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## **Role of peer educators in behaviour change communication interventions for HIV prevention among people who inject drugs: Systematic review article**

**Maltez Alberto Mabuie**

Higher School of Journalism, Maputo City, Mozambique

maltezmabuie@gmail.com

**Abstract.** Currently, there are 13 million People Who Inject Drugs (PWID) in the world of which 1.7 million people are HIV positive. Recent reports demonstrate that the risk of HIV transmission is significantly high among PWID, because these individuals are involved in risky behaviours; for instance, sharing equipment and involving themselves in risky, sexual activities more than the rest of the population. Peer education is a key behaviour change strategy that draws on several theories such as information motivation behaviour skill theory; theory of reasoned action; and diffusion of innovation theory. In particular, peer educators have been considered important agents of behaviour change because they are capable of communicating with PWID and influencing the group norms. The aim of the study is to look at the role of peer educators in behaviour change communication (BCC) intervention to prevent the spread of HIV among PWID. A systematic literature review was used as the method of choice for data collection. In particular, data were drawn from six highly relevant and most recent research journals. The results of this study demonstrate that peer education positively influences the norms, attitudes and beliefs of PWID. In conclusion, the study provides evidence that peer educators play a fundamental role reducing harm and the spread of HIV. The study proposes the engagement of volunteers who assist PWID with their injections in BCC interventions in order to prevent the transmission of HIV.

**Keywords.** PWID, HIV Prevention, Peer Educators, BCC

### **1. Introduction**

Today, approximately 13 million individuals use injected drugs. Out of this figure, 1.7 million people have HIV (World Health Organization, 2019). The People Who Inject Drugs (PWID) is highly vulnerable to being infected with HIV. Current estimations show that PWID are 22 times more likely to be infected with HIV than the general population based on available statistics from 49 nations globally (Montain et al., 2016).

Sharing needles and unsterile syringes and other risk behaviours such as using 'fresh blood' in instances where an individual is incapable of finding the drugs, are significantly common (Bazzi et al., 2018). One of the interventions aimed at preventing, treating and caring for PWID is the harm reduction program. Harm reduction refers to services, programmes, policies and actions aimed at reducing the harm to society, communities and individuals, caused by the use of drugs. The World Health Organization (2015a) indicates that harm reduction is fundamental in preventing HIV infections among PWID and their sexual partners. This prevention strategy

utilizes behaviour change communication (BCC) interventions to prevent the occurrence of new HIV infections and to manage harm arising from drug use. In particular, harm reduction peer educators can substantially contribute to the prevention of the spread of HIV among PWID (De Beck et al., 2017). Harm reduction peer education can play a fundamental role in delivering messages that can support behaviour changes. The aim of the study is to look at the role of peer educators in BCC intervention to prevent the spread of HIV among PWID.

## **2. Literature Review**

### *2.1 Vulnerability and global HIV Epidemics among PWID*

A report produced by World Health Organization (2015b) in conjunction with UNHCR, INPUD, UNAID, UNESCO, UNODC and UNICEF reveal that PWID engage in sharing non-sterile injecting equipment, unprotected sex and face social marginalization and discrimination as well as sexual exploitation. The sharing of non-sterile, injecting equipment is a common behaviour among PWID and accounts for the high number of HIV-positive cases. Furthermore, using substances such as alcohol leads to an increased desire for sex and or reduced behaviour inhibitions. Additionally, injection drug use occurs mostly among people who are socially marginalized - those living in extreme poverty. Such marginalization disproportionately affects the young people from ethnic minorities. Consequently, young PWID face multiple risks and are vulnerable to become HIV infected, since the majority engages in sexual activities, in exchange for money or drugs.

Mburu, Limmer, and Holland (2019) conducted a study that focused on determining the risk behaviours of PWID, particularly women. The authors found unprotected sex and unsafe drug injection to be the major contributors to the rise in HIV infection among the PWID. According to Mburu et al. (2019), these risks occur in the form of sexual assaults and the sharing of needles as well as transactional sex. The critical determining factors that underlie these risk behaviours include inadequate gender empowerment, poverty and social isolation.

UNAIDS (2017) indicates that the PWID population is at higher risk of being exposed to HIV because they cannot access social services and reach health care. As an outcome, Des Jarlais et al. (2016) estimate that PWID comprise a number of approximately 8.9 to 22.4 million worldwide and about 0.9 to 4.8 million injected drug users are living with HIV.

