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ORIGINAL ARTICLE

Gender-based violence against female sex workers in Cameroon: prevalence and associations with sexual HIV risk and access to health services and justice

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ABSTRACT

Background/objectives Female sex workers (FSWs) are at risk for HIV and physical and sexual gender-based violence (GBV). We describe the prevalence of lifetime GBV and its associations with HIV risk behaviour, access to health services and barriers in accessing justice among FSWs in Cameroon.

Methods FSWs (n=1817) were recruited for a cross-sectional study through snowball sampling in seven cities in Cameroon. We examined associations of lifetime GBV with key outcomes via adjusted logistic regression models.

Results Overall, 60% (1098/1817) had experienced physical or sexual violence in their lifetime. GBV was associated with inconsistent condom use with clients (adjusted OR (AOR) 1.49, 95% CI 1.18 to 1.87), being offered more money for condomless sex (AOR 2.09, 95% CI 1.56 to 2.79), having had a condom slip or break (AOR 1.53, 95% CI 1.25 to 1.87) and difficulty suggesting condoms with non-paying partners (AOR 1.47, 95% CI 1.16 to 1.87). Violence was also associated with fear of health services (AOR 2.25, 95% CI 1.61 to 3.16) and mistreatment in a health centre (AOR 1.66, 95% CI 1.01 to 2.73). Access to justice was constrained for FSWs with a GBV history, specifically feeling that police did not protect them (AOR 1.41, 95% CI 1.12 to 1.78).

Discussion Among FSWs in Cameroon, violence is prevalent and undermines HIV prevention and access to healthcare and justice. Violence is highly relevant to FSWs' ability to successfully negotiate condom use and engage in healthcare. In this setting of criminalised sex work, an integrated, multisectoral GBV-HIV strategy that attends to structural risk is needed to enhance safety, HIV prevention and access to care and justice.

INTRODUCTION

Female sex workers (FSWs) are disproportionately affected by HIV particularly in sub-Saharan Africa.[1] Multiple layers of social determinants shape their risk for HIV acquisition and transmission.[2] Physical and sexual gender-based violence (GBV), that is, violence perpetrated based on sex, gender identity or perceived adherence to socially defined gender norms,[3] is an important structural driver of FSWs' HIV risk behaviour and infection in sub-Saharan Africa and elsewhere.[4–7] While regional data are limited, GBV appears to be a persistent and significant threat to FSWs,[4 7 8] affecting approximately 50% of FSWs in the past 6 months alone in Kampala, Uganda.[9] Gender-based power differentials and criminalisation of sex work fuel GBV against FSWs and the concomitant HIV risk,[10] often against a backdrop of endemic GBV. Epidemiological modelling suggests that up to 25% of new HIV infections could be averted among FSWs through reducing GBV within a 5-year period.[11] These data have prompted calls for integrated HIV-GBV risk reduction for the FSWs affected by both epidemics.[12–14]

These dynamics are highly relevant in Cameroon, where the HIV prevalence is estimated at 26% among FSWs,[15] relative to the 4.5% estimated among reproductive age adults for 2013.[16] As in much of West and Central Africa outside of Senegal, sex work is criminalised in Cameroon and punishable by imprisonment or monetary fine. Recent qualitative data revealed violence perpetrated against FSWs by security forces and clients alike, often with impunity.[17] Yet little is known about the burden of violence against FSWs in this setting, and how it relates to HIV risk behaviour and access to health and justice. These data are needed to inform and shape policy and programming for HIV-GBV risk reduction.

Research from other settings indicates that violence undermines condom use for FSWs. Negotiation of sex and condom use are common triggers for violence,[10] and abuse has been associated with barriers to using condoms, including breakage and failure.[4 7 18 19] These patterns have been predominantly studied with clients or paying partners; violence may also influence condom use patterns with non-paying partners, though the evidence to date is mixed.[8 20] Even less is known about how violence relates to FSWs' ability to access health services and justice. These domains constitute the public infrastructure that should enable access to HIV prevention, testing and treatment as core determinants of acquisition and transmission dynamics for FSWs. The health system is also essential for treating violence-related injuries and providing postexposure prophylaxis for HIV and other sexually transmitted infections following

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sexual assault. Yet access to health services is critically challenged for sex workers, particularly in criminalised settings, and FSWs report mistreatment and discrimination in the health sector.[21] In other populations, GBV-related stigma and fear of repercussions limit access to healthcare following GBV.[22 23] Violence-related fear or stigma may further compromise access to health services in settings of FSW-related discrimination. To date, the extent to which violence may undermine access to healthcare for FSWs remains unclear.

