work, or at the study’s local office. All interviewers and recruiters completed an extensive human subjects training, which emphasized maintaining confidentiality and the protocols and procedures in place to achieve this goal. These procedures also aligned with ethical guidance on violence-related research.<sup>37</sup> Before starting the survey, interviewers obtained informed consent from each participant. The interviewer-administered survey was conducted in Kiswahili and assessed structural, socio-demographic, and behavioral factors, including HIV risk behaviors, experiences with GBV, and substance use. Responses were recorded onto a secure tablet and uploaded to a secure database upon completion of the survey. All data were de-identified using unique participant identifiers. Finally, consenting participants were counseled and tested for HIV following the Tanzanian National guidelines.

## *Measures*

### Outcome variables

The two outcome variables of interest were experiences of physical or sexual GBV from any perpetrator in the past 6 months and consistent condom use with all clients in the past 30 days. GBV was measured using the previously validated 16-item World Health Organization (WHO) scale measuring experiences of physical and sexual violence against women,<sup>38</sup> adapted for the Tanzanian context based on our formative work. The scale measured 7 types of physical violence, ranging from being slapped to having a weapon used against you. For each type of physical violence, participants were asked if they had experienced that type of violence ever, in the past 6 months, and the frequency in which they experienced it in the past 6 months. The same follow up questions were asked of participants who reported sexual violence. Responses to items regarding experiences of physical or sexual violence in the past 6 months were summed. The variable was then dichotomized to represent no experiences of violence in the past 6 months and experiences with either physical or sexual violence in the past 6 months.

Consistent condom use was measured using two questions adapted from the previously validated assessment from the NIMH-Project Accept Study on HIV risk behaviors and HIV Testing and Counseling (HTC).<sup>39</sup> Participants were asked to rate on a scale of 0 (never) to 4 (always) how often they use condoms during vaginal sex with new and regular clients in the past 30 days. Responses for regular and new clients were summed to create a summary variable and then dichotomized to represent consistent condom use (always) and inconsistent condom use (less than always) with all client types.

Independent variable of interest: The independent variable of interest was frequency of intoxication during sex work in the past 30 days. This was measured by the question “In the past 30 days, out of all the times you exchanged money for sex, how often were you intoxicated (i.e. drunk or high)?” Participants answered using a 6-point Likert scale ranging from 0 (Never)-



5(Always). The variable was dichotomized to Never/Rarely/Sometimes and Almost always/Always.

Covariates: Socio-demographic characteristics assessed included age, education, income, relationship status, number of children, and laboratory confirmed HIV serostatus. Work environment covariates included type of sex work venue, amount paid for each sex act, access to condoms, ever denied payment for sex work, location where participant meets clients, whether clients expect the participant to consume alcohol during sex work, internalized sex work stigma and social cohesion among colleagues.

The felt or internalized sex work stigma measure ( $\alpha=0.86$ ) was adapted from an internalized HIV stigma measure informed by the work of Berger.<sup>40</sup> The same questions asked in the HIV self-stigma measure were re-worded in relation to sex work. Thirteen items measured participants' feelings about themselves related to their sex work. Participants rated how much they agreed with each statement using a 4-point Likert scale. Scores on each item were summed to obtain the overall sex work stigma score. This measure was previously validated among FSWs in the Dominican Republic.<sup>41</sup>

Social cohesion ( $\alpha=0.86$ ) was measured using a reliable 9-item scale developed by the last author and previously validated among FSWs in Brazil.<sup>42,43</sup> Participants rated their agreement with statements related to mutual aid, support, and trust among their sex worker colleagues, using a 4-point Likert scale. Scores on each item were summed to obtain the overall social cohesion score.

### *Data Analysis*

Two separate analyses were conducted to explore the relationship between substance use, violence, and consistent condom use among FSWs. The first model examined the association between the frequency of intoxication during sex work on experiences of GBV in the past six months. The second model explored the association between frequency of intoxication during sex

work and GBV in the past six months on consistent condom use with all clients in the past 30 days.

We first conducted exploratory data analysis to assess the distribution of the data, and calculated descriptive statistics for each variable in the models. Next, bivariate logistic regression models were used to determine the association between the independent variables and the outcomes of interest in each model. An interaction term between frequency of intoxication during sex work and GBV in the past 6 months was included in the second model in order to assess whether GBV modified the relationship between intoxication during sex work and consistent condom use with all clients. The interaction term was not significant in the bivariate analysis, and was therefore not included in the multivariable analysis.

Next, we ran the two multivariable models, controlling for socio-demographic characteristics, sex work stigma, and social cohesion. Community was included in the multivariable models because the study design was based on the purposive selection of the two communities.

Sensitivity analyses were conducted to assess whether the findings varied by demographic characteristics, as well as severity of violence and frequency of violence experienced. The sensitivity analyses did not yield significant results and are therefore not reported.

Model fit was assessed using the Hosmer-Lemeshow goodness of fit test, with a non-significant ( $p>0.05$ ) result indicating that the model fits the data well. Finally, the generalized estimating equation (GEE) method with robust variance estimates was used for all models to estimate the logistic regression coefficients, adjusting for the within-venue, intra-class correlation related to our outcomes of interest within venues<sup>44,45</sup> Data analysis was conducted using STATA 13.<sup>46</sup>

This study received human subjects research approval from the Institutional Review Boards (IRBs) of the Johns Hopkins Bloomberg School of Public Health, the Muhimbili

University of Health and Allied Sciences Directorate of Research and Publications, and the National Institute for Medical Research of Tanzania.

## **Results**

### *Sample characteristics*

As shown in Table 1, the mean age of the sample was 27 years old (range 18-55 years). Nearly half (49%) of the sample earned an average monthly income greater than 12,000 Tsh (\$55 USD), and 61% had a full or part-time job that paid a salary. Of those with full or part-time jobs, 65% were employed as barmaids by a venue that sells alcohol. Almost all FSWs (91%) met their clients in these venues. Forty-two percent of the participants reported that they were almost always/always intoxicated during sex work in the past 30 days. Alcohol consumption was more common than drug use among this sample: 97% reported drinking at least one alcoholic beverage during a typical day at work, while 7% had ever used drugs. The mean sex work stigma score was 39 (SD=7; range 13-52), and the mean social cohesion score was 21 (SD=5; range 9-36). Physical or sexual violence was experienced by 42% of FSWs in the past 6 months. Finally, 32% of the sample reported consistent condom use with all clients in the past 30 days.

### *Results from model 1: Any GBV in the past 6 months as the outcome*

Findings from the bivariate analysis of intoxication during sex work on experiences of GBV in the past 6 months, demonstrated that FSWs who were almost always/always intoxicated during sex work were significantly more likely to experience GBV in the past 6 months, compared to those who were never, rarely, or sometimes intoxicated during sex work (OR: 1.64, 95% CI: 1.14, 2.36) (Table 2). Ever having been denied payment for sex work, social cohesion, and internalized sex work stigma were also associated with increased odds of GBV.

In the multivariable model, almost always/always being intoxicated during sex work remained significantly associated with increased odds of GBV in the past 6 months after controlling for socio-demographic variables and independent variables of interest (aOR: 1.67, 95% CI: 1.08, 2.59) (Table 2). Having ever been denied payment for sex work by clients also remained significantly associated with increased odds of experiencing GBV in the past 6 months in the multivariable model (aOR: 1.88, 95% CI: 1.22, 2.90). Social cohesion remained moderately associated with increased odds of GBV in the past 6 months (aOR: 1.06, 95% CI: 1.02, 1.11), as did sex work stigma (aOR: 1.05, 95% CI: 1.02, 1.09). Being a member of the Mafinga study community (the control community) vs. Ilula (the intervention community) was associated with decreased odds of GBV in the past 6 months in the multivariable model (aOR: 0.49, 95% CI: 0.30, 0.79).

*Results from model 2: Consistent condom use with all partners in the past 30 days as the outcome*

The bivariate analysis examined intoxication during sex work and experiences of GBV in the past 6 months and consistent condom use with all clients in the past 30 days, and demonstrated that intoxication during sex work was associated with decreased odds of consistent condom use (OR: 0.54, 95% CI: 0.36, 0.79) (Table 3). GBV in the past 6 months was not significantly associated with consistent condom use, while earning an average monthly income of more than 120,000 Tsh (\$55 USD) was associated with increased odds of consistent condom use with all clients.

In the multivariable model, intoxication during sex work is associated with reduced odds of consistent condom use with all clients, after controlling for socio-demographic variables and independent variables of interest (aOR: 0.59, 95% CI: 0.37, 0.95) (Table 3). Earning an average monthly income greater than 120,000 Tsh (\$55 USD) remained marginally significantly associated with increased odds of consistent condom use in the multivariable model (aOR: 1.57,

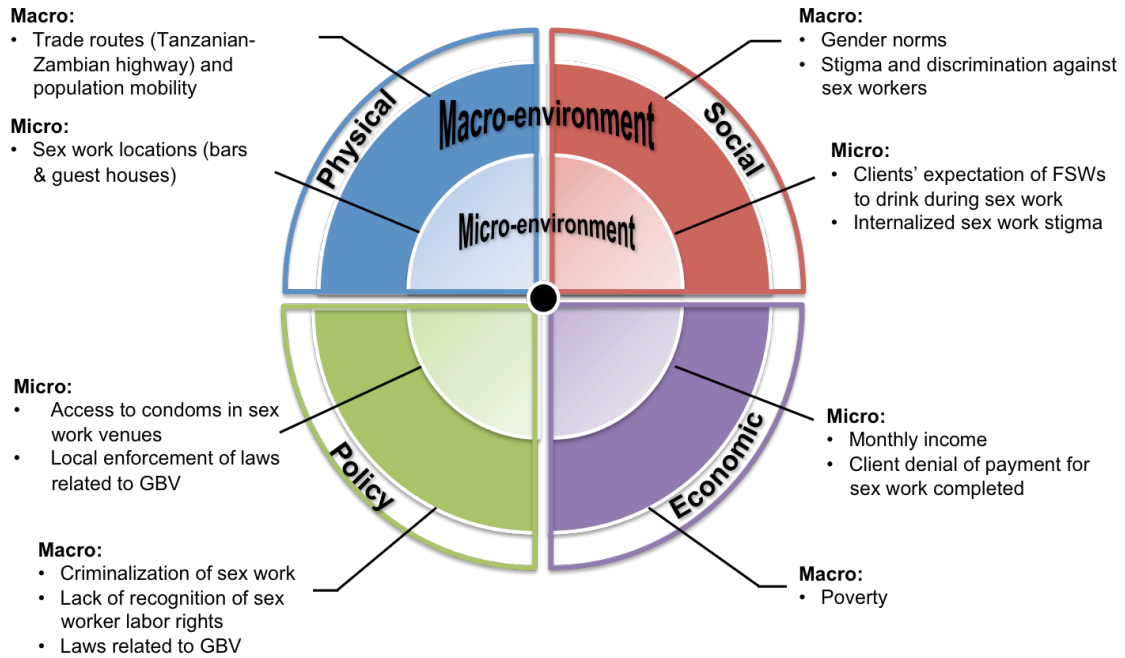
95% CI: 1.01, 2.45). The relationship between GBV and consistent condom use remained insignificant in the multivariable model.

## **Discussion**

Findings from this study indicate that intoxication during sex work is associated with increased risk for both GBV and unprotected sex among FSWs in Iringa, Tanzania. Our results also demonstrate how aspects of the sex work environment, including denial of payment for sex work completed, internalized sex work stigma, and monthly income, influence GBV and condom use among FSWs and their clients.

In the following section, we apply an adapted version of Rhodes' risk environment framework to contextualize our findings in the broader social and structural sex work environment.<sup>35</sup> We then utilize this framework to gain insight into different approaches public health practitioners can use to alter the environment to prevent substance use, GBV, and HIV among FSWs in Tanzania and similar contexts in SSA. While other researchers have adapted aspects of this framework to understand FSWs' risk for HIV,<sup>47</sup> this work has not specified how different components of the sex work environment influence risk or protection for substance use, GBV, and HIV. Figure 1 outlines a risk environment that comprises four *types* of environments (physical, social, economic, and policy) that intersect with *levels* of environments (micro and macro) to increase risk or protective factors for substance use, GBV, and HIV among FSWs in Iringa, Tanzania.<sup>35</sup>

**Figure 2. Risk environment framework for substance use, GBV, and HIV among FSWs**



Policy Environment

Sex work is criminalized in Tanzania, which has broad reaching implications for FSWs’ ability to access their human and labor rights.<sup>5-7</sup> The ILO recognizes sex work as a legitimate form of work entitled to the right to fair wages and a safe and supportive work environment, including access to HIV prevention and treatment and freedom from violence.<sup>10</sup> However, when sex work is not viewed as a legitimate form of work under the eyes of the law, as it is in Tanzania, FSWs have limited ability to demand these rights. Indeed, prior work suggests that criminalization of sex work limits FSWs’ ability to demand condom use with their clients and payment for sex work.<sup>7,47</sup> It is possible that these factors contribute to our findings that only 32% of FSWs in this sample consistently use condoms with their clients in the last 30 days, and over one third have been denied payment for sex work they have already completed.

Furthermore, it is important to appreciate that Tanzania provides limited legal protection against GBV.<sup>48</sup> The few laws that do exist offer limited guidance related to the penalty for

perpetrators of GBV, and are rarely enforced.<sup>48</sup> Prior work demonstrates that FSWs face additional barriers to accessing justice for violence perpetrated against them, due to the criminalization of their work and their marginalized status in society.<sup>5</sup> When the state fails to hold perpetrators accountable for violence against FSWs, they send a message of tolerance towards such crimes and allow abuses against FSWs to continue with impunity. It is possible that such dynamics contribute to the high rates of violence experienced by FSWs in this sample.

### Physical Environment

Iringa's location along the Tanzanian-Zambian highway brings high levels of mobility and migration through the region, increasing the demand for sex work.<sup>29</sup> The majority of sex workers in our sample (62%) work as barmaids in the modern and traditional bars that line the highway, selling alcohol to truck drivers and mobile workers passing through. It is in this context that 91% of FSWs in our sample meet their sex work clients. Prior qualitative work among FSWs in this setting suggests that alcohol consumption plays a major role in the sex exchange process.<sup>30</sup> Specifically, it is common practice for clients to buy FSWs alcoholic beverages in order to initiate the sex exchange process.<sup>30</sup> Indeed, 66% of the women in our sample reported that their clients expect them to consume alcohol during sex work. Other research in Iringa has also found that bar managers encourage FSWs to consume alcohol with clients during work in order to increase profits to the bar.<sup>30</sup> These dynamics illustrate how the physical sex work environment (i.e. bars along the Tanzanian-Zambian highway) intersects with the social environment (i.e. norms about alcohol consumption during work) to facilitate alcohol consumption during sex work. As our findings suggest, intoxication during sex work is associated with increased risk for GBV and HIV among FSWs.

Additionally, in this context, high levels of alcohol consumption among FSWs are typically accompanied by similar behaviors among clients.<sup>30</sup> Although our study did not explore client intoxication during sex work, prior research suggests that client alcohol use is associated

with increased violence perpetration<sup>33</sup> and reduced condom use.<sup>33,49,50</sup> It is therefore possible that client intoxication contributes to FSWs' risk for GBV and unprotected sex in this setting.

### Social Environment

Criminalization of sex work fosters stigma and discrimination towards sex workers.<sup>5-7</sup> Findings from our study suggest that some FSWs internalize the stigma they face in their community, and that this is associated with increased risk for violence. Internalized sex work stigma refers to FSWs' acceptance of the negative attitudes society holds about them.<sup>51</sup> Few studies have explored the relationship between internalized sex work stigma and GBV among FSWs.<sup>52</sup> However, in a qualitative study from Canada, Logie et al<sup>53</sup> assessed the influence of internalized HIV stigma on health behaviors among HIV-infected FSWs, who also experience violence.<sup>53</sup> This study found that FSWs with internalized HIV-related stigma were more likely to be in, and remain in, violent relationships.<sup>53</sup> Logie et al<sup>53</sup> found that internalized HIV stigma prevented women from leaving violent relationships because they blamed themselves for the abuse they experienced and feared they would never find love again.<sup>53</sup> Our findings suggest that much like internalized HIV stigma, internalized sex work stigma is associated with increased risk for GBV.

It is also possible that the positive relationship between internalized sex work stigma and GBV reflects the emergence of internalized sex work stigma as a result of experiences with GBV. In contexts where sex work is criminalized and highly stigmatized, violence against FSWs is often a form of enacted sex work stigma, and regularly occurs with impunity.<sup>5,6,54</sup>

Although we did not measure gender norms in our study, it is important to acknowledge that gender norms intersect with stigma and discrimination against sex workers to place FSWs at increased risk for GBV. Hegemonic masculine norms, which value male "toughness," virility, and dominance over women, are hypothesized to perpetuate gender inequality and sanction violence against women.<sup>55-57</sup> Indeed, studies have shown that men who endorse hegemonic



masculine norms are more likely to be violent towards women.<sup>22,58,59</sup> In this context, violence is viewed as a way for men to exert control over women and confirm their masculinity.<sup>55,57</sup> These dynamics are heightened among FSWs because they engage in work that defies gendered expectations of women as asexual until marriage, and monogamous when married.<sup>13,60</sup> FSWs' deviation from norms of female sexuality contributes to stigma, discrimination, and violence against sex workers.<sup>61,62</sup> Indeed, prior work has shown that some men perpetrate violence against FSWs to "punish" them for violating these norms.<sup>63</sup> Such dynamics suggest that FSWs are at heightened risk for GBV because of their intersecting marginalized identities as both females and sex workers.

### Economic Environment

As described above, criminalization of sex work compromises FSWs' labor rights, including access to fair wages and a safe work environment.<sup>10</sup> For example, prior qualitative research suggests that when FSWs demand payment denied to them for sex work they already completed, clients can become violent.<sup>64,65</sup> Our findings support these qualitative results by demonstrating that client refusal to pay FSWs for work they have already completed is associated with increased risk for GBV.

Evidence also suggests that poverty is often a key factor that causes women to go into sex work in resource-constrained settings. For example, qualitative studies have documented how FSWs' economic need and that of their children is often the catalyst for entering sex work.<sup>11,64</sup> Once in sex work, FSWs report engaging in HIV risk behaviors, such as unprotected sex, in order to earn enough money to meet their basic needs.<sup>12,13,66</sup> In many settings unprotected sex earns FSWs more money than protected sex, making it difficult for women to refuse it when they have financial difficulties.<sup>12,13</sup> Our results support this existing research by demonstrating a positive relationship between earning a higher monthly income and consistent condom use with all clients.

