Incarceration and exposure to internally displaced persons camps associated with reproductive rights abuses among sex workers in northern Uganda

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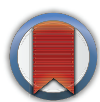

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ABSTRACT

Background While female sex workers (FSWs) face a high burden of violence and criminalisation, coupled with low access to safe, non-coercive care, little is known about such experiences among FSWs in conflict-affected settings, particularly as they relate to sexual and reproductive health (SRH) and rights. We explored factors associated with lifetime abortions among FSWs in northern Uganda; and separately modelled the independent effect of lifetime exposures to incarceration and living in internally displaced persons (IDP) camps on coerced and unsafe abortions.

Methods Analyses are based on a community-based cross-sectional research project in Gulu District, northern Uganda (2011–2012) with The AIDS Support Organization (TASO) Gulu, FSWs, and other community organisations. We conducted questionnaires, sex worker/community-led outreach to sex work venues, and voluntary HIV testing by TASO.

Results Of 400 FSWs, 62 had ever accessed an abortion. In a multivariable model, gendered violence, both childhood mistreatment/or abuse at home [adjusted odds ratio (AOR) 1.96; 95% confidence interval (95% CI) 0.99–3.90] and workplace violence by clients (AOR 3.57; 95% CI 1.31–9.72) were linked to increased experiences of abortion. Lifetime exposure to incarceration retained an independent effect on increased odds of coerced abortion (AOR 5.16; 95% CI 1.39–19.11), and living in IDP camps was positively associated with unsafe abortion (AOR 4.71; 95% CI 1.42–15.61).

Discussion and conclusions These results suggest a critical need for removal of legal and social barriers to realising the SRH rights of all women, and ensuring safe, voluntary access to reproductive choice for marginalised and criminalised populations of FSWs.

Key message points

- Experience of abuse in childhood and in the workplace are associated with increased abortions among female sex workers (FSWs) in northern Uganda.
- FSWs frequently experience denied or impeded access to sexual and reproductive healthcare, representing a major infringement on their reproductive rights.
- Living in internally displaced persons camps was independently associated with an increased risk of unsafe abortion, while experience of being incarcerated was associated with coerced abortion.

BACKGROUND

The World Health Organization (WHO) estimates that of an estimated 22 million unsafe abortions performed annually, 98% occur in low- and middle-income countries.[1] In Uganda, an estimated one in five pregnancies end in an induced abortion.[2] Abortion is only legal in Uganda under certain circumstances, resulting in the practice of unsafe and potentially dangerous methods of abortion for women.[2 3] Unsafe abortion as

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defined by the WHO is a "procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both".[1] Unsafe abortion remains the leading cause of maternal injuries and death within Uganda,[2] with the driving factor for these alarmingly high rates being lack of safe abortion services.[1]

Marginalised populations such as female sex workers (FSWs) and women exposed to armed conflict may be at increased risk for negative sexual and reproductive health (SRH) outcomes.[4–6] In sub-Saharan Africa, women in sex work are already disproportionately affected by health and social inequalities such as a high burden of HIV,[7–9] sexually transmitted infections (STIs),[10] physical and sexual violence,[7] and limited access to SRH services such as contraception.[11 12] FSWs in sub-Saharan Africa have a pooled odds of HIV infection that is 12-fold higher than among the general female population.[11] Importantly, structural determinants such as the criminalisation of sex work, stigma and discrimination, high levels of violence and human rights abuses, and conflict experiences have been shown to place FSWs at increased risk for negative health outcomes such as HIV/STIs.[8 13 14] Of particular concern, recent evidence has found denial of HIV services for FSWs, as well as forced and mandatory HIV and STI testing, raising strong concern of coercive HIV care for this criminalised population.[15 16] While most prior research has examined access to HIV/STI prevention, and to a lesser extent HIV care among FSWs, there remains a gap in research when it comes to broader SRH services for FSWs, including safe and voluntary access to abortions.

