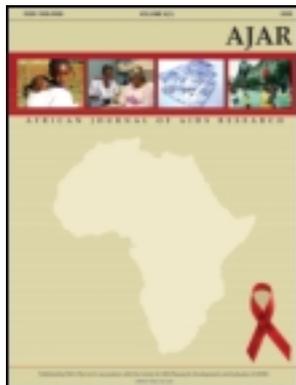


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The ethics of HIV research with people who inject drugs in Africa: a desk review

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The ethics of HIV research with people who inject drugs in Africa: a desk review

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Injecting drug use is a growing problem in Africa and a growing risk factor for contracting HIV in the region. It is imperative that HIV research includes injecting drug users so that they too are able to benefit from safe and effective behavioural interventions and biomedical HIV prevention and treatment products. This article relates a critical review of the findings of a desk review of previously published literature. The article examines injecting drug use in relation to HIV-related risk and research in Kenya, Mauritius, Nigeria, South Africa and Tanzania. The ethical challenges of including people who inject drugs in HIV research in Africa are also presented. The review found injecting drug use to be on the increase in all the countries reviewed. HIV-risk behaviour among people who inject drugs, such as needle-sharing and higher-risk sexual behaviour, was also found to be widespread. Furthermore, criminalisation of drug use and strict anti-drug laws are common in the countries reviewed, while harm-reduction programmes for people who inject drugs were found to be limited. The review identified a number of ethical challenges to the involvement of people who inject drugs in HIV research in Africa. This includes the illegal status and stigma surrounding injecting drug use, which may complicate participant recruitment, enrolment and retention. In addition, a lack of funding for supportive programmes to help injecting drug users may hinder the provision of appropriate standards of prevention and care and treatment for those who seroconvert.

Keywords: harm reduction, HIV/AIDS, injecting drug use, Kenya, Mauritius, Nigeria, research methodology, social aspects, South Africa, Tanzania

Introduction

While injecting drug use is perceived as a problem mostly in Europe and Asia, it is on the increase in Africa (Smart, 2006). The number of people who inject drugs in sub-Saharan Africa has been estimated at half a million to over three million (Mathers, Degenhardt, Phillips, Wiessing, Hickman, Strathdee *et al.*, 2008). Although reliable statistics are often not available, concern over increasing levels of injecting drug use in African countries is beginning to reach the popular press (cf. Palitza, 2011). More importantly, injecting drug use is a growing risk factor for acquiring HIV in the region, as needle-sharing, risky injecting techniques, and limited access to sterile injecting equipment all increase the risk of HIV transmission. Estimates of the extent of needle-sharing among injecting drug users for a six-month period ranged from 11–15% in Nigeria to 28–52% in Kenya (Reid, 2009). Injecting drug use also often facilitates HIV-risk behaviours, such as an increased number of sex partners, limited condom use and engaging in higher-risk sexual acts, such as anal sex (Parry, Carney, Petersen, Dewing & Needle, 2009). Recently, UNAIDS (2010) acknowledged injecting drug use as a minor driver of the HIV epidemics in Kenya, Nigeria, South Africa and Tanzania, and also acknowledged

injecting drug use as the main driver of the comparatively small HIV epidemic in Mauritius.

People who inject drugs are at high risk for contracting HIV. As such, it is imperative that they are included in HIV research so that they too are able to benefit from safe and effective behavioural interventions and biomedical HIV-prevention and treatment products. It is therefore necessary to ethically engage a range of people who inject drugs in HIV-related socio-behavioural and biomedical research in Africa.

In response to the increase in injecting drug use in Africa, the link between injecting drug use and HIV transmission, and the importance of the inclusion of injecting drug users in HIV research in Africa, the Ethics, Law, and Human Rights Collaborating Centre of the African AIDS Vaccine Programme (AAVP ELH) at the University of KwaZulu-Natal, South Africa, obtained a grant from the World Health Organization (WHO) and UNAIDS to conduct a desk review pertaining to the ethics of HIV research with people who inject drugs in Africa, and to prepare a research proposal to empirically investigate the topic.

This article reports on selected results of the desk review. The purpose of the desk review was to gain a better understanding of the extent of injecting drug use in Africa and to identify the ethical issues and challenges of conducting HIV research with people who inject drugs.