UNODC, UNAIDS and WHO (2017) show that, globally, PWID are disproportionately affected by HIV, since this population is 28 times more likely to live with HIV in comparison to the general population. UNODC, WHO, and UNAIDS together with World Bank estimate that 14% of 11.7 million injected drug users in 2014 were HIV positive.

The Global Fund (2020) provides the most recent statistics and points out that in 2017, 271 million people across the world were using drugs, of which 11.3 million were involved in injection drug use. The estimated HIV infection among PWID was 12.7%, a clear indication that 1.4 million PWID are HIV positive.

### *2.2 Harm reduction for HIV prevention*

A study by Ratliff et al. (2013) asserts that harm reduction involves onsite testing and counselling; providing and distributing health kits that contain educational, informational, and communicational materials, alongside kits for care equipment; and services for psychological support. The Global Fund (2020) reasons that harm reduction involves practices, programmes and policies that focus on minimizing the negative, legal, social and health impacts related to the use of drugs. According to the Global Fund, harm reduction is a concept grounded on the foundations of human rights and justice.

The essential, health-related interventions for PWID include: HIV-spread prevention, testing and counselling, treatment, management and care of HIV-patients and the prevention of co-infections and comorbidities such as mental health conditions. In support of Ratliff et al. (2013) and Global Fund (2020), UNAIDS (2019) contends that harm reduction is critical for a consistent decrease in mortality and morbidity among PWID.

Semá Baltazar, Boothe, and Kellogg (2020) also contributes to the discussion on the importance of harm reduction. The authors indicate that harm reduction is crucial in eliminating the health issues associated with the use of drugs for individuals, families and communities.

### *2.3 Behaviour Change Communication Interventions for HIV prevention*

#### *2.3.1 Outreach Intervention among PWID*

One of the approaches to delivering harm reduction services to PWID and their spouses/sex partners is an outreach programme. According to UNODC and NACO (2012), traditional outreach approaches provide care services to PWID in in-setting care centres. However, Binford, Kahana, and Altice (2012) demonstrate PWID are often reluctant to visit these centres because drug use is not a socially-approved behaviour and therefore the general community often discriminate against, stigmatize and criminalize PWID for using the drugs.

As a result of these challenges, it has recently become imperative to reach out to PWID in their locations, where they are likely to be found, with the prime objective of preventing the transmission of HIV, by reducing the sharing of syringes, needles and other equipment (World Health Organization, 2004). When carried out effectively, outreach has the potential to bring services to the doorstep of the PWID because it is based on respect, teamwork, empowerment and non-judgment. Nazari et al. (2016) further point out that it also allows the provision of new equipment and the collection of all used or old syringes or needles. Individuals who can conduct outreach activities include peer educators, outreach workers, auxiliary nurse midwives and project managers.

#### *2.3.2 Selection process of peer educators*

UNAIDS (1999) indicates that using social network analysis and nomination approaches are the most common techniques for identifying and selecting peer educators. This consideration is important because it ensures that the project manager is able to tailor the programme, materials, and messages in a manner that fits the needs of the target drug user.

Gillespie, Lasu, and Sawatzky (2018) advance these findings by validating that the primary factor to be considered in the selection of peer educators is the recruitment of individuals who had had previous experience in injected drug use. Additionally, evaluation of peer knowledge is a critical factor in the peer selection and -training programmes. As such, peer-driven intervention programmes need to ensure that potential peer educators complete knowledge tests before they can be allowed to engage or conduct peer-related activities. Finally, peer educator selection is a fundamental determinant of the success of the programme and indicates that the educators should be people who are accepted by the group being targeted. Furthermore, their personalities should be suitable for the activities they will be performing.

#### *2.3.3 Role of peer educators in Reducing Unsafe Injection Practices and the Spread of HIV*

Morar et al. (2018) assert that peer educators have different roles and responsibilities in the outreaching setting and in the reducing of harms that are related to the use of drugs. Primarily, they conduct the outreach and maintain contact with PWID; identify new HIV cases and provide dialogue-based, interpersonal communication.

Demirezen et al. (2020) advance this notion by revealing that peer educators encourage the uptake of services; demonstrate the safer use of condoms and injections and organise and invite group discussions with PWID.

