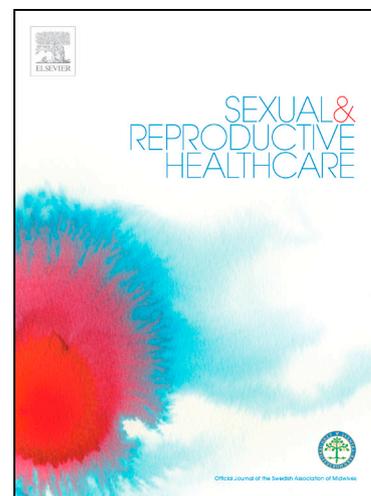


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Access and utilisation of reproductive, maternal, neonatal and child health services among women who inject drugs in coastal Kenya: findings from a qualitative study.

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Highlights

- Globally there is limited research concerning women who inject drugs.
- This paper reports important insights related to the experiences, needs and barriers preventing the utilisation of reproductive maternal, neonatal and child health services among women who inject drugs in coastal Kenya.
- Findings from this study will inform the development of equitable, comprehensive, and family-centered RMNCH interventions targeting women who inject drugs, including the integration of RMNCH services within harm reduction programs.

ABSTRACT

Introduction:

The Kenyan government has committed to increasing access to comprehensive reproductive, maternal, neonatal and child health (RMNCH) services. However, inequalities still exist. Women who inject drugs are an important sub-population for public health interventions, yet their RMNCH needs have largely been overlooked. Additionally, there is a lack of research to inform RMNCH interventions for this sub-population.

Methods:

In 2015, we undertook interviews and focus group discussions with 45 women who inject drugs and five key stakeholders to understand these women's RMNCH experiences and needs.

Results:

Women's access to essential services across the RMNCH continuum was low. Two thirds of the women were not using contraception. Many discovered they were pregnant late, due to amenorrhea of drug use, and thus were unable to enroll for antenatal care early. Facility-based deliveries were limited with many choosing to deliver at home. Following delivery, women's attendance to immunization services was sub-optimal. Stigma from healthcare workers was a major factor impeding women's use of existing RMNCH services. The prospect of experiencing withdrawals at health facilities where waiting times were long, deterred utilization of these services. Additionally, women faced competing priorities, having to choose between purchasing heroin or spending their money on health-related costs.

Conclusions:

Several barriers disrupted women's access to services across the RMNCH continuum. Consequently, there is a need to develop equitable, comprehensive, and family-centered RMNCH interventions tailored to women who inject drugs, through a combination of supply- and demand-side interventions. For optimal impact, RMNCH services should be integrated into harm reduction programs.

Key words: Reproductive, Maternal; Child Health; Harm reduction; Integration, Africa.

INTRODUCTION

Significant progress has been made over the last decade in relation to reproductive, maternal, neonatal and child health (RMNCH) outcomes [1]. Despite this progress however, maternal and child mortality are still among the leading causes of global burden of disease [2, 3]. Recent data suggest that globally, 275, 000 maternal deaths, 2.6 million neonatal deaths and still births, and 5.8 million under-five children deaths occur annually [2, 4]. Consequently, improving RMNCH outcomes remains a contemporary global health priority [2, 5]. In particular, there is global consensus that increasing availability and utilization of comprehensive RMNCH services is essential in achieving the Sustainable Development Goals and targets by 2030.

Eliminating maternal, neonatal, and early childhood mortality requires addressing persistent health systems weaknesses which are stalling further RMNCH progress. These include poor availability and quality of services [6, 7]. Investments in health care in sub-Saharan Africa and other low-income countries remain low (ref). In many low-income countries, fragmentation of services has consistently caused variations in coverage of RMNCH interventions, and prevents the multiplier benefit of combining interventions through integrated packages from being realized [5]. Not surprisingly, there is growing consensus that adopting a continuum of care approach could significantly accelerate progress in RMNCH outcomes [5]. The continuum of care approach recognizes the links from mother to child, and the need for health services across maternal, neonatal, and child stages of life [5, 8]. Its proponents assert that these services ought to be integrated and continuous, rather than isolated [5].

In addition, attention is now turning to whether the RMNCH achievements recorded to date have been equitable and inclusive [9]. Studies focusing on RMNCH have uncovered

substantial inequalities in coverage between interventions, geographic regions, countries and populations [1, 9, 10]. Variability in coverage of maternal, newborn, and child health interventions have been found to be larger among the poor compared to wealthier groups of individuals [10]. Globally, women from underserved socioeconomic and geographical strata – who often have low income per capita, low educational attainment, and high fertility rates – are unevenly reached by health services [2], and as a result, they typically have worse maternal and infant outcomes [11].