Methods

The research reviewed data acquired from published literature, online sources, government and department of health websites, conference presentations, and ethical guidance documents. The sources were primarily identified using the following search terms: 'HIV,' 'research ethics,' 'injecting drug use' or 'people who inject drugs,' and 'Africa' or 'Kenya,' 'Mauritius,' 'Nigeria,' 'South Africa' and 'Tanzania.' Data was collected pertaining to Kenya, Mauritius, Nigeria, South Africa and Tanzania as these countries all have well-developed research infrastructure and have hosted HIV-related socio-behavioural and biomedical studies (AVAC: Global Advocacy for HIV Prevention, 2008). In addition, the prevalence of people who inject drugs within these countries has been documented (cf. Dewing, Pluddemann, Myers & Parry, 2006). UNAIDS (2010) has also identified injecting drug use as contributing to the HIV epidemic in all these countries. In total, 45 sources were reviewed, with publication dates that ranged from 1992 to 2011. A framework was developed to guide the data collection based on the aims of the study. Thus, each source was reviewed in terms of the following elements: 1) coverage of injecting drug use in Africa, examined in terms of the prevalence of people who inject drugs as well as the prevalence HIV among people who inject drugs, HIV-risk behaviour among people who inject drugs, and the availability of harm-reduction programmes for people who inject drugs; 2) HIV research conducted with people who inject drugs; and, 3) the ethics of HIV research with people who inject drugs.

Findings

The prevalence of people who inject drugs in Africa

While the overall prevalence of injecting drug use in Africa is low in comparison with Asia and Eastern Europe, recent literature reveals that injecting drug use in Africa is on the increase. The prevalence of injecting drug use is estimated at 0.09% in Tanzania, 0.15% in South Africa, 0.18% in Kenya, 0.35% in Nigeria and 1.8% in Mauritius (Reid, 2009). More recently, however, Mathers, Cook & Degenhardt (2010) report the estimated prevalence of people who inject drugs to be as high as 2.13% in Mauritius and 0.87% in South Africa. Hence, different setting-specific studies have reported varying degrees of injecting drug use in the countries reviewed. In Kenya, Ndetei (2004) studied 1 420 Kenyans, including past and present drug users, with or without HIV infection, as well as HIV-positive people with or without a history of drug use. Although the divergent sampling frame limits the usefulness of the findings, it is interesting to note that the research found 23% of the sample to be injecting drug users. Beckerleg & Lewando Hundt's (2004) study of heroin use in Malindi, Kenya, identified 600 heroin users, half of which were injecting drug users. A later Kenyan study by Beckerleg, Telfer & Sadiq (2006) found that 15% of the 496 heroin users surveyed reported injecting heroin at least once. Dewing, Pluddeman, Myers & Parry (2006) reported that in Mauritius, in the first half of 2004, 57% of the patients in drug treatment were

people who inject drugs. In Nigeria, of 398 heroin and/or cocaine users surveyed 20.8% had injected drugs at least once (Dewing *et al.*, 2006). In South Africa, a national survey revealed that only 4.7% of drug users reported injecting drugs ((Parry, Dewing, Petersen, Carney, Needle, Kroeger & Treger, 2009).). However, an increase in injecting drug use in Johannesburg and Pretoria was noted over time (cf. Parry, Dewing *et al.*, 2009). According to the Alcohol and Drug Abuse Research Group (2008) of the South African Medical Research Council, South Africa does not have a culture of injecting drug use. Conversely, heroin injecting has been spreading throughout Tanzania, and a study by Beckerleg, Telfer & Lewando Hundt (2005) revealed that 18.3% of 624 Tanzanian drug users injected drugs.

HIV prevalence among people who inject drugs in Africa

Estimated HIV prevalence among people who inject drugs ranges from 8.9% in Nigeria, to 19.4% in South Africa, 29–31% in Tanzania and 22.9–50% in Kenya (Smart, 2006). In Mauritius, HIV incidence among people who inject drugs increased from 2% in 2000, to 14% in 2002, 66% in 2003, 87% in 2004, and 92% in 2005, and then dropped to 85.9% in 2006 (Sulliman, no date). Importantly, the prevalence of HIV among people who inject drugs is higher than the national HIV prevalence in all the countries reviewed (cf. UNAIDS, 2008). This highlights the importance of HIV research that includes people who inject drugs.