These findings provide further evidence of the critical role labor rights, including access to payment for sex work, can play in reducing FSWs' risk for HIV.

We had two unexpected findings. First, we found that social cohesion was associated with increased odds of GBV in the past 6 months. Prior research suggests that social cohesion among sex worker communities is essential for establishing mutual support for HIV prevention behaviors, such as consistent condom use, and taking collective action to address and prevent violence and discrimination against fellow FSWs.<sup>43,67,68</sup> As such, we expected to see a negative relationship between social cohesion and GBV, such that FSWs reporting higher social cohesion would have reduced odds of GBV. However, due to the cross-sectional nature of this study we are unable to determine temporal order. As such, it is possible that the positive association we found between social cohesion and GBV could reflect an organic emergence of mutual aid and support (i.e. social cohesion) that resulted from experiences with GBV. Further research, including longitudinal analyses, is needed to explore the relationship between social cohesion and GBV among FSWs in this setting.

Second, we found no significant association between GBV and consistent condom use among FSWs in this study. This finding held true when we stratified by demographic variables, as well as severity of violence and frequency of violence. Prior research among FSWs in other settings has demonstrated a positive relationship between experiences of GBV and inconsistent condom use, unprotected sex, and condom failure (i.e. breakage) among FSWs and their sexual partners.<sup>19,23,69</sup> Such studies have demonstrated that violence limits women's ability to negotiate and determine the timing and terms of sex, which can lead to unprotected sex and forced or unwanted sex.<sup>70,71</sup> Our results trended towards a negative association between GBV and consistent condom use with all clients, which is in line with the literature. However, our findings were not statistically significant.

Importantly, some of the prior research in this area has yielded partner-specific results related to violence and condom use.<sup>20,70</sup> Unfortunately, our data lacked specificity regarding

perpetrator type (e.g. non-paying partner, new client etc.). It is possible that our inability to specify the perpetrator type in our model weakened the relationship between GBV and consistent condom use with clients. Given the prior research described above, future studies among FSWs in Tanzania should assess whether perpetrator type influences the relationship between GBV and consistent condom use.

#### *Implications for a rights-based approach to prevent HIV and GBV among FSWs*

The risk environment framework emphasizes the potential for creating safe and supportive environments by addressing the social situations and structures that promote risk.<sup>35</sup> Here, Rhodes draws from Anthony Giddens' structuration theory, which argues that while individuals' agency is influenced by structure, structures are simultaneously maintained and adapted through agency.<sup>35,72</sup> This implies the need for interventions that mobilize FSWs to address the environmental factors that increase FSWs' risk for substance use, GBV, and HIV. Rights-based, community empowerment approaches have been shown to successfully address the sex work environment to improve HIV and GBV outcomes among FSWs globally.<sup>73</sup> Such approaches recognize that sex work is a legitimate form of work, and is entitled to the same protections as any other form of work, including a safe and supportive work environment.<sup>10,73</sup> These approaches also seek to promote and protect the human rights of sex workers including the right to work, a life free of violence, and the right to quality health care.<sup>73</sup> Community empowerment approaches provide opportunities for sex workers to come together in solidarity and take collective ownership over programs and services to address the social and structural barriers they face to their health, wellbeing, and human rights.<sup>73</sup> Prior studies that have utilized this approach have found that when FSWs come together in solidarity they are better able to advocate for and achieve a safer work environment through establishing mutual support for risk reduction behaviors such as condom negotiation and use; taking collective action to address and prevent violence and discrimination against fellow FSWs; and forming relationships with

potential allies including bar/brothel owners, police, and health care providers.<sup>73-75</sup> Such programs have been found to be successful in reducing violence and increasing condom use among FSWs.<sup>74,76-80</sup> It is possible that a rights based approach can also address aspects of the sex work environment described above, to decrease FSWs' risk for intoxication during sex work, GBV, and HIV. However, few community empowerment approaches in the literature have explicitly addressed the overlapping epidemics of alcohol use, violence and HIV risk among FSWs.<sup>7,73</sup> Our findings suggest the need for future community empowerment initiatives to address the role alcohol plays in increasing FSWs' risk for GBV and unprotected sex. But first, further qualitative exploration is needed to gain a more nuanced understanding of the dynamics within the sex work environment that promote alcohol use and place FSWs at risk for GBV and HIV to inform future programming.

### *Strengths and limitations*

It is important to acknowledge the limitations of this study. First, the cross-sectional nature of this study limits our ability to establish temporal order, and therefore draw causal conclusions about the relationships between substance use, GBV, and consistent condom use. However, considering limited research has explored these relationships among FSWs in SSA, this study remains an important contribution to the field. Another potential limitation of our study is the self-report of experiences of GBV, consistent condom use and substance use. As such, social desirability bias may affect the strength of the associations between our exposure and response variables in model 1 and model 2. Interviewers engaged in sensitivity trainings for GBV as well as other trainings on how to establish trust and rapport with participants in order minimize this potential bias. Finally, as described above, the fact that we were unable to account for perpetrator type in our analysis of the relationship between GBV and consistent condom use with clients is another limitation of this study.

Despite these limitations, this study has a number of strengths. This study contributes to our knowledge regarding the way in which substance use influences the co-occurring epidemics of GBV and HIV among FSWs in SSA. Additionally, our study sheds light on the important role of internalized sex work stigma on the experiences of violence against FSWs in this setting, something that has previously been unexplored.

## **Conclusion**

Results from this study demonstrate that intoxication during sex work is associated with increased risk for both GBV and HIV among FSWs. Findings also suggest that internalized sex work stigma, and denial of payment for sex work completed are associated with increased risk for GBV, while earning a higher average monthly income was associated with increased odds of consistent condom use with clients. We adapted the risk environment framework to contextualize our findings in the environment to gain an appreciation for how aspects of the physical, social, political, and economic environment shape FSWs' risk for substance use, GBV, and HIV. Drawing upon this framework, we argue that a rights-based approach is needed address the effects of sex work environment on FSWs' risk for substance use, GBV, and HIV. Such approaches should facilitate the opportunity for sex workers to come together as a community to mobilize their collective power and resources to fight for their right to a safe and supportive working environment.

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**Table 1. Demographic Characteristics of the Shikamana cohort at baseline (N=496)**

<b>Characteristics</b>	<b>N (%)</b>
<i>Individual level</i>	
Age, mean (SD)	27 (7)
Monthly income > 120,000 Tsh/\$55	244 (49)
Education	
No formal schooling	27 (5)
Some primary school	325 (66)
Some secondary or higher	144 (29)
HIV positive	203 (41)
Relationship status	
Single	78 (16)
In a steady relationship but not married	329 (66)
Married	89 (18)
Responsible for one or more children	449 (91)
Number of years in sex work, mean (SD)	7 (6)
Full-time or part-time employment with a salary	301 (61)
Frequency of sex work	
Once a week or less	165 (34)
A few times a week but not every day	287 (58)
Once a day or more	40 (8)
<i>Work Environment/Structural level</i>	
Almost always/always intoxicated during sex work, past 30 days	207 (42)
Drink one or more drinks on a typical day of work	408 (97)
Ever used drugs	34 (7)
Clients expect FSW to consume alcohol during sex work	324 (66)
Earn $\geq$ 15,000 Tsh/\$7 per sex act	266 (54)
Ever denied payment for sex work completed	158 (32)
Employed by a venue that sells alcohol	301 (62)
Meet clients in bars	449 (91)
Sex work stigma, mean (SD)	39 (7)
Social cohesion among sex workers in venue, mean (SD)	21 (5)
Consistent condom use with all clients, past 30 days	158 (32)
Somewhat easy access to condoms, past 6 months	400 (82)
Any GBV (physical or sexual), ever	254 (51)
Any GBV (physical or sexual), past 6 months	211 (42)
Physical GBV, ever	232 (47)
Physical GBV, past 6 months	175 (35)
Sexual GBV, ever	109 (22)
Sexual GBV, past 6 months	82 (16)

**Table 2. Unadjusted and adjusted odds of experiencing any GBV in the past 6 months among the Shikamana cohort at baseline, (N=447)**

Characteristics	Bivariate		Multivariable <sup>a</sup>	
	OR (95% CI)	p-value	AOR (95% CI)	p-value
<i>Socio-demographic</i>				
Age	0.98 (0.95, 1.00)	0.09	0.97 (0.93, 1.00)	0.08
Earn an average of 120,000 Tsh or more per month (~\$55 USD)	1.33 (0.93, 1.91)	0.12	1.32 (0.86, 2.02)	0.20
Education				
No formal schooling	(reference)	--	--	--
Some primary school	1.01 (0.46, 2.25)	0.98	1.12 (0.44, 2.85)	0.81
Some secondary or higher	1.33 (0.58, 3.06)	0.50	1.24 (0.46, 3.29)	0.67
HIV positive	1.08 (0.75, 1.55)	0.69	1.03 (0.66, 1.59)	0.89
Relationship status				
Single	(reference)	--	--	--
In a steady relationship but not married	0.89 (0.54, 1.47)	0.65	0.82 (0.45, 1.47)	0.50
Married	0.90 (0.49, 1.68)	0.75	1.06 (0.50, 2.24)	0.88
Responsible for one or more children	1.15 (0.71, 1.88)	0.57	1.07 (0.58, 1.95)	0.83
<i>Work Environment/Structural</i>				
Almost always/always intoxicated during sex work in the past 30 days	1.64 (1.14, 2.36)	0.007**	1.67 (1.08, 2.59)	0.02*
Clients expect FSW to consume alcohol during sex work	1.40 (0.96, 2.04)	0.08	1.22 (0.77, 1.93)	0.39
Clients pay an average of 15,000 Tsh or more per sexual act (~\$7 USD)	1.17 (0.81, 1.68)	0.41	1.07 (0.67, 1.71)	0.77
Ever denied payment for sex work completed	2.25 (1.53, 3.31)	<0.001** *	1.88 (1.22, 2.89)	0.004**
Work in a venue that sells alcohol	1.01 (0.69, 1.46)	0.97	1.30 (0.84, 2.01)	0.23
Meet clients in bars	0.79 (0.43, 1.44)	0.44	0.61 (0.29, 1.25)	0.18
Social cohesion among sex workers in venue	1.07 (1.03, 1.11)	0.001**	1.06 (1.02, 1.11)	0.008**
Sex work stigma	1.04 (1.01, 1.07)	0.009**	1.05 (1.02, 1.09)	0.001**
Mafinga study community	0.73 (0.49, 1.09)	0.10	0.49 (0.30, 0.79)	0.003**

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

<sup>a</sup>Hosmer lemeshow= 0.30



**Table 3. Unadjusted and adjusted odds of consistent condom use with all clients in the past 30 days among the Shikamana cohort at baseline, (N=439)**

Characteristics	Bivariate		Multivariable <sup>a</sup>	
	OR (95% CI)	p-value	OR (95% CI)	p-value
<i>Socio-demographic</i>				
Age	0.98 (0.95, 1.01)	0.22	0.97 (0.93, 1.01)	0.16
Earn an average of 120,000 Tsh or more per month (~\$55 USD)	1.53 (1.04, 2.24)	0.03*	1.57 (1.01, 2.45)	0.05*
Education				
No formal schooling	(reference)	--	--	--
Some primary school	0.69 (0.31, 1.52)	0.36	0.62 (0.25, 1.58)	0.32
Some secondary or higher	0.61 (0.27, 1.42)	0.25	0.52 (0.19, 1.39)	0.19
HIV positive	1.14 (0.78, 1.67)	0.50	1.29 (0.82, 2.04)	0.27
Relationship status				
Single	(reference)	--		
In a steady relationship but not married	1.68 (0.95, 2.96)	0.07	1.72 (0.88, 3.37)	0.11
Married	2.04 (1.03, 4.03)	0.04*	2.25 (0.99, 5.10)	0.05
Responsible for one or more children	1.35 (0.79, 2.29)	0.27	1.73 (0.90, 3.33)	0.10
<i>Work Environment/Structural</i>				
Any GBV in the past 6 months	0.90 (0.62, 1.31)	0.58	0.87 (0.56, 1.37)	0.56
Almost always/always intoxicated during sex work in the past 30 days	0.54 (0.36, 0.79)	0.002**	0.59 (0.37, 0.95)	0.03*
Interaction term: Any GBV in past 6 months X almost always intoxicated during sex work	0.68 (0.31, 1.49)	0.33	--	--
Clients expect FSW to consume alcohol during sex work	0.69 (0.47, 1.01)	0.06	0.79 (0.49, 1.26)	0.33
Work in a venue that sells alcohol	0.84 (0.57, 1.23)	0.36	0.97 (0.62, 1.51)	0.88
Ever denied payment for sex work completed	1.13 (0.76, 1.69)	0.55	1.21 (0.76, 1.91)	0.42

Meet clients in bars	0.55 (0.30, 1.00)	0.05	0.78 (0.37, 1.64)	0.51
Social cohesion among sex workers in venue	0.99 (0.95, 1.03)	0.61	0.99 (0.94, 1.04)	0.61
Sex work stigma	1.03 (0.99, 1.06)	0.06	1.02 (0.99, 1.05)	0.26
Clients pay and average of 15,000 Tsh or more per sexual act (~\$7 USD)	1.76 (1.19, 2.61)	0.005*	1.38 (0.84, 2.26)	0.20
Somewhat easy access to condoms in the past 6 months	1.36 (0.82, 2.28)	0.24	1.63 (0.90, 2.96)	0.11
Mafinga study community	1.39 (0.91, 2.12)	0.13	1.31 (0.79, 2.17)	0.29

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

<sup>a</sup>Hosmer lemeshow= 0.96

**Paper 2: “You already drank my beers, I can decide anything”: Dynamics of alcohol use, gender-based violence, and HIV risk among female sex workers in Iringa, Tanzania**

**Abstract**

Female sex workers (FSWs) experience high rates of gender-based violence (GBV) and HIV. Alcohol has been shown to facilitate women’s risk for both GBV and HIV. However, little research has qualitatively explored how aspects of the sex work environment shape this risk, as well as the strategies FSWs use to address these factors to achieve positive health outcomes. We conducted qualitative in-depth interviews with 24 FSWs enrolled in an ongoing community randomized controlled trial of a combination HIV prevention intervention in Iringa, Tanzania. Data was analyzed using the framework approach, in which the researcher begins the analysis with a coding schema based on *a priori* codes, informed by existing literature. The codes were then iteratively revised to reflect emergent domains and then systematically applied across all transcripts. Findings reveal how routine interactions between FSWs and their clients occur at specific moments during the sex exchange process to facilitate alcohol consumption and increase FSWs’ risk for GBV and HIV. Alcohol was reported to play a primary role in initiating the sex exchange process, with clients purchasing alcohol for FSWs to signal that they would like to secure their sex services. Women reported experiencing physical or sexual violence while negotiating the terms of the sex exchange, or if they refused to have sex after consuming alcohol purchased by the client. Our findings also highlight how FSWs mobilize their collective agency to address aspects of the sex work environment that place them at risk for alcohol abuse, GBV, and HIV. Ultimately, this study sheds light on aspects of the sex work environment that increase FSWs’ risk for GBV and HIV, and how FSWs in Tanzania and in similar contexts can mobilize their collective agency to address these structural factors to realize their health and human rights.

## Background

Globally, female sex workers (FSWs) are disproportionately affected by HIV and gender-based violence (GBV).<sup>1-4</sup> In Tanzania, the national HIV prevalence among FSWs is 6.5 times higher than the HIV prevalence among women in the general population.<sup>5,6</sup> FSWs in Tanzania also report much higher rates of GBV than their female counterparts in the general population.<sup>7,8</sup> Such disparities are influenced by structural factors including criminalization of sex work,<sup>4,9,10</sup> stigma and discrimination towards FSWs,<sup>4,9,10</sup> poverty,<sup>11-13</sup> and gender inequity.<sup>14,15</sup>

Alcohol use and abuse has also been shown to increase FSWs' risk for both HIV and GBV in sub-Saharan Africa (SSA).<sup>16,17</sup> Alcohol consumption is thought to increase FSWs' risk for HIV by limiting their ability to successfully negotiate and use condoms with their sexual partners.<sup>16,17</sup> Furthermore, alcohol use can increase FSWs' risk for violence by limiting their ability to detect potentially dangerous situations, or render them unconscious and unable to defend themselves against unwanted advances from clients or partners.<sup>18,19</sup>

Iringa is located in the Southern Highlands of Tanzania along the Tanzanian-Zambian highway, which brings truck drivers and seasonal migrant workers through the region, and increases the demand for sex work.<sup>20</sup> The majority of FSWs in this region are employed as barmaids in bars that line the highway and sell bottled and/or locally brewed alcohol to clientele. Barmaids in Iringa often engage in sex work to augment their low wages.<sup>13</sup> Alcohol use is common among FSWs in Tanzania, and FSWs in Iringa have the highest rate of daily alcohol consumption in the country.<sup>5</sup>

Prior research suggests that alcohol plays a central role in sex work negotiation process in Iringa. Specifically, clients typically purchase alcohol for sex workers in order to indicate that they are interested in securing their services.<sup>21</sup> As such, it is common for both sex workers and clients to engage in sex under the influence of alcohol. Previous studies have demonstrated not only how FSWs' own alcohol consumption places them at risk for HIV and GBV,<sup>16,17</sup> but also

how client intoxication is associated with increased violence perpetration<sup>18</sup> and reduced condom use.<sup>18,22,23</sup>

Anthony Giddens' work on the structuring of social conduct across time and space provides a lens through which we can begin to explore how alcohol use, GBV, and HIV risk overlap to further increase FSWs' risk for negative health outcomes, and provides insight into potential avenues for intervention. In his theory of structuration, Giddens argues the structure of social systems can be understood by the ways in which "forms of social conduct are reproduced chronically across time and space" (p. xxi).<sup>24</sup> In other words, by examining the routine behaviors or interactions of certain populations across time and space, social scientists can gain insight into aspects of the social systems that shape such practices. Furthermore, this theory posits that while social systems shape individual behaviors and routines, individuals also have the capacity to either maintain or adapt social structures through their own agency.<sup>24</sup> Structure and agency are mutually constitutive, which is referred to as the "duality of structure."<sup>24</sup> Thus, by exploring how social interactions occur across time and space in the sex exchange process, we can gain an understanding of the factors that place FSWs at risk for GBV and HIV risk. Furthermore, this exploration can provide insight into strategies FSWs can use to mobilize their collective agency to shift social and structural factors to better improve their health outcomes.

