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Unseen, unheard and unprotected: prevalence and correlates of violence among female sex workers in Mozambique

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Abstract

Violence against women, including female sex workers, is a public health concern worldwide. This is the first study in Mozambique to estimate the prevalence of and factors associated with physical and sexual violence against female sex workers. We used data collected from 1,250 women recruited using respondent-driven sampling in the cities of Maputo, Beira and Nampula in 2011–12. Participants were 15 years of age and reported having had sex for money in the preceding six months. Prevalence of physical or sexual violence (defined as being hit or battered or raped or forced to have sex within the last 6 months) ranged from 10.0% to 25.6%. Strangers (37.0%) and acquaintances (31.2%) were reported to be the most frequent perpetrators of sexual violence. Among participants who experienced sexual violence, 65.9% and 87.0% did not seek medical care and police assistance, respectively. Physical or sexual violence was associated with city (adjusted odds ratio [AOR] 2.6 and 2.0 Nampula and Beira vs Maputo), age (AOR 1.9, aged 15–24 years vs aged 25 and older), unprotected sex with last client (AOR 1.6) and self-reported sexually transmitted infections (AOR 2.1). The high prevalence of violence found confirms the need for interventions to mitigate this problem.

Keywords

female sex workers; gender-based violence; STI; HIV; Mozambique

Introduction

Gender-based violence, defined as ‘any act of violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, by any person regardless of their relationship to the victim, in any setting’, is a human rights and public health issue associated with complex physical, mental, sexual, reproductive and general health problems

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[1]·Support Centres for Women and Children Victims of Violence (*Gabinetes de Atendimento Integrado à Mulher e Criança Vitima de Violência in Portuguese*) are dedicated safe spaces located within police stations in Mozambique. The centres are staffed entirely by specially trained female police officers who provide assistance to women and children reporting abuse, sexual assault, domestic violence or any form of gender-based violence.

(World Health Organization 2017, 2). The consequences of gender-based violence include fatal and non-fatal injuries, depression, post-traumatic stress, sexually transmitted infections (STI), chronic diseases, unintended pregnancies, unsafe abortions and substance abuse (Pico-Alfonso et al. 2006; García-Moreno et al. 2013). Gender-based violence also has social and economic costs that hinder national development goals (Duvvury et al. 2013; United Nations 2015a).

An estimated 35% of women globally have experienced gender-based violence; among women in relationships, 30% have experienced intimate partner physical or sexual violence (García-Moreno et al. 2013; Devries et al. 2013). Gender-based violence prevalence is highest in Africa, where almost half of countries report lifetime prevalence among women over 40% (United Nations 2015b). Few data on gender-based violence are available for Mozambique. The 2011 Mozambican Demographic Health Survey (DHS) found that 46% of married or cohabitating women aged 15–49 years had experienced physical or sexual violence in the past year (Instituto Nacional de Estatística 2013). A study of women who sought forensic services at the Maputo Central Hospital found that, of the 1,433 participants, 55% had experienced severe intimate partner violence and 29% had been sexually coerced in the 12 months prior to seeking services (Zacarias et al. 2012).

Female sex workers are particularly vulnerable to physical and sexual violence (Dunkle and Decker 2013) because of sociocultural and structural factors such as stigma and discrimination, gender-based power disparities, economic inequalities, mobility and migratory lifestyle, trafficking or forced labour experiences, the legal status of sex work, policing practices and patriarchal attitudes (Deering et al. 2014; Ramesh et al. 2012; Okal et al. 2011; Shannon et al. 2015; Renzaho and Pallotta-Chiarolli 2009; Pauw and Brener 2003; Agha and Nchima 2004; Scorgie et al. 2013). A systematic review of workplace violence against female sex workers globally found lifetime prevalence ranging from 45% to 75% and 12-month prevalence from 32%–55% (Deering et al. 2014). Studies in sub-Saharan Africa report lifetime physical and sexual violence ranging from 47% to 82% and, in one study, a 71% prevalence of violence in the past 12 months (Mooney et al. 2013; Alemayehu et al. 2015; Coetzee, Gray and Jewkes 2017; Coetzee, Jewkes and Gray 2017; Muldoon et al. 2017; Lim et al. 2015; Wirtz et al. 2015; Decker et al. 2016; Schwitters et al. 2015; Lyons et al. 2017).