HIV prevalence among people who inject drugs in Kenya was estimated at 42.9% in 2004 (Mathers *et al.*, 2008) and 49.5% in 2006 (Ndetei, Ongecha, Malow, Onyancha, Mutiso, Kokonya *et al.*, 2006). Dewing *et al.* (2006) reported on a rapid situation assessment conducted in Mauritius which found that 91% of the 100 drug users, 17.4% of the 50 juvenile offenders, 49.7% of the 150 adult inmates, and 74.5 % of the 100 sex workers studied were injecting drug users. Dewing *et al.* (2006) also reported on a Nigerian study in which 9.8% of 358 participants were found to be HIV-positive. In South Africa, 45% of people who inject drugs in prison are thought to be HIV-positive compared with an HIV prevalence of 22% among the general prison population (Parry & Pithey, 2006). In Tanzania, HIV prevalence among people who inject drugs in Dar es Salaam averaged 57% (McCurdy, Ross, Kilonzo, Leshabari & Williams, 2006). In Zanzibar, HIV prevalence among injecting drug users who shared needles was 28% compared with 5% among injecting drug users who did not share needles (Hasnain, 2005). A study by Williams, McCurdy, Bowen, Kilonzo, Atkinson, Ross & Leshabari (2009) found that four in 10 people who inject drugs tested HIV-positive, which was six-times the infection level in the general Tanzanian adult population. Lastly, the 2002 Zanzibar HIV-prevalence survey found a 12% HIV prevalence among people who inject drugs (Revolutionary Government of Zanzibar, 2005).

HIV-risk behaviour among people who inject drugs

Although the HIV epidemic in Africa is driven by heterosexual transmission of the virus, both injecting drug use and drug use in general are growing modes of HIV transmission (Dewing *et al.*, 2006; UNAIDS, 2010). Needle-sharing,

risky injecting techniques, limited access to sterile injecting equipment, and higher-risk sexual behaviour associated with injecting drug use all increase the risk of HIV transmission. People who inject drugs are therefore contributing to the spread of HIV in Africa (Dewing *et al.*, 2006; UNAIDS, 2010). Furthermore, high levels of both HIV infection and injecting drug use have been documented among sex workers in Africa (Parry, Dewing *et al.*, 2009). Drug-using sex workers have been thought to require more customers to finance their drug addiction, thereby increasing their exposure to HIV (Parry, Carney *et al.*, 2009). Drug-using sex workers are also thought to be more likely to not use condoms, in order to secure higher payments and/or additional customers (Parry, Carney *et al.*, 2009). Consequently, sex workers who engage in unsafe injecting practices and higher-risk sexual behaviour are likely to contribute to the spread of HIV among the general population.

Setting-specific studies in Kenya show that between 27.5% (Odek-Ogunde, 2004) and 81% (Ndetei, 2004) of people who inject drugs reported using a needle after someone else had used it. Furthermore, between 26.7% (Ndetei, 2004) and 43.1% (Odek-Ogunde, 2004) of people who inject drugs reported passing on their needle to someone else. Studies in Kenya have documented poor injecting techniques, such as using needles repeatedly (Beckerleg *et al.*, 2006) and using needles that have become rusty due to incorrect storage or blunt from repeated usage (Beckerleg *et al.*, 2005). Also, access to sterile injecting equipment is limited in Kenya (Beckerleg & Lewando Hundt, 2004). A Mauritian study revealed that 80% of the 91 drug users studied had shared a needle in the past three months; and, while 95% reported cleaning their needles, only 23.3% did so with bleach (Dewing *et al.*, 2006). The same study found that 30.5% of the adult prison inmates and 76.7% of the sex workers included in the study said they shared needles (Dewing *et al.*, 2006).

Estimated rates of needle-sharing among drug users in Nigeria range from 11% to 15%, while only 25% of Nigerian injecting drug users reportedly know that sharing needles carries a risk of HIV transmission (Reid, 2009). In South Africa, one study found that 86% of 250 heroin users in Cape Town reported sharing a needle at least once (Dewing *et al.*, 2006) and a Durban study found that some injecting drug users engaged in 'flushing' (Parry, Carney *et al.*, 2009). 'Flushing' is a practice in which, once the drug has been injected, blood is drawn from the vein back into the syringe and then injected back into the vein to ensure that no drug residue remains in the syringe (Parry, Carney *et al.*, 2009). The same study also found condom use among people who inject drugs to be infrequent, even among those who were not aware of their HIV status. In Tanzania, 20% of 300 injecting drug users studied in Dar es Salaam reported sharing needles (Williams, McCurdy, Atkinson, Kilonzo, Leshabari & Ross, 2007). In Tanzania, Leshabari (2005, cited in Dewing *et al.*, 2006) uncovered a needle-sharing practice known as 'flashblood.' The practice involves injecting heroin and then drawing blood back into the syringe and giving the syringe to another user who then injects the blood into their own vein in an attempt to alleviate withdrawal symptoms when heroin is unobtainable