FSWs are also constrained in accessing justice; police protection is undermined by the criminalisation of sex work in most parts of the world. Where studied, few FSWs feel they can report abuse to police and access justice.[24] Police perpetration of violence, extortion and arbitrary arrest and detention[24 25] contribute to an environment of impunity regarding violence against sex workers. In turn, negative police encounters are linked with HIV risk behaviour among FSWs.[24] It is critical to understand the extent to which violence relates to access to justice for those in greatest need of protection.

In this cross-sectional study conducted with FSWs in seven cities in Cameroon, we (1) characterised lifetime experience of physical or sexual GBV and (2) described associations of GBV with HIV risk behaviour, access to health services, and barriers in accessing justice.

METHODS

Sample

Extensive, community-partnered, formative research entailed community mapping, key informant interviews and in-depth interviews with FSWs.[26] Informed by our formative phase, recruitment for the quantitative survey was conducted via snowball sampling initiated in establishments where sex work occurs; venues were predominantly informal, that is, not devoted primarily to sex work. Recruitment was conducted in seven major cities in Cameroon selected based on estimated FSW population size:[26] Bamenda, Bafoussam, Bertoua, Douala, Kribi, Ngaoundéré and Yaoundé. Bafoussam and Kribi are relatively smaller with geographically diffuse sex work, thus recruitment included additional proximal townships, specifically Mbouda, Dschang, Koutaba and Foumbot near Bafoussam, and Niete located in the Hevecam rubber plantation, near Kribi.

Eligible participants were aged 18 and over, able to provide informed consent in English or French, whose gender was self-determined as female and self-reported that selling sex within the past 12 months resulted in more than half their income. In each recruitment area, up to 50 venues served as the starting point for snowball sampling. FSW present in these venues were recruited by the field team consisting of project staff and local community staff familiar with the population. Following written informed consent, participants completed an interviewer-administered survey lasting up to 30 min in English or French language and received 2500 Central Africa CFA franc (FCFA) (~US$4). Data collection was conducted in secure, private areas. Participants were invited to recruit additional FSWs until the final sample size was achieved. Training for field staff included human subjects protections, the unique vulnerabilities of FSWs and safety procedures. Data collection was conducted in close collaboration with local community-based organisations and government representatives to maximise acceptability and safety. A maximum of 300 FSWs were surveyed per city for a final sample size of 1819 FSWs across the seven sites. All procedures were approved by the 'Comité National d'Éthique de la Recherche pour la Santé Humaine' in Cameroon and the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (FWA#0000287). The study was additionally reviewed and approved by The Cameroon National AIDS Control Committee Monitoring and Evaluation group and the Directorate of Operational Research at the Cameroon Ministry of Public Health.

Measures

All measures were self-reported. Our primary exposure, lifetime history of physical and/or sexual violence, was assessed via two questions. Participants indicating that they had either ever been 'beaten up or physically hurt by someone because you are a sex worker' or 'forced to have sex when you did not want to' were classified as having experienced physical and/or sexual violence. Lifetime GBV history was obtained to understand the full extent of violence, and in recognition that GBV can impart lasting effects. A set of outcomes spanned domains of HIV risk behaviour, HIV information, infection and treatment and experiences in the health and justice sectors. *HIV risk behaviour* assessments included past-month condom usage for vaginal sex with paying and non-paying partners, respectively; condom breakage (ie, past month vaginal or anal sex when a male condom has slipped or broken); condom negotiation (ie, how difficult or easy it is to ask about condom use with paying and non-paying partners, respectively); lifetime experience of being offered more money for condomless sex and lifetime history of injection drug use. Participants self-reported their receipt of HIV-related information in the past 12 months, knowledge of their HIV status, infection status, past-year HIV testing (if negative) and current receipt of HIV treatment (if living with HIV). Shorter referent periods were prioritised for HIV-related behaviour to understand current acquisition and transmission risk. Experiences in the *health sector* included lifetime history of disclosing their sex work to a doctor or nurse, fear of health services due to being a sex worker, denial of health services due to being a sex worker and mistreatment in a health centre due to being a sex worker. *Police sector* experiences included lifetime experiences of being refused police protection due to being a sex worker, jailed or imprisoned due to being a sex worker and arrested due to sex work. Participant *demographic characteristics* included age, marital status, education and recruitment city; *sex work characteristics* included number of past-month clients, dependence on sex work for income (ie, receipt of income other than sex work) and engagement with local FSW organisations.

