TITLE
Assessing risk of HIV and hepatitis C among people who inject drugs in East Africa: findings from a rapid assessment

RUNNING TITLE: Risk of HIV and HCV associated with injecting drugs in East Africa

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Acknowledgements
The rapid assessments research studies were funded by the Global Fund Regional Grant QPB-H-KANCO grant number 861 "HIV and Harm Reduction in Eastern Africa". The principle grant recipient is the Kenya AIDS NGOs Consortium (KANCO). The research team from Burundi received additional financial support from the Ministry of Health.

Conflict of interest

We have no conflict of interests to declare.

Abstract

Rapid assessment cross-sectional surveys and qualitative interviews were conducted among people who inject drugs (PWID) in Burundi and Uganda, as well as key informants working with drug users, to assess risk associated with HIV and hepatitis C (HCV). A total of 127 PWID were recruited in Burundi and 125 in Uganda of which the majority were male and aged between 24 and 26 years. Blood samples were collected in Burundi to test for antibodies to HIV, HCV and B Surface Antigen (HBsAg). Heroin was mainly injected in Uganda and Burundi with a small minority injecting crack/cocaine. Half of participants in Burundi, and 86% in Uganda had been HIV tested. The minority had been tested for HCV in any site (5-7%). HIV prevalence from the serological testing in Burundi indicated that 10% tested positive for antibodies to HIV, 6% to HCV and 9% to HBsAg. Qualitative data suggested that structural factors including costs of needle/syringes as well policies prohibiting pharmacies selling injecting equipment to PWID were related to reuse and sharing of needles/syringes among PWID, despite awareness HIV transmission risk. Police arrest was common in Burundi and Uganda and the use of bribes by police compounded existing high levels of poverty. Findings accentuate the need for policy shifts to enable easier access to clean injecting equipment, increased availability of HIV and HCV testing and increased access to affordable drug treatment and introduction of opioid substitution therapy. Specific attention is needed to the potential for sexual transmission of HIV among this population.

Keywords
People who inject drugs, rapid assessment, East Africa, harm reduction, HIV, HCV

Full text

Introduction

Injecting drug use is reported in 20 countries across Sub-Saharan Africa attributed to changes in trafficking routes and the introduction of heroin more suited to injecting than smoking.[1] Sub-Saharan Africa has 12% of the world's population but 71% of HIV infections, with HIV prevalence among adult populations estimated at 1.1% in Burundi and 6.5% in Uganda.[2] Injecting drugs has been associated with concentrated outbreaks of HIV infection in both high and low-income settings.[3] HIV prevalence among people who inject drugs (PWID) is estimated to be 15% in Kenya, 20% in Tanzania and 45% in Uganda [2,4 5] Little is known regarding regional Hepatitis C (HCV) prevalence and risk among PWID.

There is growing governmental commitment across the East African region for harm reduction interventions as a means to prevent HIV among PWID, including opioid substitution therapy (OST), needle syringe programs (NSP) and HIV testing and treatment.[6] Yet the implementation of these interventions is nascent, with OST and NSP only available in Mauritius, Madagascar, Tanzania and Kenya.[6] Concentrated HIV epidemics nested inside generalized and sexually-driven epidemics pose particular challenges for intervening. There is an urgent need for data on the extent of injecting drug use and associated HIV risk behavior to inform their development and scale up. We undertook rapid assessments in Burundi and Uganda in order to generate initial evidence on the extent of injecting drug use and HIV and HCV risks for use in mobilizing resources to support the development of harm reduction interventions to prevent and treat HIV and HCV infections among PWID.

Methodology

Rapid assessments combine qualitative with quantitative data generation methods to quickly inform intervention design, action and advocacy.[7] We conducted cross-sectional surveys among PWID in Burundi (Bujumbura), Uganda (Kampala and Mbale). To be eligible, participants had to have injected in the last 3 months, be older than 18 years (Uganda) or if younger legally recognized as being capable of assuming adult responsibilities (Burundi).