In Kenya, the government has made a commitment to increase access to comprehensive reproductive health services, including skilled birth attendance, prenatal care, emergency obstetric care and post-natal vaccinations, through free maternal healthcare [12, 13]. Although out-of-pocket expenditures for maternity care are reducing, they have not been entirely eliminated [13]. Furthermore, although 96% of pregnant women receive antenatal care, just over half (58%) make the recommended four or more antenatal care visits [14]. Additionally, less than two thirds (61%) of all births in Kenya are delivered in a health facility (61%), and a similar proportion (62%) are assisted by a skilled provider [14].

In addition, coverage of full immunization is 79% [14], which creates conditions for vaccine-preventable childhood illnesses to thrive. Not surprisingly, infant mortality rate is 39 deaths per 1,000 live births, and under-five mortality is 52 deaths per 1,000 live births. Furthermore, access to reproductive and family planning services is sub-optimal, with a modern contraceptive prevalence of 53% [14]. Overall, 18% of currently married women have an unmet need for family planning [14]. As in other countries investments in basic healthcare systems in Kenya remains insufficient [15]. The health human resources to population ratio is 13/10,000 population compared with the WHO-recommended threshold ratio of 23/10,000

population [16, 17]. Partly as a result of these deficiencies, Kenya did not meet her MDG 4, 5 and 6 targets [18].

In Kenya and other countries, inequalities in access to RMNCH services exist [18].

Therefore, monitoring the coverage of health interventions in vulnerable subgroups of the population is essential in ensuring equity [9]. In this context, women who inject drugs represent an important sub-population for public health interventions, yet their broader sexual health and RMNCH service needs have largely been overlooked due to a narrow yet important focus on HIV prevention and harm reduction services that are primarily concerned with limiting the negative effects of injecting drug use [19-21]. Literature suggests that women who inject drugs are particularly affected by inequalities in access to health services globally [22, 23]. A significant majority of the 3.5 million women who inject drugs worldwide are of reproductive age [24, 25]. Yet, these women typically have extremely poor access to essential RMNCH health services such as antenatal care (ANC) compared to non-injecting women [23, 26].

At present, there is a lack of research on women who inject drugs in Kenya that could inform potential RMNCH interventions for this sub-population [27]. In response to this knowledge gap, the aim of this study was to document the RMNCH experiences and needs of women who inject drugs in coastal Kenya.

METHODS

Research design

This study utilised qualitative focus group discussions (FGDs) and in-depth interviews (IDIs) with women who inject drugs and key stakeholders in the coastal Kenyan towns of Kilifi and

Mombasa. The combinations of IDI and FGDs, and the inclusion of key stakeholders as informants alongside the women, was intended to avail complementary information for triangulation purposes [28].

Setting

In the above two coastal towns, community-based services had been introduced to serve injecting drug users by the Kenya AIDS NGOs Consortium (KANCO), a local non-governmental organization. Services were being provided through two community-based organizations (CBOs): Reach out Centre Trust (REACH OUT) and the Muslim Education and Welfare Association (MEWA). In 2012, these sites formed part of a pilot implementation of a new community-based harm reduction service delivery approach. As opposed to relying on drug users to attend health facilities, outreach workers reached out to injecting drug users in their own localities, and provided them with information on HIV and the risks associated with injecting drug use, as well as providing clean needles and syringes [29]. Outreach workers also referred injecting drug users to the two linked CBOs where primary health and HIV services were provided. The two CBOs also served as drop-in centres, offering temporary shelters, first aid from withdrawals, and screening for Human Immunodeficiency Virus (HIV) and other Sexually Transmitted Infections (STIs). In mid-2014, the outreach program was expanded to include sexual and reproductive health (SRH) services. Services provided to injecting drug users are summarised in **Table 1**.

Table 1. Nature and scope of services provided to women who inject drugs by CBOs.

Service domain	Interventions and services provided during outreach	Interventions and services provided at drop-in centres	Referrals to private and government health and social services
Prevention and treatment of HIV and co-infections	Condoms, HIV testing, information, communication and education (IEC) on HIV	HIV testing and counselling services.	Confirmation of HIV, antiretroviral therapy (ART), and testing for

	and sexually transmitted infections (STIs).		hepatitis C and Tuberculosis (TB).
Harm reduction	Clean needle and syringes, alcohol swab, cotton wool.	Addiction counseling and first aid for violence and overdose.	Referrals for medically assisted therapy (MAT)/ opioid substitution therapy (OST).
Sexual and reproductive health services	Information on family planning, sister-to-sister counselling, hygiene packages/tampons and rarely, provision of oral contraceptive pills.	Pre-natal education, provision of short term reversible contraceptives.	Referral for long term contraceptives, ante-natal care, and cervical cancer screening.
Social and child related care services	Transport, personal care kits.	Personal care (shower soap, toothbrush, toothpaste, lotions), short term shelter and diapers for women with children.	Referrals for sexual violence and legal assistance.

