BMJ Open

Women and Substance Use: An exploratory study on sexual and reproductive health of women who use drugs in Delhi, India

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2017-018530
Article Type:	Research
Date Submitted by the Author:	05-Jul-2017
Complete List of Authors:	Sharma, Vartika; International Centre for Reproductive Health Sarna, Avina; Population Council Tun, Waimar; Population Council, HIV and AIDS Program Saraswati, Lopamudra Ray; Population Council Thior, Ibou; PATH Madan, Ira; Sahara Centre for Residential Care and Rehabilitation Luchters, Stanley; Burnet Institute, Centre for International Health
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Sexual health, Public health, HIV/AIDS, Qualitative research
Keywords:	QUALITATIVE RESEARCH, HIV & AIDS < INFECTIOUS DISEASES, PUBLIC HEALTH

Women and Substance Use: An exploratory study on sexual and reproductive health of women who use drugs in Delhi, India

*Vartika Sharma[a], Avina Sarna[b], Waimar Tun[c], Lopamudra Ray Saraswati[b], Ibou Thior[d], Ira Madan[e] and Stanley Luchters[a,f,g]

Affiliations:

[a] International Centre for Reproductive Health, Ghent University, Belgium. (Ex-Population Council, India) vs.vartikas@gmail.com

[b] Population Council, New Delhi, India, asarna@popcouncil.org, lsaraswati@popcouncil.org

[c] Population Council, Washington, USA, wtun@popcouncil.org

[d] PATH, Washington, USA, ithior@path.org

[e] Sahara Centre for Residential Care and Rehabilitation, Delhi, India, iramadan@gmail.com

[f] Burnet Institute, Melbourne, Australia, sluchters@burnet.edu.au

[g] School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

* Corresponding author

Abstract

Objectives: To explore factors that enhance vulnerabilities for poor sexual and reproductive health (SRH) outcomes and explore possible differences in SRH related behaviors and needs of women who use drugs through non-injecting and injecting routes.

Design: Qualitative study design with purposive sampling

Participants: In-depth interviews were conducted with 20 women who injected drugs in the past 3 months and 28 women who reported using drugs through non-injecting routes in the past one month.

Setting: All interviews were conducted at community based drop-in-centers in Delhi, India.

Results: Study findings illustrate that women who use drugs are often sexually active and have multiple sex partners. Volatile and abusive relationships, unstable living conditions, violence, illegal activities such as sex work, drug peddling and use of drugs, limit their decision-making and negotiation skills, which have adverse effect on sexual and reproductive health of these women. Despite high awareness, low and inconsistent contraceptive use was reported. Many participants reported coercion to conceive in their unsteady relationships. On the contrary, inability to conceive and multiple miscarriages among women who desired to conceive was also cited. Limited access to healthcare may be ascribed to their low perceived need and stigma in healthcare settings. There is an urgent need to set up women-centric targeted interventions, which act as 'one-stop-shop' for complete package of health services.

Conclusion: Study findings highlight that women who use drugs engage in a wide range of risky behaviors and are vulnerable to negative sexual and reproductive health consequences. Irrespective of the nature of drug use, it is imperative to roll out women-centric services with appropriate linkage to drug dependence treatment as well as reproductive health services. While tailor-made interventions are required to build their self-risk assessment skills, sensitization of health care service providers in addressing their special needs should not be overlooked.

Strengths and Limitations

1. This study provides a robust, in-depth understanding of context in which women who use drugs make certain behavioural choices related to their sexual and reproductive health outcomes.

2. The study findings can be used to develop comprehensive services targeted to address special sexual and reproductive health needs of women who use drugs.

3. Findings add a new perspective by including information from women who use drugs through non-injecting routes.

4. Considering that the study was conducted with a small sample of women in a defined geographical area of Delhi, it may not be representative of such women in other parts of Delhi.

Background

Women who use drugs (WUD) are notoriously hard to reach and maintain a relatively subordinate position to men in the drug using subculture(1). Drug use is often seen as contrary to the socially normative roles of women as mothers, partners and caretakers, leaving women who use drugs to face greater stigma, risks and experience a range of specific harms at higher levels than men who use drugs(1). India has a large population of people who inject drugs, estimated at 177,000(2). The number of women who inject drugs (women/I) is estimated to be in the range of 10,055 – 33,392(3). However, national level estimates for women who use drugs through non-injecting routes are not available.

Globally, significant gender-related differences have been observed between male and female drug users. A study in London reported that women used smaller amounts of drugs, for a shorter duration, and were less likely to inject than their male counterparts, thereby suggesting differences in their risk profiles. Furthermore, their drug-using sex partners were found to have an important influence on women's drug use behaviors(4). Another study conducted in Bangladesh with 176 women drug users reported that less than half of the women started with injecting, while most transitioned from smoking to injecting(5). Irrespective of the route of administration, drug use not only impairs decision-making(6) but many drugs may also increase sexual pleasure resulting in increased unsafe sexual activity(7–9). While injection drug use is strongly associated with HIV, a number of studies have also found high HIV prevalence among predominantly heterosexual, non-injecting drug users ranging from 13% in Canada to 29% in Russia and 43% in China(10); these prevalence rates are significantly higher than the prevalence among women in the general population of these countries. Analysis of data collected from women/I who accessed harm-reduction services in northeast India in 2011-12, showed that 40% engaged in occasional sex work while one-fourth engaged in professional sex work(11). Other studies across India also report that many WUD resort to sex work to obtain drugs from their sex partners or to earn money

for purchasing drugs(12–14). Poor socio-economic conditions create an urgency that contributes to unprotected sex with clients and associated risk for HIV and other sexually transmitted infections (STIs). In-depth interviews conducted with WUDs in the two northeastern states of India, reveal that uptake of HIV prevention and care services among these women was inadequate as most services related to harm-reduction are not gender-responsive(15). Further, these services do not cover women who use drugs through non-injecting routes (Women/NI) unless they identify as sex workers or transition onto injection drug use(15,16) .

Since women constitute a smaller proportion of the drug using population, their vulnerabilities with regards to their sexual and reproductive health, HIV risk and social issues are not fully researched and understood. This qualitative study thus explores factors that enhance the vulnerabilities for poor sexual and reproductive health outcomes of women who use drugs and aims to understand possible differences in the behaviors and needs of women who use drugs through injecting and non-injecting routes.

Methods

A prospective cohort study (May 2011- April 2014) was conducted to assess HIV sero-incidence among people who inject drugs and receive comprehensive HIV prevention services in Delhi(17,18) Participants were over 18 years of age and had injected drugs at least once in the last three months. They were recruited through peer referral, targeted outreach in hotspots and as walk-in clients for HIV prevention services provided through five drop-in-centers (DIC) in Delhi(18). These DICs also served as a data collection center. Women/I who were enrolled in the HIV sero-incidence study, were invited to participate in this qualitative inquiry. At the same time, women/NI - who were above 18 years of age, and had used drugs through oral route - ingestion, inhaling, chasing, snorting, sniffing or smoking - at least once in the last one month, were recruited through targeted outreach at hotspots linked to the five DICs. Interviews were reviewed daily to capture new emerging themes and diversify study sample

accordingly. Recruitment of new participants was discontinued once additional interviews no longer captured diverse risk profiles. Women/I received USD 1.50 and women/NI received USD 2.20 as compensation for their participation in the qualitative interviews. The compensation for the former group was lower as they were already a part of the HIV incidence cohort study. Written informed consent was obtained from all the study participants; for illiterate participants, informed consent was read out and a thumb imprint taken in presence of a witness.

The in-depth interview guide was designed to obtain an understanding of the social context in which WUD live and use drugs, behaviors that place them at risk of HIV and other STIs, understanding of their own risks and measures taken to mitigate those risks, their health care needs and access to healthcare services. The interview guide was pilot-tested for clarity in local language (Hindi), comprehension, content and cultural sensitivity. Mock interviews were conducted with female outreach reach workers (ORWs), who were mostly former drug users and thus were familiar with the context of our study population. A trained female interviewer with prior experience of working with this population conducted the interviews in an area with auditory and visual privacy at the DICs. Each interview lasted approximately 35-40 minutes.

All interviews were audio-recorded, transcribed verbatim, and translated into English for analysis. Atlas Ti (GmbH, Berlin; Version 6.2) was used for coding and analysis of interviews.

Data Analysis

During the period of data collection, interview transcripts were reviewed and analyzed to identify a saturation level beyond which further interviews did not elicit new information or new risk profile. Coding was initiated with themes derived from the interview guide (a priori), which in-turn was developed based on the research questions. Two researchers read the transcripts independently for content analysis and used the identified themes to generate descriptive categories and codes to

interpret within and between cases. Codes were then compared and a final code list prepared by consensus. Approximately 10% of the interviews were double-coded to minimize subjectivity. Participants have been given fictitious names in this paper to ensure confidentiality.

The study was approved by the Population Council Institutional Review Board (IRB), USA and PATH, Research Ethics Committee (REC), USA.

Results

We interviewed 20 women who injected drugs and 28 women who used drugs through non-injecting routes. Table 1 provides an overview of their socio-demographic profile. The median age of women/NI and women/I was 29.5 years and 35 years, respectively. Majority of the participants were illiterate, over one-half lived on the street, and most were self-employed in a variety of daily wage activities, some of which were illegal. Among women/I, over one-half were currently married and a third were separated or divorced. Among women/NI, two-fifths were currently married and a third separated or divorced. Almost one-third of the participants reported multiple marriages and most had children. A higher proportion of women/NI were presently engaged in sex work.

Table 1. Socio-demographic profile

Socio-demographic Characteristics	Women/I (n=20)	Women/NI (n=28)
Age (Median, IQR) in years	35 (25-40 years)	29.5 (22- 35 years)
Education		
Illiterate	17	19
Class I- XII	3	6
Graduate and above	0	0
Informal education	0	3
Accommodation		
Lived on the street	10	15
Lived in a home	10	13
Employment*		
Unemployed	5	3
Daily wage work	8	5
Sex work	4	11
Drug peddling	1	7
Pick-pocketing	3	2
Begging	3	11
Marital Status		
Married	11	12
Separated/Divorced	6	9
Widow	3	4
Single	0	3
No. of children ever born**		
None	4	2
1-2	8	10
>2	8	13

*A few women reported more than one job ** Among women who reported ever been married

FACTORS THAT ENHANCE VULNERABILITIES FOR POOR SEXUAL AND REPRODUCTIVE HEALTH OUTCOMES

Drug use

The onset of drug use was similar among both types of drug users, all of whom were introduced to drugs by different people in their lives. Many women were introduced to drugs by their drug using regular

partners, who did so to avoid confrontation and requests for them to discontinue using drugs. Furthermore, once addicted, women served as a useful resource to arrange drugs for themselves and their partners. Women also reportedly got influenced by their heavy drug using partners.

