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## Prevalence of Rape and Client-Initiated Gender-Based Violence Among Female Sex Workers: Kampala, Uganda, 2012

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### Abstract

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We utilized data from the 2012 Crane Survey in Kampala, Uganda to estimate prevalence of rape among female sex workers (FSWs) and to identify risk factors for and prevalence of client-initiated gender-based violence (GBV) among FSWs. Participants were recruited using respondent-driven sampling. Analyses were weighted using RDSAT-generated individualized weights for each of the five dependent GBV outcomes. Analyses were conducted utilizing SAS 9.3. Among 1,467 FSWs who were interviewed, 82 % (95 % CI: 79–84) experienced client-initiated GBV and 49 % (95 % CI: 47–53) had been raped at least once in their lifetime. GBV risk increased with increasing frequency of client demands for unprotected sex, length of time engaged in sex work, and FSW alcohol consumption. Risk decreased when sex with clients occurred at the FSW's or client's house or a hotel compared to when sex occurred in open spaces. Our findings demonstrate a high prevalence of GBV among FSWs. This research reinforces the urgent need for GBV prevention and response strategies to be integrated into FSW programming and the continuing need for GBV research among key populations.

### Keywords

Sex workers; Violence; Uganda

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### Introduction

Violence against women is a worldwide epidemic that has been referred to as “perhaps the most shameful human rights violation, and the most pervasive [1].” Globally, it is estimated that “one in three women will be beaten, coerced into sex, or otherwise abused in her lifetime” by an intimate partner or non-partners, while fewer than ten percent of sexual assaults are ever reported to the police [2–4]. The term gender-based violence (GBV) captures violence that occurs as a result of normative gender-role expectations along with unequal power relationships between genders within the context of a specific society [5]. The United Nations further defines GBV as “any act that results in or is likely to result in physical, sexual, or psychological harm or suffering to women, including threats or such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private life” [6]. GBV can include physical, sexual, financial, and verbal abuse and is a leading cause of women and girl's incapacity worldwide [3, 7]. Examples of GBV can include, but are not limited to, female infanticide, harmful traditional practices such as early/forced marriage or female genital mutilation, child sexual abuse and slavery, trafficking in persons, sexual coercion and abuse, neglect, physical assault, humiliation, denial of economic opportunities, and social exclusion [6, 7].

Female sex workers (FSWs) are an often marginalized population further contributing to the unequal power differentials between clients and FSWs that influence the occurrence of GBV. Sex work can in part be sustained through structural inequalities in a society such as gender imbalances, patriarchy, limited employment opportunities and social autonomy. The International Labor Office classifies sex workers as a high-risk group for experience of GBV by their clients, brothel owners and other controllers, law enforcement officials, intimate partners, families, neighbors, and other sex workers [8]. The illegality of sex work in many

countries further inhibits sex workers ability to report GBV and negotiate safe sex with clients [8].

The causes of GBV are complex and multifactorial including societal and individual factors [1, 9, 10]. Individual factors can include age, marital status, poverty, education, a history of violence, and drug and alcohol abuse [11–13]. GBV has been linked to high rates of morbidity and mortality including gynecological problems, depression, post-traumatic stress disorder, substance dependence, suicide, and sexually transmitted infections including HIV [1, 9, 14–17].

The World Health Organization's multi-country study on women's health reaffirmed the seriousness of GBV while demonstrating the far-reaching extent of the problem [4]. Rates of sexual violence are high in sub-Saharan Africa. In Kenya, one in five women aged 15–49 years reported having experienced sexual violence in the previous year [18]. In South Africa and Ghana, one-third and one-fifth of adolescent girls reported forced sexual initiation, respectively [4, 18–20]. In Namibia, 19 and 6 % of women and in Tanzania 19 and 12 % of women experienced physical and sexual abuse by non-partners since the age of 15, respectively [21]. In Uganda, 28 % of women aged 15–49 years reported lifetime sexual abuse and 16 % experienced sexual abuse in the past 12 months [22]. Fifty-six percent of women aged 15–49 years reported lifetime physical abuse and 27 % reported physical abuse in the past 12 months [22].

While the prevalence of GBV has been estimated among the general population of Ugandan females [22] our understanding of GBV affecting sex workers in Uganda remains limited. An increasing literature base has documented the severe health outcomes associated with GBV; however, our understanding of the magnitude of violence is mostly limited to that related to intimate partner violence [14]. Violence directed specifically at FSWs is often omitted from discussions of violence against women and there is a shortage of information on the prevalence, perpetrators and risk factors of GBV among FSWs [14, 23].

Despite calls for the decriminalization of sex work, it remains illegal in many countries including Uganda. The illegal nature of sex work increases stigma and the marginalization of sex workers, leaving women at higher risk of experiencing GBV while making reporting of GBV to authorities more difficult [24–26]. Additionally, the ability to access physical and mental health care including HIV services is negatively influenced [24–28]. A growing body of evidence on the association between sex work and HIV indicates that GBV is both a cause and consequence of HIV [29–31] as GBV or the fear of GBV can create barriers to HIV prevention, care, and treatment [32].