Participants

Women who inject drugs were approached by outreach workers in the course of outreach, informed about the study and, if interested, screened for eligibility. Eligible participants were scheduled for IDIs and FGDs. To be included, participants had to: be an adult aged at least 18 years; be of reproductive age (i.e. <50 years); and, have been injecting drugs within the 90 days prior to participating in the study, which was the operational definition of active injecting drug use. Overall, 45 women who injected drugs were involved in the study. Of these, 24 participated in IDIs (12 in each site) and 21 participated in three FGDs (2 sessions in Mombasa and 1 session in Kilifi).

In addition to the women, five individual key stakeholders were invited to participate in IDIs. These stakeholders were purposively sampled in collaboration with the CBOs, based on their expertise in policy and service delivery for injecting drug users. The key stakeholders included a community health worker (n=1), outreach workers (n=2), a Ministry of Health official (n=1) and a CBO manager (n=1).

Data collection

Data collection took place in 2015. All IDIs and FGDs were by undertaken by experienced researchers, JN and SA. These two researchers had been involved in research and service-provision with injecting drug users, and had good understanding of the issues faced by this population. Data collection was conducted in Swahili (the national language of Kenya) or English, depending on participants' preferences. Data were collected in private rooms on the premises of the CBOs or in stakeholders' offices. IDIs and FGDs were audio recorded and lasted between 45 and 60 minutes.

Semi-structured topic guides were developed to guide the IDIs and FGDs, which were piloted for clarity and acceptability of language, and revised based on feedback. These discussion guides were developed in reference to on existing literature and the study aim of this study. As such, topic guides explored past and current drug use history, experiences with contraception, pregnancy and pregnancy termination, reproductive and sexual health, HIV testing, immunization and vaccination, and perceived barriers to accessing RMNCH services. For stakeholders, topic guides focussed on policy and community service aspects related to women who inject drugs. At the end of IDIs and FGDs, brief standardized set of questions were used to collect basic socio-demographic data from participants.

Data analysis

Socio-demographic data were entered into Excel and summarised. Data from IDIs and FGDs were translated and transcribed into English simultaneously and as appropriate, and all transcripts were then imported into Nvivo (QSR International) [30]. Thematic analysis was used to identify pertinent themes that emerge from the IDIs and FGDs [31]. Coding was conducted by JN, and GM, and regular discussions were held to refine the themes [32].

Ethical considerations

Participation in this study was voluntary, and written informed consent was obtained from each study participant after a being provided with a detailed description of the study objective and procedures. Data were collected in private rooms to safeguard confidentiality.

Participants were informed that they could stop responding to questions and discontinue their participation at any time. Rigorous strategies were used to protect confidentiality and data were stored in password protected folders and computers. Ethical review and authorisation for this research was provided by the National Commission for Science Technology and Innovation (NACOSTI, ref: P/15/8861/4510).

RESULTS

Participant Characteristics

As shown in **Table 2**, the average survey respondent was in her late twenties, with a mean age of 28.5 years. The average participant had a low level of education. Almost a fifth (18%, n=8) had no formal education, half (51%, n=23) had attended a primary school, and 27% (n=12) had some secondary education. Only one participant had post-secondary education. The commonest sources of income were sex work (29%, n=13), 'hustling' or begging (24%, n=11), and casual labour (16%, n=7).

On average, participants had used different substances and drugs for a cumulative eight and a half years, but had used drugs by way of injecting for the last two and a half years. The primary drug injected was heroin, which was used by 85% (n=38) of participants. Polydrug usage was common, with 60% (n=29) of the participants using multiple substances. All

except seven women had at least one living child (mean 1.6; range 1–5). Overall, more than two-thirds (69%, n=31) of the participants were not using contraceptives.

Table 2. Participant Characteristics.