‘‘*Whenever he (husband) used smack I would not let him enter the house. One day, he made me swear on my parents and asked me to try it once... The first time I smoked it, I felt that I am in heaven…I kept asking for it and he kept giving it to me until I got addicted. By getting me addicted, he could continue his drugs without any trouble*”

Pooja, 19-year-old woman/NI, beggar

A few women/I reported initiating drugs with friends who duped them by giving smack- filled cigarettes. All women/I reported using drugs through oral route before switching to injecting drugs. Among women/NI, some women reported initiating drug use at the behest of their peer sex workers, mostly to make it easier to deal with clients. The other reasons for initiating drugs included – exposure and access to drugs because of drug peddling on their own or by someone in their family. For many participants, drug use helped them in handling personal problems such as the death of a close family member, violence by a partner, husband’s infidelity or a partner’s imprisonment.

Participants reported sharing of drugs and paraphernalia for multiple reasons – non-availability of new paraphernalia, as a gesture of trust for regular partner, to split cost of drug use and in case of women/I - as an incentive to male partners for preparing the fix, finding the vein and injecting it correctly. Most participants did not perceive any risk in sharing paraphernalia of oral drug use such as pipe, cigarette, silver foil and handkerchief, although the risk from sharing injecting paraphernalia was acknowledged. Nevertheless, while sharing of needles was avoided, sharing of syringes and reusing old needles/syringes were commonly reported.

Transient relationships

Many participants reported a series of regular partners. The reasons for unsteady relationships was largely related to the fact that their regular partners had multiple sexual partners - women from their previous marriage, other live-in-partners, casual sex partners or sex workers. A few women/I reported being abandoned by their husband who went onto marry other women though no legal formalities of divorce proceedings were cited. In some instances, women themselves discontinued the relationship because of their partner's infidelity. However, to survive on the street or to support their families, women needed the protection of a man and in turn looked for a new partner.

"My husband left me when my second child was born…He said that the other women loved him more. So, I left everything and came here[Delhi]…"

Zubina, 40-year-old woman/I, unemployed

"He was wrong and he used to do wrong things (sex) with outside women also…he was a flirt"

Farha, 34-year-old woman/NI, rag picker

Marital conflicts relating to drug use, inability to provide appropriate child care and violence, were other reasons cited which pushed women out of marriage. A few women also reported long incarceration periods or death of their partner a reason to move on to other relationships. Interaction with other men who lived on the street and male members of the drug using network provided opportunities for new partnerships to form.

Sex work

To earn a living, some participants sought employment opportunities, but with limited literacy and employability skills, they found it difficult to have a stable job and hence turned to sex work. While many participants went into sex work of their own volition, others were led to it by their peers and yet others were coerced by their male partners. The women/NI who were younger in age and not into heavy drug use were more likely to report sex work.

"I used to go out with other women to do drugs…they suggested that I can earn good money by doing wrong work (sex work), so I started going with them. We used to attract men, do it (sex) and get our money"

Meena, 22-year-old woman/NI, sex worker

Reasons for getting into sex work were driven by their own economic needs - to finance their drug use or to raise their families while their male partners were either incarcerated or had abandoned them. In many instances, sex work provided women a sense of independence and self-assurance, as one participant illustrates:

"Nobody gives you money for free. When I did not have a husband, I was helpless and because of it I had to do it [sex work] … I had to somehow save money for my daughter"

Seema, 20-year-old woman/NI, garbage picker

Women continue to face considerable risk of sexually transmitted infections through sex work since most reported low condom use. Reasons for not using condoms with clients included the offer of extra money, fear of violence from aggressive clients, or low client volume.

"At times, I was really high to negotiate or I didn't have it [condom] and the client also didn't have money to buy it… Some men said they don't enjoy with it(condom)…men are like that only. When they give money …. they want us to do whatever they ask"

Mala, 35-year-old woman/NI, ex-sex worker

A few participants did also report instances of refusing clients without condom use and chasing them away.

Violence

Violence was reported as an intrinsic part of their lives as drug users. Volatile relationships, unstable and adverse living conditions, illegal activities such as sex work and drug peddling made participants

vulnerable to violence not only at the hand of their regular partners, but also other drug users, clients of sex work and at times by the local police. WUD experienced verbal and physical violence from regular partners over arguments related to insufficient money to finance both drugs and household expenses, refusal to do sex work, efforts at stopping their partners from having sex outside marriage or restricting their partners from using drugs. Violence during pregnancy and intentions of self-harm were also reported.

"*He used to hit me many times.... [showing her hand] …I slit my wrist with blade after drinking alcohol…I was fighting with him that when he has everything, why does he go after other women…He was drunk so he slapped me and I could do nothing… so in anger I slashed my wrist."*

Raano, 35-year-old woman/NI, unemployed

"My life had been such a mess, I had no family since the age of 10 … I earn on my own and eat alone… It would be better if someone kills me and throws me away. I have no will to live… I once tried committing suicide but didn't die".

Amira, 29-year-old woman/I, unemployed

Sexual abuse was commonly reported by participants who lived on the street. Perpetrators included other drug users, local thugs, drug peddlers, and policemen. Three women reported sexual abuse by policemen:

"*You will find both good and bad policemen… In lots of places they say do it [sex] with us then we will let you earn. We do it with them but not all of them use condoms."*

Naseem, 29-year-old woman/NI, sex worker

SEXUAL AND REPRODUCTIVE HEALTH RELATED BEHAVIORS AND NEEDS

In the context of this highly volatile lifestyle – unstable and abusive partnerships, unsafe living conditions, and involvement in illegal activities, the sexual and reproductive health related behaviors and needs of participants are described below.

Inconsistent condom use

Most participants were sexually active and several engaged in risky sexual behaviors such as unprotected sex. While women were cognizant of the risk of infection and unplanned pregnancies through unprotected sex, and condoms being an effective way of preventing it, condom use was infrequently reported, especially with their regular partners.

A fear of breaching trust and lack of enjoyment by both partners, deterred condom use with regular partners. Further, the overall lack of perceived risk was also an important reason for infrequent condom use, except in the case of a few participants who felt at risk as their partners had multiple sexual relationships.

"*When it is your husband it [sex] is not that risky so it is mostly done without condom…And it is fine because sometimes there is no condom and your man is in a mood [to have sex]".*

Chanda, 32-year-old woman/NI, pick-pocketer

"I explained to him [husband] that since he has sex with other women he can get infected. I told him that I had no objection in him having sex with other women provided he used condoms. But he simply refused and now his disease [HIV] has passed on to me."

Shabana, 35-year-old woman/I, garbage picker

Other reasons reported for inconsistent condom use included the belief that condoms are to be used by sex workers or are only required for sex with an infected partner. Influence of drugs was an important

determinant for condom use. A woman/I reported that she doesn't remember to use condoms under influence of drugs while another one disclosed that she is too drugged to even realize when it (sex) happens. A small number of participants expressed concern that condoms were not completely safe, as they had experienced frequent tears. Women also reportedly followed traditional practices, such as, urinating or washing their genitals immediately after unprotected sex to prevent infection and pregnancy.

To minimize the chances of ill-effects of inconsistent consistent condom use, women reported using their own discretionary strategies in sex work. As one participant reported refusing unprotected sex if the client injected drugs as he was more likely to be infected. Another participant refused sex if the clients had visible symptoms of infection.

"Once a man came and asked me to switch off the lights while having sex... Then I saw that the bottom of his testicles was so fat, filthy and smelly. I felt so scared… I told him that you would give me 100-200 rupees [for sex] but I will get sick and my life will be spoiled. I then chased him away"

Iram, 40-year-old woman/I, ex-sex worker

High risk sexual acts

Some women/NI reported that their partners demand anal or oral sex though not many agreed to do it. Women refused for reasons like fear of infection, perception that anal sex is abnormal; for some, it was against their religious beliefs. There was no mention about the use of condoms during these acts. As a 23-year-old participant narrates:

"He [husband] asks me to let him do from behind [anal]…but when I refuse he starts sulking…I feel scared; I have never done it... Eunuchs do it this way, wives at home don't…he makes me suck [oral sex] also. Yesterday, he forced it in my mouth"

Laxmi, 23-year-old woman/NI, sex worker

Some women also reported having sex with their regular partners during menstruation. A few women refused to do so as they feared infecting their partners with their menstrual blood. In contrast, one woman cited her partner's fears in having sex with her when she is menstruating.

"When I am menstruating, my husband doesn't have sex with me…he is scared that sex during this time could result in me having abdominal pains and consequently infertility"

Zubina, 40-year-old woman/I, unemployed

Consequences of unsafe sexual behavior

Unprotected sex can lead to unintended and unplanned pregnancies or leave the women infected. Similar experiences were reported by our study participants. A few women reported undergoing abortion to terminate unwanted pregnancies. As one participant explains:

"*When I got pregnant, I went and took medicines to abort it. I kept lying on the bed for 2-3 days till I bled…I told my mother-in-law, your son uses drugs so how will I raise this child? My husband also now feels that it was the right decision…he cannot earn, how would he feed or educate the child…"*

Chanda, 32-year-old woman/NI, ex-pick pocketer

Abnormal vaginal discharge, itching, dyspareunia and genital ulcers were commonly reported symptoms suggestive of RTI/STI. Two of the commonly cited reasons for contracting STIs were –multiple sex partners of their regular partners and unprotected sex with clients. Women/NI who had these symptoms reported male partners with symptoms of genital itching, penile discharge or genital ulcers. Further, physical weakness, use of unhygienic toilets and not 'washing-off' the genitals after having sex were other reasons cited. However, in many cases, women could not explain reasons for having such symptoms. There was a mixed response with regards to access to treatment for STIs, as many did not perceive the need for seeking treatment for itching and vaginal discharge which they believed were common problems. Embarrassment in explaining symptoms, undergoing physical examination and the

cost of treatment further discouraged women from seeking medical help. One woman complained of being turned away without treatment for her genital ulcers since she was a drug user. The use of home remedies or treatment from local pharmacy stores for symptomatic treatment was commonly reported.