According to Gillespie, Lasu, and Sawatzky (2018), peer educators offer support to PWID by showing an understanding of and sharing their psychological and emotional pain. Peer educators can establish a helpful connection with the injection drug users because of the mutual experience that exists between them and the drug users. In turn, this allows the members of the peer group to show a willingness to try new behaviours and move beyond the previously held self-concept. Drainoni et al. (2019) agree with Gillespie, Lasu, and Sawatzky (2018) by further contending that most of the people who have recovered from injected drug use show a willingness to participate in peer education because they believe their unique experiences can help others in similar circumstances.

#### *2.3.4 Harm reduction, peer educator and prevention of HIV*

Semaan, Des Jarlais, and Malow (2006) explore different aspects of interventions which aim to reduce the risk of injection drug use and focus on peer-level interventions as among the most important approaches. They conclude that peer education is the key to behaviour change and the reduction of the risk of being infected with HIV among injection drug users in different settings. In particular, peers talking to the injection drug users frequently is the strongest component that are related to behaviour change, in response to the HIV threat. As such, reduction of risk occurs via discussions amidst the drug-using peer community about HIV, and such approaches result in the acceptance of new norms, promoting safe behaviour.

Keshab et al. (2020) performed a study that aimed at identifying the effectiveness of interventions, related to changing risk behaviour and preventing the spread of HIV among people in a low-income setting, and their results agree with Semaan, Des Jarlais, and Malow (2006). Keshab et al. (2020) also point out that peer education leads to the increased use of condoms across the HIV epidemic zones among both the young and adult populations.

#### *2.3.5 Focus on Behaviour Change Communication and engaging Volunteers*

USAID (2002) describes BCC as an important strategy that involves interacting with individuals or communities to establish approaches and messages, tailored to specific groups, to develop and promote positive behaviours. In the HIV/AIDS context, BCC is a necessary component in a comprehensive strategy that includes the provision of commodities such as needles, condoms, syringes and spiritual, social, psychological and medical services. Additionally, BCC creates a demand for services, a demand for information on HIV and AIDS, and enhances the perception of risk or the need to change the attitude toward condom use.

De Vasconcelos et al.'s (2018) assertion is also in line with USAID's (2002) result, as they show the importance of reaching out to large target groups of drug users and their sexual spouses who would otherwise not have access to preventive interventions. With BCC, both informal and formal mechanisms of reaching out to PWID can be used to reach and educate them at the community level. However, Awasthi and Awasthi (2019) point out that current literature shows little evidence of the impact of peer volunteering on BCC and assisting PWID and thus, preventing the spread of HIV.

### **3. Theoretical Framework**

The study is guided by information-motivation-behaviour skills (IMB) theory; theory of reasoned action (TRA) and diffusion of innovation theory. The IMB is a theory based on health and social psychology and is useful in the understanding of sexual risk behaviour (John, Walsh,

and Weinhardt, 2017). The IMB states that information and motivation are critical requisites for effective, action promoting as well as maintaining healthy behaviours and experiencing positive outcomes (Brown et al., 2016). In the context of this study, the IMB model is used to explain specific facts about peer education and behaviour, as well as how communication on the use of condoms, syringes and needles contributes to the prevention of HIV transmission among PWID (Ahsani-Nasab et al., 2016; Gooden et al., 2016). Also, the theory helps to explain that peer educators are important factors in exerting powerful influences on HIV prevention and behaviour change.

TRA takes into account attitude as well as subjective norms. Attitude is considered as either a positive or a negative feeling in relation to the accomplishment of an objective. Subjective norms are the person's perceptions on his ability to achieve a goal (Jemmott III, 2012). Therefore, this theory explains human actions in terms of the relationship between attitudes and behaviours. As such, the theory is used in this study to understand and explain PWID behaviour by examining the basic motivation to engage in positive behaviour that can help reduce harm and the spread of HIV (Conner et al., 2017).

The diffusion of innovation theory explains how an idea diffuses and spreads through a particular social system or population with the result being adoption as a new behaviour or idea (Balas and Chapman, 2018). As such, adoption means that an individual begins to do something different in comparison to their previous behaviour.