Characteristic	IDI	FGDs	Total	%
Age (mean, years)	26.4	30.5	28.4	-
Number of children (mean)			1.6	-
Education				
None	4	4	8	18%
Primary	13	10	23	51%
Secondary	6	6	12	27%
Post-secondary	0	1	1	2%
Unknown	1	0	1	2%
Marital status				
Married	5	3	8	18%
Live in partner	7	5	12	27%
Single	11	13	24	53%
Unknown	1	0	1	2%
Income source				
Casual labor	2	5	7	16%
Food Kiosk/plaiting	3	2	5	11%
Sex work	9	4	13	29%
Peddling	1	2	3	7%
Peer educator	0	1	1	2%

Family or partner	3	1	4	9%
Begging, hustling	5	6	11	24%
Unknown	1	0	1	2%
Drug use				
Duration using drugs (years)	7.8	9.1	8.5	-
Duration injecting (years)	3.3	2.0	2.6	-
Main drugs used				
Heroin	11	1	12	27%
Heroin, and other drugs	11	15	26	58%
Cocaine	1	3	4	9%
Cocaine and other drugs	1	2	3	6%
Currently using contraception				
Yes (including condoms)			14	31%
No			31	69%

Experiences and utilization of services along the continuum of RMNCH

As described in the following section and in **Table 3**, the results showed a number of critical issues for women who inject drugs that relate to their use and experiences of RMNCH services. Pregnancies were often discovered late, due to amenorrhea, which delayed awareness and implementation of key measures to protect the health of the child. The use of key RMNCH services like ANC check-ups, facility-based delivery services, and immunisation/vaccination was sub-optimal, and was affected by the stigmatising attitudes of staff, experiences of withdrawal symptoms and the competing priorities of health care versus drug use in terms of allocating time and money. Additionally, stakeholders articulated a need for integrated and linked RMNCH services for women who inject drugs.

Low utilisation of services along the RMNCH continuum.

Data suggested that in general, utilization of pre-natal, facility delivery and post-natal services such as immunization was sub-optimal. To start with, attendance for ANC check-ups was poor, inconsistent or late. Very few women reported having attended ANC clinics.

Others “*went only one time to get a card, so as not to get any problem when giving birth*” (Participant # 7, Mombasa). Low attendance of ANC was also noted by stakeholders, who stated that “*when pregnant, they rarely go for antenatal care*” (Stakeholder # 1, Outreach Worker, Mombasa).

Similarly, it was common to hear accounts of how women “*gave birth at home*” (Participant # 5, Kilifi and Participant # 6, Mombasa). Some women had delivered more than one child as illustrated in **Table 3**. In some cases, these deliveries were attended by traditional birth attendants, as was the case of one participant who reported that “*my mother was a traditional birth attendant, she used to help mothers giving birth*” (Participant # 6, Mombasa). However, in other cases, there were no birth attendants (neither traditional nor skilled) at the delivery, and often women only attended a health facility following childbirth. For instance, asked who assisted her, a participant stated: “*I gave birth alone and then I went to hospital the next day*” (Participant # 1, Kilifi).

A mixed picture emerged regarding immunizations. While some women reported that they had taken their children to all immunizations, others reported that they had missed immunizations, while yet others reported that they “*never went for them*” (Participant # 11, Kilifi). On their part, outreach workers agreed that poor utilisation of ANC services among this population was a significant challenge, and explained how they were intervening: “*in*

case they are pregnant, we have to go and bring them for the antenatal services until the day they are almost giving birth. We take them to Coast General Hospital” (Stakeholder # 1, Community Health Worker, Kilifi).

Table 3. Themes regarding experiences and utilization of RMNCH services

Themes	Codes	Illustrative quote
Low utilisation of RMNCH services	Low or late attendance of ANC.	“At times they go up to delivery and they have never attended any clinic, which is so dangerous... We should start early interventions during pregnancy, you know?” (Stakeholder # 1, Outreach Worker, Mombasa).
	Preference for home delivery/low facility delivery.	“Like the other child, I just gave birth at home” (Participant, FGD 2, Mombasa),
	Absence of skilled birth attendant.	“Haha. I gave birth at our home, and Khadija [a friend] came to pick me, then then we proceeded to [a clinic in] Kilifi” (Participant # 9, Kilifi)
	Missed immunizations.	“I don’t want to lie to you; I took the baby for immunization only once” (Participant 6, Mombasa).
Barriers preventing utilisation of RMNCH services	Lack of information.	“You would expect them to have the right knowledge, right information so that, they can make a decision about the number of kids ” (Stakeholder # 2, Mombasa).
	Stigma and discrimination from health providers.	“They tell each other “that is a drug user””, they take you round from one place to another once they know you are a drug user, and you end up being the last one to be served” (Participant # 5, Kilifi).
	Cost.	“I had a medical bill at the hospital that I never paid for, I was paid for by the government. From hospital, I called my mother and she sent fare, I went to home” (Participant # 1, Mombasa).
	Late discovery of pregnancy due to amenorrhea.	“When we use drugs, it usually prevents someone from getting pregnant, because it usually prevents us from getting periods. It can take for more than two years you have not had periods. I don’t know what it is usually happening” (Participant # 8, Kilifi).
	Failure to remember appointments due to drug use.	“It is heroin. Heroin causes all this. Even seeking for health services, I don’t, ahh! I just see I’m alright. Even making follow-ups, I don’t” (Participant # 9, Kilifi).
	Drug withdrawals.	“Since I had ‘arosto’ [drug withdrawal] and could not queue, I just left” (Participant # 10, Mombasa).
Lack of integrated	Failure to integrate	“Addressing the issues of health [of women who inject