Using data from the 2012 Crane Survey, a standing survey system in Kampala, Uganda, we report here on the estimated prevalence of rape among FSWs and prevalence and risk factors for client-initiated GBV among FSWs. For the purpose of this paper, we define GBV against FSWs as any client-initiated sexual, physical, verbal, or economic violence.

## Methods

### Survey Setting

The Crane Survey, funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR), represents a collaborative effort between Makerere University and The Uganda Ministry of Health, and supported by CDC Uganda. The Crane Survey is designed to monitor trends in HIV and STI prevalence and describe and identify HIV risk factors amongst key populations for HIV infection, including FSWs. The Crane Survey defines FSWs as, "women who sell sex for money, goods, favors, or services." To recruit FSWs for its surveys, the Crane Survey utilizes respondent-driven sampling (RDS), a probability-based sampling methodology that has been shown to be effective for accessing hard-to-reach populations [33–35]. Formative research suggested that respondent-driven sampling is preferable to time-location sampling due to the large proportion of very mobile street-based sex workers and the alleged reluctance of venue owners (lodges, inns, bars) to allow for sampling at or near their premises. Questions regarding GBV were added to the FSW survey in 2012.

### Survey Procedures

Recruitment of FSWs was conducted from April to December 2012. Eligibility criteria were defined as being a woman 15 years or older who lived in Kampala and sold sex to men in the 6 months prior to survey participation. Four women were initially chosen as seeds and asked to recruit additional participants by distributing coupons and study information to other FSWs within their social networks, who were in turn asked to recruit subsequent waves of participants. This "wave pattern" was repeated until the desired sample size was achieved with a total of 25 waves. Survey participants were reimbursed (\$4 USD) for their time and travel to the interview site in Kampala plus an incentive for recruiting additional participants (\$1.25 USD per recruit). Initially, each participant was given three recruitment coupons with study information to hand to other potential participants. Coupon issuance was later reduced to two coupons and eventually to one and zero towards the end of the sampling period as an adequate sample size was close to being achieved. After eligibility screening and consent, women were interviewed utilizing audio computer-assisted self-interview (ACASI) technology, which has previously been shown to be effective in collecting sensitive information privately [36, 37]. ACASI interviews were in Luganda or English and the complete process from arrival on site to exit took approximately 2–3 h.

Four violence-related components were probed in the interview: physical, verbal, and sexual abuse and economic deprivation defined as being paid less than agreed upon for a sexual act or not being paid at all, resulting in five violence-related outcomes. Physical abuse was defined as a customer hitting or hurting you; verbal abuse was defined as a customer yelling at you; and sexual abuse was defined as a customer forcing you to do sex acts you did not want to do. Nine independent variables that may indicate an association with violence were included for bivariate analyses [14, 38–45]. The independent variables included were: number of alcoholic drinks consumed by the FSW, location where clients met, location of woman's place of sex work, location where sex occurs with client, length of time working as a sex worker, age of sex worker, access to STI counseling and testing, access to HIV

counseling and testing, and frequency of client-initiated demand for unprotected sex. Additionally, participants were asked about a lifetime history of rape, characteristics of the perpetrator during the last rape occurrence, and the number of rape occurrences during the 6 month period prior to taking the survey. In the Crane Survey, rape was defined as occurring when someone, clients or non-clients, forced the FSW to give sex by beating her or threatening to hurt or kill her.

RDSAT<sup>®</sup> 7.1 was used to generate weighted population estimates and 95 % confidence intervals (CI) for demographic and GBV variables, including: age, education, length of time as a sex worker, sex work as main income, frequency and type of occurrence of violence and lifetime rape occurrence, number of rape occurrences during the last 6 months, and perpetrator during last rape.

Logistic regression analysis was performed using survey procedures in SAS 9.3 (SAS Institute Inc., Cary, NC). Analyses were weighted using RDSAT-generated individualized weights for each of the five dependent violence outcomes: physical, sexual, and verbal abuse, being paid less than agreed, and not being paid at all. Bivariate logistic regression analyses were conducted and variables with a *p* value less than 0.25 were entered into each initial multivariate regression model. Variables were sequentially removed using backwards elimination from the models until all variables were significant at *p* value less than 0.05. Remaining variables were examined for interactions. Unadjusted odds ratios (OR), adjusted odds ratios (aOR) and 95 % CI are presented for each violence outcome.

## Results

The overall coupon return rate was 48 %, with a total of 4,018 coupons issued and 1,915 redeemed. Of 1,915 women returning with coupons, 1,501 were deemed eligible to participate and of the eligible women, 1,497 completed their first visit in its entirety. Of the 1,497 participants, 1,467 (98 %) FSWs answered GBV-related questions and were included in our analysis. Median age of FSWs in the survey was 28 years (IQR: 24–33). Thirty-one percent (95 % CI: 27–34) of FSWs were less than 25 years of age; 54 % (95 % CI: 50–57) had less than 7 years of schooling; 59 % (95 % CI: 56–63) had been working as a sex worker for less than 3 years and 95 % (95 % CI: 93–96) reported sex work as their main source of income (Table 1).