Analyses

The prevalence of violence was calculated for the sample, and by demographic and sex work characteristics, with differences assessed via χ^2 analysis. We evaluated associations of violence with a set of outcomes across domains of HIV risk behaviour, HIV information, infection and treatment and experiences in the health and justice sectors. Each outcome was considered independently. For each respective outcome, prevalence estimates were calculated; differences based on experiences of violence were assessed via χ^2 analysis. For each outcome, logistic regression models were constructed and adjusted for the demographic and sex work characteristics that were associated with violence at $p<0.07$, specifically age, marital status, education, city and dependence on sex work for income. We also adjusted for number of past-month clients as a marker of sex work intensity. Our sample size varied to accommodate small amounts of missing data. Analyses were conducted using Stata V.13.1 (StataCorp, College Station, Texas, USA).

Table 1 Sample characteristics and patterns of lifetime experience of physical or sexual GBV against FSWs in Cameroon (n=1817)

	Total		Never experienced physical or sexual GBV		Ever experienced physical or sexual GBV		
	Sample, %	n/n	Row, %	n	Row, %	n	χ^2 p value
Number of participants	100.0	(1817)	39.6	(719)	60.4	(1098)	
Age, years							0.004
18–23	26.0	(473/1817)	35.5	(168/473)	64.5	(305/473)	
24–30	39.6	(719/1817)	37.8	(272/719)	62.2	(447/719)	
31+	34.4	(625/1817)	44.6	(279/625)	55.4	(346/625)	
Marital status							<0.0001
Not married	94.9	(1667/1756)	38.6	(644/1667)	61.4	(1023/1667)	
Married	5.1	(89/1756)	62.9	(56/89)	37.1	(33/89)	
Education							0.060
None or primary	41.9	(756/1809)	38.1	(288/756)	61.9	(468/756)	
Some secondary	38.2	(689/1809)	43.0	(296/689)	57.0	(393/689)	
Secondary or postsecondary	20.0	(361/1809)	36.3	(131/361)	63.7	(230/361)	
City							<0.0001
Ngaoundere	16.7	(303/1817)	26.73	(81/303)	73.3	(222/303)	
Kribi	9.3	(169/1817)	29.6	(50/169)	70.4	(119/169)	
Bertoua	14.7	(267/1817)	34.5	(92/267)	65.5	(175/267)	
Bamenda	11.6	(211/1817)	37.9	(80/211)	62.1	(131/211)	
Yaoundé	17.1	(310/1817)	45.81	(142/310)	54.2	(168/310)	
Douala	16.6	(301/1817)	46.8	(141/301)	53.2	(160/301)	
Bafoussam	14.1	(256/1817)	51.95	(133/256)	48.1	(123/256)	
Ever been to NGO							0.945
Not been to NGO	89.7	(1625/1811)	39.5	(642/1625)	60.5	(983/1625)	
Been to NGO	10.3	(186/1811)	39.3	(73/186)	60.8	(113/186)	
Dependence on sex work for income							<0.0001
No income other than sex work	63.7	(1153/1809)	36.25	(418/1153)	63.8	(735/1153)	
Has additional sources of income	36.3	(656/1809)	45.27	(297/656)	54.7	(359/297)	
Number of clients in the last month							0.730
Less than or equal to 60	39.6	(719/1817)	39.08	(281/719)	60.9	(438/719)	
More than 60 clients	60.4	(1098/1817)	39.89	(438/1098)	60.1	(660/1098)	

FSWs, female sex workers; GBV, gender-based violence; NGO, non-governmental organization for support.