"I often have a yellow colored vaginal discharge. Friends told me to go to private hospital as no one in government hospital gives medicine properly…but I don't have money so from where will I get my tests and treatment done? I think it's because of weakness that I've this problem of discharge"

Farha, 30-year-old woman/NI, garbage picker

Unmet family planning needs

As most women were in their reproductive age group and many were sexually active, their intentions for family planning were explored as discussed below.

Desire to conceive

Among those who were married and sexually active, a few participants, more so the women/NI, expressed desire to have children. While only one of them never had children, others who wanted to conceive were women who had either only one child or had lost her children. High mortality among children of drug users was commonly reported and was an important reason cited for their desire to have more. Few women reported pressure from their partners to have a child with them, even when they had children from a previous relationship.

"I did not want to conceive but my husband insisted. We used to fight at times... I argued that he had multiple wives and must be having kids from them, so why does he want them from me? …He said that he only has a son and wants a daughter now"

Shobha, 35-year-old woman/I, pick-pocketer

Some of these women, however, reported difficulty in conceiving and blamed it on their drug use, which they thought resulted in their menstrual irregularities and repeated miscarriages.

"*It has been a long time since I had my miscarriage but since then I am unable to conceive. The world yearns for children… The day I have children I will leave all of this (drug use) and I will work hard."*

Laxmi, 23-year-old woman/NI, sex-worker

Participants – both women/I and women/NI reported miscarriages; of these a few, women/I had experienced multiple miscarriages. The reasons for miscarriage included accidental fall after drug use, inappropriate medication due to non-disclosure of drug use, intimate partner violence and witchcraft.

"*I was using drugs at that time; it was raining and I slipped because of which I lost my pregnancy... I went to a lady doctor near my house. She gave me medicines to clean out the womb… I didn't tell her that I used drugs for the fear that she wouldn't give me medicines"*

Kamla, 35-year-old woman/I, beggar

Desire to limit family size

Some of the sexually active participants expressed their desire to limit the family size. Reasons included - having achieved the desired family size, financial constraints in raising more children and the fear that their children would also get into drug use. These women reported various modern and traditional methods to prevent pregnancy – condoms, contraceptive pills, abstinence, sex during menstruation and sterilization.

"After delivery of my second baby, I explained to him different ways of contraception - sterilization, pills and condoms. He was against sterilization as he thought I could die during the process and I was against pills as I tend to forget. So, finally we decided to use condoms."

Maya, 31-year-old woman/I, pick-pocketer

Despite their desire to limit family size and awareness about various contraceptives, participants reported infrequent and inconsistent use. The most commonly reported contraceptives were – condoms and oral contraceptive pills which are easily available at the government health care facilities and local pharmacy stores. With contraceptive pills, women frequently reported missing pills due to their unstable lifestyle and drug use. The reasons for poor uptake of condoms have already been reported above.

Poor access to healthcare facilities

Study participants cited multiple reasons for their limited access to health care facilities. Lack of perceived need to seek treatment was evident as women ignored symptoms of poor reproductive health, and preferred self-medication due to perceived stigma. Many reported embarrassment in discussing intimate health conditions in crowded hospital settings.

"Sometimes it [menstruation] doesn't happen for months together…I thought of getting a check-up done but since I use smack how will I or from where will I get treatment"

Shanti, 28-year-old woman/I, beggar

While women gave limited importance to their healthcare needs, the healthcare facilities also failed to provide adequate services. Few participants, who visited healthcare facility on rare occasions, reported evasive and dissatisfactory explanation to their complaints and ill-treatment because of drug use and unkempt appearance.

"I visited the government hospital since I was unable to conceive. The doctors just did the checkup and give medicine but didn't tell me anything. I even went to a private hospital for 2-3 months, got my tests done but nothing happened…I gave it a year and then left it. Doctors don't treat us well; they don't do the check-up properly...they are always in a hurry…"

Bina, 21-year-old woman/NI, gambling

Discussion

This qualitative study highlights factors that enhance the vulnerabilities for poor sexual and reproductive health outcomes for women who use drugs in Delhi, India. Further, the study findings provide insights into the risk behaviors and health needs of women who use drugs through non-injecting routes (ingestion, inhaling, chasing, snorting, sniffing or smoking), hitherto a gap in knowledge, and explores possible differences that may exist in comparison to women who inject drugs. In our study, women who injected drugs were found to be older, less likely to be sexually active, being in sex work and more likely to be divorced or separated than non-injecting drug users. Similar findings have been reported from study with women drug users in north east India(19).

Many study participants reported being sexually active, either with a regular or a paid partner. Inconsistent condom use was widely reported and incorrect knowledge and misconceptions were prevalent. Condoms were used more often with clients, especially injection drug users, and those who had visible symptoms of infection or appeared dirty. Clients who paid more or were aggressive got away without using condoms. Condoms were also less likely to be used with regular partners even when they were known to have other sex partners. Women cited coercion to engage in anal sex which is known to have higher probability of HIV transmission compared to penile-vaginal sex (1.7% vs. 0.8%)(20) Participants refused anal sex because it is an unnatural act and not because of the risk involved; condoms were not mentioned. In India, harm-reduction services for people who use drugs are limited to prevention of HIV and other STIs, thus overlooking other reproductive health needs such as family planning. A study in north eastern part of the country, identified reproductive health problems as one of the most commonly reported issues among women who use drugs(15). We report similar findings in our study. Women who desired to conceive, reported multiple miscarriages and inability to conceive, especially the women/I. A possible explanation is the well-established association between heavy drug use and poor reproductive outcomes like spontaneous abortion, restricted fetal growth and incorrect

maternal placentation(21). At the same time, many others reported unintended and unplanned pregnancies despite high levels of awareness about modern methods of contraception. Low contraceptive use could be linked to their drug use that prevents them from making decisions, accessing services and adhering to the chosen method(22). To support their drug use, participants reported risky behaviors such as sex work, which has obvious detrimental health effects, apart from conflicting with the law. Thus, our qualitative study, although with limited scope for generalizability, shows that the sexual and reproductive health needs of women who inject drugs and those who use drugs through non-injectable routes, were largely similar. However, women/NI being younger in the reproductive age span, were more sexually active (including sex work) and hence may have an increased risk to poor sexual and reproductive health outcomes.

Drug use pushes people into a chaotic lifestyle which adversely impacts their personal relationships. Lal et al. (2015) reported that women substance users report more problems in their family and social network and thus are more likely to get separated or divorced than their male counterparts(23). Multiple sexual partnerships, as reported by study participants, illustrates how these women seek new partnerships for their emotional fulfilment, to get social protection by a male partner and, to some extent, stability in their lives. However, when they are in these unstable and short-term relationships, women exhibit limited decision-making and negotiation skills especially regarding their reproductive health. The theory of reasoned action (Fishbein and Azjen 1975) argues that individuals consider the consequences of their sexual behavior before undertaking them. However, a reasoned action which could ensure better health outcomes may not be possible for our study population, as they are unable to execute protective behavior since drug use alters their state of mind. Thus, these women demonstrate limited self-risk assessment skills and lack of perceived need for better reproductive health. The context in which most drug users spend their lives – abusive relationships, drug use,

unstable living conditions, sexual exploitation, poverty – adversely impacts their self-efficacy which as per the Theory of Planned Behavior, is the most important pre-condition for any behavioral change(24).

A key challenge in meeting the health needs of this group is limited access to formal health care services, a result of their low perceived need, perceived stigma at the hand of health care providers and poor quality of services in public health settings. Study findings suggest that perceived stigma results in non-disclosure of drug use and sex work history to the treating physician, which may result in incorrect diagnosis and treatment. Similar challenges in accessing healthcare by women who use drugs have been documented globally(15).

Lal et al. (2015) report that lack of gender-sensitive and flexible treatment delivery leaves many women who use drugs with no choice but to continue drug use in even more dangerous patterns(23). Therefore, there is a need for a two-pronged approach: firstly, women should be sensitized to improve their self-risk assessment skills and consequently identify their need for treatment and seek services. Secondly, healthcare providers should be trained to provide respectful and tailored services to address specific needs of women who use drugs. This capacity building exercise should include community workers - outreach workers and peer educators – to provide services such as, counsel for family planning, identifying pregnant drug-using women, and linking them to appropriate services for ante- and post-natal, and child care services.

There is an urgent need to set up women-centric targeted interventions, which act as a 'one-stop-shop' for a comprehensive package of health services. This package should not only include reproductive health services through a visiting gynecologist but also provide facility for harm reduction services – including counseling on safe drug use practices, HIV and STI prevention, opioid substitution therapy (OST), detoxification and rehabilitation for women who want to quit drugs. Given that in the drug use trajectory, people transition from oral to injecting use, it is essential to provide harm reduction services

to women/NI before they move on to injecting drugs. Existing DICs, which cater to only people who inject drugs, could consider dedicating a few hours per week to all women who use drugs.

The study is not without its limitations. ORWs could recruit only those women who they knew used drugs or those who disclosed their drug using behavior during the recruitment phase. Further, as with all qualitative studies, generalizability of the study findings is inherently limited.

Conclusion

Study findings highlight that women who use drugs engage in a wide range of risky behaviors and are vulnerable to negative sexual and reproductive health consequences. Irrespective of the nature of drug use, it is imperative to roll out women-centric services with appropriate linkage to drug dependence treatment as well as reproductive health services. Tailor-made interventions are required to build their self-risk assessment skills and improve their self-perceived needs so they can seek treatment. At the same time, sensitization of health care service providers in addressing their special needs should not be overlooked. A survey with representatively sampled group of women who use drugs will strengthen the study findings.

Contributorship Statement

Vartika Sharma(VS), Avina Sarna (AS), Waimar Tun and Ibou Thior conceived and designed the study. VS, Lopamudra Ray Saraswati and Ira Madan recruited and interviewed participants, transcribed interviews and analyzed the data. AS and Stanley Luchters provided critical conceptual inputs on the analysis and in drafting the manuscript. All authors agreed with the results and conclusions of the research and reviewed and approved the final manuscript

Competing Interests

The author(s) declare that they have no competing interests

Funding

Support for this project was provided by ARISE – Enhancing HIV prevention for at-risk populations, through financial support provided by the Canadian Government through Foreign Affairs Trade and Development Canada, and via financial and technical support provided by PATH (CID.1450-02135-SUB). The ARISE project implements innovative HIV prevention initiatives for vulnerable communities, with a focus on determining cost-effectiveness through rigorous evaluations.