and holistic RMNCH services for women who use drugs and their families.	RMNCH into harm reduction and HIV services.	drugs] is not enough without addressing reproductive health” (Stakeholder # 1, Outreach Worker, Mombasa).
	Failure to integrate issues of children of women who use drugs.	“In our rehabilitation strategy, we should have a component that will address mothers who are into drugs with their children” (Stakeholder # 1, Outreach Worker, Mombasa).

Barriers to access to services

Another theme that emerged from the data related to barriers preventing women from utilising RMNCH services. To start with, it was suggested that women lacked information about the benefits of ANC, yet *“they ought to attend clinics when they conceive. They should go for check-ups so that they can be advised on how to take care of their pregnancy”* (Stakeholder # 1, Outreach Worker, Mombasa). Not surprisingly, women seemed to prioritise their drug use over their own health. Asked why she missed her appointments, one participant rhetorically asked *“will you take 40 shillings to go to the hospital or will you first look for drugs?”* (Participant # 5, Kilifi).

In addition, stigmatising attitudes from health care workers was blamed for low attendance at ANC and post-natal clinics. Reporting her interactions with health providers, a participant reported that *“they despise us a lot.”* She added that:

Should they know that you are an addict, they send you backwards on the queue or tell you to go and come later. (Participant # 10, Kilifi).

The importance of stigma was emphasised by ways in which participants contrasted health care workers’ attitudes vis-a-vis that from outreach workers. Referring to outreach workers from one of the CBOs, a participant reported that *“the outreach workers are okay. They don’t have anything against us. If you have problems you tell them, they will help you”*. (Participant # 6, Kilifi). Another opined that *“people from REACHOUT care. If you have any problem or if you are not feeling well, they will write for you a referral to go to hospital if they do not*

have the ability to treat you. If you get there you will be treated because of their referral. So I see they help". (Participant # 7, Mombasa).

Not surprisingly, stakeholders asserted that the low attendance of ANC and immunization appointments was also because of women's drug use:

Because of their drug use, they conceive and can even stay for up to six months before going for antenatal care (Stakeholder # 1, Outreach Worker, Mombasa).

Consistent with these claims, some women also blamed their drug use for such missed appointments. Asked whether she had taken her child to all immunizations, one participant responded:

All the immunizations? I don't think I took him to have all the immunization injections. There are those that he skipped, I don't remember. I don't even know where the cards we use at the clinic are. Have you ever seen a life that is shattered? I don't remember anything (Participant # 1, Kilifi).

Women were cognizant of the impact of drug use on their ability to seek or attend RMNCH services, with several mentioning that they hardly remembered their appointment dates. In their lives, getting access and using drugs was prioritised, and often this meant that appointments were not kept. In a typical statement one participant stated that "*at times I am passed [by the appointment] because I can't remember much*" (Participant # 10, Mombasa).

Asked about what would assist her to follow-up on her own and her child's health appointments, another participant responded:

Stopping these issues of drug abuse. That is when I can follow-up on services.

Without stopping drugs, there is nothing I can follow-up on (Participant # 9, Kilifi).

Given these observations, it is not surprising that stakeholders emphasized the need for systems to remind women about immunizations. Asked if women brought their children to the clinic, a stakeholder stated that *“they do come with them here, but the problem is that they forget. They don’t have the memory to remember the baby has to go [for immunization]. So we go back to the field to remind them”* (Stakeholder # 1, Community Health Worker, Kilifi).

Due to their ongoing drug injecting, women reported that they experienced amenorrhoea, which in-turn interfered with their ability to know if they were pregnant when they missed their periods. For instance, one participant explained that she had missed her ANC because she discovered her pregnancy late *“I realized I was pregnant when I was almost going to deliver. Eeeh! After seven months.”* (Participant # 11, Kilifi). This phenomenon was also observed by a stakeholder who asserted that *“when they are pregnant, they do not know that they are pregnant”* (Stakeholder # 1, Community Health Worker, Kilifi).