RESULTS

Overall, 60.4% (1098/1817) of participants reported having experienced physical or sexual violence in their lifetime (table 1). Violence was most prevalent among the youngest FSWs (aged 18–23 years; 64.5%, 305/473, p=0.004). The vast majority (94.9%, 1667/1756) of FSWs were unmarried; violence prevalence was lower for married FSWs (37.1%, 33/89) relative to unmarried FSWs (61.4%, 1023/1667; p<0.001). Violence prevalence ranged widely across the seven cities from 73.3% (222/303) in Ngaoundere to 48.1% (123/256) in Bafoussam. Violence was more prevalent among FSWs who reported that they had no additional sources of income beyond sex work (63.8% (735/1153) vs 54.7% (359/297), p<0.001).

GBV was associated with several forms of HIV risk behaviour (table 2). Inconsistent condom use with clients was common in the sample (59.2%, 1068/1805), and significantly more prevalent among FSWs with a violence history (65.0% vs 50.3%, adjusted OR (AOR) 1.49, 95% CI 1.18 to 1.87). Having been offered more money for condomless sex was pervasive at 86.5% (1560/1804), with significant differences based on violence exposure (90.0% vs 81.0%, AOR 2.09, 95% CI 1.56 to 2.79). Condom negotiation with non-paying partners was more difficult for those with a violence history (43.8% vs 34.6%, AOR 1.47, 95% CI 1.16 to 1.87). Recent condom failure in the form of slipping or breaking was associated with GBV (50.1% vs 40.9%, AOR 1.53, 95% CI 1.25 to 1.87).

Violence history was associated with increased probability of fearing health services (16.7% vs 7.5%, AOR 2.25, 95% CI 1.61 to 3.16) and with likelihood of being mistreated in a health centre (6.7% vs 3.4%, AOR 1.66, 95% CI 1.01 to 2.73). Across the sample, approximately one-third (33.4%) reported feeling that the police did not protect them, with those exposed to violence significantly more likely to endorse this statement (35.5% vs 30.1%, AOR 1.41, 95% CI 1.12 to 1.78). Experiences of arrest (61.7% vs 46.4%, AOR 2.02, 95% CI 1.64 to 2.49) and imprisonment (5.8% vs 3.0%, AOR 1.87, 95% CI 1.11 to 3.15) were significantly more common among those with a GBV history. Finally, FSWs with a violence history were significantly more likely to self-report they were living with HIV (6.1% vs 3.5%, AOR 1.98, 95% CI 1.18 to 3.33).

DISCUSSION

Violence against FSWs in Cameroon was prevalent, with over 60% reporting a lifetime history of physical or sexual GBV. Prior qualitative research from this setting suggests clients and police as key perpetrators.[17] Violence was associated with significant barriers to FSWs' HIV risk reduction and access to care across health and justice sectors. Findings demonstrate the need to address violence as part of a comprehensive HIV strategy for FSWs in this context. Results add to our understanding of social determinants of HIV for FSWs in Cameroon, in that those who have experienced violence disproportionately report barriers to

Table 2 Associations of GBV with HIV risk behaviour, and barriers to healthcare and justice among FSWs in Cameroon