At least one form of client-initiated GBV was experienced by 82 % (95 % CI: 79–84) of FSWs in the previous 6 months (Table 2). Forty percent (95 % CI: 37–43) experienced physical abuse; 45 % (95 % CI: 42–49) experienced verbal abuse; 50 % (95 % CI: 46–53) experienced forced sex acts; 72 % (95 % CI: 69–75) were paid less than negotiated for a sex act; and 56 % (95 % CI: 52–59) were not paid at all for a sex act (Table 2). Twentythree percent (95 % CI: 20–26) of women experienced all five types of client-initiated GBV.

Forty-nine percent (95 % CI: 47–53) of women reported having been raped at least once in their lifetime (Table 2). Of those reporting a lifetime history of rape, the perpetrators of the last rape were reported to be sex partners in 42 % (95 % CI: 35–47) of cases and strangers in 36 % (95 % CI: 30–43) of cases and authority figures (employer/supervisor, religious leader,

teacher, police, or military personnel) in 6 % (95 % CI: 3–9) of cases. Of women reporting rape in their lifetime, 19 % (95 % CI: 14–25) reported no occurrence of rape in the last 6 months while 43 % (95 % CI: 37–49) experienced two or more occurrences of rape and 38 % (95 % CI: 32–44) experienced three or more rape occurrences in the last 6 months.

Multivariate analysis revealed that odds for experiencing (in the last 6 months by a client) verbal abuse (aOR 1.07; 95 % CI: 1.02–1.11), forced sex acts (aOR 1.02; 95 % CI: 1.01–1.10), being paid less (aOR 1.07; 95 % CI: 1.01–1.13), and not being paid (aOR 1.06; 95 % CI: 1.01–1.10) increased the longer FSWs worked as a sex worker. Odds for experiencing physical abuse (aOR 6.01; 95 % CI: 2.98–12.14), verbal abuse (aOR 7.10; 95 % CI: 3.94–12.78), forced sex acts (aOR 5.27; 95 % CI: 3.02–9.19), being paid less (aOR 5.19; 95 % CI: 3.03–8.88), and not being paid (aOR 4.48; 95 % CI: 2.69–7.48) increased the more frequently clients demanded unprotected sex (Tables 3 and 4). The odds for experiencing client-initiated physical abuse were higher with consumption of five or more alcohol drinks by FSWs (aOR 2.60; 95 % CI: 1.54–4.43). However, the odds for experiencing client-initiated physical abuse were lower when sex with clients occurred at the FSW's house (aOR 0.12; 95 % CI: 0.03–0.49), the client's house (aOR 0.17; 95 % CI: 0.04–0.74), or at a hotel (aOR 0.12; 95 % CI: 0.02–0.08) compared to sex with clients in open spaces (i.e. street, parks, parking lots, or doorways). Age, location where clients were met, access to STI counseling and testing, access to HIV counseling and testing, and the location of the FSW's place of work were not associated with any GBV outcome.

## Discussion

Our study shows that rates of client-initiated GBV amongst FSWs in Kampala are even higher than the significant rates amongst women in the general population in Uganda. These findings further reinforce the urgent need for GBV prevention and response strategies to be integrated into existing FSW programming and the need to continued GBV research looking at risk factors for GBV, effective prevention strategies, and factors influencing reporting of GBV and access to GBV services. Among the participants interviewed in this study, as duration of sex work increased, so did susceptibility to verbal and sexual abuse and economic deprivation for FSWs. Increased frequency of client-initiated demand for unprotected sex was associated with increased odds of experiencing physical, verbal, and sexual abuse and economic deprivation, while the location of sex with clients was associated with increased odds for physical abuse. In addition, increased alcohol use or binge drinking was associated with increased odds of experiencing sexual abuse among FSWs.

Almost 50 % of FSWs in this study reported experiencing at least one rape in their lifetime. This is significantly higher than the 28 % of women in the general population reported during the 2011 Uganda Demographic Health Survey. Over one-third of FSWs reported experiencing rape three or more times in the last 6 months, indicating that this population is at continuous risk for experiencing rape. This high percentage of reported rape, both lifetime and in the 6-months prior to the survey reinforces the need to scale up violence-prevention strategies among FSWs. Rape recovery and support services should be made more readily available to FSWs while assuring confidentiality.

Rape and client demand for unprotected sex during paid sex acts further increase FSW susceptibility to HIV and other sexually transmitted infections [38, 46, 47]. Violence or fear of violence limits a woman's ability to negotiate condom use with a sexual partner, and during forced sex acts, perpetrators are less likely to use condoms [38, 46, 48, 49]. In addition to accessible and affordable condoms, access to GBV screening with linkage or referral to care services, including screening and testing for sexually transmitted infections and post-exposure prophylaxis (PEP), are key components of a comprehensive HIV prevention package for FSWs [7, 50–53]. Positive outcomes have been associated with community FSW empowerment programs and interventions including increased condom use, a reduction in HIV prevalence, and a reduction in STI prevalence [50, 52, 54]. Within the Ethical Framework for Key Populations in PEPFAR programs it is stated that, “while sex work may remain illegal in many settings, the provision of prevention messages and commodities, including condom promotion and distribution programs for sex workers and clients, may have significant impacts in reducing sexual risk for HIV” [51]. To increase condom use among clients, structural interventions at locations known for sex work are recommended, such as implementation of condom policies, targeted HIV prevention messages [55, 56], and policies that strive to remove inequitable power structures within commercial sex settings.