Northern Uganda recently emerged from a two-decade-long conflict with the government's Uganda's People Defense Forces and the rebel Lord's Resistance Army (LRA). Gross human rights violations including abduction of children and youth by the LRA have devastated the population, resulting in a breakdown in social structures, forced migration, and large-scale displacement.[17] Previous research suggests that exposure to conflict may disrupt or undermine access to SRH services (e.g. HIV testing, antiretroviral therapy).[18] Prior studies have shown that FSWs living within post-conflict settings experience large-scale physical and sexual violence as a result of exposure to conflict, abduction by rebel forces, and experiences living in internally displaced persons (IDP) camps.[19] However, there remains a gap in evidence regarding the links between conflict exposure and SRH and rights among FSWs, including FSWs' uptake and experiences with abortion services.

Additionally, the criminalisation of sex work in sub-Saharan Africa and other settings has been shown to result in human rights violations which contribute to negative SRH outcomes for FSWs.[10 20] The limited research available on women's experiences within the criminal justice system in sub-Saharan Africa demonstrates how current punitive approaches may undermine SRH and rights for incarcerated female inmates.[21] While there is a lack of literature specific to FSWs' experiences within the criminal justice system within sub-Saharan Africa, research on criminalisation in other contexts (e.g. exposure to police harassment and arrest) indicates that the criminalisation of sex work is linked to serious rights violations, including denial of health services, as well as increased vulnerability to negative SRH outcomes among FSWs.[16] For example, research from other low- and middle-income countries has shown that incarcerated FSWs are highly marginalised and experience disproportionate negative SRH outcomes.[22]

Despite the high burden of violence, other human rights violations and health inequities faced by FSWs in sub-Saharan Africa, there remains a lack of research regarding FSWs' SRH and rights, including access to safe and non-coercive abortion services, particularly within conflict-affected settings. The objective of this study was to examine structural contexts associated with lifetime abortions amongst FSWs in post-conflict Gulu, northern Uganda; and examine whether there is an independent confounding effect of historical exposure to incarceration and living in an IDP camp on coerced and unsafe abortions.

METHODS

This analysis drew on data from the Gulu Sexual Health Project, a community-based cross-sectional study in Gulu District, northern Uganda (May 2011–January 2012). The study was conducted by Canadian and Ugandan researchers in partnership with The AIDS Support Organization (TASO) and other local community partners. Service providers, FSWs and policy experts provided extensive input and guidance on the project and questionnaire. The study received ethical approval from the University of British Columbia Behavioural Research Ethics Board, TASO Institutional Review Board and is registered at the Ugandan National Council for Science and Technology.

As described previously,[10] a total of 400 FSWs were recruited through sex worker-led outreach to bars and other sex work venues (lodges, hotels and truck stops), as well as TASO-led outreach to former IDP camps, and referral from local community agencies (e.g. Gulu Refugee Committee). For outreach to bars and other sex work venues, sampling was based on ethnographic mapping and outreach planning by sex worker/peer outreach and TASO team. Time-location sampling was used as a method to enrol this hard to reach population, with physical spaces rather than persons as the primary sampling unit. Times and places where FSWs congregated were decided on based extensive outreach and engagement with FSWs

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and community agencies to better understand local sex work hot-spots. These methods are consistent with recruitment of other cohorts of FSWs and hidden/mobile populations.[23 24] Eligibility criteria included: ≥14 years old, exchanged sex for money or resources (e.g. food, cell phone air time, clothing, shelter, etc.) in the previous 30 days, and able to provide informed consent. The participant response rate was >95%.

Interviewer-administered questionnaires were conducted by trained female Acholi research assistants at the TASO-Gulu Clinic, or at the confidential location of the participant's choosing (e.g. home, workplace). The questionnaire covered topics including sociodemographics, sex work working conditions, trauma and violence, stigma, and sexual, reproductive, mental, and physical health and wellbeing, including access to HIV testing and treatment. Study participants received a standard monetary reimbursement of 10 000 Ugandan Shillings (UGX) (3.7 Canadian Dollars). Trained research assistants offered voluntary HIV testing and counselling, although this was not required for study participation. Referrals for food security programmes and other health services were provided.

