HHS Public Access

Author manuscript

AIDS Behav. Author manuscript; available in PMC 2019 June 01.

Published in final edited form as:

AIDS Behav. 2018 June ; 22(6): 1787–1791. doi:10.1007/s10461-017-1990-4.

Contraceptive Use among HIV-infected Females with History of Injection Drug Use in St. Petersburg, Russia

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Abstract

Limited research examines family planning for HIV-infected women with a history of injection drug use. We describe modern contraceptive use and its association with heavy drinking and recent injection for HIV-infected females in St. Petersburg, Russia (N=49): 22.4% (n=11) used traditional methods and 30.6% (n=15) reported modern contraceptive use, which consisted primarily of condoms (26.5%, n=13). Over 63% (n=31) had an abortion. Observed associations for heavy alcohol use (AOR=2.36, CI=0.53, 12.41) and recent injection drug use (AOR=2.88, CI=0.60, 16.92) were clinically notable, but not statistically significant. Prioritizing family planning for HIV-infected women with a history of substance use is urgently needed.

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Compliance with Ethical Standards:

Conflict of Interest: All authors declare that they have no conflicts of interest.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

INTRODUCTION

Russia is one of the few nations in the world with a growing HIV epidemic; the nation's annual growth rate of HIV cases is 10–12% (1). More than one-third of those infected are women (2). Simultaneously, Russia maintains one the highest rates of abortion in the world (3) despite the fact that the majority (69%) of married or in union women engage in family planning (4). High rates of abortion in this context may be due to heavy reliance on traditional methods of contraception (e.g., rhythm method or withdrawal) or condom use (4), which are less effective forms of contraception (5). Family planning among women living with HIV is important to prevent both mother to child HIV transmission and unintended pregnancies (6). However, despite growing research on effective family planning prevention efforts for women living with HIV (7), this issue continues to receive scarce attention in Russia. Studies within Russia do document that women at higher risk for HIV, both sex workers and injection drug users, report inadequate contraceptive use (8, 9), which is consistent with the broader literature on family planning among women who inject drugs (5). This study expands on prior work by examining contraceptive use among HIV-infected women with a history of injection drug use in St. Petersburg, Russia, and assessing whether such use is associated with ongoing substance use behaviors, specifically recent heavy alcohol use or drug injection.

Women who use opiods and other substances have higher rates of unintended pregnancies relative to non-substance using populations and studies show they have lower levels of modern contraception use and a higher reliance on condoms (5). Modern contraceptive methods refer to medical technologies that prevent pregnancy; for example, intrauterine devices (IUD), implants, injectables, oral contraceptives, and condoms, while non-modern, or traditional, methods include fertility awareness approaches, withdrawal and abstinence. Although condoms are the only method that prevents both pregnancy and HIV/STIs, and thus an essential tool for HIV-infected women, they are considered a less effective method of pregnancy prevention since they rely on continued and consistent use (5). For both substance using and HIV-infected women, addressing unmet need for modern contraception and expanding contraceptive choice to include methods more effective for pregnancy prevention is thus essential.

In Russia, the HIV epidemic has been driven largely by injection drug use: 2.3% of all Russian adults inject drugs (12) and an HIV prevalence among people who inject drugs (PWID) ranges from 18–31% (11). Injection drug use is even more common in urban centers like St. Petersburg (12), which has an HIV prevalence of 50% among PWID (13). It is estimated, however, that only 10% of PWID in St. Petersburg are receiving antiretroviral therapy (ART) (14), a treatment that is also vital to the prevention of mother-to-child transmission (PMTCT) (11). We know less about females who inject drugs (FWID), as HIV prevention and intervention responses have focused primarily on male injectors. Thus, women's unique needs, which include family planning and reproductive health, have received limited attention.

As a result of reproductive health policy and practice, abortion rates in Russia are also among the highest in the world and it is the primary means of pregnancy prevention; at the

same time, the use of and access to modern contraception is quite limited, suggesting an unmet need (3, 15). In a study of reproductive aged women in St. Petersburg, researchers found that 70% of sexually active women were at risk for unintended pregnancy, 58% of these had used a reliable contraceptive at last intercourse, 31% used traditional methods, 12% used no method, and more than half of sexually active women had had an abortion (16). Among FWID, previous research in St. Petersburg found lower levels of condom use (51%), no use of oral contraceptives, reliance on traditional contraceptive methods (15%), and a higher prevalence of abortion (67%) (8). Importantly, they found no relationship between having had an abortion and a subsequent greater likelihood of condom use, suggesting a persistent high risk for unwanted pregnancies and abortion-related health risks among FWID (8).