#### **4. Methodology**

##### *4.1 Type of study design*

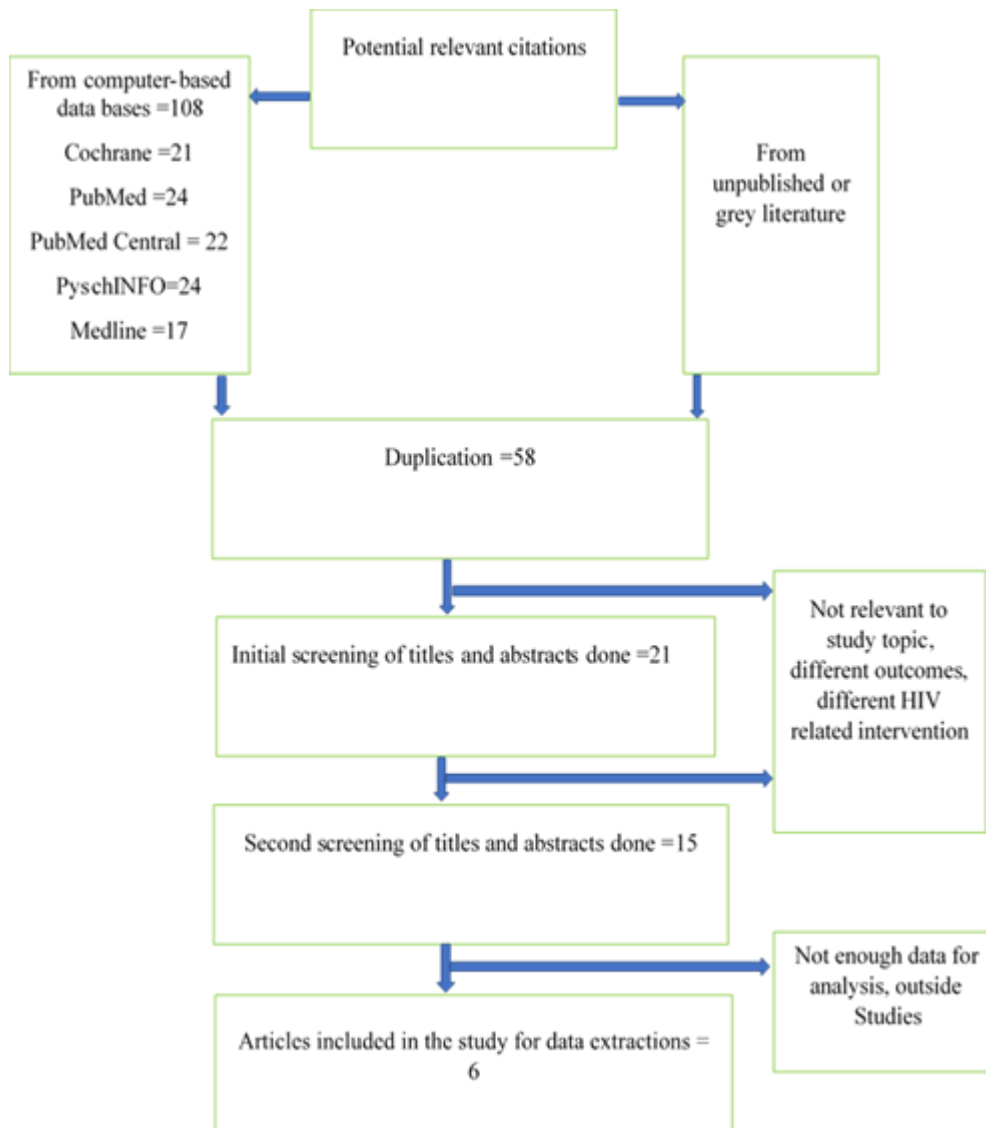
The study adopted a systematic review approach that encompasses retrieving, assessing, and summarizing the findings from relevant records (Gough, Oliver, and Thomas, 2017). In this section, the type of study design initially followed, based on the population of studies, is addressed. The research study has focused exclusively on a systematic review, aiming to examine the impact of engaging volunteer peer educators on preventing the spread of HIV among PWID.

##### *4.2 Sources of Information*

In order to achieve the goals of this research, data were obtained from secondary sources. In particular, the information used in this study was obtained from the following databases: Cochrane, PubMed, PubMed Central, PyschINFO and Medline. Primarily, data were obtained from peer-reviewed journals as well as reports from reputable international organisations such as UNHCR, INPUD, UNAID, UNESCO, UNODC, WHO, USAID, UNAID, and UNICEF. These sources generated relevant information about HIV prevention among PWID.