Individual characteristics included age, place of birth and HIV serostatus. Variables related to reproductive sexual health and interpersonal factors included contraceptive use, history of STI and HIV tests, and types of partners (e.g. having an intimate non-commercial partner). Participants who had been pregnant were asked about abortion history, methods and decision-making. Unsafe abortion was determined by the type of abortion reported (i.e. surgical from a clinic, oral induction from a provider, vaginal method from a provider, traditional provider, or self-performed). Unsafe vs. safe abortion were determined by any type of abortion with the exclusion of 'surgical from a clinic'. Although the authors acknowledge that 'safe' abortions can be provided orally from a provider, no medically approved or 'safe' oral induction methods were reported by participants. Coerced abortion was defined as having an abortion not of your own choice or will (i.e. forced or convinced to undergo an abortion).

Key structural variables used in this analysis included history of incarceration, recent physical/sexual violence by clients, ever lived in an IDP camp, and ever abducted into the LRA. Specific variables examining historical violence (e.g. abuse/mistreatment in the home, history of physical and sexual assault, war-related exposure to violence, and experience with police/soldier harassment) were also examined.

For our analysis of structural determinants of lifetime abortion, the sample was restricted to women who had ever been pregnant (n=315).

The modelling approach used in this article was two-fold. We first calculated descriptive statistics for individual, partner/interpersonal, and structural factors for women who had experienced one or more abortions. Wilcoxon rank-sum test for continuous variables and Pearson's Chi-squared (χ^2) test (or Fisher's exact test) were used for binary variables in the bivariate analysis. Variables which were hypothesised *a priori* to be related to abortions and which had $p<0.10$ in bivariate analyses were considered for inclusion in the explanatory multivariable logistic regression model. Variables considered in the multivariate analysis included key individual (e.g. age, HIV status, education), SRH (e.g. condom use and access, STI testing) and structural (e.g. client-perpetrated violence, childhood abuse, lived in an IDP camp, incarceration) variables which were significant at $p<0.10$ in bivariate analysis. The final multivariate table is reflective of the variables that held in the model following the multivariate analysis and which produced the model with the best fit. Model selection was performed using a backwards selection approach. Akaike's information criterion (AIC) was used to determine the most parsimonious model, as indicated by the lowest AIC value.

Second, following the initial analysis for our main outcome of experience of abortion, sub-analyses were conducted exploring variables associated with two primary structural exposures: unsafe and coerced abortions. Separate multivariable confounder models were constructed using the approach of Maldonado and Greenland[25] to examine the independent effect of historical exposure to (1) incarceration on coerced abortions and (2) living in IDP camps on unsafe abortions. While bivariate analyses examined the relationship between exposure to IDP camps and incarceration with both unsafe and coerced abortions, there was no significant association between exposure to IDP camps and coerced abortions, as well as incarceration and unsafe abortion in the final analyses. Potential sources of bias were addressed by adjusting for potential confounders identified in bivariate analysis. All potential confounders hypothesised *a priori* and with $p<0.10$ in bivariate analysis were included in multivariable analysis. Potential confounders were selected for inclusion in each respective multivariable model to examine the effect on the magnitude of the coefficient of the primary variable of interest. Starting with the full model of all available variables, reduced models were fit to compare the associated value of coefficient of the primary variable to the one in the full model. The secondary variable associated with the smallest relative change in the main independent variable was dropped. This iterative process continued until the minimum change exceeded 5%. Remaining variables were included as confounders in the final model. All analyses were performed using SAS V.9.3 (SAS, Cary, NC, USA).

RESULTS

Our analysis of abortions was restricted to 315 FSWs who had ever been pregnant at least once in their

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lifetime. Of these women, 62 (19.7%) had experienced at least one abortion. Of 315 women who had ever been pregnant, participants had a median age of 23 [interquartile range (IQR) 20–26], with 38.4% (121) living with HIV and 292 (92.7%) reporting having at least one child. Some 208 (66.0%) women had little or no primary education (Table 1).