	Total (n=1817)		Among FSWs without a GBV history (n=719)	Among FSWs with a GBV history (n=1098)	χ^2 p value	Adjusted OR*	95% CI
	Sample, %	(n/n)	%	%			
HIV risk behaviour							
Condom use with clients							
Inconsistent condom use (vaginal sex; past month)	59.2	(1068/1805)	50.3	65.0	<0.0001	**1.49**	**(1.18 to 1.87)**
Difficult suggesting condom use	2.9	(53/1802)	2.1	3.5	0.093	1.53	(0.79 to 2.97)
Offered more money for condomless sex (ever)	86.5	(1560/1804)	81.0	90.0	<0.0001	**2.09**	**(1.56 to 2.79)**
Condom use with non-paying partner							
Inconsistent condom use (vaginal sex; past month)	87.1	(1199/1379)	85.9	87.6	0.375	0.96	(0.68 to 1.36)
Difficult suggesting condom use	40.4	(595/1474)	34.6	43.8	0.001	**1.47**	**(1.16 to 1.87)**
Male condom failure (slip/break; past year)	46.5	(830/1786)	40.9	50.1	<0.0001	**1.53**	**(1.25 to 1.87)**
Injection drug use ever	1.5	(26/1792)	0.70	1.9	0.032	2.60	(0.94 to 7.22)
HIV information, infection and treatment							
Received information about HIV (past year)	68.3	(1236/1811)	68.6	68.0	0.810	0.91	(0.73 to 1.14)
Knowledge of HIV status	90.0	(1610/1793)	90.3	89.5	0.580	1.18	(0.83 to 1.68)
Self-reported HIV+	5.1	(81/1601)	3.5	6.1	0.017	**1.98**	**(1.18 to 3.33)**
Being treated (if HIV+)	64.2	(52/81)	72.7	61.0	0.328	0.49	(0.13 to 1.82)
HIV tested (past year; if self-reported HIV–)	73.8	(1116/1512)	75.9	72.4	0.127	0.92	(0.71 to 1.19)
Healthcare							
Ever told doctor or nurse about sex trade	32.7	(593/1811)	34.4	31.7	0.237	0.88	(0.71 to 1.09)
Fear of health services	13.0	(234/1796)	7.5	16.7	<0.0001	**2.25**	**(1.61 to 3.16)**
Denied health services	3.2	(57/1790)	2.1	3.9	0.040	1.57	(0.85 to 2.93)
Mistreated in health centre	5.4	(96/1790)	3.4	6.7	0.003	**1.66**	**(1.01 to 2.73)**
Justice							
Felt that police did not protect	33.4	(601/1801)	30.1	35.5	0.016	**1.41**	**(1.12 to 1.78)**
Arrested	55.6	(1008/1812)	46.4	61.7	<0.0001	**2.02**	**(1.64 to 2.49)**
Jailed or imprisoned	4.7	(84/1804)	3.0	5.8	0.006	**1.87**	**(1.11 to 3.15)**
Blackmailed (by anyone)	55.1	(995/1805)	38.6	66.0	<0.0001	**3.05**	**(2.48 to 3.76)**

Boldface font designates statistical significance at p<0.05.
*Adjusted for age, marital status, education, city, income other than sex work and number of clients in the past month.
FSWs, female sex workers; GBV, gender-based violence.

condom use, and health and police-related discrimination and mistreatment. Within this environment of criminalised sex work, violence against FSWs appears to further exacerbate HIV risk and undermine health.

Consistent with findings from West and Central Africa[4 7] and elsewhere,[19 20] violence was associated with barriers to successful condom use with both paying and non-paying partners. GBV was associated with inconsistent condom use with clients. Few FSWs (<3%) reported difficulty negotiating condom use with clients, with no differences identified based on violence. However, it is possible that past trauma may undermine negotiation and successful condom use in more nuanced ways than our measures capture. It is also possible that condom negotiation with clients is a trigger for violence, as has been suggested by qualitative research from Cameroon.[17] FSWs with a violence history were also more likely to experience economic pressure for condomless sex; the independent and accumulated influences of violence and economic pressure may contribute to condom non-use in this population. Past-year condom failure was prevalent at 46%; and significantly associated with GBV history. We are unable to determine the timing of condom breakage relative to violence; it is possible that these experiences occurred within the same encounter, that is, violence as a context for condom failure. Alternatively, past experiences of violence and related fear regarding negotiation may contribute to rushed and suboptimal condom application. By contrast, with non-paying partners, violence history was associated with difficulty suggesting condoms, but not with inconsistent condom use. These results speak to the potential value of addressing FSWs non-paying partners within trauma-informed HIV risk reduction. Together, these data demonstrate that FSWs with a history of violence are at sustained risk for condomless sex, through inconsistent use with clients and breakage or other failure. Addressing violence and power differentials in condom negotiation with both paying and non-paying partners is needed within a comprehensive HIV response for this population.