Violence against female sex workers often results from negotiations for payment, condom use and sexual encounter duration (Kiernan, Mishori and Masoda 2016; Schulkind et al. 2016). Negotiations are complicated and often deteriorate in work environments where alcohol use is common (Leddy et al. 2018; Schulkind et al. 2016; Schwitters et al. 2015; Wilson et al. 2016; Panchanadeswaran et al. 2008; Mbonye et al. 2014; Lees et al. 2009). The resulting violence causes women to have decreased condom self-efficacy and consistent condom use with clients, and an increased risk of gonorrhoea, syphilis and HIV infection (Dunkle and Decker 2013; Ramesh et al. 2012; Shannon et al. 2015; Beattie et al. 2015; Reed et al. 2016; Goodman-Meza et al. 2014; Madhivanan et al. 2005). Preventing violence improves health outcomes and has the potential to avert approximately 20% of new HIV infections among female sex workers; modelling also demonstrates that there are cascading

prevention benefits for clients and the general population (Shannon et al. 2015; Decker et al. 2013).

Research on female sex workers in Mozambique is limited, and no specific data on gender-based violence or vulnerability to violence existed prior to this survey. Although sex work is now legal in the country, acts defined as contrary to decency and public morals are excluded (Republica de Moçambique 2014). This leaves sex workers vulnerable to harassment and prosecution. Female sex workers also face great health risks in Mozambique, where the HIV prevalence among this group of women is high (17.8%–31.2%) (Augusto et al. 2016). We present study results describing violence and related risk factors with the goal of strengthening advocacy to reduce violence against female sex workers and informing HIV prevention programmes in Mozambique.

Methods

Study population and sampling

Our results are based on secondary data analysis of an integrated biological and behavioural surveillance study of female sex workers in Mozambique conducted between September 2011 to March 2012 in the cities and greater urban areas of Maputo, Beira and Nampula (Augusto et al. 2016). The objective of the main study was to assess HIV prevalence and associated risk factors (Augusto et al. 2016). This secondary analysis sought to measure physical and sexual violence and to identify key factors associated with assault.

The study used respondent-driven sampling, a systematic chain-referral methodology that has been widely used to sample female sex workers and other difficult-to-access populations (Heckathorn 2002, 1997; Malekinejad et al. 2008). Sampling began with the purposeful selection of participants, ‘seeds’, using diverse demographic characteristics (e.g. venue of sex work [street, bar, club, brothel, home], age, education, residence, nationality and language spoken) and size of social networks. The study team aimed to enrol women 15 years of age and older who received money from someone other than a main partner in exchange for sex in the six months preceding the survey. Women who were unable or unwilling to provide written informed consent and who did not present a valid survey coupon were excluded. A target sample size of 400 women per study site was established, assuming statistical power of 80% and a design effect of 2.0.

Study procedures

The study was implemented in discrete offices rented for the duration of enrolment. Non-descript recruitment coupons contained study location and contact information. Only individuals bearing a coupon were permitted access. Study staff screened potential participants to ensure eligibility and obtained informed consent before an interviewer administered a computer-assisted personal interview using Questionnaire Design Study software (QDS™) version 2.6.1. After completing study procedures, interviewers gave each participant study coupons to recruit other sex workers within their social network. Participants received a beauty kit (valued at ~US$8) and STI and HIV prevention materials (condoms, lubricants and brochures). Participants also received mobile phone vouchers

(valued at ~ US$2) for each eligible peer referred who enrolled in the study. The combined value of primary and secondary reimbursements was ~ US$10–15 per participant.

Measures—The survey tool was based on a standardised, behavioural questionnaire adapted for use in the Mozambican context (University of California San Francisco, and San Francisco Department of Public Health 2014). Specific domains included demographic characteristics, sexual history, sexual behaviour, experiences of violence and sexual aggression, alcohol and drug use and healthcare and prevention service utilisation. The questionnaire was piloted with female sex workers prior to implementation.