(Dewing *et al.*, 2006). The Zanzibar AIDS Commission (2008) states that 46% of people who inject drugs share needles, 9% engage in 'flashblood' practices, and only 30% clean their injecting paraphernalia with water before needle-sharing. Moreover, Williams *et al.* (2009) found that in Tanzania people who inject drugs often have sex without condoms and trade sex for money. Injecting drug use is therefore associated with several high-risk HIV-transmission behaviours.

The availability of harm-reduction programmes for people who inject drugs

The goal of harm-reduction programmes is to reduce the harm caused by drug use, such as the acquisition of HIV. Needle and syringe programmes provide sterile injecting equipment to people who inject drugs in order to reduce the hazard of using unsterile injecting equipment (Vlahov, Robertson & Strathdee, 2010). Needle and syringe programmes lead to reduced risky injecting practices and decreases in new blood-borne infections, including HIV. In addition to being effective these programmes are also safe and cost-effective (Vlahov *et al.*, 2010). In Africa, needle and syringe programmes have only been implemented in Mauritius, where an estimated 4 900 people who inject drugs access a programme annually (Mathers *et al.*, 2010). In Kenya, Nigeria, South Africa and Tanzania, restrictive drug-control policies hamper the rollout of needle and syringe programmes.

An alternative to needle and syringe programmes is to increase people's access to the sterile injecting equipment available at private pharmacies (Vlahov *et al.*, 2010). Although access to sterile needles is possible through pharmacies in all the countries reviewed, pharmacies are often not open at night and the staff may be hostile and judgemental towards those purchasing needles and syringes (IDU Reference Group, 2010).

Opioid-substitution therapy involves replacing an illegal opioid drug with a longer-acting but less euphoric opioid that is taken under medical supervision and prevents people who inject drugs from experiencing withdrawal symptoms; this allows injecting drug users to stabilise and reduces their risk behaviours (Vlahov *et al.*, 2010). Opioid-substitution therapy is associated with a reduction in HIV-risk behaviours, lowered injection frequency and lower rates of HIV infection (Vlahov *et al.*, 2010).

Except for Nigeria, all the countries reviewed have some form of opioid-substitution therapy available. Methadone maintenance treatment is available in Kenya (Mathers *et al.*, 2010), for example, yet it is not available through public health facilities as current government policy does not allow it (IDU Reference Group, 2010). In Mauritius, a government methadone substitution therapy programme was launched in 2006 (Sulliman, no date) and other opioid substitutes are available (IDU Reference Group, 2010). In South Africa, opioid-substitution therapy and demand-reduction services are available (Reid, 2009). The first patients were enrolled in Tanzania's medication-assisted therapy programme for injecting drug users in February 2011. The programme was launched by the Tanzanian Drug Control Commission (DCC), the Ministry of Health and Social Welfare, and

Muhimbili University of Health and Allied Sciences in collaboration with the United States President's Emergency Plan for AIDS Relief (PEPFAR), the US Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) (AVAC: Global Advocacy for HIV Prevention, 2010). While opioid-substitution therapy is available in the countries reviewed, for such programmes to be effective and accessible to the variety of people who inject drugs, they need to be made more widely available in primary healthcare settings in Africa.