Given the growing HIV epidemic in Russia and the limited use of modern contraception among FWID, family planning needs of this population should be prioritized. In this paper, we describe contraceptive use among a cohort of HIV-infected women with a history of substance use in St. Petersburg, Russia. In addition, we explore whether recent injection drug use and heavy drinking are associated with modern contraceptive use. This research adds to the existing literature by focusing primarily on *HIV-infected* female injectors, who may have more pervasive needs for access to modern contraceptives and family planning. The goal of this exploratory, hypothesis-generating research is to provide a preliminary examination of the family planning needs of HIV-infected female substance users that may be used to inform the development of interventions addressing the health of these vulnerable women.

METHODS

Data for this analysis come from a study of HIV-infected women and men with a history of injection drug use taking part in an intervention study, “Linking Infectious and Narcology Care (LINC),” aimed at improving the HIV treatment cascade in Russia (17). Participants in the LINC study were recruited from inpatient wards at the City Addiction Hospital in St. Petersburg, Russia between July 2012 and May 2014. The study randomized 349 HIV-infected people hospitalized at a narcology hospital to the LINC intervention (strength-based case management) or standard care. Eligibility criteria were as follows: age 18–70 years; HIV-infected; hospitalized at the narcology hospital; history of injection drug use; agree to CD4 cell count testing; have 2 contacts to assist with follow-up; live within 100 km of St. Petersburg; and have a telephone. Participants were excluded if they were not fluent in Russian, were currently on ART, or had a cognitive impairment resulting in inability to provide informed consent. Assessment occurred at baseline and at 6 and 12 months post randomization, with blood collection at baseline and 12 months. Assessments were conducted by trained research staff and administered in Russian. This study was approved by Institutional Review Boards of Boston University Medical Campus and First St. Petersburg Pavlov State Medical University.

The current analysis utilized data collected at the 6-month study visit (N=250), when methods of contraception were assessed, and was limited to female participants who reported sex in the past 6 months and who were not currently pregnant (N=49). Measures

used in the LINC study are described elsewhere (17). In the 6-month follow-up, measures of family planning were added (18), including the primary outcome of interest, current use of modern contraceptives, a dichotomous measure of whether the respondent used male condoms, female condoms, oral contraceptives, an implant, injectables, an IUD, foam, a diaphragm, or sterilization to prevent pregnancy. The two main independent variables were heavy drinking in the past 6 months (as measured by an AUDIT score of 8 or more) and injection drug use in the past 30 days. We also described several participant characteristics, including measures of reproductive health (i.e. number of pregnancies, live births, still births, miscarriages, abortions), as well as economic vulnerability (ran out of money for housing/food in past 6 months), recent arrest (past 6 months), and recent experience of violence (past 6 months). Sociodemographic variables include age, education (more than 9th grade vs. 9 or less), and relationship status (never married/widowed/divorced/separated vs. married/domestic or long-term partner).

Statistical Analyses

We present descriptive statistics (i.e., mean, SD, min, max, median, 25th and 75th percentiles) for key variables. To further describe and characterize substance use characteristics, including recent injection drug use and heavy drinking, as well as other variables, by modern contraceptive use, we used t-tests, chi-square, or Fisher's exact tests, as appropriate. We then conducted separate unadjusted exact logistic regression models for each main independent variable (i.e. heavy drinking and recent injection drug use) and adjusted exact logistic regression models that included the covariates relationship status and number of times pregnant (0–2 vs. 3+) as these were considered likely confounders based on the literature and clinical knowledge. Analyses were conducted using SAS 9.3 (SAS Institute Inc., Cary, NC).

RESULTS

On average, sexually active females in this sample were 32 years old (range 24–46) (Table 1). About 65% of females had completed some secondary education and the majority were currently single (57.1%). Economic vulnerability (i.e. not having enough money for housing/food in past 6 months) was high (79.6%) and 34.7% reported experiencing violence in the past 6 months. Prevalence of recent arrest (past 6 months) was 14.3%.