Extending this body of work, violence was associated with fear of health services due to being a sex worker, and sex work-related mistreatment in health centres. These findings are problematic given the health-related needs of FSWs as a whole, and the immediate needs of violence survivors. These include post-exposure prophylaxis in cases of sexual violence, care for related injuries and ongoing mental health support. Despite advances in available support services in Cameroon, resources and capacity to respond to the social, medial and legal needs of survivors is limited.[27] In this context, peer advocacy may be

helpful for FSWs to access care without fear and may buffer against potential mistreatment. Successfully accessing the health sector is critical for FSWs to obtain HIV-related care, including testing and antiretroviral therapy. FSWs in this study were highly engaged in HIV testing with over 70% reporting testing the past year, and no differences observed based on violence experiences. This suggests that HIV testing sites may be an entry point for violence-related assessment, support and referral. While pre-exposure prophylaxis is not widely available currently, the success of this HIV prevention tool for FSWs will similarly rely on safe and supported access to care.

FSWs' experiences of violence were also associated with having been failed by the criminal justice sector, specifically a sense that police did not protect them. Uniformed officers in many settings fail to take reports of sexual violence from FSWs and perpetuate the belief that sex workers cannot be raped, contributing to an overall climate of impunity.[24] Physical or sexual violence was also associated with arrest and imprisonment, echoing reports from India.[25] Associations of GBV with blackmail further emphasise the risk of institutionalised abuse of power. Further work is needed to clarify the perpetrators and nature of blackmail in this population. Some of the violence reported may have occurred during police custody.[20] Severe police violence has been described qualitatively by FSWs in Cameroon[17] and a variety of other settings.[24] Findings add to the evidence base for decriminalising sex work to achieve HIV prevention goals, as well as human rights protections.[2 28] It may be possible to increase access to justice, and achieve related gains in health, through sex worker capacity building and engagement with the justice system even under conditions of criminalisation. For example, legal advocacy for FSWs[29] as well as police–FSW collaborations[30] can support safe reporting, even in criminalised contexts. Current results linking violence with failure of police protection, arrest and imprisonment add to a growing body of evidence that abuse experiences, in tandem with FSW criminalisation and harmful police practices, undermine the fundamental human right of equality and non-discrimination in access to justice.[24] A policy response is required to ensure availability of advocacy and support in accessing health services and criminal justice, despite the criminalised nature of sex work in this setting and elsewhere.

These issues play out against a macro-level policy environment and social backdrop, wherein the criminalisation of sex work, the tolerance of violence against women in the general population and a narrowly focused GBV policy framework interactively perpetuate risk. As in many settings, domestic violence is prevalent in Cameroon, and abuse is tolerated despite recent policy advances and the presence of legal protection.[31] Nationally, an estimated 55% of women in Cameroon have ever experienced physical violence, and 29% have experienced sexual violence, predominantly from male partners.[32] Up to 39% of men and 47% of women indicate abuse is justified in at least one situation.[32] The GBV experiences of FSWs must be considered within this broader GBV context, where the needs for prevention and response are clear. GBV policy efforts to mitigate violence against women in Cameroon may also contribute to improved safety for FSWs who live and work within this context. Historically, FSWs have not been addressed in the GBV policy framework in Cameroon or elsewhere. Cameroon is a signatory to the Universal Declaration of Human Rights and the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW), however, as in many settings, significant work remains in implementation.[27 31] Consistent with the overarching CEDAW framework, Cameroon's statement from the 2013 57th Session of the Commission on the Status of Women focused on violence against women and girls and did not explicitly address violence against FSWs.[27] A successful HIV-GBV strategy for FSWs would benefit from lifting criminalisation of sex work, ending harmful police practices and expanding the national GBV policy framework to explicitly address the prevention, support and justice-related needs of FSWs.