Only 184 (58.4%) FSWs had ever used hormonal non-barrier contraceptives (birth control pills, Depo-Provera®/injectables, intrauterine devices, implants or sterilisation). Though the majority (n=282, 89.5%) of women reported lifetime use of condoms as contraceptive, 186 (59.1%) FSWs reported difficulty accessing condoms in the last 6 months. Only 126 (40.0%) FSWs had ever been taught about pregnancy growing up.

In terms of structural exposures, slightly over one-quarter of participants (n=85, 27.0%) reported ever having been incarcerated. FSWs experienced high levels of violence by clients, with 249 (79.1%) FSWs reporting physical and/or sexual violence from clients in the last 6 months. Of 315 FSWs, 211 (67.0%) had lived in an IDP camp, and 109 (34.6%) had been abducted into the LRA. Wartime-related violence was high, with 179 (56.8%) women reporting receiving physical threats, 100 (31.8%) women reporting severe physical violence, and 67 (21.3%) women reporting war-related rape. General experience with rape (including non-war-related rape) was much higher, with 207 (65.7%) FSWs reporting having been raped throughout their lifetime. Of 315 women, 186 (59.1%) reported childhood mistreatment and abuse. Lifetime physical violence was reported by 262 (83.2%) FSWs.

In a multivariable model (Table 2), women who reported ever using condoms for contraception [adjusted odds ratio (AOR) 0.36; 95% confidence interval (95% CI) 0.14–0.81] and who had children (AOR 0.30; 95% CI 0.10–0.85) were less likely to have undergone an abortion in their lifetime. Women who were more financially stable (AOR 2.00; 95% CI 1.05–3.80), experienced childhood mistreatment or abuse at home (AOR 1.96; 95% CI 0.99–3.90), and who experienced work-related physical/sexual violence by clients (AOR 3.57; 95% CI 1.31–9.72) were more likely to have an abortion.

Of 62 FSWs who had had at least one abortion, 64.5% (n=40) had undergone an unsafe abortion, of which the majority (75.0%) were self-performed (e.g. in the woman's home using herbs or hormonal drugs). Additionally, almost one-third (29.0%, n=18) of women with a history of abortion reported having been coerced into having an abortion. In a separate adjusted multivariable confounder model (Table 3), historical exposure to living in an IDP camp retained an association with increased odds of unsafe abortion (AOR 4.71; 95% CI 1.42–15.61), while historical incarceration retained an independent association with coerced abortion (AOR 5.16; 95% CI 1.39–19.11).

DISCUSSION

In this study, experience with both childhood abuse and workplace violence were strongly associated with increased likelihood of abortions among FSWs in the conflict-affected Gulu region of northern Uganda. Consistent with work from other countries as well as the WHO multi-country studies,[26–28] our findings suggest that physical and sexual violence may be driving unintended or unwanted pregnancies among this population of women. Although access to SRH services including abortions are critical to reproductive rights and choice for all women, legal and social barriers in Uganda, including the criminalised and stigmatised nature of both sex work and abortions,[2 10 29] place serious constraints on reproductive rights and access to safe, non-coercive abortion services for marginalised women.

Of particular concern, sub-analyses conducted as part of this study documented unacceptable high rates of unsafe and coerced abortions among FSWs in northern Uganda. Our findings revealed that exposure to living in an IDP camp remained independently associated with almost a five-fold increased risk for having an unsafe abortion. Unfortunately, as shown in previous research, access to safe and non-coercive abortion services has often been left out of reproductive health care for refugee and internally displaced women.[5] Additionally, discussions around gender-based violence are lacking when it comes to advocating for human rights and access to SRH care within IDP camps in sub-Saharan Africa.[30] Our findings echo the need to scale up access to reproductive health services within IDP camps, including access to safe and legal abortions.