The outcome variable of our secondary analysis was based on an affirmative response to at least one of two questions: 'In the last six months, were you hit or beaten for being a female sex worker?' or 'Has anyone raped you or forced you to have sex in the last six months?' Although these questions address two types of violence, we used a single variable, composed of answers to both questions, in analysis because both types of violence directly place the sex worker in a vulnerable situation and the public health implications are similar. Additionally, we followed the methodology used in other regional studies on violence for better alignment and comparison (Deering et al. 2014; Berger et al. 2018).

Data analysis

We analysed data using RDSAT v7.0 and R Statistical Software v3.1 (R Development Core Team, Vienna, Austria). RDSAT 7-produced point estimates and boot-strapped 95% confidence intervals are presented. We used individual weights specific to the outcome of interest produced in RDSAT 7 for weighted logistic regression performed in R 3.1 to determine associations with violence.

We merged weighted data from all three surveys for multivariable logistic regression. We selected variables for multivariable modelling *a priori* based on the literature (Deering et al. 2014), policy importance or demonstrated bivariate association ($p < 0.2$) with violence. Missing responses were excluded from analysis. Alcohol consumption was excluded from models because of missing responses.

We developed several descriptive models, analysing two-way interactions between variables and potential confounders (e.g. age, education and city of residence). We removed variables based on analysis of deviance until Rao–Scott likelihood ratio tests indicated a significant ($p < 0.05$) change in model fit. We present the model with the best fit. Weighted odds ratios and Wald-test p-values are reported.

Ethical considerations—The National Bioethics Committee for Health in Mozambique, the Committee on Human Research of the University of California, San Francisco (UCSF) and the Center for Global Health at the US Centers for Disease Control and Prevention, approved the study. Ethical approval included authorisation to survey younger women between the ages of 15 and 17 as financially independent, emancipated minors who resided outside of their parental homes. Personal identifying information was not collected from participants, other than a signature on the informed consent form, which was kept securely stored at the survey site.

The study team received sensitivity training on the legal and psychosocial needs of female sex workers. The training, led by the African Sex Worker Alliance, included: an explanation of legal rights; instructions on providing referrals for HIV/STI testing and treatment; and guidance on accessing counselling and legal services for violence. In accordance with standard reporting procedures for healthcare workers in Mozambique, the study team gave participants information on services available at Support Centres for Women and Children Victims of Violence[1] within local police stations and the Human Rights League where survivors of violence were able to receive free legal counsel. To preserve anonymity, verifying the services received at these organisations was not feasible.

Results

Sample demographics

Recruitment, which began with seven seeds in Maputo, six in Beira and five in Nampula, lasted 26 weeks in Maputo, 18 weeks in Beira and 17 weeks in Nampula. Equilibrium was achieved on all variables, and homophily was low. The coupon return rates were 20% in Maputo (2,160 distributed by 411 participants), 33% in Beira (with 1,455 distributed by 411 participants) and 33% in Nampula (with 1,446 distributed by 429 participants). Most participants were 15–24 years old (73.5% in Maputo, 82.1% in Beira and 80.0% in Nampula) (Table 1). The majority of women (60.4% in Maputo, 61.0% in Beira and 69.0% in Nampula) had at least a middle school education and reported being single or never married (63.8%, 76.5% and 65.4% in Maputo, Beira and Nampula, respectively).

Nearly all female sex workers were younger than 18 years at sexual debut, and 42.6% in Maputo, 58.8% in Beira and 63.9% in Nampula were younger than 18 years when they had sex in exchange for money for the first time. Condom use at last sex with the last client ranged from 73.4% in Beira to 85.8% in Maputo. Symptoms or diagnosis of an STI in the six months preceding the survey were reported by 31.1% of participants in Maputo, 43.3% in Beira and 30.6% in Nampula. The population-adjusted prevalence of physical or sexual violence in the prior six months was 10.0% in Maputo, 22.8% in Beira and 25.6% in Nampula.