Data sharing statement

The audio recordings and transcribed interviews are stored in a password protected system with the project team at the Population Council, India office. The privacy of the data is maintained since participants did not consent for data to be shared beyond the research team.

References

1. Roberts A, Mathers B, Degenhardt L. Women who inject drugs: A review of their risks, experiences and needs. 2010.

2. National AIDS Control Organization, MoHFW. Annual Report 2012–13. 2013.

3. UNODC and UNAIDS. India Country Advocacy Brief: Injecting Drug Use and HIV.

4. Powis B, Griffiths P, Gossop M, et al. The differences between male and female drug users: community samples of heroin and cocaine users compared. Subst Use Misuse. 1996 Apr;31(5):529–43.

5. UNODC and ICDDR. Rapid situation and response assessment among female drug users and female sex partners of male drug users in Bangladesh. 2010.

6. Krmpotich T, Mikulich-Gilbertson S, Sakai J, et al. Impaired Decision-Making, Higher Impulsivity, and Drug Severity in Substance Dependence and Pathological Gambling: J Addict Med. 2015;9(4):273–80.

7. Paone D, Cooper H, Alperen J, et al. HIV risk behaviours of current sex workers attending syringe exchange: The experiences of women in five US cities. AIDS Care. 1999 Jun;11(3):269–80.

8. Plant ML, Plant MA, Peck DF, et al. The sex industry, alcohol and illicit drugs: implications for the spread of HIV infection. Br J Addict. 1989 Jan;84(1):53–9.

9. Strathdee SA, Philbin MM, Semple SJ, et al. Correlates of injection drug use among female sex workers in two Mexico-U.S. border cities. Drug Alcohol Depend. 2008 Jan 1;92(1–3):132–40.

10. Des Jarlais DC, Arasteh K, McKnight C, et al. HSV-2 Co-Infection as a Driver of HIV Transmission among Heterosexual Non-Injecting Drug Users in New York City. PLoS ONE. 2014 Jan 31;9(1):e87993.

11. Murthy P. Female injecting drug users and female sex partners of men who inject drugs: Assessing care needs and developing responsive services. 2012.

12. Panda S, Bijaya L, Sadhana Devi N, et al. Interface between drug use and sex work in Manipur. Natl Med J India. 2001 Aug;14(4):209–11.

13. Women and Drug Abuse: The Problem in India. Ministry of Social Justice and Empowerment (GoI) and UNDCP-ROSA; 2002.

14. Devine A, Bowen K, Dzuvichu B, et al. Pathways to sex-work in Nagaland, India: implications for HIV prevention and community mobilisation. AIDS Care. 2010 Feb;22(2):228–37.

15. Kermode M, Songput CH, Sono CZ, et al. Meeting the needs of women who use drugs and alcohol in North-east India - a challenge for HIV prevention services. BMC Public Health. 2012 Dec;12(1).

16. Kermode M, Sono CZ, Songput CH, et al. Falling through the cracks: a qualitative study of HIV risks among women who use drugs and alcohol in Northeast India. BMC Int Health Hum Rights. 2013 Dec;13(1).

17. Sarna A, Tun W, Sharma V, et al. High Uptake of HIV Testing in a Cohort of Male Injection Drug Users in Delhi, India: Prevalence and Correlates of HIV Infection. AIDS Behav. 2013 Sep;17(7):2479–89.

18. Tun W, Sebastian M, Sharma V, et al. Strategies for recruiting injection drug users for HIV prevention services in Delhi, India. Harm Reduct J. 2013;10(1):16.

19. Kumar S, Oinam A, Debashis M, et al. Women who use drugs in Northeast India. 2015.

20. Boily M-C, Baggaley RF, Wang L, et al. Heterosexual risk of HIV-1 infection per sexual act: systematic review and meta-analysis of observational studies. Lancet Infect Dis. 2009 Feb;9(2):118–29.

21. Gyarmathy VA, Giraudon I, Hedrich D, et al. Drug Use and Pregnancy - Challenges for Public Health. Eurosurveillance. 2009;14(9).

22. WHO. Guidelines on Reproductive Health. UN Population Division;

23. Lal R, Deb K, Kedia S. Substance use in women: Current status and future directions. Indian J Psychiatry. 2015;57(6):275.

24. Ajzen I. The Theory of Planned Behavior [Internet]. 1991. Available from: https://www.researchgate.net/publication/272790646_The_Theory_of_Planned_Behavior

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	None of the authors conducted the interviews. Interviews were conducted by a trained research interviewer.
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Following are the credentials of the research team: Dr Avina Sarna: Doctor of Medicine and PhD (Health Sciences) Dr Waimar Tun: PhD (Epidemiology) Vartika Sharma: MBA (Health Management), pursuing PhD (Health Sciences) Lopamudra Ray Saraswati: Master of Philosophy (Population Studies), pursuing PhD (Population Studies) Ibou Thior: Doctor of Medicine Ira Madan: Master of Arts (Sociology) Stanley Luchters: Doctor of Medicine and PhD (Medicine and Health Sciences)
3. Occupation	What was their occupation at the time of the study?	The details of the occupation of the authors during the time this research study was conducted is placed below: Avina Sarna, Vartika Sharma, Lopamudra Ray Saraswati: Researcher staff at Population Council, India office Waimar Tun: Research staff at Population Council, Washington D.C office

		Ibou Thior: Director - PATH, USA Ira Madan: Project Coordinator, Sahara Center for Residential Care and Rehabilitation Stanley Luchters: Head, Women's and Children's Health, Burnet Institute, Australia
4. Gender	Was the researcher male or female?	In the research team, Dr Ibou Thior and Dr Stanley Luchters were male, while others were females
5. Experience and training	What experience or training did the researcher have?	Avina Sarna: More than a decade of experience in designing research studies, expert in advanced statistical analysis, published scientific articles in numerous peer reviewed journals Vartika Sharma: More than nine years of work experience which included designing and implementation of research projects and interventions related to vulnerable groups. Lopamudra Ray Saraswati: More than six years of experience in advanced statistical analysis Waimar Tun: More than a decade of experience in designing multi-country research studies on HIV/AIDS. Expert in advanced statistical analysis, published scientific articles in numerous peer reviewed journals Ibou Thior: Senior health professional with strengths in projects and programs implementation, management and strategic alliances. Author of more than 40 peer reviewed publications. Ira Madan: More than a decade of experience in managing research studies and service delivery for people who use drugs Stanley Luchters: Extensive experience in implementation, conduct and supervision of research and program interventions on maternal and child health, sexually transmitted infections and HIV, family planning, alcohol use and sexual behavior.
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Some of the participants who were enrolled in the study through ORW referral, were

		contacted more than once to discuss the purpose of the study before they agreed for study participation.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	While personal information about the interviewer and the researchers were not discussed, all participants were informed about the objective of this qualitative inquiry and how their responses will be used to create knowledge about the subject. This information was shared with the participants when the informed consent was taken for participation in the study.
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	All the interviews were conducted by a female research interviewer who had prior experience of conducting in-depth interviews and had worked with people who used drugs. There were no known biases or assumptions about the interviewer which required to be reported.
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	The data analysis has been done using the 'objective strategy' of thematic analysis as themes were identified a priori basis the identified study objectives.
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive sampling was used for this qualitative inquiry. Women who injected drugs and were part of a larger HIV incidence cohort study were invited to participate in this qualitative inquiry. However, sampling for women who used drugs through non-injecting route was done through targeted outreach at identified hotspots.
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	All participants were contacted and interviewed in person.
12. Sample size	How many participants were in the study?	The manuscript presents data from 48 women (20 women who used drugs through injecting route and 28 – women who used drugs through non-injecting routes).
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Among women who injected drugs, none of the women refused to participate. However, project team did not document information on number of refusals among women who used drugs through non-injecting routes.
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	All interviews were conducted in a private area (with audio & visual privacy) at one of the five

		project sites. The project sites served as a data collection center and a drop-in-center for people who injected drugs.
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	At the time of interview, no one other than the interviewer and the participant were present.
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	All women who participated in this study were more than 18 years of age, and were based out of Delhi, India. The data collection for this qualitative inquiry was conducted between August 2012 – September 2013.
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	The authors had developed a detailed interview guide as per the defined study objectives. To ensure that the questions were rightly phrased and captured the desired information, mock interviews (ORWs) were conducted with the outreach workers in the project. Most of these ORWs, were ex-drug users and hence were well-versed with the nuances of drug use and drug users' lifestyle. Their responses during the pilot test, helped in finalizing the guide for the actual interviews.
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	None of the participants were interviewed more than once. All the interviews were completed in one sitting.
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Only audio recording was done for data collection.
20. Field notes	Were field notes made during and/or after the interview or focus group?	Field notes were made by the interviewer and shared with the researcher to understand the context in which the participant would have responded to some of the questions.
21. Duration	What was the duration of the inter views or focus group?	On an average, each interview lasted for 35 - 40 minutes
22. Data saturation	Was data saturation discussed?	During the data collection phase, interviews were reviewed daily to monitor data saturation of the explored themes and to capture any new emerging themes. Basis the new emerging themes, efforts were made to diversify the characteristics of the study sample. Recruitment of new participants was discontinued once additional interviews no longer captured diverse risk profiles.
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No, transcripts were not returned to the participants as this was not a part of the study protocol.
Domain 3: analysis and findings		
Data analysis		

24. Number of data coders	How many data coders coded the data?	Only 10% of the interviews were double-coded to minimize researcher bias in coding. The codes were then discussed to finalize the code book. All the other interviewers were then coded by only one researcher using the code book.
25. Description of the coding tree	Did authors provide a description of the coding tree?	No, description of the coding tree has not been included
26. Derivation of themes	Were themes identified in advance or derived from the data?	Coding was initiated with themes identified from the interview guide (a priori), which in-turn was developed as per the defined study objectives.
27. Software	What software, if applicable, was used to manage the data?	Atlas Ti (GmbH, Berlin; Version 6.2) was used for coding and analysis of interviews.
28. Participant checking	Did participants provide feedback on the findings?	The study protocol did not include seeking feedback from the study participants
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	All the reported results have been supplemented by relevant quotes from the participants. To maintain confidentiality, fictitious names have used while citing quotations from participants in the manuscript.
30. Data and findings consistent	Was there consistency between the data presented and the findings?	The result findings presented in the manuscript aligns with the data collected through the in-depth interviews.
31. Clarity of major themes	Were major themes clearly presented in the findings?	Study findings related to the themes which the qualitative inquiry had set to explore have been clearly presented with relevant quotes from the participants.
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Findings relevant to the themes discussed in the manuscript, even if reported by a small number of participants have been included.