Of the 49 sexually active females included in the analysis, almost half reported doing anything to avoid/delay pregnancy (46.9%); however, less than a third (30.6%, n=15) reported current use of modern contraceptives and 22% (n=11) reported use of traditional contraceptive methods. About a quarter (n=13) of women reported use of male condoms and only 4% (n=2) used hormonal contraceptives. Reporting of problems related to condom use in the past 90 days was low (8.2%); yet, only 40% of sexual acts in the past 90 days were protected by a condom. Nearly half of females reported that they had children (n=24), average number of lifetime pregnancies was 2.7, 14% (n=7) reported having miscarried and 63% (n=31) reported having had an abortion.

The proportion of females reporting heavy drinking was high (57.1%) as was injection drug use in the past 30 days (61.2%). We found no statistically significant association between recent injection drug use, heavy alcohol use, and reporting of modern contraceptive use.

DISCUSSION

Research on modern contraceptive use among HIV-infected FWID is limited. Findings from this study with sexually active women in Russia reveal low levels of modern contraceptive use, a reliance on condoms and traditional contraceptive methods, and a high proportion of women with a past abortion. These results suggest that there is an urgent need to prioritize the reproductive health needs of this vulnerable population.

Notably, less than a third of female respondents reported any modern contraceptive use and slightly over a quarter reported use of condoms. This is lower than a recent study by Abdala and colleagues among FWID in St. Petersburg, in which about half of women reported condom use (8). Further, almost a quarter of respondents in our sample reported use of traditional contraception, while previous research with FWID reported that only 15% of women used traditional methods (8). Overall, among these HIV-infected women, only 40% of sexual acts in the past 90 days, on average, were protected by a condom. Other research with FWID found consistent condom use among 22% of participants (8). Low rates of any modern contraceptive use, including condoms, in our study is particularly concerning given that this was a sample of sexually active women who are also infected with HIV. Higher levels of risk in our study may stem from differences in sample recruitment – the Abdala study consisted of a convenience sample recruited from a center providing free medical care to PWID (8) and this study's sample consisted of PWID hospitalized at a narcology hospital, which may indicate more severe substance use issues. It is also possible that behavioral differences are specific to HIV-infected women; however, more research is needed to compare family planning among HIV-infected and uninfected FWID in this context.

The prevalence of abortion among females in this sample was also high. Almost two-thirds of study participants reported having had an abortion, which is higher than women in the general Russian population, but consistent with previous research on abortion among FWID in St. Petersburg (8). Similar to findings presented by Abdala et al. (2011), we found no significant association between modern contraceptive use and having had an abortion. High rates of abortion, in combination with low use of modern contraceptives, is discouraging and indicate that there is a substantial unmet need for reproductive health care among HIV-infected FWID in Russia. We did not find a significant association between recent injection drug use or heavy drinking and modern contraceptive use, but in this context, where both HIV and drug use are highly stigmatized, it is possible that FWID may not seek care because they fear discrimination by medical providers. For instance, the criminalization of drug use during pregnancy in Russia may deter women from obtaining needed care and to seek illegal or unsafe abortions (19). Addressing the reproductive health needs of HIV-infected FWID could have wide-reaching effects by reducing unwanted pregnancies and related morbidity and mortality, as well ensuring that wanted pregnancies are healthy.

The combination of both a low overall prevalence of any modern contraceptive use, including condoms, and high rates of abortion, is worrisome on a number of fronts and suggests that there is a need to consider specific intervention activities that address both unintended pregnancy and the transmission of HIV and other STIs. Given that this is a population of HIV-infected sexually active women, the very low uptake of condoms is alarming and suggests a need for condom promotion and provision in this population (5, 20). Condoms can also be used for pregnancy prevention, but they are a less effective contraceptive method and associated with relatively higher pregnancy rate (5, 20). Indeed the very high prevalence of abortion indicates an unmet need for pregnancy prevention that is not being met by condoms alone. This represents a missed opportunity to support longer acting contraceptive methods (e.g. IUD, implant, injectable) to prevent pregnancy. In contexts where both HIV/STI and unintended pregnancy are high, the need for dual protection can pose challenges for providers trying to best address women's multiple needs (20). Future research and programs should focus on identifying how to promote dual protection for high risk women in ways that are effective and that take into account the constraints that marginalized women face.