Of additional concern, almost one-third of abortions were coerced, suggesting major human rights infringements on FSWs' reproductive rights and choice, which has been documented as an increasing concern worldwide and particularly in sub-Saharan Africa.[16] Exposure to incarceration was linked to a five-fold increased odds of having a coerced abortion, adding to evidence that criminalisation of sex work may lead to detrimental impacts on FSWs' rights and health.[14] Coerced abortion is often linked to inequalities in gender and power,[31] and is a human rights violation on women's bodies and reproductive choice, as is any coercive form of medical care or support. Our findings raise concern regarding the fact that the most marginalised FSWs who already face persecution by the law appear to be the most likely to report coercion and a lack of control over decisions regarding their own sexual health. While previous reports have documented large-scale human rights violations for women within prisons of sub-Saharan Africa,[32] research specific to FSWs or coercion related to SRH decisions and

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Table 1 Characteristics and unadjusted odds ratios related to lifetime abortion use among 315 female sex workers in Gulu, northern Uganda

Characteristic	Yes [*n* (%)] (*n*=62)	No [*n* (%)] (*n*=254)	OR (95% CI)	*p*
Individual characteristics				
Age (years) (Med, IQR)	21 (19–25)	23 (20–26)	0.93 (0.87–1.00)	0.045
Born in Gulu				
Yes	41 (66.1)	165 (65.2)	1.04 (0.58–1.87)	0.892
No	21 (33.9)	88 (34.8)		
Is an orphan				
Yes	51 (82.3)	214 (84.6)	0.85 (0.41–1.76)	0.653
No	11 (17.7)	39 (15.4)		
HIV-positive				
Yes	17 (27.4)	104 (41.1)	0.56 (0.30–1.04)	0.065
No	43 (69.4)	148 (58.5)		
None or incomplete primary education				
Yes	28 (45.2)	180 (71.2)	0.33 (0.19–0.59)	<0.001
No	34 (54.8)	73 (28.9)		
Have children*				
Yes	54 (87.1)	238 (94.1)	0.43 (0.17–1.05)	0.096
No	8 (12.9)	15 (5.9)		
Average weekly income from sex work, 1000s UGX (Med, IQR)	40 (20–80)	40 (30–70)	1.00 (1.00–1.01)	0.948
Financially support others				
Yes	56 (90.3)	242 (95.6)	0.42 (0.15–1.20)	0.115
No	6 (9.7)	11 (4.4)		
Good current financial situation compared to neighbours*				
Yes	22 (35.5)	60 (23.7)	1.77 (0.98–3.21)	0.058
No	40 (64.5)	193 (76.3)		
SRH and interpersonal factors				
Ever used non-barrier contraceptives*				
Yes	42 (67.7)	142 (56.1)	1.64 (0.91–2.95)	0.096
No	20 (32.3)	111 (43.9)		
Ever used male condoms for pregnancy prevention*				
Yes	50 (80.7)	232 (91.7)	0.38 (0.17–0.82)	0.011
No	12 (19.4)	21 (8.3)		
Difficulty accessing condoms†				
Yes	33 (53.3)	153 (60.5)	0.74 (0.43–1.30)	0.298
No	29 (46.8)	100 (39.5)		
Ever been tested for STIs*				
Yes	22 (35.5)	124 (49.0)	0.57 (0.32–1.02)	0.056
No	40 (64.5)	129 (51.0)		
Taught about pregnancy as a child				
Yes	20 (32.3)	106 (41.9)	0.67 (0.37–1.21)	0.182
No	39 (62.9)	138 (54.6)		
Have an intimate (non-commercial) partner				
Yes	60 (96.8)	239 (94.5)	1.76 (0.39–7.94)	0.747
No	2 (3.2)	14 (5.5)		
Structural factors				
Ever been incarcerated*				
Yes	17 (27.4)	68 (26.9)	1.03 (0.55–1.92)	0.931
No	45 (72.6)	185 (73.1)		
Physical or sexual violence by clients†				
Yes	57 (91.94)	192 (75.89)	3.62 (1.39–9.45)	0.005
No	5 (8.06)	61 (24.11)		