The illegality of sex work in Uganda may be influencing the location of sex acts by FSWs [38]. The illegal nature of sex work may increase fear of arrest and may incentivize risky health behaviors, inhibit the creation of safety networks among FSWs, reduce the effectiveness of HIV and sexual health programs, increase barriers in accessing these programs, and may decrease the desire to report acts of GBV [47, 50]. Additionally, rape occurrences may be underreported to authorities by FSWs as (1) sex work is illegal in Uganda and (2) rape perpetrators were reported to be authority figures in almost 6 % of rape cases (see Table 2). Criminalization of sex work contributes to an environment where violence against sex workers may be tolerated, in part, influenced by moral judgment against FSWs. A major step in reducing the occurrence of GBV among FSWs including reducing reporting barriers may be the decriminalization of sex work and elimination of unjust application of non-criminal laws and regulations against sex workers as recommended by WHO [50]. The UNDP's Global Commission on HIV and the Law report states, “repealing laws that criminalize an aspect of an individual's identity, such as sex work, or same-sex acts, is a first step in creating an enabling environment to reduce GBV risk” [47].

Furthering the UNDP's recommendation, avenues for voluntary and safe reporting of rape occurrences to authorities without fear of prosecution for sex work or experience of further violence can be created [47, 57]. Rape needs to be recognized as the serious crime it is. Programs in South Africa, Kenya, Canada, India, and Kyrgyzstan, have successfully demonstrated that removing the barriers to reporting of rape (such as the lack of female police officers to record rape-related statements, or the lack of free forensic examination and treatment for rape victims) could result in increased reporting, access to post-rape care services and prosecution of perpetrators.

The association between alcohol use and higher frequency physical abuse was reported. A systematic review citing several articles describes the association between alcohol

consumption and decreased or improper use of condoms [58], further increasing FSW susceptibility to HIV and other STIs. Substance dependency may decrease a woman's ability to negotiate condom use and risky sexual behavior. Additionally, alcohol can be used to further place women in disadvantaged situations while intensifying already unequal gender imbalances [46, 58].

To strengthen the impact of GBV prevention, a comprehensive approach is needed to effectively prevent and respond to GBV and those factors influencing FSW susceptibility. This approach can include the development, implementation, and subsequent attention to increasing awareness of laws protecting women's rights, training of police, creation of programs promoting women's economic security, and the provision of funding and advocacy by local governments, all of which have been shown to be successful in impacting occurrence of GBV [7, 47, 50, 59]. Key populations, including FSWs, have been shown to be under-served within health services [50]. Organizations working with FSWs should be encouraged to increase the availability of GBV prevention and response efforts. This programming can include community mobilization efforts, peer-based education, and services for survivors of GBV. GBV response within the health sector as recommended by WHO should include: women-centered care (privacy, nonjudgmental environment, links to other services, well-trained providers), care for survivors (emergency contraception, HIV/STI prophylaxis), integration of GBV response should be integrated with other health services as much as possible, and mandatory reporting of violence should be discouraged [50].

There are limitations to this study. The Crane Survey relies on women returning to the survey site with coupons who provide self-reported data, which are subject to recall bias. The determination of causality is prevented by the cross-sectional design of the study. When asking questions of a sensitive nature, such as violence-related questions, participants may be motivated to provide responses they feel are socially acceptable. However, ACASI allows for questions to be answered in a confidential environment and this should minimize response biases. In addition, responses to rape questions did not differentiate client versus non-client perpetrators. This makes it difficult to concretely determine the influence of sex work on rape susceptibility.

Despite these limitations, our findings demonstrate an alarming prevalence of GBV among FSWs in Kampala. A better understanding of occurrence of and risk factors for GBV among FSWs enables organizations working with FSWs to better tailor and disseminate GBV prevention programming as well as to better respond to instances of GBV. As 82 % of FSWs reported experiencing some form of GBV in the past 6 months, continued surveillance or repeated surveys focusing on GBV and GBV-related interventions among at-risk populations is essential and should be encouraged. With the better understanding of the extent of GBV among FSWs in Kampala provided by this study, the effectiveness of interventions aimed at reducing the occurrence of GBV among this population should be evaluated.