Another barrier to use of services was related to costs. Indirect costs associated with facility-based delivery were particularly influential of women’s decisions to give birth at home. The importance of previous user fees came to the fore given the fact that in contrast to previous years, free maternal services were now available, as a participant noted:

Nowadays there is no paying for delivery services. It’s free of charge to deliver, if you go to Makadara. If you go there, they don’t ask for anything. You give birth for free. You carry your child and go your way. But during the previous time when payments were needed, you had to deliver your children at home. (Participant, FGD 2, Mombasa)

Despite the free maternal health care however, women suggested that delivering at the hospital always invariably came with some hidden costs, as they were frequently prescribed medications, which they then had to buy:

You are forced to pay. If you go, you must buy medication! If you go to the hospital then you are given a prescription, you have to buy using your own money at the chemist. (Participant, FGD 2, Mombasa).

Apart from potential indirect costs, the prospect of having drug withdrawals while at health facilities discouraged women from attending appointments, especially when queues were expected as illustrated in **Table 3**. In addition, accounts of women, particularly those who had had caesarean sections suggested that withdrawal symptoms emerged during the post-natal period, often interfering with the care they received. In an illustrative example, a participant narrated how she “*had to be operated upon*” but at the hospital, “*issues of drug use*” came up (Participant # 12, Kilifi). She explained that she had a negative experience and “*had to persevere, because I was falling often like a leper*” due to drug withdrawals.

Lack of integrated and holistic services along RMNCH continuum

Data suggested that part of the reason for the low utilisation of RMNCH services was the lack of a holistic view of the health needs of women who inject drugs. Harm reduction services were not generally catering for the sexual and RMNCH needs of women, prior to the pilot that was started in 2014:

We didn't have a specific package for females, and there was no project that was addressing issues of women. So we started implementing this innovative SRH project, which has brought great mileage. (Stakeholder # 1, Outreach Worker, Mombasa).

In the words of this stakeholder, the lack of SRH services for women who inject drugs was “*a great challenge, because females who use drugs are not given a right, to decide when, they should get pregnant*” (Stakeholder # 1, Outreach Worker, Mombasa).

In addition, another stakeholder explained that these gaps occurred because “*the health care workers did not understand why and how they needed to serve female drug users*”. (Stakeholder # 3, CBO Program Manager, Kilifi). Addressing the health issues of women who inject drugs was not seen as sufficient unless it includes reproductive health services for women as illustrated in **Table 3**. Furthermore, there were misconceptions and false assumptions that women who inject drugs were not sexually active or did not reproduce, which was blamed for the neglect of sexual and RMNCH services for this population. As one stakeholder asserted:

There has been a lot of misconception that females who use drugs are not sexually active, that they do not reproduce, but these are mere misconceptions and myths that the communities have. The reality is when they are informed, they can take actions which are highly informed. If they get knowledge, they get informed, then they can make some decisions upon their reproductive life (Stakeholder # 1, Outreach Worker, Mombasa).

A lack of a holistic approach to the health of these women also meant that they did not have access to child support services. In a good number of cases, women left their children to be looked after by their own parents, while they continued with their drug use. An example is a participant who reported how her child was being taken care of by her “*mum*” while she “*returned to drug use*” (Participant # 12, Kilifi). In addition, it was clear that a lack of integrated services caused missed opportunities for child health services, for example in

relation to HIV testing, which is particularly important given that women who inject drugs are at high risk of HIV in the study context. One participant illustrated this by mentioning that:

I got pregnant when I was [using drugs] like this, and I gave birth at home. The child was not tested...I just started taking the baby for the immunization without being tested for HIV...but the child started becoming sick (Participant # 5, Mombasa).

This deficiency in integration of services and lack of a holistic approach to the continuum of RMNCH interventions was also said to affect wider issues of child welfare. Stakeholders suggested that a lack of focus on the children of women who injected drugs was a “challenge... because the families are being raised in an unfavourable environment... a family which has nowhere to live, except in the streets” it was suggested that services targeting women who inject drugs “should have a strategy to address issues of both the mom and the child” (Stakeholder # 1, Outreach Worker, Mombasa). This stakeholder was of the view that “in our rehabilitation strategy, we should have a component that will address mothers who are into drugs with their children”. This was due to the observations that many children were separated from their mothers, who stakeholders felt “have a right to be under the custody of their mothers” (Stakeholder # 1, Outreach Worker, Mombasa).

DISCUSSION

This study documents the experiences and needs of women who inject drugs in relation to their access to RMNCH services, and highlights that there are significant supply and demand side issues to be considered in program interventions. The sub-optimal use of RMNCH services documented in this study have also been observed among non-drug-using women in many other setting in sub-Saharan Africa. These include barriers that reduce demand for

these services among women, such as lack of awareness about complications in pregnancy or need to attend ANC [33], lack of knowledge of the benefits of skilled/facility-based delivery [33, 34], low health seeking behaviours and delays therein [33], and long distances or lack of transportation to the health facilities [33-36].