Perpetrators and reporting of sexual violence

Among the 1,240 participants, 138 (11.1%) reported at least one instance of forced sex in the past six months; the mean number of reported instances was 1.8 in all three cities (range 1–10) (Table 2). Strangers (37.0%), friends/acquaintances (31.2%) and clients/sexual partners (30.4%) were the main perpetrators of violence. Additionally, 68.1% of participants who experienced sexual violence reported that the most recent perpetrator did not use a condom. One-third (34.1%) of participants who experienced sexual violence sought medical services; 6.5% received medical treatment. Few female sex workers pursued justice or legal services: 13.0% reported the incident to the police, and 5.8% filed a report with the Support Centres for Women and Children Victims of Violence.

Disclosure statement

The authors have no conflicts of interest to disclose. The findings and conclusions in this manuscript are the authors' and do not necessarily represent the official position of the US CDC.

Independent associations with violence

In Maputo, physical and sexual violence was statistically associated with greater educational attainment (12.6% among female sex workers with secondary schooling or greater versus 5.0% with less education) and younger initiation to sex work (13.9% among participants who first had sex for money younger than 18 years versus 6.1% older than 18). In Beira, violence was positively associated with reported symptoms or diagnosis of an STI in the prior six months: 31.5% among those with an STI versus 15.9% among those without one. Variables independently associated with violence in Nampula included age (27.8% of female sex workers between 15–24 years old had experienced violence compared to 14.3% of women at least 25 years old), marital status (10.9% among married or cohabitating female sex workers compared to 28.3% among single or unmarried women) and number of stable sexual partners (38.6% among female sex workers with two or more non-client sex partners in the prior month compared to 21.7% among those without non-client partners). Associations by city are presented in Table 3.

Multivariable associations with violence

In multivariable analysis (Table 4), female sex workers from Nampula and Beira had twice the odds of experiencing violence compared to women from Maputo (adjusted odds ratio [AOR] = 2.6, 95% CI: 1.8–4.0 in Nampula and AOR = 2.0, 95% CI: 1.3–3.1 in Beira), as did female sex workers aged 15–24 years (AOR = 1.9, 95% CI: 1.2–2.9). Odds of violence were greater among female sex workers with a self-reported STI in the prior six months (AOR = 2.1, 95% CI: 1.6–2.9), and among those that did not use a condom at last sex with a client (AOR = 1.6, 95% CI: 1.2–2.2). Educational level, marital status and language spoken at home were not significantly associated with violence in multivariable analysis.

Discussion

Our analysis reveals that female sex workers in Mozambique experienced high levels of physical and sexual violence, which notably is associated with condomless sex with clients and STI symptoms. This finding is consistent with those in other settings and has important public health implications (Dunkle and Decker 2013; Ramesh et al. 2012; Shannon et al. 2015; Beattie et al. 2015; Reed et al. 2016). During a violent encounter, a woman's ability to negotiate the circumstances of sex (e.g. where the sexual exchange occurs and what type of sex transpires) is compromised, and HIV and STI prevention is often sacrificed in the face of implied pressure or overt coercion (Dunkle and Decker 2013; Lees et al. 2009). A mediating factor for violence and aggression is often a client's desire for condomless sex and the woman's resistance (Dunkle and Decker 2013; Okal et al. 2011; Kiernan, Mishori and Masoda 2016; Schulkind et al. 2016).

Our study also showed that women aged 15–24 years were almost twice as likely to have experienced violence as female sex workers older than 25 years. Consistent with our findings, other research shows that adolescent age at sex work entry and less sex work experience is associated with greater vulnerability to physical and sexual violence (Alemayehu et al. 2015; Silverman 2011). In contrast, older women with more experience

may mitigate threats by identifying potentially violent clients, securing safer work locations and reducing police conflict (Okal et al. 2011).