Following informed consent, behavioral data on HIV risk practices and service use were generated via an interviewer-administered questionnaire. Whole blood samples were collected in Burundi at health centers, and tested following clinical screening procedures testing for anti-bodies to HIV, HCV and Hepatitis B Surface Antigen (HBsAg). Supplementary qualitative data generation comprised semi-structured interviews and focus group discussions (FGD) with PWID recruited from community settings and key informants working with PWID. Ethical approval was granted by the national ethical committee in Burundi, the Mildmay Research Ethics Committee in Uganda and the London School of Hygiene and Tropical Medicine ethics committee.

Results

Cross sectional surveys and secondary data

We recruited 127 PWID in Burundi and 125 in Uganda. The minority of participants were female: 7% in Burundi and 18% in Uganda. On average, PWID were slightly younger in Burundi compared to Uganda (median=24 and 26 years) and with higher levels of homelessness (22% and 10%). Approximately half of the sample had ever exchanged sex for money, drugs or goods, among whom 63% and 81% used a condom at last sex work in Burundi and Uganda respectively. (Table 1) In Uganda all female and 26% of male participants had engaged in sex work while in Burundi 78% of women and 49% of men had done so (data not shown).

The main drug injected in both countries was heroin, but between 6% and 10% injected crack/cocaine. The median duration of injecting was 4.5 years (Burundi) and 5 years (Uganda). In Burundi 21% injected daily and 15% in Uganda. In the last three months, approximately half the sample had injected with a used needle/syringe in both sites (49-58%). Shared use of any injecting equipment (filters, spoons, rinse water) was reported by 53% in Burundi and 75% in Uganda in the last three months, and in both countries, approximately 70% used the same needle/syringe for injecting twice or more over the same time period.

Pharmacies were the main source for obtaining new needles/syringes (61% Burundi, 67% Uganda) then friends or drug dealers (27% Burundi, 24% Uganda,) with health facilities the least common (5% Burundi, 15% Uganda). A higher proportion had recent contact with a peer educator in Uganda (57%) compared to Burundi (34%).

Half of participants in Burundi had ever been tested for HIV and 86% in Uganda, but only the minority had been tested for HCV (5-7%), testing for which is not routinely offered in either country. Lifetime uptake of treatment

to modify drug use was low in Uganda (15%) and Burundi (3%) and experience of overdosing was high: 40% (Burundi); and 53% (Uganda). Serological testing in Burundi indicated that 10% of the sample were positive for antibodies to HIV, 6% to HCV and 9% to HBsAg. There were few cases of HIV/HCV coinfection (1), HIV/HBsAg (2) and no cases of HCV/HBsAg coinfection or triple infection (data not shown). HIV prevalence was 22% among women and 9% among men.

The majority of the sample had been arrested by the police in the last 12 months in Burundi (76%) and Uganda (65%). High proportions had experienced violence from the police in the same time frame (77% Burundi, 49% Uganda). Over half of participants in Burundi (55%) and Uganda (59%) had ever been in prison with 34% injecting with a used needle/syringe while in prison in Burundi and 15% in Uganda.

Focus groups and key informant interviews

In Burundi, nine interviews with key informants from the police, Ministry of Health, and local community were conducted as well as three FGD with PWID (n=8), people with experience of injecting drug use (n=8) and health service providers (n=8). In Uganda a total of 30 key informants from health services, police and the Ministry of Health were interviewed. Twelve focus group discussions were conducted in Kampala and 5 in Mbale among PWID.

Qualitative data indicated that cost and pharmacy restrictions selling needles/syringes to drug users was related to the sharing of injecting equipment "We are vulnerable! If I have 5000 Fbu [3 USD] to buy a single dose, I leave money for a needle, but you can't even find one nearby…..I quickly go to a friend nearby to borrow his needle because by now my body is burning from lack of heroin. Now HIV or AIDS does not mean anything to you, you think about it later!" [PWID, Bujumbura, Burundi] Needle/syringe sharing continued despite awareness of HIV transmission risks.