Other barriers operate to reduce supply, affordability and availability of these services. These include out-of-pocket health expenditures [33], inattention to reproductive health and rights [37], poor quality of health care [37], inadequate staffing [38], and lack of training of health providers [36], fear of being neglected or maltreated by health workers [34, 36]. Our study adds onto existing literature showing that women who inject drugs may particularly be affected by these barriers [23, 26, 39]. In light of these findings, we suggest that interventions focusing on both supply and demand and appropriate RMNCH interventions will be required.

Strengthening the supply and availability of integrated RMNCH interventions to women who inject drugs

An efficient and effective health care system requires an accessible health care delivery system that provides appropriate services to all populations, including marginalized populations, where and when they need them [40]. Our study points to a number of health systems weaknesses and barriers preventing the utilization of RMNCH interventions.

Therefore, health systems need to be strengthened and adapted so as to be responsive to health needs of women who inject drugs. At a macro level, this will also require enhanced investments in health sector across all elements of the health system [40, 41]. This is particularly critical in Kenya, where the current expenditure in health is below the 2001 Abuja declaration which recommended 15% of the annual national budget to be set aside for health [42]. In addition, it will be essential to strengthen health information systems so as to

include user fields that allow tracking of equity in reach of health services. Monitoring the coverage of health interventions in subgroups of the population is critical because national averages can hide important inequalities [9]. Given the low ratios of health providers, further expansion of the health work force will be essential to mitigate current shortage [41].

At a micro level, training of health providers regarding the needs of women who inject drugs will be essential. Evidence from the study setting suggests that health providers do not know how to attend to women who inject drugs, as they are unfamiliar with their health needs and issues, such as methadone, withdrawals, and amenorrhea, among others. Addressing misconceptions documented in our study and elsewhere [19, 43] that women who inject drugs are not active sexually or that they cannot have responsible control over their own reproductive and maternal health will be necessary. In addition, our study suggests that given the poor reach of formal health services to these marginalized population, adapting the local delivery system so as to reach them in their localities will be critical in achieving equitable access to essential RMNCH services.

In a recent review of maternal, newborn, and child health services, community-based interventions were more equally distributed than those delivered in health facilities [10]. Therefore, ensuring that services are delivered outside of health facilities and as much as possible in the community will be a critical determinant of whether marginalized populations are reached with essential services. In this regard, integrating reproductive, maternal, neonatal services into harm reduction programs will be needed, as recommended by others [44]. In 2006, the Ministry of Health formally recognized the importance of linking communities and front line facilities and launched the Community Health Strategy. Five years later, in 2013, the Ministry launched the Harm Reduction Strategy [45]. Our assertion is

that to achieve optimal outcomes, these strategies will need to be operationalized via community-based harm services that include RMNCH interventions, and are provide women who inject drugs in their own localities.

Increasing demand and utilization of integrated RMNCH interventions by women who inject drugs

Addressing health systems alone is not sufficient to address determinants of RMNCH service utilization, at least based on our study findings. At a macro level, advocating for the reproductive health and rights of women a basic human rights entitlement at the national level will be important in driving macro-level demand, and ensuring that the government can meet its obligations to international human rights commitments, particularly those pertaining to sexual and reproductive health and rights (SRHR) of women. Addressing issues of cost will require ensuring that user fees are eliminated in keeping with the government's commitment for free maternal healthcare, and indirect costs, such as transport costs or purchasing of prescriptions, are minimised. In addition, strengthening community systems and infrastructure will drive the demand of RMNCH services. Evidence from recent reviews shows that interpersonal and community-based interventions are effective in increasing the demand and uptake of RMNCH services [46], for example through site and home visits [46, 47].

Based on the findings from this study, a significant number of barriers can be addressed by integrating RNMCH interventions into outreach-based harm reduction programs. The closeness of outreach workers to the women who inject drugs can facilitate the tracking and provision of essential RMNCH interventions across the RMNCH continuum of care. Our

recommendation is that community-based outreach services should 1) ensure early identification of pregnant women including through pregnancy testing, and newborn babies; 2) link pregnant women to ANC, 3) support the retention of pregnant women in ANC attendance through site visits and appointment reminders (e.g. via text messages), 4) screen, recognize and refer pregnancy-related complications (e.g. pre-eclampsia, haemorrhage, premature rupture of membranes, and infections) for management at referral facilities, 5) assist women to have a birth plan that supports facility-based delivery or at least assisted by a skilled birth attendant, 6) identify post-natal women who may have missed ANC and link them and their newborn babies to post-natal care, 6) integrate post-natal follow up and home visits to harm reduction outreach activities, 7) follow up and provide reminders to women to ensure that they adhere with immunization schedules and, 8) follow up women and their children and link them with multifaceted interventions that address needs of children, housing, employment among other needs. This will require multi-sectoral collaboration.