Low rates of modern contraceptive use among FWID, more broadly, may be due to limited access to contraceptives and needed reproductive health care services (8). In Russia, although medical care is free, informal fees and need for residency registration may impact access to care, as registration can result in the sharing of personal information, like illicit drug use, with authorities (21). Further, the use of hormonal contraceptives in Russia is very low (22) and recent policies encouraging increased fertility and reduced abortion may limit access to an even greater extent (3). Our findings suggest that more needs to be done to support the contraceptive needs of HIV-infected FWID in Russia, including improved provision of health services. For instance, integrating family planning programs into drug treatment could address a number of women's health issues. In particular, increased access to hormonal contraceptives, which are highly effective for pregnancy prevention, is important (23).

This study is subject to limitations, mainly that the sample size of females who were sexually active and eligible for inclusion was quite small, limiting the power of the study. We therefore consider this to be a descriptive, hypothesis-generating study. Future studies need to explore contraceptive use and reproductive health among larger samples of HIV-infected FWID. Additionally, our results may not be generalizable to FWID outside of St. Petersburg; however, they may still be relevant to other areas with similar epidemiologic characteristics. Despite these limitations, our findings provide preliminary, but important, insight into the need for strategies that reduce the impact of HIV and unwanted pregnancy among vulnerable women.

CONCLUSIONS

Our findings indicate that only a third of HIV-infected female injectors in St. Petersburg use modern contraceptives, and most of this use was condoms, which is a less effective method of pregnancy prevention. These findings suggest the need for increased availability and accessibility of family planning services and modern contraceptives among FWID,

especially given their HIV positive status. In the Russian context, where access to stigma-free reproductive health care and harm reduction services is limited, integrating and strengthening these complementary services with general health services for FWID is essential to attenuate the growing HIV epidemic and to protect the health of vulnerable women, their children and partners.

Acknowledgments

Funding: This study was funded through NIDA grant R01DA032082. Dr. West is funded by NIDA grant K01DA041233.

The authors gratefully acknowledge the contributions of study participants and staff. We would also like to Vivian Dinh for assistance with table preparation.

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Table 1

Sample Characteristics among Sexually Active HIV-infected Russian Females (N=49) with a History of Injection Drug Use

SOCIODEMOGRAPHICS	
Age	
Mean (SD)	32.4 (5.1)
Median (min–max)	33 (24–46)
Education	
Grade 9 or less	17 (34.7%)
More than grade 9	32 (65.3%)
Relationship Status is Single/Divorced/Widowed	28 (57.1%)
CONTRACEPTIVE USE	
Currently doing something or using any method to avoid/delay pregnancy	23 (46.9%)
Currently using modern contraceptive methods	15 (30.6%)
Currently using traditional contraceptive methods	11 (22.4%)
Currently using hormonal contraception	2 (4.1%)
Currently using condoms	13 (26.5%)
Has had problems with condoms, Past 90 days	4 (8.2%)
Proportion of condom protected sexual acts, Past 90 days	
Mean (SD)	0.4 (0.5)
Median (min–max)	0 (0–1)
SUBSTANCE USE	
Heavy Drinking (from AUDIT)	28 (57.1%)
Used injection drugs, Past 30 days	30 (61.2%)
INDICATORS OF VULNERABILITY	
Ran Out of Money for Housing/Food, Past 6 Months	39 (79.6%)
Arrested, Past 6 Months	7 (14.3%)
Victim of Violence, Past 6 Months	17 (34.7%)
REPRODUCTIVE HEALTH CHARACTERISTICS	
No. of Times Pregnant	

SOCIODEMOGRAPHICS	
Mean (SD)	2.7 (2.6)
Median (min–max)	4 (0–13)
Has Had Children	24 (49.0%)
No. of Living Children	
Mean (SD)	0.7 (1.0)
Median (min–max)	0 (0–4)
No. of Children Born Alive but Later Died	
Mean (SD)	0 (0.1)
Median (min–max)	0 (0–1)
Ever Had a Stillbirth	1 (2.0%)
Ever Had a Miscarriage	7 (14.3%)
Ever Had an Abortion	31 (63.3%)