Barriers to accessing services in both Uganda and Burundi included stigma and discriminations, as well as a lack of harm reduction services for PWID and high costs of accessing private health services "even after we have overdose and blacked out, and we attempt to go to the health facilities, they delay to attend us, because they look at us as though we are useless. They think we are deviants and thugs, so they don't hurry to give us treatment." (FGD, Mbale) Existing problems related to poverty were compounded by the need to bribe police to avoid arrest as well as experiencing violence from police "when we [PWID] use these drugs, they [the police] arrest us, saying we are destabilizing the community, […] and when they [the police] arrest you, they demand money in order to release you". (FGD, Bujumbura Burundi)

Discussion and recommendations

We found a high prevalence of HIV and HBsAg but low prevalence of HCV among PWID in Burundi. Survey results suggested injecting with used, as well as reuse of, needles/syringe was common. Participants reported poor access to drug treatment and health facilities. Despite the presence of needle/syringe exchange programs in both countries, pharmacies, then friends were the main source for obtaining needles/syringes. There was a considerable overlap between experience of sex work and injecting drug use.

Access to clean injecting is poor as evidenced by high levels of sharing and reuse of the same needles/syringe for injecting. We found that high cost as well as policies that prohibit pharmacies from selling needles/syringes to be a key barrier for PWID to obtaining injecting equipment as well as intensive policing practices and violence from police.

Uptake of HIV testing is higher than previously documented in the region[8], particularly in Burundi, although uptake of HCV testing is low in both countries and availability needs to be increased. In both sites 46% had engaged in sex work, with the majority of women reporting experience of sex work. Data from Burundi suggest a higher prevalence of HIV among women than men. A similar difference has been documented in Kenya and Tanzania.[4] Harm reduction interventions need to address the additional vulnerabilities experienced by women who inject drugs, including risks of sexual transmission of HIV.

Despite attempts to recruit a diverse sample of PWID in all sites through the use of community mapping, these rapid assessments are limited by the lack of probabilistic sampling methods and small sample. Findings therefore may not represent the broader population of PWID. Despite these limitations, the study provides important new evidence of injecting drug use, particularly in Burundi, where injecting has not been documented before suggestive of increased diffusion of injecting.[3] There is a need for further in depth research, as well as the introduction of harm reduction interventions designed to facilitate low threshold access to services and the removal of restrictions on access to clean injecting equipment.

Table 1: Characteristics of people who inject drugs in Burundi and Uganda.

	Burundi	Uganda
	% (n) or Median (IQR)	
Total	127	125
Demographic characteristics		
Age (years)	24 (IQR 20-30)	26 (IQR 23-30)
Female	7% (9	18% (23)
Having no fixed abode	22% (28)	10% (12)
History of drug use		
Drug injected		
Heroin	98% (117) [&]	87% (109)
Cocaine/crack	10% (13) [&]	6% (7)
Duration of injecting (years)	4.5 (2-9)	5 (3-8)
Daily injecting	21% (27)	15% (19)
Injecting risk behaviours (3 months)		
Injected with a used needle/syringe	49% (62)	58% (72)
Sharing injecting equipment ^^	53% (67)	75% (94)
Used a needle twice or more	71% (85)	69% (83)
Sexual risk behaviours		
Ever exchanged sex	51% (65)	40% (49)
Used a condom at last sex work	63% (41)	81% (41)
Access to services		
Main source of needles/syringes		
Pharmacy	67% (50)	61% (75)
Health facility	5% (4)	15% (19)
Friends/other drug users	27% (20)	24% (29)
Contact with a peer educator (3 month)	34% (43)	57% (71)
Ever tested for HIV	50% (64)	86% (107)
Ever tested for HCV	5% (6)	7% (9)
Ever received drug treatment	3% (4)	15% (19)
Biological indicators		
Anti-HIV	10% (13)	45% (243)*
Anti-HCV	6% (7)	2% (9)*
HBsAg infection	9% (12)	3 (13)*
Health indicators		
Ever had an STI	22% (28)	57% (71)
Ever overdosed	40% (51)	53% (66)
Contact with criminal justice system		
Arrested in the last 12 months	76% (96)	65% (81)
Experienced police violence	77% (98)	49% (61)
Ever been in prison	55% (70)	59% (71)
Injected with used n/s while last in prison	34% (24)	15% (11)

[&] Main drug injected: Burundi, numbers do not add up as multiple responses were allowed and 21 people who smoked heroin; ^^ Sharing of injecting equipment was defined as shared use of filters or syringes in Burundi, and shared use of filters, spoons or frontloading in Uganda. *Data collated from Ugandan Harm Reduction Network client records. Total number of cases for HIV testing is 511, 546 for HCV, and 445 for HBsAg.

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