Another striking study finding was the small proportion of female sex workers who sought legal recourse or medical care after experiencing physical or sexual assault. Reporting violence to the police, in particular, may be perceived as a risk because police in many settings use the law to harass, threaten, beat and sexually coerce female sex workers (Decker et al. 2015; Arnott and Crago 2009; Schulkind et al. 2016; Pauw and Brener 2003; Agha and Nchima 2004; Onyango et al. 2015). This was likely a concern of participants in Mozambique during our study implementation when a penal code from 1886 provided the legal framework (Republica Portuguesa 1919) and stated that the 'prostitute' may be subject to security measures in cases of '… public scandal or continuously disobey[ing] the police prescription'. This code, which permitted subjective police interpretation, was replaced with an updated code in 2014 that still leaves female sex workers in a precarious position by penalising behaviour against decency and public morals (República de Moçambique 2014). In medical settings, the Ministry of Health encourages providers to report violence and refer survivors to legal services (Romão et al. 2012); however, stigma experienced in some clinics, combined with uncertain legal standing, could deter female sex workers from seeking medical care.

The regional variation in the prevalence of violence experienced by female sex workers (10.0% in Maputo, 22.8% in Beira and 25.6% in Nampula) may highlight cultural, religious and societal factors in Mozambique (Audet et al. 2010) that require ethnographic research to be better understood. For example, the cities have differing urbanity, educational access and migration to and from neighbouring countries (Raimundo 2009; van der Berg, da Maia and Burger 2017) that may influence violence. Similarly, further exploration is needed on the observed differences between our data and violence experienced nationally and by female sex workers regionally. The prevalence of violence against participants in our study, although unacceptably high, was lower than the prevalence of violence experienced by Mozambican women in the general population and female sex workers in other sub-Saharan African countries (Instituto Nacional de Estatística 2013; Berger et al. 2018; Misganaw and Worku 2013; Renzaho and Pallotta-Chiarolli 2009; Muldoon et al. 2017; Wilson et al. 2016; Fawole and Dagunduro 2014; Alemayehu et al. 2015; Micheni et al. 2015; Sherwood et al. 2015; Mooney et al. 2013; Schwitters et al. 2015).

We recognise that a large proportion of the survey sample was composed of younger women, and age, an important confounding variable, may limit generalisability of our findings to the total female sex worker population of each city. Nevertheless, coupon return rates were similar to other studies, and weighting accounts for population age distribution. Another limitation derives from the secondary nature of this analysis, which uses data collected primarily to measure HIV prevalence. This resulted in a limited number of violence-related questions and insufficient power to analyse sexual and physical violence separately. Additionally, the definition used in the survey included only sex work-related physical violence and, as such, does not capture other experiences. The lack of consistent definitions of violence and reference time periods across studies obfuscates differences and makes comparisons difficult. For example, physical violence in our survey was defined as

being hit or beaten in the prior six months specifically for being a female sex worker, whereas the DHS defines physical violence more broadly with a 12-month period of exposure. The reliance on self-reported violence also may have biased results. Participants may have been reluctant to disclose their experience with violence and/or may have misclassified violence, associating it with terms of sex work. It is well-documented that many female sex workers view violence as 'part of the job' and forced sex as repayment for food and drinks consumed (Okal et al. 2011; Decker et al. 2015; Leddy et al. 2018). Finally, the exclusion of alcohol use from analysis because of missing responses is a limitation as it is an important factor in violence against female sex workers (Leddy et al. 2018; Schulkind et al. 2016; Schwitters et al. 2015; Wilson et al. 2016; Panchanadeswaran et al. 2008; Mbonye et al. 2014).