Continued

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Table 1 Continued

Characteristic	Yes [*n* (%)] (*n*=62)	No [*n* (%)] (*n*=254)	OR (95% CI)	*p*
Fear of violence from client if asked to use a condom†				
Yes	48 (77.4)	187 (73.9)	1.37 (0.68–2.74)	0.373
No	12 (19.4)	64 (25.3)		
Used drugs or alcohol while working†				
Yes	46 (74.2)	161 (63.6)	1.64 (0.88–3.07)	0.117
No	16 (25.8)	92 (36.4)		
Ever lived in an IDP camp*				
Yes	43 (69.4)	168 (66.4)	1.15 (0.63–2.09)	0.658
No	19 (30.6)	85 (33.6)		
Ever been abducted into the LRA*				
Yes	14 (22.6)	95 (37.6)	0.49 (0.25–0.93)	0.026
No	48 (77.4)	158 (62.5)		
Historical violence				
Mistreated/abused at home*				
Yes	45 (72.6)	141 (55.7)	2.37 (1.24–4.55)	0.008
No	14 (22.6)	104 (41.1)		
Ever defiled/raped*				
Yes	37 (59.7)	170 (67.2)	0.67 (0.37–1.24)	0.201
No	21 (33.9)	65 (25.7)		
Ever experienced any police/soldier harassment*				
Yes	22 (35.5)	88 (34.8)	1.03 (0.58–1.84)	0.917
No	40 (64.5)	165 (65.2)		
Ever been verbally threatened*				
Yes	56 (90.3)	216 (85.4)	1.60 (0.64–3.98)	0.309
No	6 (9.7)	37 (14.6)		
Ever been sexually assaulted*				
Yes	46 (74.2)	159 (62.9)	1.70 (0.91–3.17)	0.093
No	16 (25.8)	94 (37.2)		
Ever been physically assaulted*				
Yes	52 (83.9)	210 (83.0)	1.07 (0.50–2.26)	0.870
No	10 (16.1)	43 (17.0)		

*Lifetime.
†Last 6 months.
CI, confidence interval; IDP, internally displaced persons; IQR, interquartile range; LRA, Lord's Resistance Army; Med, median; OR, odds ratio; SRH, sexual and reproductive health; STIs, sexually transmitted infections; UGX, Ugandan Shilling.

services within criminal justice settings within this context is relatively non-existent. Reports have shown that on average only 2.2% of all inmates in sub-Saharan Africa are female, with Uganda having 3.4% female inmates out of the total prison population.[32] Due to the low number of female inmates combined with a lack of resources, women and young girls are often detained alongside male inmates and are largely supervised entirely by male staff.[32] Within incarceration settings where the majority of the detained population are male, SRH services for incarcerated women are likely to be extremely limited, if at all available. Our findings shed light on a major human rights infringement on reproductive health for FSWs in sub-Saharan Africa surrounding the criminalisation of sex work and their subsequent incarceration.

LIMITATIONS

Although these findings provide a critical first step in highlighting the role of structural determinants for FSWs' SRH and rights, several limitations and potential biases should be considered in interpreting our findings. While it is not possible to examine temporality in cross-sectional data, we do know that lifetime exposures of IDP camps and wartime abduction are historical in the context of the conflict, and as such may predate the unsafe abortions. Nevertheless, as a cross-sectional analysis, our findings cannot be used to infer causality; as it is possible that causal relationships could work in either direction, future longitudinal and intervention studies remain needed. Additionally, while we acknowledge that this study may not be representative of all FSWs, our team

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Table 2 Multivariable logistic regression analysis of factors independently associated with lifetime abortion among female sex workers who had ever been pregnant (*n*=315) in Gulu, northern Uganda

Variable	AOR (95% CI)	p
Ever used male condoms*		
(Yes vs No)	0.34 (0.14–0.81)	0.015
Have children*		
(Yes vs No)	0.30 (0.10–0.85)	0.023
Mistreated/abused at home*		
(Yes vs No)	1.96 (0.99–3.90)	0.054
Good financial situation		
(Yes vs No)	2.00 (1.05–3.80)	0.036
Physical or sexual violence by clients‡		
(Yes vs No)	3.57 (1.31–9.72)	0.013

*Lifetime.
‡Last 6 months.
AOR, adjusted odds ratio; CI, confidence interval.