BMJ Open

Women and Substance Use: A qualitative study on sexual and reproductive health of women who use drugs in Delhi, India

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2017-018530.R1
Article Type:	Research
Date Submitted by the Author:	13-Sep-2017
Complete List of Authors:	Sharma, Vartika; International Centre for Reproductive Health Sarna, Avina; Population Council Tun, Waimar; Population Council, HIV and AIDS Program Saraswati, Lopamudra Ray; Population Council Thior, Ibou; PATH Madan, Ira; Sahara Centre for Residential Care and Rehabilitation Luchters, Stanley; Burnet Institute, Centre for International Health
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Sexual health, Public health, HIV/AIDS, Qualitative research
Keywords:	QUALITATIVE RESEARCH, HIV & AIDS < INFECTIOUS DISEASES, PUBLIC HEALTH

Women and Substance Use: A qualitative study on sexual and reproductive health of women who use drugs in Delhi, India

Vartika Sharma[a], Avina Sarna[b], Waimar Tun[c], Lopamudra Ray Saraswati[b], Ibou Thior[d], Ira Madan[e] and Stanley Luchters[a,f,g]*

Affiliations:

[a] International Centre for Reproductive Health, Ghent University, Belgium (former Population Council, India), vs.vartikas@gmail.com

[b] Population Council, New Delhi, India, asarna@popcouncil.org, lsaraswati@popcouncil.org

[c] Population Council, Washington, DC, USA, wtun@popcouncil.org

[d] PATH, Washington, DC, USA, ithior@path.org

[e] Sahara Centre for Residential Care and Rehabilitation, Delhi, India, iramadan@gmail.com

[f] Burnet Institute, Melbourne, Australia, sluchters@burnet.edu.au

[g] School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

*Corresponding author

Abstract

Objectives: Explore contextual factors that increase vulnerabilities to negative sexual and reproductive health (SRH) outcomes and possible differences in SRH-related behaviours and needs of women who use drugs (WUD) through non-injecting and injecting routes.

Design: Qualitative study design using semi-structured in-depth interviews.

Participants: Twenty women who injected drugs in the past three months and twenty-eight women who reported using drugs through non-injecting routes in the past one month.

Setting: Interviews were conducted at community-based drop-in-centers in Delhi, India.

Results: Study findings illustrate that WUD were sexually active and had multiple sex partners including clients of sex work. Transient relationships were reported and many participants engaged in unsafe sex. Factors which affected safe sex behaviours included – gender power imbalance, limited agency for decision-making, lack of accurate information for correct self-risk assessment, and being under the influence of drugs. Despite high awareness, low and inconsistent contraceptive use was reported. Some participants were coerced to conceive while a few others reported their inability to conceive. Violence was a key determinant for SRH outcomes. Perception of certain adverse health outcomes (such as infertility) to be 'common and expected among WUD' influenced access to health care. Further, health care providers' stigmatizing attitudes and lack of women-centric services deterred women from uptake of healthcare services.

Conclusion: Findings highlight that SRH-related behaviours and needs of this group are a complex interplay of multiple determinants which need to be addressed at all levels–individual, family, community and institutional. It is imperative to roll out a "one-stop-shop" for a comprehensive package of health services. Expansion of existing drop-in-centers could be considered for setting-up community-based women-centric services with appropriate linkage to drug dependence treatment and reproductive health services.

Strengths and Limitations

1. Qualitative study design allowed for a more detailed and nuanced contextual understanding of the health needs and behavioural choices of WUD.

2. Semi-structured in-depth interviews were found to be appropriate to discuss intimate and sensitive issues such as sex work, multiple sex partners, and intimate partner violence (IPV).

3. Collaborating with an experienced, local NGO was instrumental in ensuring appropriateness of the study protocol and data collection tools for the target population which resulted in participants' trust in the study purpose.

4. Considering the study was conducted with a small sample of women in a defined geographical area of Delhi, it may not be representative of such women in other urban areas or even other parts of Delhi.

BACKGROUND

Women who use drugs (WUD) are notoriously hard to reach and maintain a relatively subordinate position to men in the drug using subculture (1). Drug use is often seen to be contrary to the socially normative roles of women as mothers, partners, and caretakers, leaving WUD to face greater stigma and risks and experience a range of specific harms at higher levels than men who use drugs (1). India has a large population of people who inject drugs (PWID), estimated at 177,000 (2). The number of women who inject drugs (women/I) is estimated to be in the range of 10,055–33,392 (3). However, national level estimates for women who use drugs through non-injecting routes (women/NI) are not available.

Globally, significant gender-related differences have been observed between male and female drug users. A study in London reported that women used smaller amounts of drugs, for a shorter duration, and were less likely to inject than their male counterparts, thereby suggesting variance in their vulnerabilities to engage in potentially risky behaviours. Furthermore, drug-using sex partners were found to have an important influence on women's drug use behaviours (4). A study with 176 women drug users in Bangladesh reported that less than half of the women started with injecting, as most transitioned from smoking to injecting behaviours (5). Irrespective of the route of administration, many drugs increase sexual pleasure which may result in increased unsafe sexual activity (6–8). Poor socio-economic conditions create an urgency that contributes to unprotected sex with clients and associated risk for HIV and other sexually transmitted infections (STIs). A study with women/I in northeast India, showed that 40% of participants engaged in occasional sex work while one-fourth engaged in professional sex work (9). Other studies have also reported that WUD resort to sex work to obtain drugs from their sex partners or to earn money for purchasing drugs (10–12). Lucas et al. (2015) in their study with 14,821 PWID across 15 cities in India reported a three folds higher HIV prevalence among women compared to men, however, women/I were almost exclusively recruited from the north-eastern states of the country (13).

While injection drug use is strongly associated with HIV, a number of studies have also found high HIV prevalence among predominantly heterosexual, non-injecting drug users ranging from 13% in Canada to 29% in Russia and 43% in China (14); these prevalence rates are significantly higher than the prevalence among women in the general population of these countries.

Studies in India have reported inadequate uptake of HIV prevention and care services as they are not found to be gender responsive (15). Further, these services do not cater to women/NI unless they identify themselves as sex workers or transition onto injection drug use which often is in the later stage of the drug use trajectory (15,16).

Much of the evidence around WUD in India is limited to the north-eastern states of Manipur and Nagaland, since they consistently report high HIV prevalence fueled by injection drug use (15). However, these states are ethnically and culturally distinct, geographically isolated from rest of the country, and characterized by long-standing civil insurgent movements, deeply-felt social conservatism, and substantial under- development (15); hence generalization of study findings to other parts of India is severely limited. During the mid-term appraisal of National AIDS Control Program Phase IV (2016), the state of Delhi showed emerging concerns about PWID (17).

Considering the state is a relatively recent entry in the drug using scene in India and women in Delhi constitute a much smaller proportion of the drug using population (18), their SRH-related vulnerabilities (beyond HIV) and social factors have not been researched and understood. This qualitative study thus explores contextual factors that increase their vulnerabilities to negative SRH-related outcomes and aims to understand possible differences in the behaviours and needs of WUD through injecting and non-injecting routes.

METHODS

An interpretivist approach, using the social-constructivist theory (Berger and Luckmann, 1966) was used to understand how certain negative SRH- related outcomes are embedded with cultural meaning, and are socially constructed at an experiential level, based on how individuals come to understand and live with their negative health conditions.

Research team

Seven researchers (5 women, 2 men) participated in the study. VS, AS, WT, LS and IM had experience of working with people who use drugs in India but had no prior relationship with any of the participants. SL had extensively worked on SRH-related issues among women in resource-constraint settings while IT had been involved in designing research studies for most-at-risk groups for HIV.

Settings and participants

A prospective cohort study (May 2011-April 2014) was conducted in Delhi to assess HIV sero-incidence among PWID and receive comprehensive HIV prevention services (18,19) Participants, were over 18 years of age and had injected drugs at least once in the last three months (19). They were recruited through peer referral, targeted outreach in hotspots and as walk-in clients for HIV prevention services provided through five drop-in-centers (DIC) which also served as data collection centres. This study was approved by the Population Council Institutional Review Board (USA), PATH, Research Ethics Committee (USA), and Technical Resource Group and Ethics Committee of National AIDS Control Organization (India).

A qualitative study design was used for conducting in-depth interviews with participants recruited through purposive sampling. Women/I enrolled in the HIV sero-incidence study were invited to participate in this qualitative study. To complement the parent cohort study, women/NI were recruited. Women/NI, who were above 18 years of age, and had used drugs through non-injecting routes, such as - ingestion, inhaling, chasing, snorting, sniffing or smoking - at least once in the last one month, were

recruited through targeted outreach at hotspots linked to the five DICs. Recruitment of new participants was discontinued once data saturation was achieved. Interviews were conducted between August 2012 and September 2013. Women/I received a lower compensation (USD 1.50) compared to women/NI (USD 2.20) since their visit to the DIC was a part of their participation in the HIV sero-incidence study and hence they received compensation only for time required for the interview. However, the latter visited the DIC specifically for participating in this study and thus received additional compensation for their travel time.

Written informed consent obtained from the participants apprised them of the study objectives and procedures. For illiterate participants, informed consent was read out and a thumb imprint was taken in the presence of a witness. Participants have been given fictitious names in this paper to ensure confidentiality.

Data Collection

The interview guide was pilot-tested for clarity in local language (Hindi), comprehension, content and cultural sensitivity. Mock interviews were conducted with female outreach workers (ORWs), who were mostly former drug users and thus familiar with the context of the study population. A trained female interviewer with prior experience of working with this population conducted face-to-face interviews in an area with auditory and visual privacy at the DICs. All interviews were completed in one sitting and lasted approximately 35- 40 minutes.