##### *4.3 Search strategy*

Grewal, Kataria, and Dhawan (2016) demonstrate that using keywords is a useful approach for establishing the most accurate and relevant data sources in secondary research. Therefore, the search strategy, which made use of the following keywords and phrases to retrieve the results, was employed: "HIV prevention among PWID"; "behaviour change communication and engaging volunteers"; "outreach intervention among PWID"; "harm reduction peer educator and HIV prevention" and "role of peer educators in HIV-spread prevention".



**Figure 1:** PRISMA flowchart of the results of the search process

#### 4.4 Criteria for data inclusion as well as exclusion

The following criteria were used to achieve high-quality research. The first and most fundamental inclusion criteria that were used during the selection of records in this study involved making sure that each record related to HIV Prevention among PWID. Journals and peer-reviewed articles were the first critical target. In addition, reports on HIV prevention were also selected for the study.

Secondly, the selection of studies was done on two criteria linked to the language and publication year of the study. Only those studies or reports that were published in English were selected, to maintain comprehension. In addition, the studies were also selected by considering the publication date, i.e. no study was selected that has a publication date older than 2013. These were the core criteria that determined the selection of research papers - apart from considering their relevancy.

#### 4.5 Data extraction

To extract data in this systematic review, a simple tool, i.e. an extraction table, is made use of. Using some of the important fields in the table - such as: author and date of publication; study focus; topic or purpose and methods used for data collection and findings (Lajeunesse, 2016) - and arranging these parameters in tabular format allow an easy and quick glance of the summaries of research papers.

#### 4.6 Data analysis

For the analysis of data, retrieved from the prior research papers, the technique of meta-analysis is employed. Meta-analysis is used as a method to summarise the results of selected research studies. The research of Cooper, Hedges, and Valentine (2019) mentions that meta-analysis is the most effective approach to the analysis of a systematic, literature review. In particular, cross-case analysis was used as the primary approach to data analysis. A cross-case analysis is an approach that involves in-depth exploration of similarities and differences between cases, with a view of supporting underlying theory (Ryan, 2012).

### 5. Results

**Table 1:** Characteristics of the selected studies and major results achieved

Author(s)	Study aim	Method of data collection	Main study results
Stengel et al. (2018)	Study focused on identifying feasibility and potential impact of peer outreach at fostering community level.	Semi-structure interviews	Peer education serves as sources of hope to those currently using injected drugs. Peer education is important in reduction of spread of HIV among PWID .
Jozaghi, Lampkin, and Andresen (2016)	Identification of peer educators' role in reducing morbidity factors.	The semi structured interviews with 10 peer educators and 10 PWID	Volunteer peer education in HIV create increased awareness about HIV. Peer education resulted in a positive reduction in equipment sharing. Condom use: statistically significant result in the increase of condom use.
Pawa and Areesantichai (2016)	Examination of efficacy of behaviour change strategy among PWID.	A quasi-experimental research	84% of the treatment group reported improvement in harm reduction. Peer education resulted in significant improvement in harm reduction.
Mihailovic, Tobin, and Latkin (2015)	Determination of the efficacy of the peer-based intervention to reduce behaviour risk of HIV.	Quasi-experimental study	Increased level of conversation about and knowledge of the prevention of HIV among PWID.

Khosravi et al. (2018)	Examination of efficacy of peer education on reducing risk, related to HIV infection among street children in Afghanistan.	A quasi-experimental study involving 61 street children	80% of the participants showed a significant change in attitude and an increase of knowledge about HIV/AIDS.
Mackesy-Amiti et al. (2013)	The research analysed a large, randomized HIV/HCV data basis, related to PWID in the U.S.	Comparison of peer education interventions to a time-matched, attention control group.	90% of the PWID perceived to exhibit high-risk behaviours, engaged less in risk behaviours after peer education intervention. Study showed improved knowledge of and attitude toward equipment sharing.

## 6. Discussion

The study demonstrates that volunteer peer education is an important method of intervention, that assists PWID with behaviour change and thus helps prevent the spread of HIV among this section of the population. In particular, the study agrees with USAID (2002), since its findings indicate that intervention done by PWID-peers is effective, as it resulted in an increase of knowledge and an improved attitude towards behaviour changes. Almost all of the reviewed studies demonstrate that peer education results in an 80% to 90% reduction of risk behaviour among PWID. The intervention also resulted in an improvement of harm reduction and self-efficacy.