Although prior research has demonstrated the important role alcohol plays in increasing FSWs' risk for both HIV and GBV, little research has examined how social interactions across time and space in the sex exchange process shape this risk. Given the implications of structuration theory, outlined above, further research is needed to gain a more nuanced understanding of the dynamics that link alcohol to HIV and GBV among FSWs in order to shed light on potential pathways for intervention. We conducted a qualitative study with 24 FSWs in Iringa, Tanzania in order to fill this gap in the literature.

## Methods

### *Study Setting*

As described above, FSWs in Iringa, Tanzania are often employed as Barmaids in either modern or traditional bars, and engage in sex work to supplement their income. In this context, modern bars (*Baa*) refer to larger venues that sell bottled beer and liquor and are run by bar managers/owners, who employ women as barmaids. Barmaids who work in modern bars are often mobile sex workers who move from bar to bar depending on the agricultural season. As such, some modern bars have rooms in the back of the bar where FSWs can sleep and sometimes conduct sex work. Modern bars can also be connected to guesthouses, which rent out short-term rooms for passing truck drivers.<sup>25</sup> Women can also use these rooms to conduct sex work.

Traditional bars or *vilabu* (singular *kilabu*) are smaller, often informal, bars that sell local brew such as *ulanzi* (bamboo wine) or *komoni* (maize beer).<sup>25</sup> Women who work in these bars often run their own stalls where they make the local brew and sell it to customers. This is also where women meet clients for sex work. The distinction between modern bars and traditional *vilabu* date back to colonial times when bottled beer and European spirits were restricted for use by colonists, and traditional brews were consumed by East Africans.<sup>26</sup> Today, although there are no longer restrictions on who can consume bottled beer and liquor, the alcohol sold in modern bars is more expensive than local brew, and therefore draw clientele that have more money for alcohol and sex.

### *Description of Parent Study*

This qualitative study was nested within an ongoing phase II community-randomized controlled trial of a community-based combination HIV prevention model for FSWs in Iringa, Tanzania.<sup>27</sup> Project Shikamana (Swahili for “Stick together”) consists of biomedical, behavioral, and structural intervention components that are informed by a rights-based framework and shaped

by the needs expressed by FSWs themselves.<sup>27</sup> Intervention components include (1) peer education, condom distribution, and HIV counseling and testing in entertainment venues; (2) peer navigation to facilitate HIV prevention as well as linkage to and retention in HIV care and treatment; (3) sensitivity training for HIV health care providers and police; (4) text messages to promote project awareness and adherence to HIV care and treatment; and (5) a community-based drop-in center (DIC) where workshops are held to promote social cohesion among FSWs and facilitate community mobilization around issues such as stigma and discrimination, violence, and financial insecurity.<sup>27</sup>

The parent study established a cohort of 496 FSWs, stratified by HIV status, in the Iringa region of Tanzania. The cohort consists of 252 FSWs from the intervention community and 143 FSWs from the control community. In order to be eligible to participate in the parent study, women must meet the following eligibility criteria:  $\geq 18$  years, report exchanging sex for money in the last month, and work at an identified venue in one of the two study communities.

### *Sampling and Recruitment*

We conducted a qualitative sub-study among 24 FSWs from the cohort of 252 FSWs in the intervention community of the parent study. Participants were purposively sampled based on the following characteristics to facilitate comparisons in the analysis: HIV status (n= 12 HIV infected & 12 HIV uninfected), work venue (n=12 modern bar & 12 traditional bar), and level of engagement in the intervention (n=12 low engagement & 12 high engagement). In this study, low engagement in Project Shikamana was defined as participating in none or one workshop in the DIC and refusing peer navigator services. High engagement was defined as participating in at least one workshop and accepting peer navigator services. Baseline data and intervention tracking information from the parent study were utilized to identify participants. Participants were contacted over the phone and asked if they were interested in participating in the qualitative sub-

study. To ensure confidentiality and safety of the participants, recruiters framed the study as one that was focused on participants' health and life experiences.<sup>28</sup>

### *Data Collection*

The interview guide consisted of broad, open-ended questions meant to elicit FSWs' thoughts and perspectives on the role alcohol use plays in the sex work environment, and how alcohol use is related to experiences with violence and HIV prevention behaviors. Additionally, the guide included questions that explored the strategies FSWs employ to address factors in the sex work environment that increase their risk for GBV and HIV. Questions in the guide were informed by prior research on these topics as well social behavioral theory including the constructs of social cohesion and structuration theory. The interview guide was first written in English, translated into Kiswahili, back translated, and piloted to ensure questions made sense to participants.

All interviews were conducted in a private room in the DIC affiliated with the parent study. Participants were first led through the informed consent form and provided their consent before starting the interview. Two female interviewers conducted in-depth interviews utilizing a semi-structured interview guide.

### *Data analysis*

All interviews were audio-recorded, transcribed and translated into English, and entered into Atlas.ti<sup>29</sup> qualitative analysis software for coding. Qualitative analysis was conducted using the framework approach. This approach was developed for applied research, in which the objectives of a qualitative study are established in advance and driven by the need to inform the development of health programs or further explore quantitative findings.<sup>30</sup> The framework approach was chosen for this analysis because it enabled a more direct analytical process, allowing us to hone in on questions that arose from quantitative findings.



Analysis was facilitated by immersion in the data, through multiple readings of the transcripts and memo writing to highlight emergent themes and insights. Drawing on the framework approach,<sup>30</sup> an initial coding schema was developed based on *a priori* codes (e.g. informed by the key research questions and findings from quantitative analyses), which were iteratively revised by adding new codes that reflect additional themes, topics and frames that emerged from the data. The codes were then systematically applied across all the transcripts, using memos to elaborate upon the codes and their application. Next, the data were organized into a chart format, with a chart for each key theme and summaries of different perspectives and experiences from several participants.<sup>30</sup> This method allows data to be compared and contrasted across different themes and perspectives, and facilitates the identification of associations between themes, which can provide explanations for the findings.<sup>30</sup>

We utilized a number of approaches to improve the likelihood that the data we collected and our interpretations of that data stayed true to the lived experiences of the participants.<sup>31</sup> First, both the interviewers and the investigator wrote detailed memos throughout the research process to reflect upon the ways their experiences, values, and beliefs may have influenced the data received, and their interpretation of that data.<sup>31</sup> Second, interviewers were trained to clarify their understanding of important points participants made during the interview and ask for feedback from the participant.<sup>32</sup> This enabled participants to clarify the meaning of their statements, and improved the ability of the researchers to more accurately interpret the data in a way that is faithful to the participant's experience. Finally, interviewers and the investigator debriefed after each interview to discuss the main themes that emerged in the interview, the tone of the interview, as well as any concerns that arose during the interview. These debriefing notes served as a check to ensure that the tone of the interview and the main themes were captured in the transcription and translation.<sup>33,34</sup>

This study received human subjects research approval from the Institutional Review Boards (IRBs) of the Johns Hopkins Bloomberg School of Public Health, the Muhimbili

University of Health and Allied Sciences Directorate of Research and Publications, and the National Institute for Medical Research of Tanzania.

## **Results**

### *Sample demographics*

The demographic characteristics of the sample are outlined in Table 1. All 24 participants were purposively recruited from the Project Shikamana intervention community in Iringa, Tanzania. We also purposively recruited participants so half of the sample was HIV-infected, half worked in a modern bar, and half were highly engaged in Project Shikamana. The age of participants ranged from 19 to 47 years, with a mean age of 29 years (SD=6). Less than half of the participants (38%) earned more than 120,000 Tsh per month (~ \$54 USD). The majority of participants (88%) reported hazardous or harmful alcohol use, as defined the Alcohol Use Disorders Identification Test (AUDIT).<sup>35</sup> Additionally, one-quarter reported consistent condom use with all clients in the past 30 days. Finally, 63% reported ever experiencing any violence (physical or sexual) in their lifetime, while 54% reported experiencing any violence in the past 6 months.

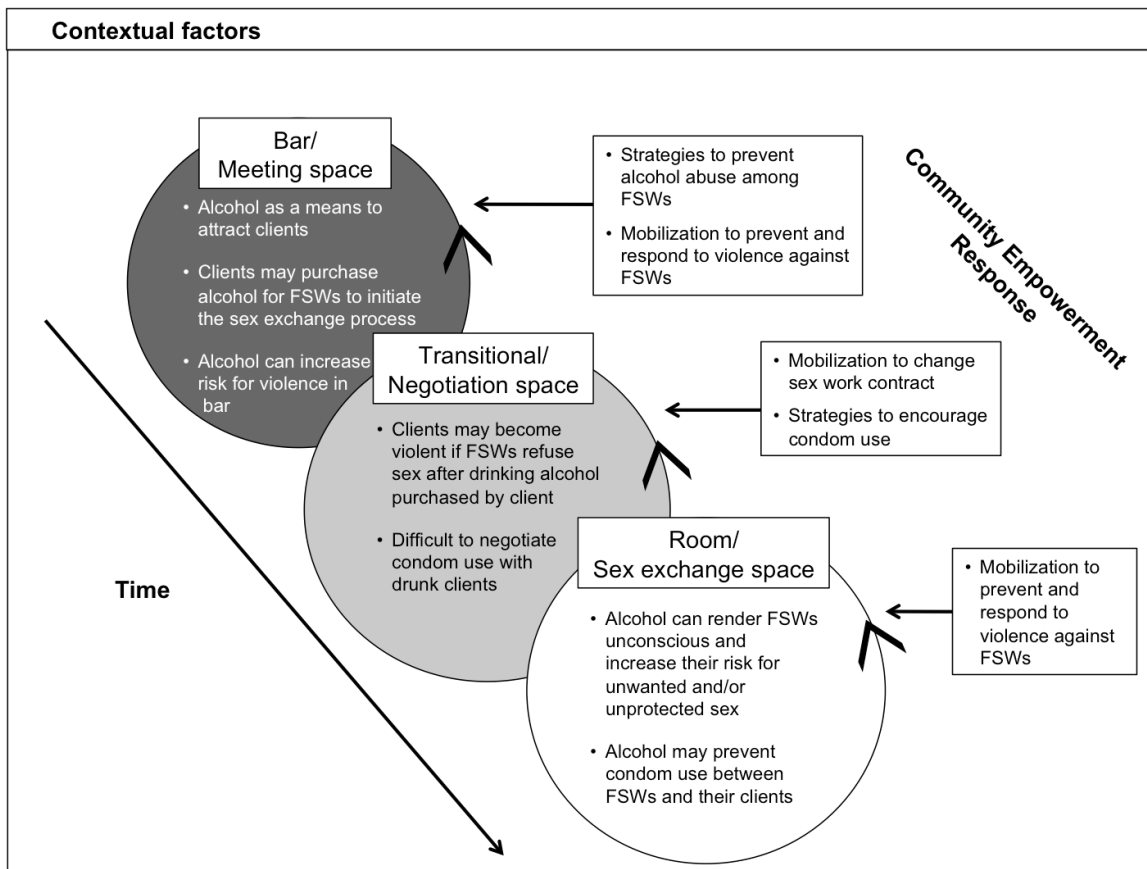
### *Findings*

Findings from this study reveal that FSWs and their clients engage in routine patterns of behavior at three specific moments during the sex exchange process, which facilitate alcohol consumption, GBV, and unprotected sex. These moments of time and space include: 1) attracting and meeting clients in the bar, 2) negotiating the terms of the sex exchange and moving from the bar to the room, and 3) engaging in sex in a room. These moments of time-space are depicted in Figure 1 as circles, each with an arrow representing the repetition of routine interactions and practices at that moment in time and space.

Our results also shed light on strategies FSWs use to shift the trajectory of the sex exchange process at each moment of time-space to limit alcohol consumption and prevent GBV and HIV. These strategies are illustrated on the right hand side of figure 1, with arrows pointing towards the moments of time-space to suggest their interruption of the routine behavior in each moment.

In the following section we describe the routine behaviors at each moment of time-space, which work to promote alcohol use among FSWs and their clients, and increase women’s risk for GBV and HIV. We also outline the strategies FSWs can or are already using to interrupt these routine behaviors and limit alcohol consumption and prevent GBV and HIV within the sex work environment.

**Figure 3. Intersection of alcohol use, GBV, and unprotected sex across time-space**



### Attracting and meeting clients in the bar

Women described consuming alcohol for a number of reasons during work including for pleasure, as a coping mechanism to “forget” the hardships of life, such as poverty, and to attract clients. For the purposes of this paper, we focus on alcohol as a strategy women used to attract clients. As the following quote illustrates, women recounted drinking alcohol to give them courage to initiate conversations with clients and appear “happy” and “excited” to interact with clients:

*“When you drink alcohol it can attract a client to sit and drink at your place. If you haven’t drunk [alcohol]... he sees you are not excited. Clients want to find a person [who] is excited, laughing, happy...If he finds you angry he can’t come to your place.”* (23 years, traditional bar, HIV-uninfected)

Alcohol consumption among FSWs is further facilitated by the routinized social practice of clients purchasing alcohol for FSWs to signal that they are interested in securing the women’s services. As one woman noted:

*“[Clients] can’t just come from nowhere [and say] ‘you lady, I want to go and sleep with you. No! So he uses a certain way to get you attracted. [He tells a barmaid] ‘give that lady over there a beer.’ After you have already drank, he gives you an offer. He tells [the barmaid] ‘please call for me that lady I want to talk to her.’ You go and talk to him. He tells you ‘I want you for today, maybe can we go [have sex]?’”* (23 years, modern bar, HIV-uninfected).

Other women supported this statement, maintaining that they know they are supposed to have sex with a client once he purchases an alcoholic beverage for them. The narratives around this practice suggest that by consuming alcohol purchased by a client, FSWs essentially assent to a social contract, or an implicit agreement, that commits them to have sex with that client.<sup>36</sup>

Women argued that it is very difficult to engage in sex work without drinking alcohol. Some participants stated that if they refuse alcohol purchased by a potential client, they will lose business from that client. Since the vast majority of FSWs rely on sex work for their income, they

are often forced to accept and consume alcohol purchased for them by a client, even if they do not want to.

Finally, women reported that both modern and traditional bars are the primary locations where FSWs experience violence. Participants attributed this to the fact that male clients routinely drink to the point of intoxication. Women argued that clients who are drunk are more likely to become violent. Respondents described situations where they would get into arguments with a client over his payment for alcohol or for sex work, and because the client was drunk, he would become physically violent. Other women contended that when clients are drunk they touch women without their consent or follow women to the bathroom and rape them. Participants argued that such behaviors would be less likely if clients were sober.

### *Collective Agency*

FSWs who were highly engaged in Project Shikamana revealed that they employ strategies to avoid becoming intoxicated during sex work. For example, a few respondents described arranging with the barmaid working behind the bar to fill their beer bottles with water, thereby, perpetuating the illusion that they are consuming the alcohol their client purchased for them. As the following quote demonstrates, not only does this strategy allow women to remain sober during sex work, it also allows them to earn additional money because the client pays for their beer even though they are given water.

*“If [a client] tells me, ‘drink,’ I [order] a beer that is sold at 3,500 Tsh... the [beer] can doesn’t show what is inside. So you take that can, [and] you just put water [in it]. You just tell the barmaid, like you just talk with your fellow [who] you have a good relationship [with], ‘make sure everything that is coming to me is a can with water.’ You [can] drink even ten of those. If you calculate 3,500 Tsh times ten, you just find you have a good amount of money.” (29 years, modern bar, HIV-infected)*

Furthermore, to mitigate violence that occurs in bars, some FSWs reported joining forces to

intervene and stop violence perpetrated against their colleagues. Other participants said they seek help from the bar manager or other male clients to stop violence against FSWs in the bar. Participants who reported engaging in these practices were primarily those who were highly engaged in Project Shikamana.

#### Transitional/Negotiation space

After consuming alcohol purchased by clients, FSWs and their clients negotiate the terms of sex. These terms include the price and type of sex (vaginal or anal), and whether or not a condom will be used. FSWs and their clients typically negotiate these terms at the table where they are drinking in the bar, or as they are making their way from the bar to a guesthouse where they will have sex. The majority of women contended that violence often occurs at this moment if a FSW refuses to have sex with a client after consuming the alcohol he purchased for her. As illustrated by the following quote, women in such situations often experience physical violence, especially if the client is already drunk:

*“He can buy me two, three beers and want to leave with me (to go have sex), [if] I don’t want he decides to beat me...Those things happen a lot. When clients get drunk in the bar, that is when they do that.”* (30 years, modern bar, HIV-infected)

Narratives around violence in these situations often cast blame on FSWs for revoking the social contract, which was set in motion when they consumed alcohol purchased by a client. When asked why FSWs experienced violence from clients, a number of participants suggested that FSWs do not experience violence “for no reason.” Instead, many suggested that the FSW “must have eaten his money (drank his beers)” and not provided sex in return. Bar managers seem to hold similar views, with women reporting that some managers refuse to help FSWs press charges against clients who become violent when FSWs refuse to have sex after consuming the client’s alcohol. Participants also reported that in some instances, managers make FSWs pay the

client back for the alcohol he purchased for her even after the client physically beat or raped her for refusing to have sex with him.

Women also argued that negotiating condom use becomes particularly difficult when clients are drunk. In general, women said that the majority of clients do not want to use condoms because they feel that condoms do not allow them to “taste” sex, meaning that sex with condoms is not as pleasurable as unprotected sex. However, women noted that when clients are drunk it becomes even more difficult to convince them to use condoms because alcohol makes clients “stubborn” and, as evidenced by the following quote, many refuse to use condoms.

*“In the local brew club after a man has got komoni and drinks...he doesn’t agree to use condom at all...I mean he refused fully, he tells you I can’t use.” (30 years, traditional bar, HIV-uninfected)*

Women explained that if they refuse to have unprotected sex with a client, the client can find another woman to have unprotected sex with. Therefore, in order to avoid losing business, women often feel as if they have to accept unprotected sex with a client, even if they want to use condoms.