Interviews were audio-recorded, transcribed, and translated into English for analysis. Participant debriefing was not done to avoid participation overburden. Atlas Ti software (GmbH, Berlin; Version 6.2) was used for coding and data analysis.

Data Analysis

Qualitative descriptive approach, guided by Braun & Clarke (2006), was used for data analysis (20). During data collection, interview transcripts and field notes were reviewed and analyzed. This interim analysis helped monitor data saturation, and pursue emerging avenues of inquiry in further depth (21).

Two researchers read the transcripts independently for data immersion and inductively developed a coding scheme and then compared to prepare a final code list. Approximately 10% of the interviews were double-coded to discuss degree of agreement in coding; team discussions were used to resolve any disagreements and reach a consensus. Codes were analyzed and sorted to identify over-arching themes and sub-themes. Data reduction, based on the research question and study objectives, occurred throughout the analysis.

Key themes and sub-themes that were identified include, unsafe sex characterized by the nature of relationship – regular and paid sexual partnerships (power imbalance, IPV and stigma), negative SRH-related outcomes (symptoms suggestive of a reproductive tract infection (RTI) /sexually transmitted infection (STI), coerced or unfulfilled desire for conception, unmet family planning needs) coupled with low uptake of health care services.

RESULTS

We interviewed 20 women/I and 28 women/NI. Table 1 provides an overview of their socio-demographic profile. The median age of women/I and women/NI was 35 years and 29.5 years, respectively. Most participants were illiterate, over one-half lived in the streets (i.e. they were homeless), and most were self-employed in various informal daily wage activities, some of which were illegal. Almost one-third of the participants reported multiple marriages and most had children. A higher proportion of women/NI were presently engaged in sex work.

Table 1. Socio-demographic profile

Socio-demographic characteristics	Women/I (n=20)	Women/NI (n=28)
Age (Median, IQR) in years	35 (25-40 years)	29.5 (22- 35 years)
Education		
Illiterate	17	19
Class I- XII	3	6
Graduate and above	0	0
No formal schooling	0	3
Accommodation		
Street-based	10	15
Home-based	10	13
Employment status*		
Unemployed	5	3
Daily wage work	8	5
Sex work	4	11
Drug peddling	1	7
Pick-pocketing	3	2
Begging	3	11
Marital status		
Married	11	12
Separated/divorced	6	9
Widow	3	4
Single	0	3
Number of children ever born**		
None	4	2
1-2	8	10
>2	8	13

*Some women reported more than one job

** Asked only to women who reported ever been married since child-bearing without marriage is a social taboo in India

UNSAFE SEX– CHARACTERIZED BY THE NATURE OF RELATIONSHIP

Regular partners – sex partners and drug use companions

Regular partners had a crucial role in the drug use practices and trajectory of the study participants, as many women were introduced to drugs by these men, mainly to avoid confrontation and requests for them to discontinue using drugs. Once addicted, participants reported that they served as a useful

resource to arrange drugs for themselves as well as their partners. Thus, most women and their regular partners shared a dual relationship of sexual and drug using partnerships.

However, many participants reported a series of regular partners and the reasons for unsteady relationships was largely related to the fact that their regular partners had multiple sex partners- women from their previous marriage, other live-in-partners, casual sex partners or sex workers. A few women/I reported being abandoned by their husbands who went onto marry other women though no legal formalities of divorce proceedings were cited. In other instances, women themselves discontinued the relationship because of their partner's infidelity.

"My husband left me when my second child was born… He said that the other women loved him more. So, I left everything and came here[Delhi]…."

Zubina, 40-year-old woman/I

"He was wrong and he used to do wrong things [sex] with outside women also…he was a flirt."

Farha, 34-year-old woman/NI

Participants who made efforts to stop their partners from having sex outside of marriage ended up experiencing verbal and physical violence. Some women reported self-inflicting harm on themselves due to circumstances which they could no longer bear or due to their requests and feelings being unheard.

"*He used to hit me many times.... [showing her hand] …I slit my wrist with a blade after drinking alcohol…I was fighting with him that when he has everything, why does he go after other women… He was drunk so he slapped me and I could do nothing… so in anger I slashed my wrist."*

Raano, 35-year-old woman/NI

Marital conflicts related to drug use, inability to provide appropriate child care and violence were other reasons cited which pushed women out of marriage. Some women also reported their partner's long

incarceration period or death as reasons to move on to other relationships. To survive on the street or to support their families, women reported the need of a man's protection and in turn looked for a new partner. Interaction with other men who lived on the street and male members of the drug using network provided opportunities for such new partnerships to form.

Unsafe sex within regular partnerships

Many women were sexually active with regular partners and reported being cognizant of the risk of infection transmission and unplanned pregnancies through unprotected sex, and condoms being an effective way of preventing it, but condom use was infrequently reported.

Fear of breach of trust and lack of enjoyment by both partners, deterred condom use. Further, perception of "sex being safe" within the institution of marriage was an important reason for infrequent condom use, except for a few participants who were aware that their partners had sex outside of marriage.

"*When it is your husband it [sex] is not that risky so it is mostly done without condom… And it is fine because sometimes there is no condom and your man is in a mood [to have sex].*"

Chanda, 32-year-old woman/NI

"I explained to him [husband] that since he has sex with other women he can get infected. I told him that I had no objection in him having sex with other women provided he used condoms. But he simply refused and now his disease [HIV] has passed on to me."

Shabana, 35-year-old woman/I

Other reasons for inconsistent condom use included misconceptions that condoms are only used by sex workers or are required only for sex with an infected partner. Drugs were found to be an important influence on condom use. One woman/I reported that she could not remember to use condoms under the influence of drugs while another woman disclosed that she was too "drugged" to even realize when

sex happened.

Sexual violence was prevalent. Some women/NI reported coercion from their partners to have anal or oral sex. Women were reluctant to engage in such acts for fear of infection, perception that anal sex is abnormal or/and their belief that it is against their religion. There was no mention of condom use during these acts. As a 23-year-old participant narrated:

"He [husband] asks me to let him do from behind [anal]…but when I refuse he starts sulking…I feel scared; I have never done it…. Eunuchs do it this way, wives at home don't…he makes me suck [oral sex] also. Yesterday, he forced it in my mouth."

Laxmi, 23-year-old woman/NI

Some women also reported having sex with their regular partners during menstruation, although a few refused for the fear of infecting their partners with their menstrual blood.

Paid sexual partnerships

With limited literacy and employable skills, women found it difficult to have a stable job and hence some of them engaged in sex work. The economic needs varied from financing their own or partner's drug use or to be the economic caregiver while their male partners were either incarcerated or had abandoned them.

Women/NI who were younger in age and not into heavy drug use were more likely to report sex work. While many participants did it of their own volition others were led to it by their peers and few violently coerced by their male partners.

"Salim (husband) and his family pushed me into sex work. They would beat me black and blue whenever I resisted. My mother-in-law once burnt my stomach with a cigarette…. My husband would often twist my hand and threaten to break it. These black patches that you see (showing her forehead) are because he used to hit me with bottles…."

Suman, 21-year-old woman/I

"I used to go out with other women to do drugs…they suggested that I can earn good money by doing wrong work (sex work), so I started going with them. We used to attract men, do it (sex) and get our money"

Meena, 22-year-old woman/NI

Women also complained of frequent misbehaviour from their clients as they subjected them to sexual violence (such as coercion for unprotected sex) or declined to pay for their services. Women also reported instances where custodians of law –the local policemen – solicited sexual favors to provide them impunity against sex work, which is illegal in India.

"*You will find both good and bad policemen…. In lots of places they say do it [sex] with us then we will let you earn. We do it with them but not all of them use condoms."*

Naseem, 29-year-old woman/NI

Unsafe sex within paid partnerships

Women faced considerable risk of STIs and unintended pregnancies since most reported infrequent condom use for reasons such as influence of drugs, offer of extra money, fear of violence, or low client volume. The skewed power dynamics in the client-sex worker relationship significantly influenced their negotiation for safe sex.

"At times, I was really high to negotiate or I didn't have it [condom] and the client also didn't have money to buy it…. Some men said they don't enjoy with it [condom]…men are like that only. When they give money …. They want us to do whatever they ask."

Mala, 35-year-old woman/NI

To minimize the ill-effects of inconsistent condom use, women reported using their own discretionary strategies to assess risk of getting infected. One participant reported refusing unprotected sex if the client injected drugs as he was more likely to be infected while another refused sex if the clients had visible symptoms of infection.

"Once a man came and asked me to switch off the lights while having sex... Then I saw that the bottom of his testicles was so fat, filthy and smelly. I felt so scared… I told him that you would give me 100 to 200 rupees [for sex] but I will get sick and my life will be spoiled. I then chased him away."

Iram, 40-year-old woman/I

A small number of participants expressed concern that condoms were not completely safe as they had experienced frequent tears. Traditional practices, such as urinating or washing their genitals immediately after unprotected sex gave them a false sense of protection against possible adverse health outcomes.

NEGATIVE SRH - RELATED OUTCOMES COUPLED WITH LOW UPTAKE OF HEALTH CARE SERVICES

Symptoms suggestive of RTI/STI

Abnormal vaginal discharge, itching, dyspareunia and genital ulcers were frequently reported. Two of the commonly cited reasons for contracting infections were multiple sex partners of their regular partners and unprotected sex with clients. Women/NI who had these symptoms reported male partners with symptoms of genital itching, penile discharge, or genital ulcers. Further, physical weakness, use of unhygienic toilets, and not 'washing-off' genitals after having sex were other reasons cited. However, in many cases, women could not explain reasons for having such symptoms.

There was a mixed response to access to treatment for these symptoms. Many women did not perceive the need for seeking treatment for itching and vaginal discharge as they believed it was a common

occurrence among women. Embarrassment in explaining symptoms, undergoing physical examination, and cost of treatment further discouraged them from seeking medical help. Stigma also emerged as a significant barrier in seeking healthcare. One participant complained of being turned away without treatment for her genital ulcers since she was a drug user. Therefore, use of home remedies or self-treatment from local pharmacy stores for symptomatic treatment was commonly reported.