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## References

1. Annan, K. Remarks on International Women's Day. Interagency videoconference for a World Free of Violence against Women; New York. 1999. <http://www.un.org/News/Press/docs/1999/19990308.sgsm6919.html>
2. United Nations Population Fund. Gender equality. <http://www.unfpa.org/gender/violence.htm>.
3. United Nations. Unite to end violence against women. New York: United Nations Department of Public Information; 2008.
4. World Health Organization. Geneva: World Health Organization; 2005. WHO multi-country study on women's health and domestic violence against women: a summary report on initial results on prevalence, health outcomes, and women's responses.
5. Bloom, S. Violence against women and girls: A compendium of monitoring and evaluation indicators. Chapel Hill: Measure Evaluation; 2008.
6. United Nations. Declaration on the elimination of violence against women. New York: United Nations General Assembly; 1993.
7. Gardsbane, D. Gender-based violence and HIV. Arlington: USAID; 2010.
8. Cruz, A.; Klinger, S. Gender-based violence in the world of work: Overview and selected annotated bibliography. Geneva: International Labor Organization; 2011.
9. Meshkat, N.; Landes, M. Gender-based violence: a call to action. In: Finkel, M., editor. Public Health in the 21st Century. California: Praeger; 2011. p. 323-346.
10. World Health Organization. Geneva: World Health Organization; 2005. Integrating poverty and gender into health programs: a sourcebook for health professionals.
11. Silverman J, Gupta J, Decker M, Kapur N, Raj A. Intimate partner violence and unwanted pregnancy, miscarriage, induced abortion, and stillbirth among a sample of Bangladeshi women. *BJOG*. 2007; 114:1246–1252. [PubMed: 17877676]
12. Gostin L, Lazzarini Z, Alexander D, et al. HIV testing, counseling, and prophylaxis after sexual assault. *JAMA*. 1994; 271:1436–1444. [PubMed: 8176804]
13. Dearwater S, Coben J, Nah G, et al. Prevalence of intimate partner violence in women treated at community hospital emergency departments. *JAMA*. 1998; 280:433–438. [PubMed: 9701078]
14. Shannon K, Kerr T, Strathdee S, et al. Prevalence and structural correlates of gender based violence among a prospective cohort of female sex workers. *BMJ*. 2009; 339:b2939. [PubMed: 19671935]
15. Astbury J. Violence against women and girls: mapping the health consequences. *Int Congr Ser*. 2006; 1287:49–53.
16. Coker A, Smith P, Bethea L, King M, McKeown R. Physical health consequences of physical and psychological intimate partner violence. *Arch Fam Med*. 2000; 9:451–457. [PubMed: 10810951]
17. Kouyoumdjian FG, Calzavara LM, Bondy SJ, et al. Intimate partner violence is associated with incident HIV infection in women in Uganda. *AIDS*. 2013; 27(8):1331–1338. [PubMed: 23925380]
18. Kenya National Bureau of Statistics. Kenya demographic and health survey 2008–2009. Calverton: KNBS and Macro International; 2010.
19. Jewkes R, Abrahams N. The epidemiology of rape and sexual coercion in South Africa: an overview. *Social Sci Med*. 2002; 55:1231–1244.
20. Oduro GY, Swartz S, Arnot M. Gender-based violence: young women's experiences in the slums and streets of three sub-Saharan African cities. *Theory Res Edu*. 2012; 10(3):275–294.
21. World Health Organization. Geneva: World Health Organization; 2002. International data on percentage of adolescent females reporting forced sexual initiation.