### *Collective Agency*

To prevent the violence that typically occurs when a FSW refuses to have sex with a client after consuming the alcohol he purchased her, some women pay the client back for the drink(s) he bought her. As illustrated by the following quote, if a FSW does not have enough money to pay her client back, other FSWs will lend her money to help her avoid violence:

*“If you have used his money and beers, [and] if you refuse [to have sex with him], then he will ask for his money back. In that situation we can help our fellow working women (FSWs)... We shall stand for our fellow. If they agreed before and later she changes her mind and the man panics then we shall find a way to return his money back. Some times we request the counter cashier to*

*lend us some money and tomorrow we must pay her back.*” (28 years, modern bar, HIV-uninfected)

To ensure condom use, some women who were highly engaged in Project Shikamana reported secretly inserting female condoms before leaving with their client to have sex. This often occurs after a woman tries to negotiate condom use with a client who adamantly refuses. As the following quote illustrates, women who employ this strategy go to the restroom to put on the female condom before they leave with their client:

*“You know [when] men are drunk, he tells [you] ‘I don’t use condom.’ So if he insists [on unprotected sex], I ask to visit [the] toilet. Then I put on my lady condom [and] then I come back. He will think that I have agreed to sex without condoms. Meanwhile I know what I have done.”*  
(27 years, traditional bar, HIV-uninfected)

#### Room/Sex exchange space

The majority of FSWs in Iringa exchange sex in guesthouses near the bars where they meet their clients. Typically, FSWs and their clients leave the bar after agreeing to the terms of the sex exchange and arrive at a nearby guesthouse, where the client will pay to rent a room for a couple hours or the night, depending on the agreement made with the FSW. Sex work can also occur in rooms in the back of modern bars, which double as living quarters for FSWs who work as barmaids in these bars.

Many participants reported that, when women drink to the point where they lose consciousness, clients sexually assault them in the room where they exchange sex. Women recounted stories of how they or their friends had become unconscious from excessive drinking, taken to a room by a client, and either raped (vaginally or anally), gang raped, and/or forced to have sex without a condom. Participants also described how clients attempt to get FSWs drunk to facilitate sexual assault. In the following quote, a woman describes clients who intentionally got her friend drunk so they could gang rape her:



*“There was a certain friend of mine... she drank the beers of people who arranged to rape her after she was drunk... She was very drunk, to the extent that she could not move. So they raped her... They raped her both sides (vaginally and anally). When she got her mind (when she became conscious) she said there were like five men.”* (34 years, traditional bar, HIV-infected)

Women also described how clients agree to engage in a certain type of sex during the negotiation process, only to change their minds when they get into the room. If a woman consumes alcohol purchased by the client and refuses to acquiesce to the clients’ new demands, she is be beaten or raped. In the following quote, a woman describes a friend’s experience:

*“First he (client) told her ‘I want to go with you.’ She agreed... but she told him clearly ‘I want us to use condom.’ The client agreed but... inside [the room], the client turned [and said] ‘you can’t tell me to use condom while you have already drank my beers, I can decide anything.’ She refused [to have unprotected sex] and that is when she was beaten.”* (23 years, modern bar, HIV-uninfected)

Participants also explained that alcohol makes them “forget” to negotiate condom use, which results in unprotected sex. In this context, women revealed that it is often left up to them to negotiate condom use because clients prefer unprotected sex. Thus, when a woman forgets to ask her client to use a condom, they end up having unprotected sex. Finally, women also noted that alcohol greatly increases their sexual desire, and that this makes them reluctant to use condoms because they consider protected sex less pleasurable than unprotected sex.

### *Collective Agency*

To prevent violence, participants recalled covering shifts for FSWs who become too intoxicated to work. They also reported bringing their fellow FSWs home to rest when they become unconscious from excessive drinking. Such strategies prevent their colleagues from being exploited by clients. FSWs also reported advising colleagues who frequently become intoxicated to reduce their alcohol consumption.

Some women who experienced violence in private rooms while conscious scream or yell for help from their sex worker colleagues. As part of Project Shikamana, women were given whistles and advised to take the phone numbers of their sex worker colleagues to call for help when they are in danger of violence. Women who were highly engaged in Shikamana reported utilizing these strategies and effectively mobilizing their fellow FSWs to stop the violence being perpetrated against them. The following quote illustrates this phenomenon:

*“Our fellow [FSW] agreed to have sex with a customer. After getting inside [the room] she found two clients. Because she was already educated by then (participated in Project Shikamana)...she blew the whistle. After she blew the whistle there are some people who went there and some of them also... we were called through phones. After been called, we as [FSWs], we ran there. [When we arrived] that customer ran...we went to report [the violence] to the police station” (25 years, traditional bar, HIV-uninfected)*

## **Discussion**

Findings from this study reveal that the routine social interactions between FSWs and their clients occur at different moments of time and space across the sex exchange process to facilitate alcohol consumption, and increase FSWs’ risk for GBV and unprotected sex. Giddens’ structuration theory (1984) provides a lens through which we can interpret our findings. In this theory, Giddens discusses how social interactions are structured across moments in time and space. Specifically, he speaks of how moments of time and space are marked by “ritual forms of conduct and utterance,” which are regulated by “normative sanctions of ‘correct performance’” (p.126).<sup>24</sup> The normative practices that occur in each moment of time-space are “routinized” or habitual practices in the day-to-day experience of individuals, and are thought to reflect larger social structures and institutions at play.

Our findings demonstrate how women routinely drink alcohol in the modern and traditional bars where they sell alcohol and meet their clients. FSWs’ need to attract potential clients, as well

as client expectations of alcohol consumption as a first step in the sex exchange process facilitate high levels of alcohol use among this population. Our findings support results from another study in Iringa, Tanzania, which found that clients purchase alcohol for FSWs to initiate the sex exchange process.<sup>21</sup> Prior work in South Africa suggests that a similar practice occurs among women who engage in transactional sex.<sup>37,38</sup> Our findings build upon this past research by highlighting that accepting alcohol purchased by a client signals that FSWs not only initiate the sex work process, they also assent to a social contract signifying that they will eventually have sex with that client. From a structuration theory perspective, clients purchasing alcohol for FSWs in the bar is the “marker that signals the opening of the brackets” of the sex work encounter (p.135).<sup>24</sup> The results from this study suggest that deviating from the expected trajectory of the sex exchange process by refusing to have sex after drinking alcohol purchased by a client often results in physical violence.

Here, the term “social contract” is used to describe the implicit agreement between the client and the FSW, which is initiated when the FSW consumes alcohol purchased by a client, and obligates the FSW to have sex with the client.<sup>36</sup> Findings from this study also suggest that this social contract goes beyond just an agreement to engage in sex. In some instances, the social contract also entails FSWs relinquishing their power or control over the timing and terms of sex. Drawing from Carole Pateman’s work on the sexual contract (1988), our findings indicate that by consuming alcohol purchased by a client, FSWs sign a contract, which gives the client “command over the use of her person and body” for the length of the contract in any way he desires (p. 203).<sup>36</sup> This was demonstrated by FSWs’ stories of clients who, upon entering a private room, would abrogate the previously agreed upon terms of sex. In such instances, if a FSW had consumed alcohol purchased by a client, but did not agree to the new terms, she would experience physical or sexual violence. For example, women reported often being forced to have unprotected sex with a client, even though he had previously agreed to use a condom. In this case, going against the social contract established by consuming alcohol purchased by a client – even though

the terms were changed without the woman's consent – increases FSWs' risk for both GBV and HIV.

Clients' violent reactions to FSWs nullifying the social contract of sex work reflect larger social and structural forces at play. Hegemonic masculine norms, which value male "toughness," virility, and dominance over women, are hypothesized to perpetuate gender inequality and sanction violence against women.<sup>39-41</sup> Violence is seen as a way that men are able to exert their control over women and confirm their masculinity.<sup>39,41</sup> The narratives outlined by participants in this study suggest that clients assume a sense of "ownership" and control over women once a woman consumes alcohol they purchase.<sup>36</sup> It is possible that clients feel as though their authority is challenged when an FSW refuses to have sex or a certain type of sex with them, after consuming the alcohol they purchased for her. In such instances, violence can be seen as a strategy men use to exert their power and control over "disobedient" women.

Gender norms might also drive clients to purposefully get FSWs drunk to the point where they become unconscious, to facilitate the rape of FSWs without a condom. The majority of FSWs in our sample argued that they usually try to negotiate condom use with their clients, but clients are typically reluctant to use condoms. Such reactions to condom use among clients reflect hegemonic masculine norms, which value unprotected sex over condom use.<sup>39-41</sup> Furthermore, as described above, men who endorse such norms see women's bodies as objects of pleasure and male control. Thus the act of purposively getting a woman drunk to the point of unconsciousness and raping her without a condom is one way men in this context can exercise their control over women and engage in unprotected sex.

Violence against FSWs in the situations described above can also be understood as a result of stigma and discrimination towards sex workers. Sex work is criminalized in Tanzania, which fosters an environment of stigma and discrimination towards FSWs, and gives perpetrators license to abuse FSWs' human rights with little or no criminal repercussions.<sup>4,9</sup> In such contexts,

violence against FSWs is often a form of enacted sex work stigma, and regularly occurs with impunity.<sup>4,9</sup> It is likely that such dynamics facilitate violence against FSWs in this setting.

### *Public Health Implications*

As described earlier, structuration theory posits that while structure influences individual agency, individuals also have the capacity to use their agency to maintain or adapt structures. This theory has implications for how FSWs can mobilize their collective agency to interrupt the routinized interactions within the three key moments of time-space in the sex exchange process that facilitate alcohol abuse and increases their risk for GBV and HIV. Furthermore, acknowledging the considerable constraints FSWs may face in shifting the structural environment, it is also important for FSWs to garner the support from bar owners/managers and other key stakeholders.

Our findings suggest that FSWs are already mobilizing their collective agency to prevent and respond to alcohol abuse and GBV within the bar environment. For example, within the time-space moment of attracting clients in the bar, women reported asking barmaids to fill their beer cans with water instead of beer, to prevent them from becoming too intoxicated. Other participants reported taking FSWs who became unconscious from alcohol consumption back to their homes to rest to prevent them from being exploited. FSWs in this context could also partner with bar managers/owners to help them reduce alcohol consumption during work. Additionally, findings suggest that FSWs join forces to intervene when one of their colleagues is experiencing violence in a bar, or they call their manager or other clients to help them intervene.

At the transitional/negotiation stage along the sex exchange continuum, our findings suggest that FSWs subversively use female condoms to ensure protected sex even when their client refuses to use condoms. Other sex worker community mobilization interventions have demonstrated the importance of developing a collective and individual responsibility to practice safe sex in order to improve condom use.<sup>42-44</sup> Without the fear of losing clients to other FSW who

may agree to have unprotected sex, FSW are better able to negotiate condom use, and ultimately use condoms with their clients.<sup>44-48</sup> Such commitments can be further strengthened by gaining support and buy in from bar managers and owners.

Our findings also demonstrate the need for FSWs in settings such as Iringa to redefine the social contract of sex work, initiated when clients purchase alcohol for them. Specifically, there is a need to end the routine practice of clients becoming violent towards FSWs if they refuse to have sex with clients after drinking the alcohol purchased for them. While the constraints are formidable and contexts do make a difference, evidence suggests that significant advances could be made through workshops where bar owners/managers and FSWs learn about the human and labor rights of sex workers and form a collective sense of solidarity and commitment to ensure FSWs' safety within the workplace.<sup>49,50</sup> These workshops should stress that FSWs have the right to refuse sex from a client even after consuming alcohol purchased for them. Furthermore, such workshops should stress that any violence against FSWs is a human rights violation, and perpetrators of such violence should be prosecuted. Prior work has demonstrated the utility of FSWs and bar managers/owners signing a literal social contract agreeing to promote the health and wellbeing of sex workers within each establishment.<sup>50</sup> The social contract in this context could articulate that managers and other FSWs should intervene and press charges against clients who become violent towards a FSW, even if the FSW consumed the client's alcohol and refused to have sex with him.

Finally, in order to address the dynamics that increase FSWs' risk for GBV in rooms where sex work is conducted, FSWs can continue to utilize the whistles provided by Project Shikamana to call for help. Other strategies include distributing tip cards to FSWs, which outline strategies for violence prevention and response. Such strategies include informing sex worker colleagues when one is leaving to go have sex with a client, and saving FSW colleagues' phone numbers in one's phone to call in case of an emergency. At the policy level, sex workers can mobilize to advocate for the decriminalization of sex work both in Tanzania and in other, similar

contexts. This would establish sex work as a legitimate form of work in the eyes of the government and would likely result in reduced stigma and discrimination towards sex workers, and translate into more protection of sex worker rights.

While our study provides important insights into the ways in which alcohol use increases FSWs' risk for GBV and HIV, this study is not without limitations. Specifically, given the sensitive nature of our research questions, it is possible that some women withheld information regarding their personal experiences with alcohol use, violence and unprotected sex. In order to address this potential limitation, both interviewers were trained to establish rapport with participants before beginning all interviews, and received in-depth sensitivity trainings related to sex work and GBV.

## **Conclusions**

Our findings reveal how routine interactions between FSWs and their clients occur at specific moments across the sex exchange process and promote alcohol consumption and increase women's risk for GBV and HIV. Participants revealed that they use alcohol to facilitate sex work, and that clients purchase alcohol for FSWs to initiate the sex exchange process. Women also reported that violence typically occurs when a FSW refuses to have sex, or a certain type of sex with a client after consuming alcohol purchased by the client. These findings suggest that by consuming alcohol purchased by a client, FSWs in this context essentially sign a social contract committing them to have sex with that client. If women break that contract, they are placed at risk for violence. Drawing from the structuration theory, our findings also highlight the strategies FSWs can use to mobilize their collective agency to address aspects of the sex work environment that place them at increased risk for alcohol abuse, GBV, and HIV in this context.

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**Table 4. Background characteristics of study participants (N=24 from Project Shikamana intervention community)**

Characteristics	Total Sample N (%), Mean (SD)
Age (years)	29 (6)
Earn more than 120,000Tsh (~\$54) per month	9 (38)
Education	
Never attended formal school	2 (8)
Some primary school	14 (58)
Some secondary school or higher	8 (33)
Relationship status	
Single	2 (8)
In a relationship but not married	16 (67)
Married	6 (25)
Work in a modern bar	12 (50)
HIV-positive	12 (50)
Highly engaged in Project Shikamana	12 (50)
Hazardous/ Harmful alcohol use (AUDIT)	21 (88)
Consistent condom use with all clients in the past 30 days	6 (25)
Experience GBV (physical or sexual) ever	15 (63)
Experience GBV (physical or sexual) in the past 6 months	13 (54)

**Paper 3: Extortion, Sexual Coercion, and Impunity: A qualitative exploration of female sex workers' experiences accessing justice for gender-based violence in Iringa, Tanzania.**

**Abstract**

**Background:** Female sex workers (FSWs) in sub-Saharan Africa (SSA) experience very high levels of gender based violence (GBV). Despite this, evidence suggests that FSWs have limited access to justice for violence perpetrated against them, with police refusing or failing to adequately investigate and prosecute perpetrators of violence. Such failures of the justice system perpetuate a climate of tolerance towards violence against FSWs and enable abuses towards women to continue. This study explored FSWs' experiences accessing justice for violence perpetrated against them in order to gain insight into potential avenues of intervention.

**Methods:** We conducted qualitative in-depth interviews with 24 FSWs enrolled in an ongoing community randomized controlled trial of a combination HIV prevention intervention in Iringa, Tanzania. Data analysis was facilitated by the framework approach, which includes applying *a priori* codes, while allowing additional domains to emerge from the data, and then systematically applying the codes across all transcripts.

**Results:** Findings demonstrate that FSWs in Iringa, Tanzania are often denied access to justice for violence perpetrated against them and are forced to pay bribes or have sex with police officers when they report violence. Additionally, participants revealed that authorities routinely violate international standards of the justice process by instituting a policy of reconciliation and reimbursement to survivors for the medical expenses incurred as a result of violence, instead of prosecution.

**Conclusions:** This study suggests that FSWs in Tanzania are denied justice for violence perpetrated against them and face additional human rights abuses at the hands of the police when

they report experiences of violence. Such failures in the justice system perpetuate a climate of tolerance towards violence against FSWs and allow abuses to continue with impunity. Ultimately, this paper argues that there is a need for public health interventions that mobilize FSWs' collective agency, and garner support from key stakeholders, to address these factors and improve FSWs' access to justice.

## **Introduction**

Globally, female sex workers (FSWs) experience very high rates of gender-based violence (GBV).<sup>1</sup> GBV constitutes any act of violence that is perpetrated against someone because of their gender that “results in, or is likely to result in, physical, sexual or psychological harm or suffering...including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life”(Article 1).<sup>2</sup> In sub-Saharan Africa (SSA), estimates suggest that 49-82% of FSWs have experienced some form of GBV in the past 6 months.<sup>3-5</sup> In Tanzania, national estimates indicate that 50% of FSWs have experienced physical violence, and 37% experienced sexual violence (i.e. forced sex) in the past 6 months.<sup>3</sup> Violence against sex workers is a human rights violation and can increase women's risk for a number of negative health outcomes, including HIV.<sup>6-8</sup>

Inequitable gender norms, which value male power and control over women, and criminalization of sex work, which fosters an environment of stigma and discrimination towards FSWs, are thought to contribute to the high rates of GBV experienced by this population.<sup>1,9-11</sup> In contexts where gender inequitable norms prevail, violence is seen as a way for men to exert their control over women, and confirm their masculinity.<sup>10,12</sup> Criminalization of sex work also contributes to violence against FSWs by enabling discrimination towards FSWs, limiting their access to justice, and allowing violence against them to occur with impunity.<sup>1,13,14</sup> In this paper, we define justice as access to international standards of justice process including the investigation

and prosecution of perpetrators of violence, as well as prompt redress for the harms suffered as a result of violence, as outlined by Tanzanian law.<sup>15</sup>

### *Legal context in Tanzania*

Tanzania has no specific or comprehensive law(s) related to GBV.<sup>16</sup> Instead, aspects of GBV are addressed through a number of different policies.<sup>16,17</sup> The three laws that are most relevant to GBV include: The Constitution of the United Republic of Tanzania of 1977 (Articles 12-29); the Law of Marriage Act (2002); and the Sexual Offences Special Provisions Act (SOSPA) (1998).<sup>16</sup> The Tanzanian Constitution prohibits discrimination on the basis of gender, and also recognizes the human rights of all Tanzanian citizens, including “equal protection under the law” and the right to “personal security.”<sup>16,17</sup> Thus, although not explicitly mentioned, the Constitution provides sufficient mandate to enforce laws against GBV.