"I often have a yellow colored vaginal discharge. Friends told me to go to private hospital as no one in government hospital gives medicine properly…but I don't have money so from where will I get my tests and treatment done? I think it's because of weakness that I've this problem of discharge"

Farha, 34-year-old woman/NI

Conception – coerced or unfulfilled desire

Among married and sexually active participants, some—more so the women/NI— expressed desires to have children. While only one of them never had children, others who wanted to conceive were women who either had only one child or had lost her children. High mortality among children of drug users was commonly reported and was an important reason cited for their desire to have more. A few women also reported pressure from their male partners to bear children with them, despite having children from previous relationships.

"I did not want to conceive but my husband insisted. We used to fight at times…. I argued that he had multiple wives and must be having kids from them, so why does he want them from me? …He said that he only has a son and wants a daughter now."

Shobha, 35-year-old woman/I

On the other hand, some participants who wanted to conceive reported miscarriages; of these a few women/I experienced multiple miscarriages. The reasons for miscarriage included accidental fall after

drug use, inappropriate medication due to non-disclosure of drug use, intimate partner violence, and witchcraft.

"*I was using drugs at that time; it was raining and I slipped because of which I lost my pregnancy…. I went to a lady doctor near my house. She gave me medicines to clean out the womb…. I didn't tell her that I used drugs for the fear that she wouldn't give me medicines."*

Kamla, 35-year-old woman/I

Most women blamed drug use for their miscarriages and difficulty in conception as they not only heard from their peers but themselves believed that women who use drugs suffer menstrual irregularities and infertility.

"We tried to conceive for a long time but it was just not happening…we lived in Jamuna Bazaar [a well-known hotspot for drug users] and everyone there knew that women who use drugs have such problems"

Neeta, 28-year-old woman/I

Women who did visit a healthcare facility to seek treatment for their reproductive health issues/ problems were disappointed. Women often received evasive and unsatisfactory explanations, ill-treatment, and negative attitudes by health care providers because of their drug use and unkempt appearance. Challenges in navigating health care facilities were also cited.

"I visited the government hospital since I was unable to conceive. The doctors just did the checkup and gave medicines but they did not tell me anything. I even went to a private hospital for 2-3 months, got my tests done but nothing happened…I gave it a year and then left it. Doctors don't treat us well; they don't do the check-up properly...they are always in a hurry…."

Bina, 21-year-old woman/NI

"Sometimes it [menstruation] doesn't happen for months together…I thought of getting a check-up done but since I use smack how will I or from where will I get treatment."

Shanti, 28-year-old woman/I

Unmet family planning needs

Some of the sexually active participants were keen to limit their family size. Reasons included having achieved the desired family size, financial constraints in raising more children and fear that their children will eventually use drugs. These women reported various modern and traditional methods to prevent pregnancy–condoms, contraceptive pills, injectable contraceptives, abstinence, sex during menstruation, and sterilization.

"After delivery of my second baby, I explained to him different ways of contraception, sterilization, pills and condoms. He was against sterilization as he thought I could die during the process and I was against pills as I tend to forget. So, finally we decided to use condoms."

Maya, 31-year-old woman/I

The most commonly used contraceptives were – condoms and oral contraceptive pills(OCPs) which are easily available at the government health care facilities and local pharmacy stores. Despite their desire to limit family size and awareness about various contraceptives, participants reported none or infrequent and inconsistent use. Use of OCPs was reported as an "unnecessary headache" as adherence due to unstable lifestyle and drug use was difficult. Weakness due to OCPs and fear of other possible ill-effects were also cited. Not many women knew about injectable contraceptives; among those who were aware, cost was reported to be a key barrier. Poor uptake of condoms in context of different partnerships has been reported above.

Unplanned and unintended pregnancies at times resulted in termination of pregnancy, as one participant narrated:

"*When I got pregnant, I went and took medicines to abort it. I kept lying on the bed for 2-3 days till I bled…I told my mother-in-law, your son uses drugs so how will I raise this child? My husband also now feels that it was the right decision…he cannot earn, how would he feed or educate the child….*"

Chanda, 32-year-old woman/NI

DISCUSSION

To the best of our knowledge, this is the first study which attempts to provide contextual understanding of sexual and reproductive health (beyond HIV) related behaviours and needs of women who use drugs in Delhi, the capital city of India. Study findings provide key insights for women who use drugs through non-injecting routes (ingestion, inhaling, chasing, snorting, sniffing or smoking), hitherto a gap in knowledge, and explores possible differences that may exist in comparison to women who inject drugs. In our study, women/I were found to be older, less likely to be sexually active, and engaged in sex work, and more likely to be divorced or separated than women/NI. Similar findings have been reported from study with WUD in north-east India (22).

Study findings indicate that drug use pushes women into a chaotic lifestyle which adversely impacts their personal relationships. This was similar to findings by Lal et al. (2015) who had reported that women substance users have more problems in their family and social network and thus are more likely to separate or divorce than their male counterparts (23). Women in our study sought recluse from abusive relationships and built newer partnerships for their emotional fulfilment, to get social protection from a male partner and, to some extent, bring stability in their lives.

Many study participants were sexually active with their regular partners. Inconsistent condom use was widely reported due to established gender power imbalance, fear of violence, and misconceptions embedded within the institution of marriage. Condoms were not used even when regular partners were known to have multiple sex partners. Sexual violence was prevalent as coercion for anal sex which put

women at greater risk of HIV transmission compared to penile-vaginal sex (1.7% vs. 0.8%) was reported (24).

Participants who engaged in sex work faced a two-fold risk since both sex work and drug use, are illegal in India. This often resulted in uneven power dynamics unfavorable to women as they consequently faced violence and health risks through unprotected sex. In such circumstances, women used their own discretion and negotiated condom use with clients who were more likely to be infected while they continued to remain at risk of being infected or impregnated otherwise. High prevalence of IPV, as reported by our participants, illustrated its role in shaping sex behaviours as women were less likely to agree to unsafe sex for fear of violence. Chamberlain et al. (2012) and Morre et al. (2010) had also illustrated role of IPV in predicting poor reproductive health outcomes (25,26).

In India, harm-reduction services for people who use drugs are limited to prevention of HIV and other STIs, thus overlooking other reproductive health needs such as family planning. A study in the north-eastern part of the country had identified reproductive health problems as one of the most commonly reported issues among WUD (15). We found similar gaps of unaddressed reproductive health needs among our study participants. Among women who desired to conceive, multiple miscarriages and inability to conceive were reported, especially by women/I. A possible explanation is the well-established association between heavy drug use and poor reproductive outcomes like spontaneous abortion, restricted fetal growth and incorrect maternal placentation (27). At the same time, many others reported unintended and unplanned pregnancies despite high levels of awareness about modern methods of contraception. Gender power imbalance which affected women's involvement in decision-making for family planning and influence of drugs itself, were important reasons reported for infrequent contraceptive use. Thus, our qualitative study, although with limited scope for generalizability, shows that the sexual and reproductive health needs of women who inject drugs and those who use drugs

through non-injectable routes, were largely similar. However, women/NI being younger in the reproductive age span, were more sexually active (including sex work) and hence may have an increased risk to poor SRH – related outcomes.

Theory of reasoned action (Fishbein and Azjen 1975) argues that individuals consider the consequences of their sexual behaviour before undertaking them. However, a reasoned action to ensure better health outcomes may not be possible for our study population, since their immediate needs could be financing the next drug dose or feeding her children or herself, in which case her action cannot be determined by 'potential but not immediate' consequences on health.

Our study illustrated mixed response on low uptake of healthcare services. Women acknowledged the need for healthcare services but did not access it for reasons like embarrassment in discussing intimate problems, stigma from health care providers and high costs. Additionally, women did not seek medical help for problems which are perceived to be common among WUD or women in general suggesting lack of accurate information to correctly comprehend conditions which need medical attention. However, correct information could not always ensure safe behaviours as many involve dyadic decision-making with sexual partners. Further, stigmatized by the society in that they are viewed (and often view themselves) as having deviated from the traditional societal norms (such as multiple sex partners) were key influencers in health- related decisions. Thus, SRH related behaviours and needs of this group is a complex interplay which demands coordinated multi-dimensional approach to address issues at all levels– individual, family, community and institutional.

Basis our study findings, we suggest a two-pronged approach to holistically address the healthcare needs of WUD: first, women should be equipped with correct information pertaining to their sexual and reproductive health to improve their self-risk assessment skills and consequently identify their need for treatment and seek healthcare services. Second, healthcare providers should be trained to provide

respectful and tailored services to address specific needs of this group. This capacity building exercise should include community workers– ORWs and peer educators– to provide services such as counsel for family planning, identifying pregnant drug-using women, and linking them to appropriate ante- and post-natal services and child care.

Further, there is an urgent need to set up community-based women-centric targeted interventions, which act as a "one-stop-shop" for a comprehensive package of health services. These could be expanded models of existing DICs with few hours per week dedicated for all WUD, including woman/NI. This package should not only include reproductive health services through a visiting gynecologist but also provide opioid substitution therapy (OST), detoxification and rehabilitation services for women who want to quit drugs. Provision of mental health services can go a long way in making women more receptive and adherent to these services.

The study is not without its limitations. ORWs could recruit only those women who they knew used drugs or those who disclosed their drug use behaviour during the recruitment phase. Further, the qualitative study design and analysis plan was not designed to derive any prevalence estimates of the needs and behaviours identified as relevant by the study participants.

Conclusion

Study findings indicate that SRH-related behaviours and needs of WUD are a complex interplay of unstable and abusive relationships, stigma, influence of drugs, lack of correct information, and trained healthcare providers. Therefore, it is imperative to roll out community-based women-centric services with appropriate provisions for drug dependence treatment as well as reproductive health services. A survey with representatively sampled group of WUD will strengthen the study findings.

Contributorship Statement

Vartika Sharma(VS), Avina Sarna (AS), Waimar Tun (WT) and Ibou Thior (IT) conceived and designed the study. VS, Lopamudra Ray Saraswati (LS) and Ira Madan (IM) recruited and interviewed participants, transcribed interviews and analyzed the data. AS and Stanley Luchters (SL) provided critical conceptual inputs on the analysis and in drafting the manuscript. All authors agreed with the results and conclusions of the research and reviewed and approved the final manuscript

Competing Interests

The author(s) declare that they have no competing interests

Funding

Support for this project was provided by ARISE – Enhancing HIV prevention for at-risk populations, through financial support provided by the Canadian Government through Foreign Affairs Trade and Development Canada, and via financial and technical support provided by PATH (CID.1450-02135-SUB). The ARISE project implements innovative HIV prevention initiatives for vulnerable communities, with a focus on determining cost-effectiveness through rigorous evaluations.