Findings should be considered in light of several limitations. Our violence measure is limited to two items, and the relative timing and perpetrator(s) are unknown. Our physical violence assessment specified abuse due to being a sex worker and may not have captured abuse experienced in other contexts. Our sexual violence measure was limited to forced sex, and did not include experiences of pressured or coerced sex that did not escalate to the level of force. Future research will benefit from more robust violence measures, including those that distinguish perpetrators and forms of sexual violence.[6] Temporal ordering of violence and outcomes in our cross-sectional study is unclear, though violence is linked with incident HIV infection in other populations of women.[33] Self-reported HIV infection prevalence was strikingly low relative to estimates for FSWs in Cameroon[15] and elsewhere in the region[1] derived using biological testing. We lacked data on some sexual risk behaviours, most notably anal intercourse.

Findings provide direction for rights-based policy responses to mitigate HIV risk, and support the health and safety of FSWs in Cameroon. The current global policy climate increasingly recognises violence against FSWs as a human rights issue, and ensuring human rights is central to the global HIV response.[24 34] This climate should expedite the translation of current recommendations into practice both in Cameroon and in other settings dually affected by violence and HIV among FSWs.

Key messages

- Over half (60%) of female sex workers (FSWs) in Cameroon in our study had a history of physical or sexual violence.
- Violence history was associated with multiple barriers to condom use as well as fear of health services, and inadequate police protection.
- In this criminalised setting where FSWs are disproportionately burdened by HIV, violence enables risk for acquisition and transmission, and unmet needs persist in access to healthcare and justice.