Despite these limitations, our analysis highlights female sex worker vulnerability in Mozambique and the need for comprehensive services to address the complexity of violence and resulting risks for survivors. At the individual level, female sex workers could benefit from integrated programmes that combine HIV and STI interventions with gender-based violence prevention (Bekker et al. 2015; Schulkind et al. 2016). Model programming has demonstrated reduced violence and STI prevalence using strategies such as peer outreach, condom promotion and provision and HIV and STI testing and treatment (Beattie et al. 2015). Another potential component of comprehensive services for female sex workers in Mozambique is cash transfers. This may limit early sex work debut, thereby reducing the risk of violence for younger women, and reduce dependence on violent sexual relationships for monetary gain (Fulu, Kerr-Wilson and Lang 2014). Given the increased risk of sexual infection from condomless penetration, the provision of pre-exposure prophylaxis (PrEP) for HIV should also be standard to keep uninfected women healthy. Following an assault, presumptive STI treatment, emergency contraception and post-exposure prophylaxis (PEP) also should be routinely administered. The inclusion of mental health interventions is equally important, as female sex workers who are sexually assaulted have a high burden of post-traumatic stress disorder (Rossler et al. 2010).

At the community and structural levels, efforts to mitigate violence against female sex workers in Mozambique should include strengthening networks, providing advocacy and legal support and promoting safer work environments. Peer support, galvanised by the formal or informal creation of female sex worker associations, can facilitate 'bad date' warning systems as an additional method of protection from violence (Goldenberg, Duff and Krusi 2015; Lim et al. 2015; Schulkind et al. 2016; Leddy et al. 2018; Cange et al. 2017). This strategy, along with guidance from experienced female sex workers (Stadler and Delany 2006), may benefit younger women who were more vulnerable in our study. Rapid violence response through 24-hour crisis management teams has also proven to be effective elsewhere (Beattie et al. 2015). Simple structural strategies to promote safer work environments include making changes to venues (e.g. improving the lighting), enacting supportive managerial practices (e.g. restricting alcohol sales to inebriated clients), providing accessible HIV/STI prevention and improving relations with police (Shannon et al. 2015; Goldenberg, Duff and Krusi 2015). As previously noted, the police who interpret laws governing sex work contribute to an environment in which violence against female sex workers is tolerated and easily perpetrated (Decker et al. 2015; Pauw and Brener 2003;

Agha and Nchima 2004; Schulkind et al. 2016). In the absence of clear legislation that decriminalises sex work in Mozambique, there is a need to clarify how the current code is operationalised and interpreted by the judicial system and police in an effort to better protect the rights and health of female sex workers.

Comprehensive services and policy strategies constitute an appropriate public health response to violence perpetrated against female sex workers in Mozambique that will benefit the communities where they work and reduce new HIV infections attributable to sex work. Therefore, violence prevention for female sex workers should be a priority for the country's HIV care and treatment strategy.

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Table 1.

Sample description and prevalence of physical and sexual violence among female sex workers, Mozambique, 2012.

	Maputo (N = 400)				Beira (N = 411)				Nampula (N = 429)			
	Sample		Adjusted*		Sample		Adjusted*		Sample		Adjusted	
	n	%	%	(95% Cl)	n	%	%	(95% Cl)	n	%		(95% Cl)
Ages 15–24 years old	238	59.5	73.5	(69.0–83.4)	317	77.1	82.1	(76.9–86.7)	333	78.0	80.0	(75.1–85.9)
Primary/no formal education	177	44.4	39.6	(32.0–47.3)	168	41.0	39.0	(32.5–45.9)	113	26.4	31.0	(23.8–36.8)
Spoke primarily Portuguese at home	232	58.1	53.6	(46.0–60.7)	143	34.9	34.1	(28.4–40.0)	205	47.9	48.4	(41.3–55.0)
Marital status												
Single	227	56.9	63.8	(57.9–71.4)	293	71.5	76.5	(71.3–81.4)	278	65.0	65.4	(58.3–71.4)
Married/cohabitating	31	7.8	4.6	(2.5–8.0)	19	4.6	4.4	(2.3–6.6)	37	8.6	10.6	(6.7–14.8)
Divorced/widowed/separated	141	35.3	31.6	(24.0–36.9)	98	23.9	19.1	(14.6–24.0)	113	26.4	24.0	(19.0–30.3)
<18 years old at sexual debut	372	95.4	95.9	(93.0–98.1)	381	94.3	94.2	(90.7–9.7)	411	96.3	96.7	(94.5–98.5)
<18 years old when first had sex for money	142	35.7	42.6	(35.5–50.3)	232	57.3	58.8	(51.9–64.6)	273	63.9	63.9	(56.8–71.3)
Income earned from work besides sex work, past 6 months	103	25.8	23.7	(18.1–29.4)	129	31.5	30.4	(24.9–36.3)	62	14.5	16.8	(12.0–22.0)
Condomless sex with last client	45	11.3	14.2	(10.0–19.1)	109	26.7	26.6	(20.8–32.4)	162	37.9	37.2	(30.6–43.5)
Alcohol use indicative of abuse or dependence (AUDIT-C)	180	46.3	44.5	(38.1–51.6)	204	49.9	50.0	(44.1–56.1)	185	43.2	41.3	(34.0–48.2)
STI symptom or diagnosis, past 6 months	106	26.6	31.1	(25.2–37.7)	171	41.8	43.3	(37.3–48.7)	119	27.8	30.6	(24.2–37.2)
Hit or beaten for being a female sex worker, past 6 months	26	6.5	6.4	(3.8–9.5)	55	13.4	11.6	(7.6–15.7)	65	15.2	14.9	(10.9–19.4)
Raped or forced to have non-consensual sex, past 6 months	18	4.5	4.2	(2.2–6.5)	55	13.4	11.6	(7.6–15.7)	83	19.5	18.5	(13.9–23.5)