Table 3 Separate confounder models examining the independent effects of lifetime incarceration and living in an internally displaced persons camp on coerced and unsafe abortion among female sex workers (*n*=62) in Gulu, northern Uganda*

	Outcome [AOR (95% CI)]	
Exposure	Coerced abortion	Unsafe abortion
Lifetime incarceration†	5.16 (1.39–19.11)	–
Ever lived in an IDP camp‡	–	4.71 (1.42–15.61)

*Bivariate analyses were conducted exploring variables associated with unsafe and coerced abortions in our sample (see online Supplementary Table A and B). Based on findings of bivariate analyses, multivariable confounder models were then constructed using the approach of Maldonado and Greenland[25] to examine the independent effect of historical exposure to (1) incarceration on coerced abortions and (2) living in IDP camps on unsafe abortions.
†Model selection included age and fear of violence when asking clients to use condoms as potential confounders; only age was retained in the final model.
‡Model selection included sexually transmitted infection testing, and fear of violence when asking clients to use condoms as potential confounders; however, no confounding variables were retained in the final model.
AOR, adjusted odds ratio; CI, confidence interval; IDP, internally displaced persons.

employed a variety of strategies to ensure that our sample was as representative as possible, including use of rigorous time-location sampling methods, strong community partnerships, and regular outreach efforts, which resulted in our ability to recruit a large and diverse sample of hidden and hard-to-reach FSWs across a diverse range of work environments and venues. Nonetheless, as time-location sampling has the potential to over-represent women who visit certain locations more often than another, it is possible that our results may not be fully representative of all FSWs across all work environments, and may underestimate variance in some of the characteristics and associations reported. As the sample size for this study was based on preliminary estimates of HIV prevalence among young women in Uganda, and not based on experience with abortion, this may have limited our power to detect differences in experience with abortions. In light of the small number of cases used in the sub-analyses, the results and confidence intervals associated with our confounder models should be interpreted with caution. However, the small number of cases of coerced and unsafe abortions documented in this study would have made it more difficult to detect the associations we noted between incarceration, internal displacement, and these outcomes, biasing our findings towards the null. Building on findings of this exploratory analysis, more robust studies investigating patterns and determinants of coercive and unsafe abortions for FSWs remain critically needed.

CONCLUSIONS

In sub-Saharan Africa, women in sex work face multiple barriers when it comes to access to SRH services, representing a major infringement on their reproductive rights. In this study, experience with historical and ongoing violence was linked to increased odds of abortions among FSWs in conflict-affected Gulu, northern Uganda. With almost a five-fold increased risk of unsafe abortions among those who lived in IDP camps, findings of sub-analyses show that there continues to be large gaps in care concerning access to safe reproductive services for refugee and displaced women in sex work. Furthermore, one-third of abortions were coerced – a major human rights infringement on reproductive choice for FSWs. While access to non-coercive and safe abortion practices represents a human right fundamental to promoting women's overall wellbeing, legal prohibitions of access to abortion services coupled with the criminalised and stigmatised nature of sex work in Uganda, as in other settings in sub-Saharan Africa, continue to pose major gaps in access to SRH care for FSWs. Given examples in other settings of denial of access to care among FSWs in sub-Saharan Africa and forced/coercive HIV testing,[15] our findings echo broader human rights concerns of the harms of criminalisation and incarceration on reproductive health care for FSWs. In order to protect and promote the health and rights of FSWs in northern Uganda as well as other conflict-affected settings in sub-Saharan Africa, strengthening rights-based SRH for marginalised and displaced women, including access to non-coercive and safe abortions services, remain critically needed. Future programmes and legal reforms remain critical in order to protect the SRH choice and rights for women, especially marginalised populations of FSWs.

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