22. Uganda Bureau of Statistics (UBOS), & ICF International, Inc.. Uganda demographic and health survey 2011. Kampala, Uganda: UBOS and Calverton : ICF International, Inc; 2012.
23. Watts C, Zimmerman C. Violence against women: global scope and magnitude. *Lancet*. 2002; 359:1232–1237. [PubMed: 11955557]
24. Gable L, Gostin L, Hodge JJ. HIV/AIDS, reproductive and sexual health, and the law. *Amer J Public Health*. 2008; 98(10):1779–1786. [PubMed: 18703431]
25. Beattie T, Bhattacharjee P, Ramesh B, et al. Violence against female sex workers in Karnataka state, south India: impact on health, and reductions in violence following an intervention program. *BMC Public Health*. 2010; 10:476. [PubMed: 20701791]
26. Rhodes T, Simic M, Baros S, Platt L, Zikic B. Police violence and sexual risk among female and transvestite sex workers in Serbia: qualitative study. *BMJ*. 2008; 337:a811. [PubMed: 18667468]
27. Evans C, Lambert H. The limits of behavior change theory: condom use and contexts of HIV risk in the Kolkata sex industry. *Cult Health Sex*. 2008; 10(1):27–42. [PubMed: 18038279]
28. Panchanadeswaran S, Johnson S, Sivaram M, et al. Intimate partner violence is as important as client violence in increasing street-based female sex workers' vulnerability to HIV in India. *Int J Drug Policy*. 2008; 19(2):106–112. [PubMed: 18187314]
29. Campbell J. Health consequences of intimate partner violence. *Lancet*. 2002; 359:1331–1336. [PubMed: 11965295]
30. Dunkle K, Jewkes R, Brown H, Gray G, McIntyre J, Harlow S. Gender-based violence, relationship power and risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet*. 2004; 363:1415–1421. [PubMed: 15121402]
31. Maman S, Mbwapo J, Hogan N, Kilonzo G, Sweat M. Women's barriers to HIV-1 testing and disclosure: challenges for HIV-1 voluntary counseling and testing. *AIDS Care*. 2001; 13:595–603. [PubMed: 11571006]
32. Lang D, Salazar L, Wingood G, Diclemente R, Mikhail I. Associations between recent gender-based violence and pregnancy, sexually transmitted infections, condom use practices and negotiation of sexual practices among HIV-positive women. *J Acquir Immune Defic Syndr*. 2007; 46:216–221. [PubMed: 17693895]
33. Heckathorn DD. Respondent-driven sampling II: deriving valid population estimates from chain-referral samples of hidden populations. *Soc Probl*. 2002; 49(1):11–34.
34. Heckathorn DD. Extensions of respondent-driven sampling II: analyzing continuous variables and controlling for differential recruitment. *Sociol Methods*. 2007; 37(1):151–207.
35. Mangani R, Sabin K, Saidel T, Heckathorn DD. Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS*. 2005; 19(S2):S67–S72.
36. Van der Elst EM, Okuku HS, Makanya P, et al. Is audio computer-assisted self-interview (ACASI) useful in risk behavior assessment of female and male sex workers, Mombasa, Kenya? *PLoS ONE*. 2009; 4(5):e5340. [PubMed: 19412535]
37. Harmon T, Turner CF, Rogers SM, et al. Impact of T-ACASI on survey measurements of subjective phenomena. *Public Opin Q*. 2009; 73(2):255–280. [PubMed: 22476560]
38. World Health Organization. Geneva: World Health Organization; 2005. Violence against sex workers and HIV prevention.
39. Church S, Henderson M, Barnard M, Hart G. Violence by clients towards female prostitutes in different work settings: questionnaire survey. *BMJ*. 2001; 322:524–525. [PubMed: 11230067]
40. Pauw I, Brener L. You are just whores-you can't be raped. *Cult Health Sex*. 2003; 5:465–481.
41. Odireleng P, Keitseope N, Ntseane D. Alcohol abuse, gender-based violence, and HIV/AIDS in Botswana: establishing the link based on empirical evidence. *SAHARA J*. 2005; 2(1):188–202. [PubMed: 17601023]
42. Pando MA, Coloccini RS, Reynaga E, et al. Violence as a barrier for HIV prevention among female sex workers in Argentina. *PLoS ONE*. 2013; 8(1):e54147. [PubMed: 23342092]
43. Swan H, O'Connell DJ. The impact of intimate partner violence on women's condom negotiation efficacy. *J Interpers Violence*. 2012; 27(4):775–792. [PubMed: 21987514]

44. Decker MR, McCauley HL, Phuengsamran D, et al. Violence victimization, sexual risk and sexually transmitted infection symptoms among female sex workers in Thailand. *Sex Transm Infect.* 2010; 86(3):236–240. [PubMed: 20444745]
45. Ghimire L, Smith WC, van Teijlingen ER, Dahal R, Luitel NP. Reasons for non-use of condoms and self-efficacy among female sex workers: a qualitative study in Nepal. *BMC Women's Health STDs.* 2011; 11:42.
46. El-Bassel N, et al. Correlates of partner violence among female street-based sex workers: substance abuse, history of childhood abuse, and HIV risks. *AIDS Patient Care STDs.* 2001; 15(1): 41–51. [PubMed: 11177587]
47. United Nations Development Programme. Global commission on HIV and the law: Risks, rights, and health. New York: UNDP; 2012.
48. Irwin K, Edlin B, Wong L, et al. Urban rape survivors: characteristics and prevalence of human immunodeficiency virus and other sexually transmitted infections. *Obstet Gynecol.* 1995; 85:330–336. [PubMed: 7862367]
49. El-Bassel N, Schilling R, Irwin K, et al. Sex trading and psychological distress among women recruited from the streets of Harlem. *Am J Pub Health.* 1997; 87:66–70. [PubMed: 9065229]
50. World Health Organization. Geneva: World Health Organization; 2012. Prevention and treatment of HIV and other sexually transmitted infections for sex workers in low- and middle-income countries: recommendations for a public health approach.
51. Beyrer, C.; Grady, C.; Bekker, LG., et al. Washington: PEPFAR; 2012. A framework for ethical engagement with key populations in PEPFAR programs. <http://www.pepfar.gov/sab/210110.htm> [Accessed 12 Sep 2013]
52. Kerrigan D, Moreno L, Rosario S, et al. Environmental-structural interventions to reduce HIV/STI risk among female sex workers in the Dominican Republic. *Am J Pub Health.* 2006; 96(1):120–125. [PubMed: 16317215]
53. Rau, B. The Avahan-India AIDS Initiative. Arlington: USAID; 2011. [http://www.aidstar-one.com/sites/default/files/AIDSTAR-One\\_case\\_Study\\_combination\\_prevention\\_avahan.pdf](http://www.aidstar-one.com/sites/default/files/AIDSTAR-One_case_Study_combination_prevention_avahan.pdf) [Accessed 3 Nov 2013]
54. Carlson CE, Chen J, Chang M, et al. Reducing intimate and paying partner violence against women who exchange sex in Mongolia: results from a randomized clinical control trial. *J Interpers Violence.* 2012; 27(1):1911–1931. [PubMed: 22366477]
55. Zhongdan C, Schilling RF, Shanbo W, Caiyan C, Wang Z, Jianguo S. The 100% condom use program: a demonstration in Wuhan, China. *Eval Program Plann.* 2008; 31(1):10–21. [PubMed: 17976720]
56. Rojanapithayakorn W. The 100% condom use program in Asia. *Reproductive Health Matters.* 2006; 14(28):41–52. [PubMed: 17101421]
57. Woolf-King SE, Maisto SA. Alcohol use and high-risk sexual behavior in Sub-Saharan Africa: a narrative review. *Arch Sex Behav.* 2011; 40:17–42. [PubMed: 19705274]
58. Small E, Nikolova SP, Narendorf SC. Synthesizing gender-based HIV interventions in Sub-Saharan Africa: a systematic review of the evidence. *AIDS Behav.* 2013; 17:1–14. [PubMed: 23054037]
59. Esuer SM, Souverein D, Gowda PRN, et al. Pragati: an empowerment programme for female sex workers. *Glob Health Action.* 2012; 5:1–11.