*Weighted estimates and boot-strapped confidence intervals produced in RDSAT 7.

Table 2.

Health-seeking behaviours among female sex workers (n = 139) who were raped or forced to have sex in the last six months, Mozambique, 2012.

	n = 138*	Mean (min, max) or %
Number of times sexually assaulted in past 6 months	138	1.8 (1.0, 10.0)
Main perpetrator of last sexual assault was a:		
Stranger (previously unknown individual)	51	37.0
Friend/acquaintance	43	31.2
Client/sexual partner	42	30.4
Other	2	1.4
Sought medical treatment after last assault	47	34.1
Received medical treatment after last assault	9	6.5
Reported incident to the police	18	13.0
Reported incident to the Support Centres for Women and Children Victims of Violence	8	5.8
Condom was not used by the perpetrator at last sexual assault	94	68.1

*Estimates are unweighted.

Table 3.

Prevalence of violence by female sex worker socio-demographic and behavioural characteristics, Mozambique, 2012.

	Maputo			Beira			Nampula		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Age									
15–24	238	13.3	(9.1–18.2)	315	24.2	(18.4–30.6)	331	27.8	(21.9–34.5)
≥25	159	4.3	(0.9–9.0)*	94	16.4	(7.7–27.1)	96	14.3	(7.9–23.3)**
Spoke primarily Portuguese at home									
Yes	231	8.8	(4.7–13.7)	143	182	(10.2–26.9)	205	21.5	(15.4–29.0)
No	166	10.4	(5.7–15.9)	266	25.2	(18.9–31.5)	222	29.2	(21.8–36.6)
Level of education									
Primary/no formal	175	5.0	(1.5–8.8)	168	25.7	(17.3–33.9)	113	20.7	(13.4–28.1)*
Secondary or greater	222	12.6	(8.0–17.5)*	241	20.5	(13.8–27.5)	314	27.6	(21.2–34.3)
Marital status									
Single	226	11.3	(7.0–16.5)	292	25.4	(18.4–30.7)	278	28.3	(21.6–35.4)
Married/cohabitating	31	7.2	(0.0–21.6)	19	27.2	(5.9–53.6)	36	10.9	(3.1–23.5)*
Divorced/widowed/separated	140	8.5	(4.4–14.2)	98	16.1	(8.9–25.4)	113	22.6	(13.1–33.9)
Age of sexual debut									
<18	371	10.8	(7.2–14.8)	380	23.5	(18.0–29.0)	410	24.7	(19.8–30.3)
≥18	17	1.3	(0.0–5.5)	23	10.9	(0–28.1)	16	35.3	(9.2–68.0)
Age first sex for money									
<18	142	13.9	(8.2–21.9)	231	23.7	(16.6–30.3)	272	28.9	(21.8–35.9)
≥18	254	6.1	(2.8–9.4)*	173	21.7	(14.4–30.2)	154	20.9	(13.8–30.2)
Number of non-client partners, past month									
0	268	10.5	(6.3–15.0)	215	22.0	(15.2–29.6)	250	21.7	(15.8–28.6)
1	102	9.2	(3.8–17.4)	120	23.6	(13.7–34.4)	116	24.0	(15.7–34.8)
≥2	20	5.2	(0.0–13.0)	73	23.1	(12.8–34.5)	53	38.6	(21.6–57.0)**
Number of first-time clients, past month									
<2	209	10.2	(6.2–15.2)	188	24.4	(16.4–32.9)	254	24.2	(18.3–30.5)
≥2	179	7.6	(3.6–12.6)	214	21.9	(15.6–28.7)	163	27.1	(17.7–36.0)
STI symptom or diagnosis, past 6 months									
Yes	106	13.2	(7.2–20.2)	171	31.5	(22.6–40.6)	118	33.5	(22.5–46.2)
No	291	8.2	(4.8–12.0)	237	15.9	(10.8–21.7)	309	21.1	(16.6–27.5)**
Used a condom at last sex with last client									
Yes	351	9.6	(6.2–13.6)	299	20.3	(15.2–26.1)	265	22.5	(17.6–29.1)
No	45	12.2	(2.2–25.0)	109	30.2	(19.7–41.8)	162	31.5	(22.5–42.2)*
Location of last client meet-up									
Indoor establishment	79	13.8	(5.7–24.7)	193	24.0	(16.8–32.3)	192	24.4	(16.3–32.7)
Street-based venue	234	9.4	(5.6–14.1)	169	21.2	(14.1–28.2)	198	26.7	(19.5–34.6)