At a micro level, reaching, informing and educating women on issues regarding RMNCH will increase their awareness. Mobilizing and training them to seek, demand and utilise RMNCH services will be an important second step. Interpersonal education and information strategies are effective in increasing uptake of maternal and neonatal outcomes [47], and these could work well within outreach programs. In addition, there is a need to leverage on women's agency and desire to improve their own reproductive health. Women who inject drugs should not automatically be imagined as being unable to make informed choices regarding their own health and that of their children [43].

Evidence suggests that many drug-using women are keen to achieve or maintain identity as a responsible mother, and to live out the values of being a responsible mother [48, 49]. Often,

they are cognizant that drug use is an impediment to these aspirations, and many are confronted with fear of hostile social judgements of being an addict mother [48]. Despite these adversities however, most of these women aspire to be successful mothers [43, 49]. Therefore, leveraging on these motivations and aspirations would be an important and transformational strategy through which women can be supported to cope with stigma, self-blame, and minimize harm from drug use [48, 49], while at the same time improving their access to essential RMCH services and outcomes. Demand can also be increased through specific incentives. Although financial incentives have been considered in other contexts [47], in our context, free pampers for women with children were incorporated at drop-in centers to motivate their use of harm reduction and reproductive health services.

Limitations

Our sample included women who were already being reached with outreach services and may have had different experiences. Thus, transferability of our findings to women who inject drugs who are not enrolled in outreach services may be limited. In addition, social desirability bias may have affected our findings, given that participants were recruited through CBOs that encouraged them to seek health services. Methodologically, combination of IDI and FGDs was designed to provide complementary data for triangulation purposes. However, as might be noted from our findings, women in FGDs were less forthcoming with information related to their utilization of RMNCH services, which could be a reflection of social desirability bias. Indeed, our findings may be under-estimating the extent of the need and barriers related to RMNCH services as women may have been hesitant to report their poor health seeking behaviours. Under-reporting of poor health seeking is reported in other studies of drug users [50]. This may be particularly important for this study as member checking was not conducted in this study. Nevertheless, FGDs and IDIs overlapped in their

often iterative questions, and findings across both methodologies were consistent. In addition, findings from both the women and stakeholders were consistent in highlighting the poor utilization and wide-ranging barriers to women's utilization of RMNCH services.

Researchers' predispositions frequently affects what is reported from studies [28]. To safeguard credibility and trustworthiness of our analysis, the coding process was conducted by two authors (JN and GM) as recommended by other scholars [31]. These authors were familiar with issues of women who inject drugs and services at the CBOs, enabling them to contextualise the data appropriately. Quotes are presented in the text to support our assertions, and the linkage between these quotes, codes and themes are made clear in **Table 3** to facilitate independent judgement as suggested by Chiovitti and Piran [51]. In addition, participants were recruited via two different CBOs through a combination of convenience and purposive sampling which enabled the known strengths of these sampling methodologies to be harnessed [52], while mitigating researcher bias in participant selection. Despite these strategies, it is nearly impossible to eliminate subjectivity in qualitative data analysis [31]. Nevertheless, and in spite of potential residual limitations, findings from this study will be a useful starting point for improving RMNCH services and policy pertaining to women who inject drugs in Kenya.

Conclusions

Despite recent improvements in maternal, neonatal and under-five health indicators in the era of MDGs, significant efforts will be required to ensure equity in RMNCH in the context of the new sustainable development goals (SDGs). Women who inject drugs face significant challenges in accessing conventional health services. This study reports the sub-optimal utilization of services across the continuum of RMNCH by these women. To strengthen

access to these services by these women, specific interventions to support their access at low thresholds of interventions across the RMNCH continuum should be prioritized. This will require a combination of supply-side interventions that strengthen health systems such as equity monitoring, training of health providers and decentralization of services to communities, and demand-side interventions such as right-based advocacy, education and training of women to seek services, and active screening and referral of pregnant women for appropriate RMNCH services. For optimum impact these services should be integrated into existing facility- and outreach-based harm reduction services.

Conflict of interests

Authors declare no conflict of interest.

Authors' contributions

GM, JN and SA contributed to the design of the study. JN, SA and SM participated in data collection. JN and GM performed the analysis. GM drafted the manuscript. JN, SA, TA, SM, FJ and GA reviewed and provided critical input to the paper. The final draft was approved by all authors.

Availability of data

Due to the sensitive and criminalized nature of drug use in the study context, data may not be publicly available. Request for data can be submitted to the corresponding author.

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