The Law of Marriage Act prohibits spousal corporal punishment, yet it does not define what is meant by corporal punishment, nor does it specify legal actions to take against such acts of violence.<sup>16,17</sup> Furthermore, marital rape is not considered an offence under this law. As a result, domestic violence often occurs with impunity.<sup>16,17</sup>

SOSPA classifies a variety of forms of GBV as illegal including rape, gang rape, defilement, sodomy, human trafficking, sexual assault, sexual harassment, socio-economic denial, psychological/emotional abuse, and physical violence against women and children.<sup>16,17</sup> Again, marital rape is not considered an offence under this law. SOSPA also includes specific punishments for sexual offences, including a minimum sentence of 30 years imprisonment and compensation to a survivor of sexual violence. Additionally, gang rape is recognized as a special crime punishable with life imprisonment for each person in the group, regardless of that person’s role in the rape.<sup>16,17</sup>

While these laws offer some protection to survivors, they are clearly not comprehensive, leaving many survivors without access to justice. Furthermore, the effectiveness of these laws is



undermined by the fact they are not systematically enforced, and violence often goes unreported, particularly among marginalized populations such as FSWs.<sup>13,17</sup> As described above, sex work is criminalized in Tanzania, which fosters an environment of stigma and discrimination towards FSWs. Not only does such an environment promote violence against FSWs, in the form of enacted stigma, it also limits their ability to access justice for crimes perpetrated against them.<sup>1</sup> Prior work suggests that FSWs who experience violence from their clients or non-paying intimate partners often do not report it to the authorities because of the stigma and blame associated with sex work and GBV, as well as systematic denial of police protection, and fears of further violence at the hands of police.<sup>13,18-21</sup> For example, evidence from SSA, Central and Eastern Europe, Central Asia, and the United States suggests that police officers routinely ignore FSWs' reports of violence and fail to prosecute perpetrators due to the stigmatizing belief that FSWs "deserve" violence because they engage in illegal work.<sup>18,19,21</sup> Other studies have found that sex workers are sometimes subjected to further physical abuse, humiliation, extortion, and sexual violence including forced unprotected sex by police officers when they report experiences of violence to the authorities.<sup>13,18,19,21</sup> As a result, violence against FSWs regularly occurs with impunity.

Statistical modeling suggests that reducing violence against FSWs can avert new HIV infections among both FSWs and the general adult population even in the context of antiretroviral coverage.<sup>22</sup> Thus, it is critical for interventions to prevent violence against FSWs, not only to help them realize their human rights but to also reduce HIV incidence at the population level. While a fair amount of research has explored FSWs' experiences preventing violence, less research has focused on their experiences accessing justice for violence perpetrated against them, particularly in SSA. However, sustained reductions in violence against FSWs will not be achieved until the state systematically holds perpetrators accountable for violence against FSWs. Thus, it is important to gain insight into FSWs' experiences accessing justice for violence in order to inform future GBV prevention interventions among this vulnerable population. To address this gap in the

literature, and gain insight into strategies FSWs can utilize to access justice, we conducted a qualitative study with 24 FSWs in Iringa, Tanzania.

## **Methods**

This qualitative study was nested within Project Shikamana (Kiswahili for ‘Stick Together’), an ongoing phase II community-randomized controlled trial of a community-based combination HIV prevention model for FSWs in Iringa, Tanzania.<sup>23</sup> The parent study established a cohort of 496 FSWs, stratified by HIV status, in the Iringa region of Tanzania. The cohort consists of 252 FSWs in the intervention community and 143 FSWs in the control community. Eligible participants were 18 years or older, reported exchanging sex for money in the last month, and work at an identified venue in one of the two study communities.

### *Sampling and Recruitment*

We conducted a qualitative sub-study among 24 FSWs from the cohort of 252 FSWs in the intervention community of the parent study. Participants were purposively sampled based on HIV status, sex work venue (modern bar vs. traditional bar), and level of engagement in the intervention (high vs. low engagement). Participants were identified through baseline data and intervention tracking information. Recruiters contacted potential participants over the phone and invited them to participate in the qualitative sub-study. To ensure confidentiality and safety of the participants, recruiters framed the study as one that was focused on participants’ health and life experiences.<sup>24</sup>

### *Data Collection*

Participants arrived at the drop-in-center affiliated with the parent study and were led to a private room. A female interviewer obtained each participant’s informed consent before conducting the in-depth interviews using the semi-structured interview guide.

The semi-structured interview guide consisted of broad, open-ended questions meant to elicit FSWs' experiences and perspectives on GBV, reporting violence to the authorities, and accessing justice. Questions in the guide were informed by prior research on these topics. The interview guide was written in English, and then translated into Kiswahili and back translated, to ensure the meaning of the questions were adequately captured in the guide. The interview guide was then piloted to ensure the questions resonated with participants.

### *Data analysis*

All interviews were audio-recorded, transcribed and translated into English, and entered into Atlas.ti for coding. Qualitative analysis was conducted using the framework approach.<sup>25</sup> This approach facilitated the analysis of pre-determined research questions related to FSWs' experiences with violence and accessing justice.

Drawing on this approach, the first author developed an initial coding schema based on *a priori* codes, which were informed by the key research questions and findings from prior work in this area. These codes were iteratively revised by adding new codes, which highlighted additional domains that emerged from the data. The codes were then systematically applied across all the transcripts. Next, the codes were organized into a chart format, with a chart for each key theme and summaries of different perspectives and experiences from several participants.<sup>25</sup> This method allowed the first author to compare and contrast the data across different themes and perspectives, ultimately, facilitating the identification of associations between themes and providing explanations for the findings.<sup>25</sup>

A number of approaches were utilized to improve the likelihood that the data collected and the interpretations of that data reflected the lived experiences of the participants.<sup>26</sup> First, both the interviewer and the investigator wrote detailed memos throughout the research process to reflect upon how their past experiences, prior knowledge, or identity may have influenced the data received, and their interpretation of that data.<sup>26</sup> Finally, after each interview, the interviewer

and the investigator met to discuss the main themes that emerged in the interview, the tone of the interview, as well as any concerns that arose during the interview. The notes from these meetings were used to ensure that the main themes were captured in the transcription and translation of each interview.<sup>27,28</sup>

This study received human subjects research approval from the Institutional Review Boards (IRBs) of the Johns Hopkins Bloomberg School of Public Health, the Muhimbili University of Health and Allied Sciences Directorate of Research and Publications, and the National Institute for Medical Research of Tanzania.

## **Results**

### *Sample demographics*

The demographic characteristics of the sample are outlined in Table 1. All 24 participants were purposively recruited from the Project Shikamana intervention community in Iringa, Tanzania. We also purposively recruited participants so half of the sample was HIV-infected, half worked in a modern bar, and half were highly engaged in Project Shikamana. The age of participants ranged from 19 to 47 years, with a mean age of 29 years (SD=6). Less than half (38%) of the participants earned an average monthly income that was more than 120,000 Tsh (~\$54 USD). The majority (63%) reported experiencing physical or sexual violence in their lifetime, while 54% reported experiencing any violence in the past 6 months. All participants reported either having first-hand experience reporting violence to the police or knew about a friend's experience.

### *Findings*

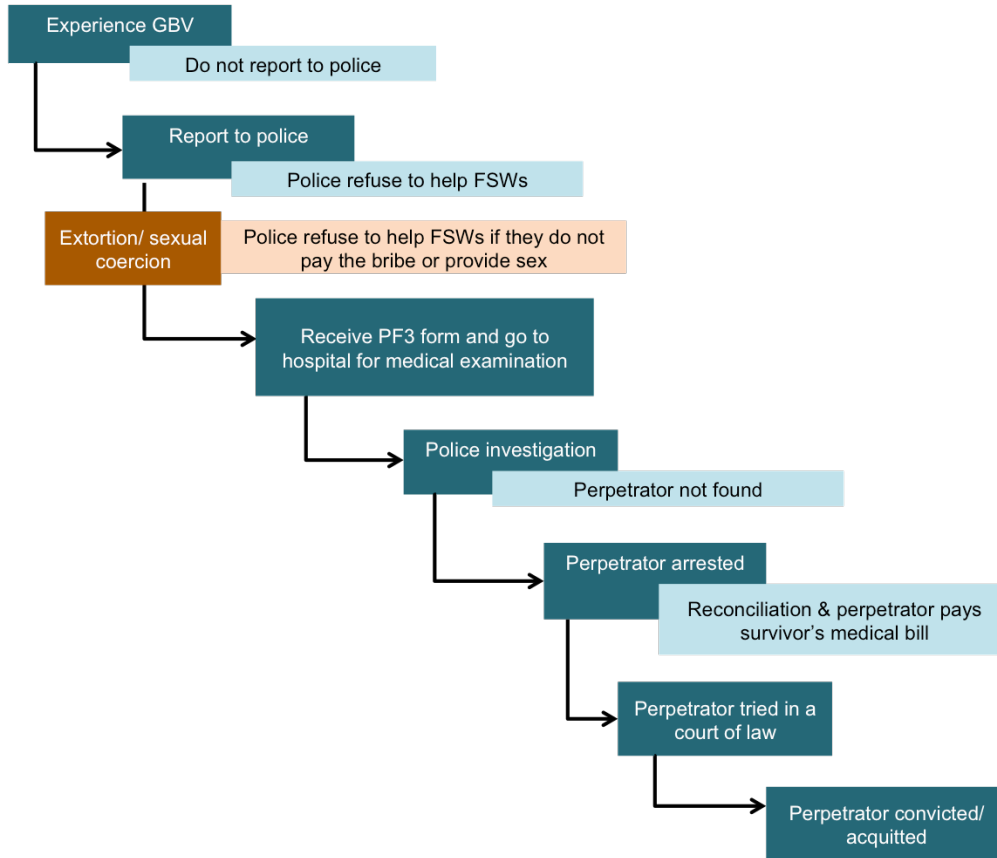
Results from this study revealed that FSWs in Iringa, Tanzania face a number of constraints in accessing justice for violence perpetrated against them, including human rights abuses at the hands of police. Specifically, women described how police stigmatize them because

they engage in sex work and often deny FSWs protection because of this. Participants also explained that some police officers expect them to pay money as a bribe before the police officer helps them with their case. If women do not have money, officers expect women to have sex with them before they look into the case. Furthermore, our findings demonstrate that even when police pursue women's cases, perpetrators very rarely serve time in jail, as stipulated by Tanzanian and international law. Instead, perpetrators are often asked to simply reimburse women for the cost of the treatment they received in the hospital for the injuries they sustained as a result of the violence. Such experiences were reported by women in our sample regardless of their HIV status, workplace, or level of engagement in Project Shikamana. In the following section we describe FSWs' experiences seeking redress for violence perpetrated against them, including the barriers they face at each point along the justice cascade, which prevent them from accessing justice (Figure 1). Here, the justice cascade refers to the series of steps in the formal justice system that women must traverse to access justice for violence perpetrated against them.<sup>29</sup>

#### Anticipated or actual negative experiences with police as barrier to reporting violence

In anticipation of being stigmatized and abused, some women avoided reporting violence to the police. For example, one woman described accompanying her friend who had been physically assaulted by a client to report the violence to the police. When they got there, the police called them "prostitutes" and refused to help them with the case. As a result, the woman now held the following belief: "even if you experience violence, there is no need to go to the police station. [You should just] nurse yourself" (29 years, modern bar, HIV-uninfected). When another woman was asked about her experience reporting violence to the police she revealed that she has never gone to report violence to the police because her friends told her that the police ask for money in order to open the case. This woman described how she struggles to make enough money to feed her family so she cannot afford to pay a bribe to the police in order to access justice. As a result, she does not report experiences of violence to the police.

**Figure 4. Barriers FSWs face in completing the steps along the justice cascade**



Some women contended that not all police officers treat FSWs poorly when they report violence. As one woman stated, “there are some police who are understanding” and do their job “as it is supposed to be done” (25 years, traditional bar, HIV-uninfected). Officers who are “understanding” were described as listening attentively when women recounted their experiences with violence and going to find the perpetrator and bringing him back to the station for questioning. Police officers also provide FSWs with the government form (PF3 form) they need to take to the hospital to be treated for rape or other injuries they sustained as a result of the violence. This form is also used by health care providers to document forensic evidence and is necessary in order to facilitate legal action against the perpetrator.<sup>17</sup> However, as described later in this section, even when police officers do help the women without stigmatizing them or asking

for bribes, they still often fail to bring the perpetrator to justice in a way that is in line with Tanzanian law.

### Stigmatization enables denial of protection

Some women revealed that police officers call FSWs “*malaya*” (a derogatory Kiswahili term for women who exchange sex for money, directly translated to “prostitutes” in English), and refuse to listen to or help them with their case when they report experiences of violence. Additionally, some officers hold the stigmatizing attitude that FSWs “want” or should at least expect to be beaten or raped because of the work that they do. Such perspectives come across as blaming the woman for experiencing violence because she engages in sex work. For example, when a woman was asked about her experience reporting violence to the police, she described:

*“When you go to the police station he (police officer) tells you: ‘What do you want? You are a sex worker. Go away! We don’t listen to people like you. You like those things (violence). If you stayed at home, do you think those things [would] happen to you?’ It becomes very difficult to get help. We are very despised... He (police officer) degrades your status, [he says]: ‘You are a sex worker, don’t you expect to experience things like this (violence)? ....’ You are selling yourself. So that (violence) is what you deserve.’ [You can say] I have experienced this and this (violence), and he (police officer) won’t listen to you.”* (23 years, modern bar, HIV-uninfected)

Other participants reported that police officers thought that the very nature of their work made it impossible for FSWs to be raped. Again, police officers with this view tended to refuse to help women bring their perpetrators to justice, which blatantly defies the human rights principle of equal protection under the law:

*“In my experience, if you have been raped, he (police officer) can tell you... ‘A woman like you (sex worker) can’t be raped,’ or ‘you can’t be gang raped.’ [He will say] ‘You just wanted it (rape). We (police) don’t have time to help you. You need to leave here (police station).’ He can tell you to leave and he won’t help you. Or he will insult you and tell you ‘you are stupid, you are just a prostitute.’”* (25yrs, traditional bar, HIV-uninfected)

Finally, some respondents explained that law enforcement officers refuse to help FSWs file a case against an abusive partner or client, citing the perspective that it was “not [their] responsibility” to help women address violence from an intimate partner. Instead, police officers would tell women to leave the station and resolve conflicts with their partners on their own. Such responses from law enforcement officers reflect the normative belief that violence between intimate partners is a “private” matter that should be resolved within the household.<sup>30</sup> Yet, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), which is an international treaty ratified into Tanzanian law, articulates that governments must regulate aspects of the public and private domain that discriminate against women, including protecting women who experience violence within the home. As such, when law enforcement officers fail to assist women in accessing justice for violence that occurs within the private domain, they are in direct violation of this international treaty.

#### FSWs experience human rights abuses in the pursuit of justice

Participants also reported that male police officers often exploit the inherent power dynamic between themselves and female citizens by making women pay a bribe before helping with their cases. If a woman does not have any money, and the police officer knows she is a sex worker, she will not get help with her case until she has sex with the officer. Participants recounted that if they do not offer police money or sex, the police will fail to look for the perpetrator and press charges. One woman described a common story that she has heard from friends who have reported violence to the police:

*“You might go [to the police station] without money. A officer at the police station will ask for money in order to [pursue] the case. He (police officer) can tell you, ‘give us a certain amount of money to help you.’ But you don’t have [money]. [He will say], ‘If you don’t have [money] what are we going to do? Just come and let us have sex with you so we can open your file.’” So because*



*you are in need of support (in accessing justice), you have to do it (sex).” (23 years, modern bar, HIV-uninfected)*

Other women noted that some police do not ask for money but simply ask to have sex with women in return for their help with their case. In the following quote, a woman describes how a client physically assaulted her and when she went to report it to the police, the officer she spoke with demanded sex before he would help her with her case. However, there was another officer who overheard this arrangement, and also wanted to have sex with her. As a result, this woman had to have sex with both officers in order to access justice for the physical violence she experienced by her client:

*“When I reached the [police] station, I explained that [someone] beat me. [The police officer said], ‘for us to help you, you have to do this.’ This means the police want sex as corruption... He knows I am a FSW. And there is another police [officer] who wants sex, so I had to have sex with him too...so when I had sex with him, that is when he took the responsibility of calling my client (perpetrator) [to the police station].” (31years, traditional bar, HIV-uninfected)*

This practice is in direct violation of international human rights standards of law enforcement, which stipulate, “law enforcement officials shall not commit any act of corruption” and “shall respect and protect human dignity and maintain and uphold the human rights of all persons,” which includes the right to access justice (p.16).<sup>31</sup>

### Repercussions for perpetrators of violence

Participants reported that when a perpetrator is caught and brought to the police station, police officers often facilitate a conversation between the perpetrator and the survivor to aid “reconciliation.” Specifically, police officers will ask the perpetrator to apologize for abusing the woman. If the perpetrator is “stubborn” and does not apologize, that is when he will be put in jail and tried in a court of law. One participant described this practice in the following way:

*“Police want reconciliation. I mean reconciliation between you, who was violated, and him who did it (perpetrator). The police ask [the perpetrator] ‘why have you done this and this (violence) to this woman?’ Then they ask you, the victim, ‘have you forgiven this man or not?’ If the one who did this (violence) to you is stubborn, the police tell you; ‘Go to court. There they will decide what to do.’” (33 years, modern bar, HIV-uninfected)*

Other participants explained how instead of prosecuting perpetrators, it is common for police to ask perpetrators to simply reimburse the survivor the amount of money she spent getting her injuries treated in the hospital. The following quote illustrates this phenomenon:

*“You go to the hospital, they treat [your injuries from being] beaten or raped. After you are treated...[the police] will search for that person (perpetrator). [When they find him], that is when he will be put in jail, [and asked] why did he rape? [Then] he (the perpetrator) will pay the woman for her treatment...Eeh after he pays her, the case is closed.” (20 years, modern bar, HIV-infected)*

Only two women mentioned that perpetrators spend time in jail for perpetrating violence against FSWs. One woman maintained that while most perpetrators just reimburse women for their hospital bill, some are sentenced to three- to six-month jail terms. The other woman asserted that when a man rapes a woman he could spend up to 30 years in jail. It is unclear, however, whether she actually knows of a perpetrator who had spent that much time in jail for raping a FSW, or if she is just familiar with that stipulation under SOSPA.