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REFERENCES

1 Baral S, Beyrer C, Muessig K, *et al*. Burden of HIV among female sex workers in low-income and middle-income countries: a systematic review and meta-analysis. *Lancet Infect Dis* 2012;12:538–49.
2 Shannon K, Strathdee SA, Goldenberg SM, *et al*. Global epidemiology of HIV among female sex workers: influence of structural determinants. *Lancet* 2015;385:55–71.
3 USAID, US Department of State. *United States strategy to prevent and respond to gender-based violence globally*. USAID and Department of State, Government of the United States of America, 2012.
4 Wirtz AL, Schwartz S, Ketende S, *et al*. Sexual violence, condom negotiation, and condom use in the context of sex work: results from two West African countries. *J Acquir Immune Defic Syndr* 2015;68(Suppl 2):S171–9.
5 Ulibarri MD, Strathdee SA, Ulloa EC, *et al*. Injection drug use as a mediator between client-perpetrated abuse and HIV status among female sex workers in two Mexico-US border cities. *AIDS Behav* 2011;15:179–85.
6 Decker MR, Wirtz AL, Moguilnyi V, *et al*. Female sex workers in three cities in Russia: HIV prevalence, risk factors and experience with targeted HIV prevention. *AIDS Behav* 2014;18:562–72.
7 Tounkara FK, Diabaté S, Guédou FA, *et al*. Violence, condom breakage, and HIV infection among female sex workers in Benin, West Africa. *Sex Transm Dis* 2014;41:312–18.
8 Mooney A, Kidanu A, Bradley HM, *et al*. Work-related violence and inconsistent condom use with non-paying partners among female sex workers in Adama City, Ethiopia. *BMC Public Health* 2013;13:771.
9 Schwitters A, Swaminathan M, Serwadda D, *et al*. Prevalence of rape and client-initiated gender-based violence among female sex workers: Kampala, Uganda, 2012. *AIDS Behav* 2015;19(Suppl 1):S68–76.
10 Okal J, Chersich MF, Tsui S, *et al*. Sexual and physical violence against female sex workers in Kenya: a qualitative enquiry. *AIDS Care* 2011;23:612–18.
11 Decker MR, Wirtz AL, Pretorius C, *et al*. Estimating the impact of reducing violence against female sex workers on HIV epidemics in Kenya and Ukraine: a policy modeling exercise. *Am J Reprod Immunol* 2013;69(Suppl 1):122–32.
12 WHO. *16 ideas for addressing violence against women in the context of HIV epidemic: a programming tool*. Geneva: World Health Organization, 2013.
13 Khan A. *Gender-based violence and HIV: a program guide for integrating gender-based violence prevention and response in PEPFAR programs*. Arlington, VA: USAID's AIDS Support and Technical Assistance Resources, AIDSTAR-One, Task Order 1, 2011.
14 Middleton LS. *Technical paper: review of training and programming resources on gender-based violence against key populations*. Arlington, VA: USAID's AIDS Support and Technical Assistance Resources, AIDSTAR-Two, Task Order 2 and the International HIV/AIDS Alliance, 2013.
15 Mosoko JJ, Macauley IB, Zoungkanyi AC, *et al*. Human immunodeficiency virus infection and associated factors among specific population subgroups in Cameroon. *AIDS Behav* 2009;13:277–87.
16 UNAIDS. *HIV and AIDS estimates 2013, Cameroon*. Geneva: UNAIDS, 2013.
17 Lim S, Peitzmeier S, Cange C, *et al*. Violence against female sex workers in Cameroon: accounts of violence, harm reduction, and potential solutions. *J Acquir Immune Defic Syndr* 2015;68(Suppl 2):S241–7.
18 Decker MR, McCauley HL, Phuengsamran D, *et al*. Violence victimisation, sexual risk and sexually transmitted infection symptoms among female sex workers in Thailand. *Sex Transm Infect* 2010;86:236–40.
19 Deering KN, Lyons T, Feng CX, *et al*. Client demands for unsafe sex: the socioeconomic risk environment for HIV among street and off-street sex workers. *J Acquir Immune Defic Syndr* 2013;63:522–31.
20 Deering KN, Bhattacharjee P, Mohan HL, *et al*. Violence and HIV risk among female sex workers in Southern India. *Sex Transm Dis* 2013;40:168–74.
21 Scorgie F, Nakato D, Harper E, *et al*. 'We are despised in the hospitals': sex workers' experiences of accessing health care in four African countries. *Cult Health Sex* 2013;15:450–65.
22 Wirtz AL, Pham K, Glass N, *et al*. Gender-based violence in conflict and displacement: qualitative findings from displaced women in Colombia. *Confl Health* 2014;8:10.
23 Wirtz AL, Glass N, Pham K, *et al*. Development of a screening tool to identify female survivors of gender-based violence in a humanitarian setting: qualitative evidence from research among refugees in Ethiopia. *Confl Health* 2013;7:13.
24 Decker MR, Crago AL, Chu SK, *et al*. Human rights violations against sex workers: burden and effect on HIV. *Lancet* 2015;385:186–99.
25 Erausquin JT, Reed E, Blankenship KM. Police-related experiences and HIV risk among female sex workers in Andhra Pradesh, India. *J Infect Dis* 2011;204(Suppl 5):S1223–8.
26 Papworth E, Grosso A, Ketende S, *et al*. *Examining risk factors for HIV and access to services among Female Sex Workers (FSW) and Men who have Sex with Men (MSM) in Burkina Faso, Togo, and Cameroon*. Baltimore: USAID: Project Search: Research to Prevention, 2014.
27 Ministry of Women's Empowerment and Family of the Republic of Cameroon. *Statement 57th SESSION OF THE COMMISSION ON THE STATUS OF WOMEN.* New York, NY, 2013.
28 Global Commission on HIV and the Law. *Risks, rights & health.* New York, NY: UNDP, 2012.
29 OSF. *Bringing justice to health: the impact of legal empowerment projects on public health.* New York, NY: Open Society Foundation, 2013.
30 Crago AL. *Arrest the violence: human rights abuses against sex workers in central and Eastern Europe and Central Asia*. Sex Worker Rights Advocacy Network, 2009.
31 Gender Empowerment and Development. Beijing +15: the reality of Cameroon and the unfinished business. 2010. http://library.fes.de/pdf-files/bueros/kamerun/08018.pdf (accessed 11 Jun 2015).
32 Institut National de la Statistique (INS) et ICF. International. Enquête Démographique et de Santé et à Indicateurs Multiples du Cameroun 2011 *Institut National de la Statistique (INS) et ICF*. Calverton, Maryland, USA: INS et ICF International, 2012.
33 Jewkes RK, Dunkle K, Nduna M, *et al*. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet* 2010;376:41–8.
34 Office of the United Nations High Commissioner for Human Rights and the Joint United Nations Programme on HIV/AIDS. *International guidelines on HIV/AIDS and human rights*. Geneva: OHCHR, 2006.

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