Data sharing statement

The audio recordings and transcribed interviews are stored in a password protected system with the project team at the Population Council, India office. The privacy of the data is maintained since participants did not consent for data to be shared beyond the research team.

References

1. Roberts A, Mathers B, Degenhardt L. Women who inject drugs: A review of their risks, experiences and needs. 2010.
2. National AIDS Control Organization, MoHFW. Annual Report 2012–13. 2013.
3. UNODC and UNAIDS. India Country Advocacy Brief: Injecting Drug Use and HIV.

4. Powis B, Griffiths P, Gossop M, et al. The differences between male and female drug users: community samples of heroin and cocaine users compared. Subst Use Misuse. 1996 Apr;31(5):529–43.

5. UNODC and ICDDR. Rapid situation and response assessment among female drug users and female sex partners of male drug users in Bangladesh. 2010.

6. Paone D, Cooper H, Alperen J, et al. HIV risk behaviours of current sex workers attending syringe exchange: The experiences of women in five US cities. AIDS Care. 1999 Jun;11(3):269–80.

7. Plant ML, Plant MA, Peck DF, et al. The sex industry, alcohol and illicit drugs: implications for the spread of HIV infection. Br J Addict. 1989 Jan;84(1):53–9.

8. Strathdee SA, Philbin MM, Semple SJ, et al. Correlates of injection drug use among female sex workers in two Mexico-U.S. border cities. Drug Alcohol Depend. 2008 Jan 1;92(1–3):132–40.

9. Murthy P. Female injecting drug users and female sex partners of men who inject drugs: Assessing care needs and developing responsive services. 2012.

10. Panda S, Bijaya L, Sadhana Devi N, et al. Interface between drug use and sex work in Manipur. Natl Med J India. 2001 Aug;14(4):209–11.

11. Women and Drug Abuse: The Problem in India. Ministry of Social Justice and Empowerment (GoI) and UNDCP-ROSA; 2002.

12. Devine A, Bowen K, Dzuvichu B, et al. Pathways to sex-work in Nagaland, India: implications for HIV prevention and community mobilisation. AIDS Care. 2010 Feb;22(2):228–37.

13. Lucas GM, Solomon SS, Srikrishnan AK, et al. High HIV burden among people who inject drugs in 15 Indian cities: AIDS. 2015 Feb;1.

14. Des Jarlais DC, Arasteh K, McKnight C, et al. HSV-2 Co-Infection as a Driver of HIV Transmission among Heterosexual Non-Injecting Drug Users in New York City. PLoS ONE. 2014 Jan 31;9(1):e87993.

15. Kermode M, Songput CH, Sono CZ, et al. Meeting the needs of women who use drugs and alcohol in North-east India - a challenge for HIV prevention services. BMC Public Health. 2012 Dec;12(1).

16. Kermode M, Sono CZ, Songput CH, et al. Falling through the cracks: a qualitative study of HIV risks among women who use drugs and alcohol in Northeast India. BMC Int Health Hum Rights. 2013 Dec;13(1).

17. National AIDS Control Organization, MoHFW. Mid-Term Appraisal of National AIDS Control Programme Phase IV [Internet]. 2016. Available from: http://www.naco.gov.in/sites/default/files/Report%20of%20the%20MTA%20of%20NACP%20IV%20-%20August%202016.pdf

18. Sarna A, Tun W, Sharma V, et al. High Uptake of HIV Testing in a Cohort of Male Injection Drug Users in Delhi, India: Prevalence and Correlates of HIV Infection. AIDS Behav. 2013 Sep;17(7):2479–89.

19. Tun W, Sebastian M, Sharma V, et al. Strategies for recruiting injection drug users for HIV prevention services in Delhi, India. Harm Reduct J. 2013;10(1):16.

20. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006 Jan;3(2):77–101.

21. Pope C, Ziebland S, Mays N. Qualitative research in healthcare: Analysing qualitative data. BMJ. 2000;(320).

22. Kumar S, Oinam A, Debashis M, et al. Women who use drugs in Northeast India. 2015.

23. Lal R, Deb K, Kedia S. Substance use in women: Current status and future directions. Indian J Psychiatry. 2015;57(6):275.

24. Boily M-C, Baggaley RF, Wang L, et al. Heterosexual risk of HIV-1 infection per sexual act: systematic review and meta-analysis of observational studies. Lancet Infect Dis. 2009 Feb;9(2):118–29.

25. Chamberlain L, Levenson R. Addressing Intimate Partner Violence, Reproductive and Sexual Coercion: A Guide for Obstetric, Gynecology and Reproductive Health Care Setting. The American College of Obstetricians and Gynecologists; 2012.

26. Moore AM, Frohwirth L, Miller E. Male reproductive control of women who have experienced intimate partner violence in the United States. Soc Sci Med. 2010 Jun;70(11):1737–44.

27. Gyarmathy VA, Giraudon I, Hedrich D, et al. Drug Use and Pregnancy - Challenges for Public Health. Eurosurveillance. 2009;14(9).

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	None of the authors conducted the interviews. Interviews were conducted by a trained female research interviewer. *Methods section, page 7*
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Following are the credentials of the research team: Dr Avina Sarna: Doctor of Medicine and PhD (Health Sciences) Dr Waimar Tun: PhD (Epidemiology) Vartika Sharma: MBA (Health Management), pursuing PhD (Health Sciences) Lopamudra Ray Saraswati: Master of Philosophy (Population Studies), pursuing PhD (Population Studies) Ibou Thior: Doctor of Medicine Ira Madan: Master of Arts (Sociology) Stanley Luchters: Doctor of Medicine and PhD (Medicine and Health Sciences) *Cover page of manuscript, page 1*
3. Occupation	What was their occupation at the time of the study?	Details of the occupation of the authors during the time this research study was conducted is placed below: Avina Sarna, Vartika Sharma, Lopamudra Ray Saraswati: Researcher staff at Population Council, India office Waimar Tun: Research staff at Population Council, Washington D.C office

		Ibou Thior: Director - PATH, USA Ira Madan: Project Coordinator, Sahara Center for Residential Care and Rehabilitation Stanley Luchters: Head, Women's and Children's Health, Burnet Institute, Australia *Organizational affiliation has been reflected along with the names of the authors on page 1 of the manuscript.*
4. Gender	Was the researcher male or female?	In the research team, Dr Ibou Thior and Dr Stanley Luchters were male, while all others were females *Methods section, page 6*
5. Experience and training	What experience or training did the researcher have?	In the research team, Dr Ibou Thior and Dr Stanley Luchters were male, while all others were females *Methods section, page 6*
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	None of the researchers had a prior relationship with the participants. *Methods section, page 6*
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	All participants were informed about the objective of this qualitative inquiry and how their responses will be used to create knowledge about the subject. This information was shared with the participants through the informed consent for study participation. *Methods section, page 7*
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	All the interviews were conducted by a female research interviewer who had prior experience of conducting in-depth interviews and had worked with people who used drugs. There were no known biases or assumptions about the interviewer which required to be reported. *Methods section, page 7*
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology,	Social constructivist theory (Berger and Luckmann, 1966) was used to achieve the study objectives. *Methods section, page 6*

	content analysis	
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive sampling was used for this qualitative inquiry. *Methods section, page 6*
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Face-to-face interviews were conducted for all participants *Methods section, page 7*
12. Sample size	How many participants were in the study?	The manuscript presents data from 48 women (20 women who used drugs through injecting route and 28 – women who used drugs through non-injecting routes). *Result section, page 8*
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Among women/I, there were no refusals. However, project team did not document information on number of refusals among women/NI. Since it was one-time data collection and all interviews were completed in one sitting, there were no drop-outs. Methods section, page 7
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Data collection was done at project-sites, drop-in-centers *Methods section, page 7*
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	Audio-visual privacy was ensured at time of data collection. *Methods section, page 7*
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Characteristics of the sample has been reported under methods section and result section *Methods section, page 6 & Results section, page 8-9*
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	The interview guide was pilot tested with female outreach workers, most of them were ex- ORWs. Their responses during the pilot test, helped in finalizing the guide for the actual interviews. *Methods section, page 7*
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	All the interviews were completed in one sitting with no repeat interviews.

		Methods section, page 7
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Only audio recording was done for data collection. *Methods section, page 7*
20. Field notes	Were field notes made during and/or after the interview or focus group?	Field notes were made by the interviewer and shared with the researcher to understand the context in which the participant would have responded to some of the questions. *Methods section, page 8*
21. Duration	What was the duration of the inter views or focus group?	On an average, each interview lasted for 35 - 40 minutes *Methods section, page 7*
22. Data saturation	Was data saturation discussed?	Interim analysis was done to monitor data saturation *Methods section, page 8*
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Participant debriefing was not done *Methods section, page 7*
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	Only 10% of the interviews were double-coded to minimize researcher bias in coding. *Methods section, page 8*
25. Description of the coding tree	Did authors provide a description of the coding tree?	Themes and sub-themes identified through inductively derived coding scheme have been described. *Methods section, page 8*
26. Derivation of themes	Were themes identified in advance or derived from the data?	Braun and Clarke's approach was used for identification of themes. Data reduction throughout the analysis period ensured alignment with the study objectives and research question *Methods section, page 8*
27. Software	What software, if applicable, was used to manage the data?	Atlas Ti software (GmbH, Berlin; Version 6.2) was used for coding and analysis of interviews. *Methods section, page 7*
28. Participant checking	Did participants provide feedback on the findings?	Participant debriefing was not done *Methods section, page 7*
Reporting		

29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	All the reported results have been supplemented by relevant quotes from the participants. To maintain confidentiality, fictitious names have used while citing quotations from participants in the manuscript. *Results section, page 9 –18*
30. Data and findings consistent	Was there consistency between the data presented and the findings?	The result findings presented in the manuscript aligns with the data collected through the in-depth interviews. *Discussion section, page 18 - 21*
31. Clarity of major themes	Were major themes clearly presented in the findings?	Study findings related to the themes which the qualitative inquiry had set to explore have been clearly presented with relevant quotes from the participants. *Results section, page 9 - 18*
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Findings relevant to the themes discussed in the manuscript, even if reported by a small number of participants have been included. *Results section, page 9 – 18*

*Please note that the page numbers reflect the location of the information in the main document (clean version of the manuscript.)