**Table 1**

Participant demographic information for study participants (N = 1,467)

<b>Characteristic</b>	<b>n</b>	<b>% (95% Confidence interval)</b>
Age (years), median [IQR]		28 (IQR: 2–33)
24 years	404	31 (27–34)
25 years	1,061	69 (66–73)
Years of school, median [IQR]		6 (IQR: 0–10)
6 years	781	54 (50–57)
7 years	686	46 (43–50)
Years as a sex worker, median [IQR]		2 (IQR: 1–5)
2 years	775	59 (56–63)
3 years	691	41 (38–44)
Sex work is main source of income	1,380	95 (93–96)

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**Table 2**

Number (%) of FSWs reporting experience of client-initiated GBV by type in prior 6 months (N = 1,201);  
number of experiences of client-initiated GBV in prior 6 months (N = 1,467)

	<b>n</b>	<b>Estimated Population % (95 % CI)</b>
Type of GBV experience		
Physical abuse	575	40 (37–43)
Verbal abuse	656	45 (42–49)
Forced sex acts	720	50 (46–53)
Paid less than agreed	1,069	72 (69–75)
No money paid after sex	806	56 (52–59)
Number of experiences of GBV		
0	266	18 (16–22)
1	209	13 (11–15)
2	243	17 (15–20)
3	201	14 (12–16)
4	212	15 (12–17)
5	336	23 (20–36)
Perpetrator during last rape		
Family member	31	4 (2–7)
Own sex partner	268	42 (35–47)
Friend	121	12 (10–18)
Authority figure	50	6 (3–9)
Stranger	266	36 (30–43)
Number of rape occurrences, prior 6 months		
0	130	19 (14–25)
1–2	330	43 (37–49)
3	276	38 (32–44)

**Table 3**  
Risk factors for experience of client-initiated GBV by sex work characteristics—previous 6 months (N = 1,467)

Factors	Physical abuse		Verbal abuse		Forced sex acts	
	Unadjusted OR (95 %)	Adjusted OR (95 %)	Unadjusted OR (95 %)	Adjusted OR (95 %)	Unadjusted OR (95 %)	Adjusted OR (95 %)
Years as a sex worker*	1.03 (0.99–1.07)		1.07 (1.03–1.11)	1.07 (1.02–1.11)	1.07 (1.03–1.11)	1.02 (1.01–1.10)
Location clients are met						
Street	Reference		Reference		Reference	
Phone/internet	0.63 (0.41–0.97)		0.54 (0.35–0.82)		0.71 (0.47–1.08)	
Hotel	0.59 (0.39–0.90)		0.50 (0.30–0.75)		0.67 (0.45–1.00)	
Club/bar	0.86 (0.60–1.21)		0.69 (0.49–0.97)		0.82 (0.59–1.16)	
Private place	0.96 (0.59–1.55)		0.78 (0.49–1.26)		0.88 (0.55–1.42)	
Brothel	1.29 (0.74–2.23)		0.72 (0.44–1.34)		0.96 (0.55–1.70)	
Location sex with client occurs*						
Open space	Reference	Reference	Reference		Reference	
My home	0.12 (0.03–0.50)	0.12 (0.03–0.49)	0.49 (0.14–1.70)		0.63 (0.19–2.10)	
Client's/other home	0.20 (0.05–0.85)	0.17 (0.04–0.74)	0.75 (0.21–2.71)		0.88 (0.26–3.04)	
Hotel	0.16 (0.03–0.88)	0.12 (0.02–0.68)	1.54 (0.30–7.20)		0.95 (0.21–4.26)	
Age	1.00 (0.99–1.00)		1.00 (0.99–1.00)		1.00 (0.99–1.00)	
Location woman works*						
Bar/club	Reference		Reference		Reference	
Hotel	0.94 (0.70–1.26)		0.90 (0.67–1.21)		0.91 (0.68–1.21)	
Shop/market	0.68 (0.78–1.64)		1.24 (0.56–2.73)		0.51 (0.22–1.21)	
Other	0.64 (0.40–1.03)		0.75 (0.48–1.17)		1.03 (0.67–1.58)	
Access to STD counseling/testing	1.17 (0.83–1.64)		0.78 (0.56–1.08)		1.11 (0.80–1.54)	
Access to HIV testing/counseling	1.04 (0.71–1.52)		1.00 (0.70–1.46)		1.00 (0.70–1.46)	
Alcoholic drinks when drinking*						
0	Reference	Reference	Reference		Reference	Reference
1–2	1.61 (1.01–2.57)	1.46 (0.89–2.40)	1.17 (1.11–2.65)		1.54 (1.01–2.35)	1.08 (0.59–2.00)
3–4	1.47 (0.89–2.43)	1.24 (0.73–2.10)	2.04 (1.27–3.26)		1.76 (1.12–2.78)	1.36 (0.87–2.13)
5+	3.06(1.84–5.07)	2.60 (1.54–4.43)	2.72 (1.68–4.40)		2.56 (1.60–4.11)	1.37 (0.85–2.22)