The policy of reconciliation and reimbursement for medical expenses incurred as a result of violence defy international standards of the justice process, which call for the investigation and prosecution of perpetrators of human rights abuses, including GBV (as outlined in Figure 1).<sup>29,32</sup> These policies also violate the Optional Protocol of CEDAW, which is ratified in Tanzanian law, and requires states to effectively implement existing laws that criminalize GBV.<sup>29</sup> As described above, Tanzania has laws that define GBV as a criminal offence and stipulate penalties for perpetrators. For example, SOSPA requires 30 years imprisonment for sexual assault.<sup>16</sup> When police disregard international standards of justice process and fail to implement existing laws that

provide redress for victims of violence, they deny women their right to equal protection under the law and ultimately perpetuate a culture of impunity for violence against FSWs.

## **Discussion**

Results from this study demonstrate how structural factors, such as stigma and discrimination towards sex workers, and inadequate law enforcement maintain and extend human rights abuses against FSWs and limit their access to justice. Access to justice for violence is not only the right of all Tanzanian citizens; it also has important implications for the health of survivors and the general population.<sup>22,33-35</sup> A substantial body of literature has demonstrated the negative impact GBV has on women's health, including increased risk for death and injury, HIV and other sexually transmitted infections, mental health disorders (i.e. anxiety and depression), and chronic pain, just to name a few.<sup>8,36</sup> Furthermore, statistical modeling suggests that preventing violence against FSWs has the potential to reduce HIV incidence not only among FSWs, but also among the general adult population.<sup>22</sup> However, when the state fails to hold perpetrators accountable for violence, they perpetuate a climate of tolerance towards violence against women and enable abuses towards women to continue.<sup>34</sup> As a consequence, women are placed at increased risk for the negative health outcomes described above, with implications reaching to the general adult population. In contrast, access to justice has the potential to prevent future violence by demonstrating intolerance to GBV through the enforcement of legal consequences for perpetrators, such as imprisonment.

While evidence suggests that Tanzanian women, in general, face a number of barriers to accessing justice for violence perpetrated against them,<sup>30</sup> our findings suggest that sex workers face additional barriers, including numerous human rights violations, as a result of their occupation. Prior research has also found that Tanzanian women who report intimate partner violence to the authorities can be turned away and told to resolve the issue with their partner on their own, reflecting the normative belief that violence is a private matter that should be resolved

in the home.<sup>30</sup> FSWs in this study also reported this experience; however, in addition, FSWs revealed that stigmatization and humiliation at the hands of police officers was common when they went to report violence. Moreover, they were often denied assistance in accessing justice due to their occupation. Research among sex workers in other countries has documented similar dynamics between police and FSWs who report violence.<sup>18,19</sup> For example, a study from four countries in Eastern and Southern Africa found that police ignore FSWs' reports of violence and fail to press charges against perpetrators, largely due to the stigmatizing belief that FSWs cannot be raped because of the nature of their work.<sup>18</sup> When law enforcement officers refuse to assist FSWs to access justice because of their stigmatizing attitudes towards sex work, they deny FSWs their human right to equal protection under the law.

Another example of the way FSWs experience additional barriers to accessing justice, as compared to other women in Tanzania, can be found in their experiences of being subjected to demands for bribes or sexually coerced by police officers when they report violence. Prior research has shown that, in general, law enforcement officers expect Tanzanian women to pay them bribes before they will assist women with their cases.<sup>30</sup> As noted earlier, such acts of corruption violate international human rights standards of law enforcement.<sup>31</sup> While FSWs in the present study recounted experiencing these human rights abuses when they report violence to the authorities, they also revealed that police officers force them to have sex before helping them access justice. This practice not only violates the international human rights standards of law enforcement, it is also an act of violence in and of itself. Indeed, as mentioned earlier, the United Nations includes coercion of all forms, including sexual coercion, in its definition of GBV.<sup>2</sup> When FSWs are exposed to human rights violations, including further perpetration of violence, in places where they seek protection from violence, they are led to believe that they have no legal recourse and are less likely to report violence in the future.<sup>1</sup> As such, these dynamics create considerable constraints that work to prevent FSWs from accessing justice, resulting in the perpetuation of violence against FSWs with impunity.

Finally, this study revealed that even when police officers decide to assist FSWs in accessing justice, they disregard international standards of justice process and fail to enforce existing laws that outline legal penalties for perpetrators of violence. Instead, authorities institute a policy of reconciliation and reimbursement for medical expenses incurred as a result of the violence. Prior work has documented a cultural emphasis on reconciliation and mediation for intimate partner violence in Tanzania, in order to keep marriages together.<sup>30</sup> This may explain our finding that police enforce a policy of reconciliation instead of prosecution when FSWs report violence. However, it does not account for the fact that FSWs experience violence from actors other than their primary intimate partners (e.g. clients), in which marriage reconciliation would not be appropriate. Regardless, reconciliation is not recognized by international standards as a legitimate form of justice process.<sup>32</sup>

Furthermore, it is unclear how and why prosecution has been replaced by reimbursement for the survivors' medical expenses. A review of the relevant GBV laws in Tanzania found no mention of payment for treatment expenses as possible legal recourse for violence. SOSPA does stipulate that perpetrators of rape need to compensate the survivor, however, women are only supposed to receive compensation after the perpetrator is found guilty in a court of law. Furthermore, SOSPA does not specify that the compensation should be for medical expenses. It is possible that this practice emerged from sex workers' inability to afford treatment for their injuries from violence. Evidence suggests that health facilities charge a fee ranging from 2,000-3,000 Tsh (\$0.90- \$1.50 USD) in order to examine and treat survivors' injuries from violence and fill out the police form, which survivors must present to officers to file a police report.<sup>16</sup> This fee is a significant amount of money, especially for sex workers, many of whom live in poverty. It is therefore possible that sex workers opt to settle the case out of court in order to access their compensation earlier so they can pay for their medical treatment. A similar phenomenon has been reported among women in the general population.<sup>16</sup> Further research is needed to gain a more nuanced understanding of the factors that promote policies of reconciliation and reimbursement in

the context of accessing justice for violence against FSWs in order to shed light on possible intervention approaches.

*Implications for incorporating justice initiatives into community empowerment approaches*

Our findings suggest the need for interventions that mobilize FSWs' collective agency to address the structural factors that impede FSWs' access to justice. Such approaches should educate sex workers about their rights as well as the laws and policies around sex work and GBV. With this knowledge, FSWs may be better able to advocate for their access to justice for violence perpetrated against them.<sup>37</sup> Recognizing that FSWs face a number of structural constraints to accessing justice for GBV, such approaches should also aim to garner support from key stakeholders such as police officers and human rights NGOs through sensitization trainings. It is possible that such efforts could prevent future violence against FSWs. When perpetrators are held accountable for their crimes and are systematically sentenced to the appropriate punishment, as defined by Tanzanian law, the Government sends the message that violence against FSWs is not tolerated and will be penalized. Such a message might deter people from perpetrating violence against FSWs in the future.

A similar approach could be used in Iringa, Tanzania to hold police accountable for ignoring FSWs' reports of violence, extortion, sexual coercion, and failing to charge perpetrators of GBV for their crimes. Project Parivartan in Andhra Pradesh, India offers one example of a rights-based community empowerment approach among FSWs that aimed to modify police behavior and improve FSWs' access to justice and their human rights.<sup>37</sup> It also demonstrates the importance, of mobilizing support from groups both within and beyond the sex work profession. This project partnered with local stakeholders including local NGOs, human rights activists and lawyers to educate FSWs about their human rights and offer legal literacy trainings in order to confront police action that violated their rights and access to justice.<sup>37</sup> The program encouraged systematic reporting and tracking of police violence against sex workers, arbitrary arrests, and

extortion. The tracking information allowed FSWs to monitor police activity and follow up with action, including pressing charges against corrupt or violent police officers or launching peaceful demonstrations to demand their human rights and access to justice.<sup>37</sup>

Additionally, Project Parivartan held sensitization meetings with local police officials to challenge stigma and discrimination towards FSWs, emphasize the human rights of FSWs and review laws and policies related to GBV and sex work.<sup>37</sup> Through these trainings, police became sensitized to the rights of sex workers and made a commitment to use their authority to protect those rights, instead of abuse them. Evaluations from this project demonstrated a decrease in FSWs' reports of negative police interactions over time, including reduced reports of bribes, workplace raids, and arbitrary arrests.<sup>38</sup> Furthermore, these efforts resulted in the enforcement of laws that had previously not been implemented.<sup>37</sup> While we recognize that the particular constellation of constraints and enabling factors to accessing justice are unique to each setting, such an approach holds considerable promise to help improve interactions between FSWs and police in Iringa, Tanzania, and, ultimately, ensure perpetrators of violence against FSWs receive the just punishment for their crimes, as defined by Tanzanian law.

The Bar Hostess Empowerment and Support Program (BHESP) in Kenya, offers another example of a community-empowerment approach that seeks to improve FSWs' access to their human rights and justice.<sup>39,40</sup> BHESP trains FSWs as paralegals to educate other sex workers about their human rights and help them resolve legal disputes and navigate the legal system without necessarily engaging the services of a lawyer, which can be expensive.<sup>39,40</sup> The paralegals act as a first point of contact for FSWs seeking legal advice in relation to violence or arbitrary arrest, and they ensure that such cases are reported to the police or other relevant authorities. Additionally, BHESP partners with local and international human rights organizations to offer more substantial legal support if charges are brought upon FSWs in the community.<sup>39,40</sup> Because of BHESP's work, FSWs in Kenya know about the law and their rights and are able to directly challenge police abuse of power, arbitrary arrest and detention. By training FSWs as paralegals in

Iringa, Tanzania, FSWs may be better able to fight back against police corruption and coercion and ensure that all perpetrators serve time for crimes committed against FSWs.

While our study offers important insights into FSWs' experiences accessing justice for violence perpetrated against them, it is not without limitations. Specifically, given the sensitive nature of our research questions, it is possible that some women withheld some information regarding their personal experiences reporting violence to the police. In order to address this potential limitation, both interviewers were trained to establish rapport with participants before beginning all interviews, and received in-depth sensitivity trainings related to sex work and GBV.

## **Conclusion**

Findings from this study demonstrate that FSWs who experience violence in Iringa, Tanzania face further human rights abuses at the hands of police, including extortion and sexual coercion, when they report violence to the authorities. Furthermore, our findings reveal that police disregard international standards of justice process, and instead of prosecuting perpetrators they simply ask them to reimburse the survivor for the medical services she received to treat injuries sustained at the hands of the perpetrator. Such actions are in clear violation of the law and of FSWs human rights, and deny FSWs access to justice for violence committed against them. When states fail to hold perpetrators accountable for their crimes, they perpetuate a climate of impunity and allow abuses towards FSWs to continue.<sup>34</sup> Sustained violence with impunity amongst FSWs can have severe implications for their health, as previously noted.<sup>8,36</sup> It is possible that improving the justice system's response to GBV against FSWs in Tanzania might serve as an important component of a multi-pronged approach towards reducing GBV and improving the health outcomes of FSWs in the country. We argue that community-based justice initiatives implemented by FSWs in concert with other stakeholders, such as police, serve as promising approaches to hold law enforcement officials accountable for upholding the law and improving FSWs' access to justice for crimes committed against them.



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**Table 5. Background characteristics of study participants (N=24 from Project Shikamana intervention community)**

Characteristics	Total Sample N (%), Mean (SD)
Age (years)	29 (6)
Earn more than 120,000Tsh (~\$54) per month	9 (38)
Education	
Never attended formal school	2 (8)
Some primary school	14 (58)
Some secondary school or higher	8 (33)
Relationship status	
Single	2 (8)
In a relationship but not married	16 (67)
Married	6 (25)
Conduct sex work in a modern bar	12 (50)
HIV-positive	12 (50)
Highly engaged in Project Shikamana	12 (50)
Experience GBV (physical or sexual) ever	15 (63)
Experience GBV (physical or sexual) in the past 6 months	13 (54)

## V. Discussion

The overall objective of this dissertation was to understand more fully the factors that place FSWs at risk for GBV and HIV and to gain insight into prevention strategies. This objective was achieved by utilizing both quantitative and qualitative methods to assess the relationship between substance use, GBV, and consistent condom use; explore the role alcohol plays in both HIV and GBV-related risk in the context of venue-based female sex work; and examine FSWs' experiences accessing justice for violence perpetrated against them.

Manuscript 1 quantitatively explored the relationship between substance use, GBV, and HIV risk among FSWs. Findings suggest that intoxication during sex work is associated with increased odds of GBV and decreased odds of consistent condom use with clients. Additional results suggest that internalized sex work stigma and ever having been denied payment for completed sex work is associated with increased risk for GBV, while higher average monthly income is associated with increased odds of consistent condom use. These findings contribute to the literature by suggesting that future HIV prevention interventions among FSWs in Tanzania, and in similar settings, need to address the role alcohol use plays in increasing FSWs' risk for GBV and HIV, through unprotected sex. Community empowerment approaches for HIV prevention among FSWs have proven successful in increasing condom use among sex workers and their clients.<sup>131</sup> However, few, if any, have explicitly addressed the link between alcohol consumption, GBV, and condom use.<sup>73</sup> Additionally, given the other findings from this analysis, it is imperative that such models adopt a rights-based approach by promoting the human and labor rights of FSWs, including the right to a fair wage, as well as freedom from stigma, discrimination, and violence. It is possible that a rights-based community empowerment approach that addresses the role alcohol plays in increasing FSWs' risk for GBV and unprotected sex could

successfully prevent GBV and HIV among FSWs in Tanzania and in similar contexts. However, first, additional qualitative research is needed to gain insight into the dynamics within the sex work environment that facilitate alcohol consumption and contribute to GBV and unprotected sex.

Manuscript 2 expands upon Manuscript 1 by using qualitative methods to gain a more nuanced understanding of the ways in which alcohol use overlaps with GBV and condom use in the context of venue-based sex work. Specifically, this paper examines how patterns of interactions between FSWs and their clients at certain moments in time and space during the sex exchange process facilitate alcohol consumption and increase FSWs' risk for GBV and unprotected sex. According to Giddens' theory of structuration, analyzing routine interactions across time and space provides insight into the structural factors within the sex work environment that promote alcohol consumption, and constrain FSWs' ability to prevent GBV and engage in consistent condom use. Findings reveal that the sex exchange process is initiated in the bar, and alcohol plays a central role, with FSWs using alcohol to attract clients, and clients purchasing alcohol for FSWs to signal that they would like to secure their sex services. By accepting alcohol from a client, FSWs essentially sign a social contract that commits them to have sex with that client. In the social space of negotiating the terms of sex work, FSWs who nullify the social contract by refusing to have sex with a client after consuming alcohol he purchased for her, often experience physical or sexual violence. Finally, participants reported that some clients intentionally get FSWs drunk to the point where they lose consciousness to facilitate unprotected sex or gang rape, once they enter a private room where the sex exchange is intended to occur.

These dynamics reflect larger social and structural forces at play such as hegemonic masculine norms, which value male dominance over women, and stigma and discrimination towards sex workers. Clients' violent reactions to FSWs who nullify the social contract of sex work suggests that clients assume a sense of "ownership" and control over women once a woman consumes alcohol they purchase for her. These norms might also cause clients to purposefully get

FSWs drunk to the point where they become unconscious, to facilitate un-consented sex without a condom. From this perspective, the act of purposively getting a woman drunk to the point of unconsciousness and raping her without a condom is one way men in this context can exercise their control over women and engage in unprotected sex. Violence against FSWs in the situations described above can also be understood as a result of stigma and discrimination towards sex workers. In contexts such as Tanzania, where sex work is criminalized, violence against FSWs is often a form of enacted sex work stigma, and regularly occurs with impunity.<sup>7,41</sup>

Drawing from structuration theory, while structural factors such as hegemonic masculine norms and stigma and discrimination towards FSWs increase women's risk for GBV and HIV, FSWs have the capacity to mobilize their collective agency to alter aspects of the sex work environment to improve their access to their health and human rights. Our findings highlight the ways in which FSWs are already mobilizing their collective agency to address aspects within the venue-based work environment to limit alcohol consumption, prevent and respond to GBV, and promote condom use. Furthermore, our findings highlight how FSWs draw upon bridging social capital by calling upon bar managers/owners to help them address and prevent violence that occurs in the bar. These findings contribute to the literature by highlighting how aspects of the venue-based work environment facilitate alcohol and increase FSWs' risk for GBV and HIV, through unprotected sex. Furthermore, these results offer insight into potential strategies future community empowerment approaches can use to limit alcohol consumption, prevent GBV, and improve condom use among FSWs in Tanzania and in similar contexts.

Finally, manuscript 3 utilized qualitative methods to explore FSWs' access to justice for violence perpetrated against them. Justice can be conceptualized as an essential mechanism to uphold and protect the human rights of all people, including the right to freedom from violence. When the state systematically enforces legal consequences for perpetrators, they effectively demonstrate intolerance to GBV, which dissuades people from perpetrating violence.<sup>102</sup> However, when the state fails to hold perpetrators accountable for violence, they allow abuses towards



women to continue with impunity.<sup>102</sup> As such, justice for violence is a key component of violence prevention. By exploring FSWs' experiences accessing justice for violence, this study sought to gain insight into the ways the justice system works, or does not work, to uphold and protect FSWs' human right to live a life free from violence. Findings suggest that FSWs are routinely denied access to justice for violence perpetrated against them due to their occupation, and face humiliation and human rights abuses at the hands of the police when they report violence. These results advance our understanding of FSWs' experiences accessing justice for violence perpetrated against them and make the case for incorporating justice initiatives into future community empowerment approaches among FSWs. Such initiatives could offer trainings to FSWs regarding the laws and policies related to GBV, international standards for justice process and law enforcement, and their human right to live a life free from violence. These efforts should also seek to partner with local stakeholders such as police officers and human rights NGOs to hold law enforcement officials accountable for upholding the law and improving FSWs' access to justice for crimes committed against them. It is possible that such an approach could improve FSWs' access to justice for violence perpetrated against them, and ultimately reduce GBV and HIV among this population.

### **Implications for Public Health Programming and Research**

Results from this dissertation have important implications for public health programming that seeks to prevent GBV and HIV among FSWs. As outlined above, findings from this dissertation highlight the need for community empowerment responses among FSWs to: 1) address the role alcohol consumption plays in increasing FSWs' risk for GBV and HIV by providing opportunities for FSWs to mobilize their collective agency to alter aspects of the sex work environment that facilitate alcohol consumption and contribute to GBV and unprotected sex; 2) offer opportunities for FSWs to learn about their human and labor rights, including their right to freedom from violence, stigma, and discrimination, as well as their right to fair wages and

a safe and supportive work environment, and strategize ways advocate for these rights; and 3) provide space for FSWs to come together to learn about laws and policies related to GBV, international standards for justice process and law enforcement, and to strategize ways they can mobilize their collective resources to hold authorities accountable for upholding the law and improving FSWs' access to justice.