	Maputo			Beira			Nampula		
	n	**%**	**(95% CI)**	**n**	**%**	**(95% CI)**	**n**	**%**	**(95% CI)**
Other	81	7.5	(1.9–15.6)	46	21.6	(8.7–37.2)	37	22.1	(8.0–37.9)

Note: Estimates and boot-strapped confidence intervals produced in RDSAT 7. P-values based on Wald-test from generalised logistic regression using RDSAT-generated weights.

*$p < 0.05$.

**$p < 0.01$.

Table 4.

Multivariable logistic regression of factors associated with violence among female sex workers, Mozambique, 2012.

	OR (95% CI) (N = 1,233)	*p*	AOR (95% CI) (N = 1,230)	*p*
City				
Maputo	1.0		1.0	
Beira	2.7 (1.8–4.0)	<0.01	2.0 (1.3–3.1)	<0.01
Nampula	3.1 (2.1–4.6)	<0.01	2.6 (1.8–4.0)	<0.01
Age				
≥25	1.0		1.0	
15–24	2.2 (1.5–3.2)	<0.01	1.9 (1.2–2.9)	0.01
Spoke primarily Portuguese at home				
Yes	1.0		1.0	
No	1.4 (1.1–1.9)	0.02	1.3 (1.0–1.7)	0.11
Level of education				
Primary/no formal	1.0		1.0	
Secondary or greater	1.3 (1.0–1.8)	0.08	1.2 (0.8–1.7)	0.22
Marital status				
Married/cohabitating	1.0		1.0	
Single	2.0 (1.1–4.1)	0.04	1.8 (0.9–3.8)	0.11
Divorced/widowed/separated	1.4 (0.7–2.9)	0.39	1.5 (0.8–3.3)	0.27
STI symptom or diagnosis, past 6 months	missing = 1			
No	1.0		1.0	
Yes	2.1 (1.6–2.8)	<0.01	2.1 (1.6–2.9)	<0.01
Condomless sex with last client	missing = 2			
Yes	1.0		1.0	
No	1.6 (1.2–2.2)	<0.01	1.6 (1.2–2.2)	<0.01

Note: Odds ratios (OR), adjusted odds ratio (AOR) and p-values, which are based on Wald-test from generalised logistic regression, produced using respondent-driven sampling weights.