The study agrees with De Vasconcelos et al. (2018) by showing that peer education results in a higher level of knowledge of HIV prevention among PWID. In particular, the majority of the PWID showed behaviour changes regarding the sharing of equipment and engaging in safe sex practices. These results are explained by Drainoni et al. (2019) and Gillespie, Lasu, and Sawatzky (2018) who point out that peer education is critical, because it involves a particular, trusting relationship between the educators and the current injection drug users.

This finding can be explained by the diffusion of innovation theory, which posits that certain people can influence behaviour changes through diffusing information and influencing the target group. In this sense, volunteer peer educators comprise an important social support system that provides the means through which PWID can re-identify with their communities.

The result of this study agrees with Semá Baltazar, Boothe, and Kellogg (2020) and the Global Funds (2020) reports that demonstrate that activities of peer educators go beyond diffusion of information on adopting positive drug use practices, through social network and foster community building. Peer educators' unique position influences awareness about HIV prevention and harm reduction because of their shared, drug injection experiences. Furthermore, they can communicate messages of behaviour changes because they present themselves as ambassadors of change.

Similarly, this study is in line with Morar et al. (2018), Nazari et al. (2016), Demirezen et al. (2020) Semaan, Des Jarlais, and Malow (2006) and Keshab et al. (2020) and demonstrates that peer education plays an important role in harm reduction and HIV prevention since it allows PWID to acknowledge the safer use of materials such as condoms. In the same regard, Nazari et al. (2016) point out that with effective outreach, more than 80% of the PWID are able to receive education, information, and advice either in group or individual settings. In addition,

through the outreach, PWID receive regular distribution of new syringes and needles, alcohol swabs, distiller water, and cotton swabs.

Thus, it is evident that volunteer peer education is a critical method of intervention that results in harm reduction among PWID and a reduction of the spread of HIV. To PWID, harm reduction means: having access to sterile injecting equipment, made possible by syringe and needle programmes, and evidence-based interventions. Harm reduction is fundamental because it is based on the principles of inclusivity, trust, flexibility and a non-judgmental attitude towards the needs of the PWID.

The impact of peer education on HIV prevention and harm reduction can be explained by the theory of reasoned action. The theory is supported by the findings of Semaan, Des Jarlais, and Malow (2006) and Keshab et al. (2020). In particular, the study demonstrates that peer education plays a fundamental role in influencing condom use and reducing equipment sharing because it fosters an increased knowledge of HIV and risk behaviour reduction, and improves the skill of using needles and syringes.

This study's findings can further be explained by using the Information Motivation Behaviour Skill Model. In particular, all the reviewed studies demonstrate that knowledge provision is the most important approach to behaviour change. Furthermore, the theory posits that PWID should be motivated, a goal that can be achieved through peer education (John, Walsh, and Weinhardt, 2017). Peer educators are placed in a unique position because of their knowledge of and experience with PWID. Thus, peer educators educate, motivate and initiate behaviour changes among PWID. Finally, as part of BCC, peer education is also an indispensable approach when it comes to the prevention, care, and support programmes for PWID, since it relates to numerous interrelated benefits: increased knowledge, fostering dialogues at the community level, promoting important attitude change, and reducing discrimination and stigma (USAID, 2002).

## **7. Conclusion and Recommendations**

This study sought to determine the impact of engaging peer educators in BCC intervention to prevent the spread of HIV among PWID. A systematic research approach was used as the method of choice and data were drawn from six highly relevant studies. In all of the reviewed studies, the researchers observed a significant improvement in terms of changes in attitudes, knowledge, and self-efficacy of PWID.

The result of this study demonstrates that peer educators effectively communicate with PWID and influence behaviour change to reduce harm. Due to their knowledge and first-hand experience as reformed drug users, they can establish important relationships with current PWID and promote the adoption of positive behaviours to reduce the spread of HIV.

Based on the findings, several recommendations are possible. Peer-led interventions should be used to enhance more comprehensive programmes for drugs and substance abuse and must be administered by peer educators with a current or previous history of drug use, to maximize effectiveness. In addition, given that the intervention can reduce sex-related, risk behaviours, associated with injection drug use by 80% to 90%, it is important to implement informative or educational programmes to support public discussion about reducing HIV transmission through the use of BCC strategies.

However, there is also the need to investigate the cost-effectiveness of this behaviour prevention intervention. Looking at the role of peer educators in HIV prevention among PWID, the study proposes the engagement of volunteers (who are close to and in permanent contact with PWID in hotspots) who assist PWID with their injections in BCC interventions. This can guarantee the sustainability of harm reduction actions.

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