These approaches should also seek to forge reciprocal relationships with key stakeholders such as bar managers/owners, police, government officials and local NGOs whenever possible. These relationships can be established by holding trainings with stakeholders to sensitize them to the unique needs of FSWs and emphasize ways in which cooperation between FSWs and stakeholders is mutually beneficial.<sup>31,140,146</sup> For example, when Sonagachi sensitized brothel madams to the importance of promoting condom use in their brothels, they emphasized how it was in the madam's best interest to ensure the health of FSWs working in her brothel because when sex workers remain healthy, they are better able to complete their work, ultimately bringing more business to the brothel.<sup>140</sup> Findings from this dissertation suggest that bar managers/owners in Tanzania, and in similar contexts, need to be educated about the role alcohol plays in GBV and unprotected sex among FSWs and their clients, and how aspects of the work environment facilitate this. From the perspective outlined above, it would be in the bar manager/owner's best interest to help FSWs address aspects of the work environment that increase their risk for these negative outcomes. By partnering with FSWs to address these factors, the bar manager/owner would help to ensure the health and well-being of FSWs, which would ultimately improve women's ability to work and bring more business to the bar.

Community empowerment approaches in other settings have also formed partnerships with stakeholders to improve FSWs' access to justice for violence perpetrated against them.<sup>137,138,164</sup> For example, FSWs in India and Kenya partnered with pro-bono lawyers, human rights organizations, and police officers to improve their access to justice for human rights abuses.<sup>137,165</sup> It is possible that such an approach, coupled with strategies to educate and mobilize

the sex worker community, would serve useful in helping FSWs accessing justice for violence perpetrated against them in Tanzania and in similar settings. Project Shikamana has started this process by providing human rights and GBV workshops to FSWs in the DIC and holding a sensitivity training with local police officers. However, findings from this dissertation suggest that these efforts need to intensify in order to make progress in curbing the culture of impunity.

Results from this dissertation also have a number of implications for future research. First, future studies should explore the relationship between alcohol use, GBV, and consistent condom use among FSWs longitudinally to determine temporal order, and thereby establish causality. Additionally, given that environmental factors were found to influence FSWs' risk for GBV and consistent condom use, it would also be important for longitudinal studies to examine the influence of social cohesion, internalized sex work stigma, monthly income, and denial of payment for sex work completed on GBV and consistent condom use. Such analyses would help to further develop our understanding of the factors that place FSWs at risk for GBV and HIV in the context of venue based sex work.

Future research would also benefit from developing and validating more nuanced measures of GBV and social capital among FSWs in SSA. There is currently no validated or internationally agreed upon measure for violence against FSWs.<sup>7,108</sup> Research on GBV among FSWs typically utilizes measures that are validated among the general female population, including the 16-item World Health Organization (WHO) GBV scale used in this study.<sup>108,148</sup> However, studies have found that women in the general population primarily experience GBV from their intimate partners, while FSWs can experience violence from a number of different perpetrators (i.e. new clients, regular clients, police, intimate partners etc.).<sup>7,108</sup> Specifying perpetrator type in GBV measures for FSWs is critical because evidence suggests that the impact of GBV on HIV risk varies by perpetrator type among this population.<sup>63</sup> For example, one study found that physical violence from clients and sexual assault from police are associated with increased risk for HIV/STI among FSWs, while threats of violence from pimps is indirectly

associated with HIV/STI through increased number of clients.<sup>63</sup> Furthermore, incorporating perpetrator type into GBV measures can provide important information about primary perpetrators of violence against FSWs and inform interventions.

Findings from this dissertation also highlight how bonding, bridging, and linking social capital can play a role in GBV and HIV prevention among FSWs in Tanzania and in similar contexts. Interestingly though, quantitative findings from this study revealed that social cohesion (i.e. bonding social capital) was associated with increased risk for GBV among FSWs. As described above, it is possible that this finding reflects the organic emergence of social cohesion as a consequence of experiences of violence. Longitudinal exploration could provide insight into the directionality of this relationship. However, it is also possible that this unexpected finding reflects issues with the social cohesion measure used in this study, which was originally developed and validated among FSWs in Brazil.<sup>26,135</sup> It might be beneficial for future research to validate this measure among FSWs in Tanzania, given the different social dynamics and history in this country, compared to Brazil. Specifically, it is possible that the socialist history of Tanzania, and its cultural emphasis on communalism,<sup>166</sup> might cause FSWs in Tanzania to have a different understanding of social cohesion than FSWs from other countries. It would be important for future studies to qualitatively explore what social cohesion means to FSWs in the Tanzanian context. Findings from such studies could inform the development of a more nuanced measure of social cohesion for FSWs in Tanzania and in similar settings.

Additionally, given the qualitative findings from this dissertation, which highlight the important role bridging and linking social capital can play in GBV and HIV prevention, it would also be beneficial for future research to develop and validate nuanced measures of these constructs, and assess their impact on GBV and HIV risk behaviors among FSWs in SSA. In order to inform these measures, qualitative research should be conducted to gain a more in-depth understanding of the relationship dynamics between FSWs and bar managers/owners (bridging social capital), as well as FSWs and police, local NGOs, and health care providers (linking social

capital). Specifically, such research should try to understand which aspects of these relationships facilitate or impede cooperation between these different groups to prevent GBV and HIV among FSWs. It is possible that the development of such measures could provide additional insight into the pathways through which bonding, bridging, and linking social capital influence GBV and HIV prevention among FSWs.

Furthermore, while the qualitative findings from this dissertation related to the challenges FSWs face in accessing justice for violence are compelling, it would be important to explore this question quantitatively to assess how prevalent these barriers are among FSWs in Tanzania and in similar settings. Such an analysis would help inform the focus of future interventions to improve FSWs' access to justice for violence.

Finally, although prior community empowerment approaches have recognized the important link between GBV and HIV, and have sought to prevent GBV among FSWs, few studies have actually evaluated such approaches.<sup>131</sup> A study affiliated with the Avahan program in Karnataka, India offers one of the only evaluations of the impact of a community empowerment approach among FSWs on GBV outcomes.<sup>27</sup> This study utilized a pre-test post-test design and demonstrated significant reductions in GBV at follow up.<sup>27</sup> Future research should adopt more rigorous study designs, such as randomized controlled trials, to evaluate the impact of community empowerment approaches on GBV and HIV outcomes among FSWs. Additionally, findings from this dissertation suggest the need for research to evaluate the effectiveness of community empowerment approaches that address alcohol consumption and seek to improve FSWs' access to justice for violence, and the impact of such approaches on GBV and HIV outcomes among FSWs. Again, these approaches should be evaluated by following a cohort of FSWs longitudinally through a randomized controlled trial.

## **Strengths and Limitations**

It is important to acknowledge the limitations of this research. First, the cross-sectional nature of this study limits our ability to establish temporal order, and therefore draw causal conclusions about the relationship between substance use, GBV, and consistent condom use. However, considering limited research has explored this research question among FSWs in SSA, this study was an essential first step and offered important contributions to the field. Another potential limitation of this research is the self-report of experiences of substance use, GBV, and consistent condom use. As such, social desirability bias may have affected the strength of the associations between the exposure and response variables in Aim 1. In order to minimize this potential bias, interviewers engaged in a sensitivity training for GBV as well as other trainings on how to establish trust and rapport with participants. Finally, given the sensitive nature of the qualitative research questions, it is possible that some women withheld some information regarding their personal experiences with substance use during work, GBV, condom use and experiences accessing justice for violence. In order to address this potential limitation, both interviewers were trained to establish rapport with participants before beginning all interviews, and received in-depth sensitivity trainings related to sex work and GBV.

This research has a number of strengths. Through Aim 1, this study contributed to our knowledge about the relationship between substance use, GBV and consistent condom use among FSWs in Tanzania. Aim 2 offered a more nuanced understanding of the environmental factors that contribute to substance use, GBV and HIV risk through unprotected sex among FSWs. Additionally, this aim offered insight into how FSWs take collective action, in conjunction with bar managers/owners, to limit alcohol consumption, prevent GBV, and promote condom use in the context of venue-based sex work. Additionally, aim 3 enhanced our understanding of FSWs' experiences accessing justice for violence perpetrated against them.

The ability of the student investigator to go to Iringa, Tanzania to train qualitative interviewers and debrief with them after each interview was another strength of this study. These

steps improved the credibility of the qualitative research by ensuring that the interviewers conducted the interviews in a respectful and sensitive manner and established rapport with participants. Furthermore, the debriefing notes taken by the student investigator after each interview assisted her in ensuring that the transcription and translation stayed true to the intended meaning explained by the participants.

Another strength of this study was the ability of the student researcher to disseminate her research findings to women engaged in Project Shikamana, including the women who participated in the qualitative interviews. This dissemination meeting not only provided an opportunity for the student researcher to share her findings with the participants, it also enabled her to get a sense of whether or not her findings resonated with the lived experiences of the participants. Based on the feedback received during this meeting, it was clear that the qualitative findings did, in fact, ring true to women's experiences.

Finally, the student researcher was able to contribute to the larger parent study by creating many of the DIC workshop manuals, which offered information to FSWs about their human and labor rights, GBV prevention and strategies to address violence, as well as HIV prevention. She also created workshop manuals for health care provider and police sensitivity trainings. These experiences offered her additional insight and understanding of the context and factors that influence FSWs' risk for GBV and HIV and their ability to access justice for violence.

## **VI. Conclusion**

Findings from this research highlight the important role alcohol plays in increasing FSWs' risk for GBV and HIV in the context of venue-based sex work. This research also provides insight into the dynamics within the sex work environment that facilitate alcohol use and contribute to GBV and unprotected sex among FSWs and their clients, as well as the strategies

FSWs are already using to mobilize their collective agency to address these factors and access their health and human rights. Finally, findings from this dissertation reveal that FSWs are routinely denied access to justice for violence perpetrated against them and experience human rights abuses when they report violence to the police. The results of this research suggest that community empowerment approaches for HIV prevention among FSWs must address the role alcohol plays in increasing FSWs' risk for GBV and unprotected sex, and provide opportunities for FSWs to demand justice for violence perpetrated against them. It is possible that such an approach could successfully reduce GBV and HIV among FSWs in Tanzania and in similar contexts.



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## Appendix

### Appendix 1. Map of the Iringa region in Tanzania



The Iringa region is outlined in red, and the Tanzanian-Zambian highway is shown by the long red line stretching from Dar es Salaam to Zambia.

## Appendix 2. Photographs of the sex work environment in Iringa, Tanzania

### Appendix 2.1. Modern bar



Appendix 2.2. Guest house at a truck stop along the TanZam highway



Appendix 2.3. Kilabu



Appendix 2.4. Ulanzi



Villagers draining the sap/juice from a bamboo tree to make *Ulanzi*



*Ulanzi* as sold in Kilabu

## Curriculum Vitae

### Anna Maytum Leddy, MHS

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Phone: (415) 637-3209 | email: aleddy3@jhu.edu

#### EDUCATION

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- 2014-  
Expected  
June 2017      **Doctor of Philosophy (PhD)**  
Johns Hopkins Bloomberg School of Public Health  
Department of Health, Behavior and Society  
Baltimore, MD
- 2012-2014      **Masters of Health Sciences (MHS)**  
Johns Hopkins Bloomberg School of Public Health  
Department of Health, Behavior and Society  
Concentration in Health Communication and Health Promotion  
Baltimore, MD
- 2007-2009      **Bachelor of Arts (BA), *highest distinction in general scholarship***  
University of California, Berkeley  
Department of Psychology  
Berkeley, CA  
*Major: Psychology*
- 2005-2007      University of California, Santa Cruz (Transferred)  
Santa Cruz, CA

#### EMPLOYMENT

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- 2016-Present      **Graduate Research Consultant**  
**Population Council, Washington, DC**  
Supervisors: Julie Pulerwitz, Director of Social and Operations Research, HIV and AIDS; and Ellen Weiss, Technical Writer and Editor, Project SOAR (Supporting Operational AIDS Research)
- Conduct a systematic review on the interrelationship between the HIV treatment cascade and gender-based violence (GBV) and on the effectiveness of interventions that reduce GBV and improve HIV-related care/treatment outcomes. This document will be the basis for a meeting in Washington, DC of GBV and HIV researchers, programmers and funders to discuss the current state of the field and identify knowledge gaps to inform policy and practice.
- 2015-Present      **Graduate Research Assistant**  
**Department of Health Behavior and Society**  
**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

Supervisor: Deanna Kerrigan, PhD

Assist with the development of intervention content for Project Shikamana, a NIH-funded Phase II randomized controlled trial of a community empowerment based combination HIV prevention intervention for female sex workers (FSWs) in Iringa, Tanzania. Some highlights include:

- Developing peer educator trainings and workshops for FSWs on sex worker rights, violence prevention, as well as HIV prevention, care and treatment, as well as sensitivity trainings for health care providers and police
- Developing, implementing and managing a qualitative study to evaluate the acceptability of the intervention from the perspective of FSW
- Assisting with survey development

2013-Present

**Graduate Research Assistant**  
**Center for Communication Programs (CCP)**  
**Department of Health Behavior and Society**  
**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**  
Supervisor: Carol Underwood, PhD

Assist with the development and evaluation of a variety of health behavior change communication programs. Highlights include:

- Conducting a secondary quantitative analysis for USAID to explore the influence of communication interventions on gender equality and family planning outcomes in India, Malawi, Nigeria and Tanzania
- Conducting a primary quantitative analysis to evaluate the impact of a health communication campaign affiliated with the USAID-funded program *Suahaara* ('good nutrition') in Nepal, which aimed to improve nutrition among women and children
- Conducting a primary quantitative analysis to assess the impact of the USAID-funded program *Support for Service Delivery Integration-Communication (SSDI)* program in Malawi, which aims to improve outcomes related to maternal and child health, nutrition, water sanitation and hygiene (WASH), family planning and malaria.
- Developing a gender transformative health communication intervention for aquatic agricultural systems in Zambia
- Conducting a systematic literature review of quantitative measures of gender equity for use in aquatic agriculture settings
- Conducting systematic literature reviews for the governments of Saudi Arabia and Egypt regarding the burden of non-communicable diseases in their countries.
- Designing a quantitative survey for the government of Saudi Arabia to assess the distribution of non-communicable diseases in the country
- Conducting a literature review on the knowledge, attitudes and practices related to malaria in Malawi

2015-2017

**Qualitative Research Consultant**  
**Center for AIDS Prevention Studies**  
**University of California, San Francisco, San Francisco, CA**  
Supervisor: Amy Conroy, PhD

Conducted qualitative analysis of in-depth interviews with HIV-affected couples in KwaZulu-Natal, South Africa. This research aimed to understand how relationship dynamics, including gendered power dynamics, influence anti-retroviral adherence and utilization of HIV care and treatment. Also contributed to the development of abstracts and manuscripts.

2015-2017

**Graduate Teaching Assistant**

**Department of Health Behavior and Society**

**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

Supervisors: Katherine Smith, PhD; Andrea Gielen, PhD; David Holtgrave, PhD; Debra Roter, DrPH

Served as a teaching assistant for the following courses:

- Sociological Perspectives in Public Health (Term 1, 2014 and 2016; Instructor: Dr. Katherine Smith)
- Challenges and strategies for effective health communication (Term 3, 2015; Instructor: Dr. Debra Roter)
- Program Planning for Health Behavior Change (Terms 1 & 4, 2016; Instructor: Dr. Andrea Gielen)
- Translating Research into Public Health Practice (Terms 3 & 4, 2016 and 2017; Instructor: Dr. David Holtgrave)

2014-2015

**Qualitative Research Consultant**

**University of California Global Health Institute**

**University of California, San Francisco, San Francisco, CA**

Supervisor: Joelle Brown, PhD

Conducted qualitative data analysis to inform the development of a safer conception training and education toolkit for the empowerment of HIV-affected women, couples and healthcare providers in Kisumu, Kenya. Also contributed to the abstract and manuscript writing.

2010-2012

**Research Analyst (50% time)**

**Center for AIDS Prevention Studies**

**University of California, San Francisco, San Francisco, CA**

Supervisor: Lynae Darbes, PhD

Provided research coordination and assistance to Dr. Darbes on her NIH funded randomized controlled trial of a couples-based voluntary counseling and testing intervention in KwaZulu-Natal, South Africa. Specific duties included:

- Development of research protocols, survey instruments and intervention manuals
- Contributed to scientific manuscripts and abstracts
- Liaised with grants management team and project specific management to meet all agency deadlines and ensure accurate tracking of activities across multiple subcontracts
- Completed progress reports and IRB applications
- Tracked, monitored and analyzed participant enrollment, coded and analyzed qualitative interviews from preliminary studies
- Conducted qualitative analysis to inform the development of the intervention



2011-2012     **Research Analyst (50% time)**  
**Bixby Center for Global Reproductive Health**  
**University of California, San Francisco, San Francisco, CA**  
Supervisor: Megan Huchko, MD

Provided coordination and research assistance to Dr. Huchko on her cervical cancer screening and prevention program at Family AIDS Care and Education Services (FACES) in Kisumu, Kenya. Specific duties included:

- IRB application development and management of renewals
- Study monitoring and evaluation
- Contributed to scientific manuscripts and grant proposal development
- Budget oversight
- Data management and analysis
- Wrote and submitted progress reports to the funding agencies

2010- 2011     **Pre-award Grant Analyst (50% time)**  
**Bixby Center for Global Reproductive Health**  
**University of California, San Francisco, San Francisco, CA**  
Supervisor: Emily Mangone, MPH

Assisted with all aspects of the pre-award process, including:

- Preparation, compilation, and review of proposal budgets and documents
- Proposal submission and tracking proposals once they were submitted
- Transitioning the grant proposal from pre-award to post-award financial and contracts and grants management if funded
- Seeking new funding opportunities for investigators.