Factors	Physical abuse		Verbal abuse		Forced sex acts	
	Unadjusted OR (95 %)	Adjusted OR (95 %)	Unadjusted OR (95 %)	Adjusted OR (95 %)	Unadjusted OR (95 %)	Adjusted OR (95 %)
Client demand– no condom use*	Reference	Reference	Reference	Reference	Reference	Reference
Never	2.12 (1.08–4.19)	1.99 (0.97–4.06)	2.60 (1.46–4.63)	2.47 (1.37–4.45)	1.73 (1.00–2.96)	1.65 (0.95–2.86)
Rarely	4.03 (2.08–7.80)	3.95 (1.98–7.91)	5.23 (2.98–9.16)	4.87 (2.76–8.62)	4.00 (2.37–6.77)	3.79 (2.24–6.46)
Sometimes	6.5 (3.31–12.79)	6.01 (2.98–12.14)	7.52 (4.21–13.44)	7.10 (3.94–12.78)	5.60 (3.24–9.70)	5.27 (3.02–9.19)
Frequently						

\* P < 0.25, entered into multivariate model

**Table 4**

Risk factors for experience of client-initiated GBV by sex work characteristics—previous 6 months

Factors	Paid less		Not paid at all	
	Unadjusted OR (95 %)	Adjusted OR (95 %)	Unadjusted OR (95 %)	Adjusted OR (95 %)
Years as a sex worker*	1.07 (1.01–1.13)	1.07 (1.01–1.13)	1.06 (1.02–1.11)	1.06 (1.01–1.10)
Location clients are met				
Street	Reference		Reference	
Phone/internet	0.71 (0.45–1.12)		0.74 (0.49–1.13)	
Hotel	0.52 (0.34–0.81)		0.47 (0.32–0.70)	
Club/bar	1.02 (0.68–1.54)		0.79 (0.56–1.12)	
Private place	0.61 (0.36–1.04)		0.70 (0.43–1.13)	
Brothel	0.95 (0.49–1.83)		0.82 (0.47–1.44)	
Location sex with client occurs				
Open space	Reference		Reference	
My home	0.50 (0.23–1.97)		0.33 (0.09–1.19)	
Client's/other home	0.65 (0.16–2.65)		0.51 (0.14–1.91)	
Hotel	1.12 (0.19–6.52)		0.72 (0.15–3.48)	
Age	1.00 (0.99–1.00)		1.00 (1.00–1.00)	
Location woman works				
Bar/club	Reference		Reference	
Hotel	0.84 (0.47–1.40)		0.91 (0.68–1.22)	
Shop/market	0.86 (0.34–2.17)		0.61 (0.27–1.35)	
Other	0.56 (0.36–0.89)		0.67 (0.44–1.03)	
Access to STD counseling/testing	1.00 (0.66–1.51)		0.89 (0.63–1.25)	
Access to HIV Testing/counseling	1.00 (0.68–1.48)		0.93 (0.64–1.34)	
Alcoholic drinks when drinking				
0	Reference		Reference	
1–2	1.76 (1.13–2.73)		1.57 (1.03–2.40)	
3–4	2.62 (1.58–4.33)		1.50 (0.95–2.38)	
5+	2.15 (1.28–3.60)		2.42 (1.49–3.92)	
Client demand for no condom use*				
Never	Reference	Reference	Reference	Reference
Rarely	1.55 (0.96–2.53)	1.53 (0.94–2.49)	1.38 (0.84–2.26)	1.31 (0.80–2.16)
Sometimes	3.00 (1.85–4.87)	2.90 (1.78–4.70)	3.17 (1.96–5.13)	2.90 (1.84–4.86)
Frequently	5.26 (3.08–9.00)	5.19 (3.03–8.88)	4.73 (2.84–7.85)	4.48 (2.69–7.48)

\* P &lt; 0.25, entered into multivariate model