HIV research with people who inject drugs in Africa

Scant data is available on the number of injecting drug users enrolled in HIV-related research in Africa and, in general, there have been few studies of people who inject drugs in Africa. For example, a search of the registry <ClinicalTrials.gov> using the terms 'injection/injecting/intravenous drug use(rs)' and 'injection/injecting/intravenous drug use(rs) and HIV/AIDS' did not reveal any clinical trials in Africa. In the Kenya Medical Research Institute (KEMRI) cohorts, little is known about the number of people who inject drugs, and the topic has not been explored in any detail (personal communication, E.J. Saunders, KEMRI, July 2010). However, one KEMRI study set out to determine whether audio computer-assisted self-interviews could be useful in assessing the risk behaviour of female and male sex workers recruited for an HIV-1-intervention trial in Mombasa; the research revealed that 10.8% of 343 male and 4.4% of 176 female participants reported injecting drug use during the last three months (Van der Elst, Okuku, Nakanya, Muhaari, Davies, McClelland *et al.*, 2009). In a study involving 285 men who have sex with men and enrolled in a KEMRI vaccine-preparedness cohort study, only four participants (1.4%) reported injecting drug use (Sanders, Graham, Okuku, Van der Elst, Muhaari, Davies *et al.*, 2007). Moreover, the number of people who inject drugs and are enrolled in research that focuses specifically on HIV and drug use is low (personal communication, C.D.H. Parry, South African Medical Research Council, July 2010). For example, a South African Medical Research Council study on drugs and HIV, in Cape Town, Pretoria and Durban, enrolled 6 133 drug users between 2007 and 2009, of which only 195 (3.1%) said they were injecting drug users (personal communication, C.D.H. Parry, July 2010).

The ethics of HIV research with people who inject drugs in Africa

The desk review did not identify any published literature discussing the challenges to conducting ethical research with people who inject drugs in Africa. Sources from the international literature and conference presentations were therefore used to hypothesise about the ethical challenges that researchers in Africa may face.

The first ethical challenge researchers must consider is the punitive anti-drug laws in many African countries. These may subject people who inject drugs to heavy fines or long-term imprisonment. Criminalisation and anti-drug laws may prevent people who inject drugs from carrying sterile

syringes or from accessing treatment and harm-reduction services out of fear of prosecution (Human Rights Watch & The International Harm Reduction Association, 2009). Csete, Gathumbi, Wolfe & Cohen (2009) found that people who inject drugs in Kenya and Tanzania were afraid of being reported to the authorities if they utilised government health services. WHO & UNAIDS (2007) caution that in selected circumstances biomedical HIV-prevention trials should not be conducted — such as when insurmountable legal barriers are present. When strict criminalisation of drug use and anti-drug laws exist and/or when some prevention methods, such as needle and syringe programmes, are illegal in a proposed research site, researchers will need to consider whether in that context it is appropriate to conduct HIV research with people who inject drugs (Macklin, 2010). Moreover, criminalisation and anti-drug laws may impact on the willingness of people who inject drugs to participate in the research and so hamper the researchers' recruitment efforts. Criminalisation and anti-drug laws may also negatively impact on the willingness of people who inject drugs and who are enrolled in HIV research to utilise harm-reduction services or to visit HIV-care or drug-treatment referral sites. Also, when researching people involved in illegal activities, the possibility exists that the research data may be subpoenaed. Information about illegal behaviours obtained by researchers may incriminate the research participants or the researchers may be punished if they fail to release the requested information (Australian Injecting and Illicit Drug Users League, 2003).

A second potential ethical challenge for researchers to consider is that people who inject drugs are a highly stigmatised group (Chan, Yang, Zhang & Reidpath, 2007). There is often little political support for research or HIV prevention among this group (Des Jarlais, 2010). Advocacy initiatives are needed to make HIV research and prevention efforts available to this stigmatised group. Moreover, discrimination against drug users by addictions-treatment staff has previously been documented (see Ross & Darke, 1992). As such, when injecting drug users are enrolled in HIV research, researchers should actively work to prevent members of the research team from stigmatising or discriminating against them. If people who inject drugs are hired by research teams to work as recruiters or community advisory board members, steps must be taken to ensure that they are treated with respect and are not discriminated against by the research staff.

WHO & UNAIDS (2007) recommend that researchers and sponsors engage meaningfully with study communities in a participatory and transparent manner throughout the research process. However, this can prove ethically difficult when researching people who inject drugs. Identifying appropriate representatives from the injecting-drug-using community may itself be a challenge, while 'transparent' community engagement may reveal the identity of people who inject drugs, placing them at risk with the law (Macklin, 2010).

Participant recruitment and retention can also be ethically challenging when conducting research with people who inject drugs. People who inject drugs are a hidden population, hard to reach by standard recruitment methods.