## **RESEARCH EXPERIENCE**

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2016-Present     **Doctoral Dissertation Research**  
**Department of Health Behavior and Society**  
**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**  
Advisors: Deanna Kerrigan, PhD & Carol Underwood, PhD

Utilizing a cross-sectional mixed method design, this research explores the intersection between substance use, gender-based violence, and HIV prevention behaviors among female sex workers (FSWs) in Iringa, Tanzania. An additional aim of the research is to understand FSWs' experiences accessing justice for violence perpetrated against them, and the role social cohesion among FSWs plays in this. These research questions were explored through secondary quantitative data analysis, and primary qualitative data analysis. This dissertation is nested within Dr. Deanna Kerrigan's NIH-funded community randomized controlled trial of a community-based combination HIV prevention intervention in Iringa, Tanzania.

2016-Present     **Qualitative Research Consultant**  
**University of California Global Health Institute**  
**University of California, San Francisco, San Francisco, CA**  
Supervisor: Rena Patel, MD, MPH & Joelle Brown, PhD

Conducted qualitative data analysis, utilizing data from the Partners PrEP study in Kenya and Uganda that explored the key factors that motivate sero-discordant

couples in Kisumu, Kenya to prevent HIV transmission. Co-wrote a manuscript, which was submitted to a peer reviewed journal and is currently under review.

2015

**Graduate Research Assistant**  
**Global Early Adolescence Study**  
**Department of Population, Family and Reproductive Health**  
**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**  
Supervisors: Caroline Moreau, MD & Robert Blum, MD

Conducted qualitative data analysis and led focus groups to inform the development of a gender norms scale for the Global Early Adolescent Study, conducted in 15 countries around the world.

2013-2014

**Masters Practicum Intern**  
**Center for AIDS Prevention Studies**  
**University of California, San Francisco, San Francisco, CA and the**  
**Department of Health, Behavior and Society**  
**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**  
Supervisors: Lynae Darbes, PhD (UCSF) & Danielle German, PhD (JHSPH)

Conducted secondary quantitative data analysis with data from a cross-sectional survey on sexual health behaviors, attitudes, norms, HIV testing and relationship dynamics among heterosexual couples in Soweto, South Africa. Explored the relationship between couple sexual communication self-efficacy (a couple's confidence in their ability to talk about sex and condom use) and consistent condom use in the presence of gender inequitable norms. The results from this research were published in *AIDS Care*.

2010

**Intern**  
**Bixby Center for Global Reproductive Health**  
**University of California, San Francisco, San Francisco, CA**  
Supervisor: Janet Turan, PhD

Assisted with study coordination for Dr. Turan's projects with pregnant women in rural Kenya. Researched gender-based violence interventions and created a presentation for a stakeholder's meeting in Kenya, where participants discussed gender-based violence in Kenya and brainstormed ideas for a possible intervention. Other duties included: conducting literature reviews and manuscript writing; assisting with IRB submissions; and data management and cleaning.

2009-2010

**Intern**  
**Foundation for Sustainable Development, Mombasa, Kenya**  
Supervisor: Mary Paul

Collaborated with grass roots organization, Hope Worldwide Kenya, and community stakeholders (Ministry of Health, the Ministry of Agriculture, Equity Bank, and Likoni Community Development Program) to develop an intervention that aimed to improve anti-retroviral adherence among HIV positive women in the region. The intervention consisted of two training sessions that provided women with the skills and knowledge to grow their own low-cost gardens and start a small business selling their produce. In addition to the development and implementation of this intervention, I applied for and obtained a grant, to fund the intervention; established a monitoring and evaluation protocol; and

constructed a standard operating procedures manual. Using the money from the grant, Hope Worldwide Kenya was able to roll out the intervention for a year after my departure.

2009

**Intern**

**Center for AIDS Prevention Studies**

**University of California, San Francisco, San Francisco, CA**

Supervisor: Tim Lane, PhD

Assisted with the development of an NIH funded randomized control trial of a HIV prevention intervention for men who have sex with men (MSM) in South Africa.

2006-2010

**Intern/Independent Research**

**Center of Excellence in Women's Health**

**University of California, San Francisco, San Francisco, CA**

Supervisor: Nanette Gartrell, MD

Designed and conducted a qualitative study, under the supervision of Dr. Gartrell, which explored the experience of being raised in a lesbian home from the perspective of the daughters and sons of lesbian families. Submitted the research paper as my honors thesis at UC Berkeley, and received honors.

**ADVOCACY AND VOLUNTEER EXPERIENCE**

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2016-Present

**Founder and Leader**

**Violence Journal Club**

**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

Founded the first ever violence journal club at the Johns Hopkins Bloomberg School of Public Health. This journal club seeks to provide a forum to discuss current research on violence including, but not limited to, the public health implications of violence, violence prevention and intervention, as well as novel methods for measuring violence.

2013-Present

**Co-President and Founding Member**

**Ahimsa: Students for a Violence Free World**

**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

Ahimsa is a student group, which aims to raise awareness and spark critical discussions about the impact of gender inequality and gender based violence on health. As Vice President I have worked to establish sustainable relationships between JHSPH students, faculty, other student organizations, and community organizations working to address GBV Baltimore. I also organize special speaker series on the topic of GBV, coordinate the Ahimsa-sponsored One Billion Rising event each year, organize philanthropic events with community organizations, and coordinate with the Student Outreach Resource Center (SOURCE) to identify opportunities for members to volunteer in the community.

2015-2017

**Treasurer and Founding Member**

**Students for a Positive Academic Partnership with the Baltimore Community (SPARC)**

## **Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

SPARC is a student advocacy group promoting greater institutional commitment to the Baltimore community and building the capacity of public health professionals to respond to health inequities resulting from historic and systemic racism, and class oppression in Baltimore City. As one of the founding members and the treasurer, I have contributed to the formation of the student group and the organization of a number of events that aim to fulfill the objectives of the student group.

2008-2009

### **Chapter Co-Founder and Co-President Face AIDS at UC Berkeley, Berkeley, CA**

Co-founded the UC Berkeley chapter of Face AIDS, a non-profit organization dedicated to mobilizing students to fight AIDS in Africa. All proceeds from outreach efforts support Partners in Health in Rwanda to provide free anti-retrovirals for people living with HIV/AIDS in that area. Organized and implemented weekly chapter meetings, fundraisers and guest speaker events.

## **GRANTS**

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2016-2017

F31 Kirschstein-NRSA Individual Pre-doctoral Fellowship  
NIH/NIMH

Title: *“Gender-based violence, social cohesion, and engagement in HIV care among female-sex workers in Iringa, Tanzania: A mixed methods approach”*

2017

Dissertation Enhancement Award  
Center for Qualitative Studies in Health and Medicine  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD

2016

Sommer Scholar Tuition Support  
Department of Health, Behavior and Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD

2016

Doctoral Distinguished Research Award  
Department of Health, Behavior and Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD

2015

Doctoral Special Project Funding  
Department of Health, Behavior and Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD

2010

Foundation for Sustainable Development Research Award  
Mombasa, Kenya

## **HONORS AND DISTINCTIONS**

---

- 2016 Teaching Assistant Award for Excellence in Teaching Assistance  
Department of Health, Behavior and Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD
- 2016 Research Assistant Award for Outstanding Service to Faculty and Science  
Department of Health, Behavior and Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD
- 2014 Delta Omega Public Health Honors Society  
Johns Hopkins Bloomberg School of Public Health  
Baltimore, MD
- 2009 Honors in Psychology  
University of California, Berkeley  
Berkeley, CA
- 2009 Highest Distinction in General Scholarship  
University of California, Berkeley  
Berkeley, CA
- 2009 Phi Beta Kappa Society  
University of California, Berkeley  
Berkeley, CA
- 2009 Candidate for the University Medal  
University of California, Berkeley  
Berkeley, CA

## ORIGINAL PUBLICATIONS

---

### *Peer Reviewed*

1. Patel, R.C., Leddy, A., Odoyo, J., Anand, K., Stanford-Moore, G., Wakhungu, I., Bukusi, E.A., Beaten, J., Brown, J.M. Gender norms shape serodiscordant couples' motivations to prevent HIV transmission: qualitative findings from a PrEP implementation study in Kenya. *Under Review.*
2. Underwood, C., Leddy, A., Hendrickson, Z. Direct and indirect effects of communication interventions: Gender constructs and modern contraceptive use. *Under Review.*
3. Conroy, A.A., **Leddy, A.**, Johnson, M.O., Ngubane, T., Van Rooyen, H. & Darbes, L.A. (2017). 'I told her this is your life': Relationship dynamics, partner support, and adherence to antiretroviral therapy among South African couples. *Culture, Health, and Sexuality*, In Press.
4. Conroy, A.A., McKenna, S.A., **Leddy, A.**, Johnson, M.O., Ngubane, T., Darbes, L.A., & Van Rooyen, H. (2017). "If she is drunk, I don't want her to take it": Partner beliefs and influence

- on use of alcohol use and antiretroviral therapy in South African couples. *AIDS and Behavior*, In Press.
5. Kerrigan, D., Mbwambo, J., Likindikoki, S., Beckham, S., Mwampashi, A., Shembilu, C., Mantsios, A., **Leddy, A.**, Davis, W., Galai, N. (2017) Project Shikamana: Baseline findings from a community empowerment based combination HIV prevention trial among female sex workers in Iringa, Tanzania. *J Acquir Immune Defic Syndr*, 74; Suppl 1: S60-S68.
  6. Brown, J., Njoroge, B., Akama, E., Breitnauer, B., **Leddy, A.**, Darbes, L., Omondi, R., Mmeje, O. A Novel Safer Conception Counseling Toolkit for the Prevention of HIV: a Mixed Methods Evaluation in Kisumu, Kenya. *AIDS Educ Prev*, 28(6); 524-538.
  7. Mmeje, O., Njoroge, B., Akama, E., **Leddy, A.**, Breitnauer, B., Darbes, L., Brown, J. (2016). Perspectives of healthcare providers and HIV-affected individuals and couples during the development of a safer conception counseling toolkit in Kenya: Stigma, fears, and recommendations for the delivery of services. *AIDS Care*, 28 (6); 750-757.
  8. **Leddy, A.**, Chakravarty, D., Dladla, S., de Bruyn, G., Darbes, L. (2015). Sexual communication self-efficacy, hegemonic masculine norms and condom use among heterosexual couples in South Africa. *AIDS Care*, 28 (2); 228-233.
  9. Breitnauer, B., Mmeje, O., Njoroge, B., Darbes, L., **Leddy, A.**, Brown, J. (2015). “Without the child, there is no happiness in the family”: Community perceptions of childbearing and use of safer conception strategies among HIV-discordant couples in Kisumu, Kenya. *Journal of the International AIDS Society*, 18; 19972-19979.
  10. Huchko, M.J., Woo, V., Liegler, T., **Leddy, A.**, Smith-McCune, K., Sawaya, G.F., Bukusi, E.A., Cohen, C.R. (2013). Is there an association between HIV-1 genital shedding and cervical intraepithelial neoplasia 2/3 among women on antiretroviral therapy? *Journal of Lower Genital Tract Disease*, 17(3); 354-60
  11. **Leddy, A.**, Gartrell, N., & Bos, H. (2012). Growing up in a lesbian family: The life experiences of the adult daughters and sons of lesbian mothers. *Journal of GLBT Family Studies*, 8: 243-257.

### **Book Chapters**

1. Woznica, D., **Leddy, A.**, Lane, T. (*In press*). From social science to social action: The history of South Africa’s national response to key populations (1990-2016) and the future of community mobilization in HIV management. In Kerrigan, D. & Barrington, C. (Eds.), *Structural Dynamics of HIV: Risk, Resilience and Response*.

### **Reports**

1. Underwood, C., Chatata, D., **Leddy, A.** (2017). Support for service delivery integration communication: Findings from the 2016 endline survey of 15 districts in Malawi. USAID.

2. Underwood, C., Hendrickson, Z., **Leddy, A.** (2015). Gender equity and family planning outcomes in health communication programs: A secondary data analysis. USAID.
3. Underwood, C.R., **Leddy, A.M.**, Morgan, M. (2014). Gender-equity or gender-equality scales and indices for potential use in aquatic agricultural systems. Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems. Program Report: AAS-2014-37.

## **PRESENTATIONS AND ABSTRACTS**

---

### *Oral Presentations*

1. Underwood, C., Kc, S., Jacoby, C., Leslie, L., **Leddy, A.** (2016). Enabling Nutrition, Gender, and Social Change: Evidence from a Study of Nepal's "Bhanchhin Aama" Campaign. Oral presentation at the American Public Health Association (APHA) conference in Denver, CO.
2. Mantsios, A., Shembilu, C., Mbwambo, J., Likindikoki, S., Beckham, S., Mwampashi, A., **Leddy, A.**, Davis, W., Galai, N., Kerrigan, D. (2016). "When you don't have money, he controls you": Financial security, community savings groups, and HIV risk among female sex workers in Iringa, Tanzania. Poster discussion session at the XXI International AIDS Conference, Durban, South Africa.
3. Brown, J., Njoroge, B., Akama, E., Omondi, R., Breitnauer, B., **Leddy, A.**, Darbes, L., Mmeje, O. (2015). The impact, acceptability, and feasibility of a novel safer conception toolkit for the prevention of HIV: A process evaluation in Kisumu, Kenya. Oral presentation at the National AIDS and STI Control Program (NASCOP), Nairobi, Kenya.
4. Breitnauer, B., Mmeje, O., Njoroge, B., Darbes, L.A., **Leddy, A.**, Brown, J. (2015). Community perceptions of childbearing and use of safer conception strategies among HIV-discordant couples in Kisumu, Kenya: A qualitative analysis. Oral presentation at the National AIDS and STI Control Program (NASCOP), Nairobi, Kenya.

### *Poster Presentations*

1. **Leddy, A.**, Mbwambo, J., Likindikoki, S., Shembilu, C., Beckham, S., Mwampashi, A., Mantsios, A., Davis, W., Galai, N., Kerrigan, D. (2016). Substance use, Gender-Based Violence, and HIV risk behaviors among Female Sex Workers (FSW) in Iringa, Tanzania. Poster presentation at the Inter-CFAR Joint Symposium on HIV Research in Women, Birmingham, AL.
2. **Leddy, A.**, Mbwambo, J., Likindikoki, S., Shembilu, C., Beckham, S., Mwampashi, A., Mantsios, A., Davis, W., Galai, N., Kerrigan, D. (2016). Association between alcohol consumption and gender-based violence (GBV) among female sex workers in Iringa, Tanzania. Poster presentation at the XXI International AIDS Conference, Durban, South Africa.

3. Kerrigan, D., Likindikoki, S., Galai, N., Beckham, S., Mwampashi, A., Shembilu, C., Mantsios, A., **Leddy, A.**, Davis, W., Mbwambo, J. (2016). Project Shikamana: Community empowerment based combination HIV prevention among female sex workers in Iringa, Tanzania. Poster presentation at the XXI International AIDS Conference, Durban, South Africa.
4. Beckham, S., Likindikoki, S., Galai, N., Mwampashi, A., Shembilu, C., Mantsios, A., **Leddy, A.**, Davis, W., Mbwambo, J., Kerrigan, D. (2016). Pregnancy, HIV, and denial of antenatal care among female sex workers in Southern Tanzania: implications for elimination of vertical transmission. Poster presentation at the XXI International AIDS Conference, Durban, South Africa.
5. Conroy, A.A., **Leddy, A.**, Johnson, M.O., Ngubane, T., van Rooyen, H., Darbes, L.D. “I told her this is your life”: How primary partners help overcome barriers related to ART adherence in South Africa. Poster presentation at the XXI International AIDS Conference, Durban, South Africa.
6. Conroy, A.A., **Leddy, A.**, Johnson, M.O., Ngubane, T., van Rooyen, H., Darbes, L.D. “If she is drunk, I don’t want her to take it”: Partner influence on alcohol use and ART adherence within South African couples. Poster presentation at the XXI International AIDS Conference, Durban, South Africa.
7. **Leddy, A.**, Mmeje, O., Njoroge, B., Darbes, L.A., Breitnauer, B., Akama, E., Omondi, R., Brown, J. (2015). Communication and decision-making about safer conception: A qualitative study to understand experiences from HIV-affected men, women and couples in Kisumu, Kenya. Poster presentation at the National AIDS and STI Control Program (NASCO), Nairobi, Kenya.
8. **Leddy, A.M.**, Chakravarty, D., Dladla, S., de Bruyn, G., Darbes, L. (2015). Sexual Communication Self-Efficacy (SCSE) Mediates Relationship Power and Consistent Condom use among Heterosexual Couples in Soweto, South Africa. Poster presentation at the Consortium of Universities for Global Health (CUGH) Conference, Boston, Massachusetts.
9. Brown, J., Njoroge, B., Akama, E., Omondi, R., Thurman, B., **Leddy, A.**, Darbes, L., Mmeje, O. (2015). The acceptability, feasibility, and impact of a novel safer conception toolkit for the prevention of HIV: a process evaluation. Poster presented at the East Africa Collaborative Scientific Symposium, Kisumu, Kenya.
10. **Leddy, A.**, Chakravarty, D., Dladla, S., de Bruyn G., & Darbes, L.A. (2014). HIV-specific social support predicts consistent condom use among heterosexual couples in Soweto, South Africa. Poster presented at the XX International AIDS Conference, Melbourne, Australia.
11. **Leddy, A.**, Johnson, M., Dladla, S., & Darbes, L. (2012). South African couples’ preferences for the delivery of a Couples-based Voluntary Counseling and Testing (CBVCT) intervention. Poster presented at the XIX International AIDS Conference, Washington DC, USA.



12. Darbes, L., Chakravarty, D., **Leddy, A.**, Dladla, S., & de Bruyn, G. (2012). Sexual communication self-efficacy (SCSE) is a significant predictor of couples engaging in couples-based voluntary counseling and testing (CBVCT) for HIV in Soweto, South Africa. Poster presented at the XIX International AIDS Conference, Washington DC, USA.
13. Darbes, L., Chakravarty, D., **Leddy, A.**, Dladla, S., & de Bruyn, G. (2012). Attitudes towards child and adult male circumcision among a community-based sample of heterosexual couples in Soweto, South Africa. Poster presented at the XIX International AIDS Conference, Washington DC, USA.

## **JOURNAL PEER REVIEWER**

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*AIDS and Behavior*  
*Global Public Health*

## **MISCELLANEOUS**

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Language	English (Native)
Computer	Microsoft Office, Microsoft Access, STATA statistical software, Dedoose mixed methods research software, Atlas.Ti qualitative research software
Skills	<p>Research design and management including: study protocol development, intervention content development, survey design, data management, and quantitative and qualitative data analysis.</p> <p>Strong communication and writing skills, including grant and manuscript writing, and experience collaborating with international and domestic team members.</p>