Researchers need to consider how the participants will be identified, how and where they will be recruited, and how their confidentiality will be maintained. Respondent-driven sampling has been proposed as the most appropriate sampling and recruitment method for research with people who inject drugs (Scott, 2008). However, the potential for peers to use unethical recruitment methods exists and should be monitored and prevented by the researchers. Scott (2008) reports that respondent-driven sampling may also be used by some injecting drug users to secure a superior position among fellow injecting drug users in their community. Moreover, the use of peer recruiters may be problematic in African countries due to the criminalisation of drug use and anti-drug laws. And finally, people who inject drugs may be difficult to retain in research as their drug dependence could result in increased loss to follow-up or failure to adhere to study visits or correct product use.

Researchers may also face ethical challenges while obtaining consent and maintaining confidentiality if enrolling people who inject drugs in their studies. People who inject drugs are particularly vulnerable to breaches of participants' confidentiality as this may result in discrimination or action by lawful authorities. The illegal nature of injecting drug use also means that the act of signing a consent form may be considered dangerous or too risky for people who inject drugs (Australian Injecting and Illicit Drug Users League, 2003). However, this issue may be addressed by securing a waiver of signed consent from a research ethics committee and requesting that the researcher sign to indicate that the research participants have provided informed consent. Furthermore, injecting drug use is often accompanied by psychiatric co-morbidity (Compton, Cottler, Phelps, Ben Abdallah & Spitznagel, 2000), which further complicates the conduct of ethical research with injecting drug-using populations, especially in terms of obtaining voluntary informed consent for research participation (Fulford & Howse, 1993).

In general, reimbursing research participants rewards them for their contribution and compensates them for their time and out-of-pocket expenses (Ritter, Fry & Swan, 2003). Researchers have expressed ethical concerns that people who inject drugs may participate only for financial gain and may use the monetary reimbursements to buy drugs (Ritter *et al.*, 2003). In response to this concern, some researchers opt for non-cash reimbursements for the participants. However, this assumes that people who inject drugs are dishonest and cannot spend cash sensibly (Ritter *et al.*, 2003). In a study of drug users' views about monetary reimbursement for research participation, Slomka, McCurdy, Ratliff, Timpson & Williams (2007) found that drug-using participants did not believe that payment for participation would increase their drug use or risk-taking behaviour. Ritter *et al.* (2003) argue that people who inject drugs have the same rights to be reimbursed as other research participants and that withholding monetary reimbursement from this vulnerable group would be unjust and discriminatory. Ultimately, decisions about whether or not cash reimbursements should be provided should be reached in negotiation with the study community.

WHO & UNAIDS (2007) state that access to all state-of-the-art HIV-risk-reduction methods should be provided to

participants in HIV-prevention trials. This includes access to risk-reduction counselling and proven HIV-prevention methods. Parry, Petersen, Carney & Needle (2010) advocate for a multi-component approach to HIV prevention for people who inject drugs. This includes community-based outreach, voluntary HIV counselling and testing, HIV-reduction counselling, condom provision and harm-reduction components, including access to clean injecting equipment and drug-treatment services. However, barriers exist to the provision of appropriate standards of prevention for people who inject drugs. In Africa, these include stigma and discrimination and a lack of harm-reduction interventions and referral sites, largely due to legislation, weak healthcare systems and a lack of political will (Harm Reduction International, 2012). Furthermore, the possession of injecting equipment without a prescription remains illegal in many African countries; the possibility of arrest and prosecution may therefore prevent people who inject drugs from accessing HIV-prevention services (Harm Reduction International, 2012). Researchers may also face the problem of how to provide state-of-the-art risk-reduction services, such as the provision of clean needles, when doing so would be illegal in the country where the research is being conducted.

Furthermore, WHO & UNAIDS (2007) state that access to treatment regimens from among those internationally recognised as optimal should be provided to participants in HIV-prevention trials. However, legislation and policy barriers may impede access to HIV treatment for drug users in African HIV trials (Parry *et al.*, 2010). Struggling healthcare systems and a lack of political may result in insufficient funding for supportive programmes, and this may hinder the provision of care and treatment for those who seroconvert during HIV trials. HIV-positive drug users have also been found to be less likely than other groups to receive antiretroviral drugs (The American Foundation for AIDS Research, 2010), despite high levels of adherence to antiretroviral drugs being documented among drug-using individuals (Tyndall, McNally, Lai, Zhang, Wood, Kerr & Montaner, 2007). Providing optimal HIV treatment and drug therapy to drug users in African countries, while important, is unlikely to be an eventuality since public provision of even the most basic health services is still severely limited in many African countries.

In general, the provision of appropriate standards of prevention, care and treatment to injecting drug users enrolled in HIV research is likely to be problematic. This is due to resource-constrained health systems, lack of expertise pertaining to drug addiction, the perception of drug use as a social vice rather than as a chronic or relapsing health problem, and the ignorance-related fear of offering even basic care to people who use illegal drugs. Complete reliance on donor funding (and thus donor policies) for these services can be another constraint to the effective rollout of appropriate standards of prevention, care and treatment to drug-using populations.

Limitations of the study

There were several limitations to this desk review. The researcher was unable to locate grey literature on the

topic, such as conference presentations and unpublished data, and limited feedback and verification of the data was received from the key informants contacted during the review. Thus, the desk review was based primarily on the limited amount of published literature on injecting drug use in Africa. This desk review therefore may not provide a comprehensive review of the topic. Moreover, little or no data was found on the number of injecting drug users screened and/or enrolled in HIV research in Africa, or on the ethical challenges of conducting research with people who inject drugs in African contexts. Thus, the appropriateness of the generalisations made from the international literature to the African context is unknown.

Recommendations

The reported increase of injecting drug use in Africa, the link between injecting drug use and HIV transmission, and the imperative to include injecting drug users in HIV research so that they are able to benefit from safe and effective behavioural interventions and prevention and treatment products, means that HIV researchers in Africa and international human rights advocates need to start taking this vulnerable population into consideration. In order to do so, further empirical research is needed to determine the prevalence of people who inject drugs in Africa, and the prevalence of HIV infection and HIV-risk behaviour among them. Accurate data and information on the number of injecting drug users screened and enrolled in HIV research in Africa is also needed. It is recommended that country-specific audits are undertaken to determine the legal, policy and resource barriers to the enrolment of people who inject drugs as participants in HIV research. Similarly, an audit of the harm-reduction services available in specific countries would be essential in preparation for the broader inclusion of injecting drug users in HIV research in Africa. Lastly, as no literature is yet available on the ethical engagement of people who inject drugs in research in an African context, a survey of researchers' experiences and the ethical challenges encountered when studying people who inject drugs is recommended.

Conclusions

The first purpose of this desk review was to gain a better understanding of the extent of injecting drug use in Africa. The review found injecting drug use to be a growing problem in the five countries reviewed. The review also found injecting drug use to be a growing risk factor for acquiring HIV in Africa, as needle-sharing and higher-risk sexual behaviour among people who inject drugs is common. The criminalisation of drug use and strict anti-drug laws were found to be common in the countries reviewed. This prevents the implementation of a needle and syringe programme in all the countries reviewed, except for Mauritius, and hampers the rollout of opioid-substitution therapy in primary health facilities. All the countries reviewed, however, with the exception of Nigeria, have some form of opioid-substitution therapy available.

The second purpose of the review was to identify ethical challenges to conducting HIV research with people who

inject drugs. The review established that criminalisation, anti-drug laws, discrimination and stigmatisation make research participation difficult for people who inject drugs. People who inject drugs have also been identified as a hidden population, hard to reach by standard recruitment methods. Retaining people who inject drugs in research is recognised as difficult since their drug dependence may result in increased loss to follow-up or failure to adhere to study visits or correct product adherence. Providing monetary reimbursements to participants who are injecting drug users was also found to be of ethical concern to some researchers. Lastly, several ethical challenges to the provision of prevention, care and treatment services to injecting drug users enrolled in HIV research were identified; these are largely due to current legislation, weak healthcare systems, limited resources and a lack of political will.

In order to ensure that people who inject drugs are included in HIV research in Africa, further empirical research is needed on the number of injecting drug users screened and enrolled in HIV research in Africa. The legal, policy and resource barriers to the enrolment of injecting drug users in HIV research, and the extent of harm-reduction services available to this group in Africa, also need to be identified and analysed. Furthermore, empirical research is recommended on researchers' previous experiences and the ethical challenges encountered when studying people who inject drugs.

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The author — Nicole Mamotte is a project manager with the Ethics, Law and Human Rights Collaborating Centre of the WHO/UNAIDS African AIDS Vaccine Programme (AAVP ELH), and a member of the South African Human Sciences Research Council's research ethics committee.

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