Short Report

Harm reduction-based and peer-supported hepatitis C treatment for people who inject drugs in Georgia

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\textbf{A R T I C L E  I N F O}

Article history:
Received 11 July 2017
Received in revised form 2 November 2017
Accepted 9 November 2017
Available online xxx

Keywords:
People who inject drugs
HCV treatment
Peer-support
Cascade of care

\textbf{A B S T R A C T}

Backgrounds: Georgia faces high HCV rates (5.4% of chronic cases in general population) with an epidemic concentrated among people who inject drugs (PWID). A National HCV Elimination Program (NHCEP), was launched in April 2015, aiming to eliminate HCV by 2020. To succeed, this program must develop tailored interventions to enroll PWID in treatment.

Intervention: We implemented a pilot intervention to facilitate access to and retention of PWID in the NHCEP, and to prevent reinfection after treatment. Screening was offered at a harm reduction center. PWID with positive results were followed by peer-workers during medical assessment, which lasted 73 days in average, and throughout the treatment by Sofosbuvir and Ribavirin+/– Peginterferon for 12, 24 or 48 weeks delivered at a medical center. Additional prevention sessions and PCR checks were delivered to PWID 6 and 12 months after the confirmation of sustained virologic response.

Results: The pilot intervention screened 554 people in 5 months with 244 starting treatment. The majority of participants (98.0%, n=239) completed the treatment. The intervention, initially implemented in the capital, was replicated in a rural area.

Conclusion: Peer-supported and strongly integrated, comprehensive HCV care will help PWID reach high uptake and adherence to care.

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\textbf{Background}

\textit{Eliminating hepatitis C}

The introduction of new highly effective direct-acting antiviral (DAA) therapies has created an opportunity for the global elimination of hepatitis C virus (HCV) (\textit{Hepatitis C: only a step away from elimination?}, 2015).

People who inject drugs (PWID) account for 10% of HCV cases worldwide (Gower, Estes, Blach, Razavi-Shearer, & Razavi, 2014; Nelson et al., 2011) and 23% of new infections (WHO, 2017). Almost half of chronically infected PWID lives in East/Southeast Asia and Eastern Europe (Nelson et al., 2011), where there is overall limited access to HCV treatment due to the high prices of DAs (Bailey, Turkova, & Thorne, 2017; Lim et al., 2017). In many Eastern European countries, these exorbitant prices lead to further exclusion of PWID, with reimbursement restrictions in case of drug use, masked as concern about treatment adherence (Marshall et al., 2017).

Interventions adapted to middle-income countries that overcome the barriers to HCV treatment in PWID urgently need to be developed to achieve the WHO targets of testing 90% and treating 80% of chronic HCV cases by 2030 (WHO, 2016).

\textit{The Georgian challenge}

With 5.4% of chronic HCV infection in the general population (Gvinjilia et al., 2016), Georgia has one of the highest HCV burdens in the world. The country also has a high rate of injecting drug use, with 66.2%–92% of antibody carriers among PWID (Bouscaillou...
et al., 2014; Curatio International Foundation, 2015). PWID represent 25% of HCV cases in the country (Luhmann et al., 2015). A National HCV Elimination Program (NHCEP) was launched in April 2015 with strong stakeholders support and a donation of DAAs from Gilead Sciences. The initial phase (2015–2016) of the NHCEP focused on providing 7000 free courses of Sofosbuvir (with Ribavirin+/– Peginterferon) limited to persons with advanced liver fibrosis (F3 or more corresponding to elastometry above 10 kPa or FIB4 > 3.25). The ongoing second phase (2016–2020) intends to treat every person chronically infected with HCV (Gvinjilia et al., 2016). To succeed in eliminating HCV, PWID must be considered a priority target, with a more proactive approach to guarantee their access to treatment.

Intervention: a model of care for PWID to facilitate access and adherence to treatment

Aim of the project

To facilitate access to and retention of PWID in the NHCEP and to prevent reinfection after treatment, Médecins du Monde (an international, medical non-governmental organization), alongside New Vector (a Georgian self-support organization of PWID) and Neolab (a medical center) developed and implemented a peer-support intervention. The overall aim of the project was to provide a model to scale-up to other regions of Georgia in the framework of the NHCEP.

The project took place in Tbilisi, the capital of Georgia, during the initial phase of the NHCEP. During this phase and until recently, HCV treatment delivery was only possible in authorized medical centers (MC).

The project was evaluated in the context of an effectiveness-implementation research (Curran, Bauer, Mittman, Pyne, & Stetler, 2012) that received ethical clearance from the Georgian Institutional Review Board of the Health Research Union, Tbilisi. Each participant included in the project signed a written informed consent. Medical costs that were not included under NHCEP (e.g. management of the adverse events) were reimbursed by Médecins du Monde.

Conceptual framework

In addition to stigma, being denied social support, criminalization and discrimination, patient and provider-related barriers contribute to suboptimal hepatitis C treatment uptake and retention among PWID (Doyle et al., 2015; Harris & Rhodes, 2013; Rich et al., 2016). The intervention aims to overcome the following obstacles: (1) due to referral-associated delays, inflexible hours, geographical distance, waiting time, as well as the prejudiced attitudes of some health professionals, PWID are not likely to seek HCV testing; (2) in the case of a positive result, linkage to care can be made difficult by the long medical assessment required before starting treatment (the PCR test, which confirms the infection, needs to be done in centralized laboratories, and until now, the choice of treatment combination is based on knowing the genotype and the level of liver fibrosis); (3) health providers are concerned that poor treatment adherence in PWID, related to their supposed instability and the occurrence of unusual side effects, will lead to suboptimal efficacy; and finally (4) the risk of reinfection due to continued injecting drug use after treatment that would negate the benefit of treatment is a major reason stated by health authorities for excluding PWID from treatment programs.

Intervention content (Table 1)

Screening within a harm reduction center (HRC)

The screening process was offered at a HRC usually delivering prevention services to about 2600 PWID in Tbilisi. Eligibility to treatment was defined for the initial phase of the NHCEP by a positive viral load and severe liver fibrosis (defined as fibrosis F3 or more according to FIB-4 score or liver elastometry). The usual clients were invited to the HRC to undergo a HCV rapid test (which can only identify people having HCV antibodies, not those who have actually confirm chronic infection) and a liver elastometry (which can be performed using a device that is highly mobile). People with HCV antibodies and liver fibrosis F3 or more were sent to the medical center (MC) for further assessment. To avoid missing cases eligible to treatment, PWID with F2-F3 or inconclusive

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Table 1
Pathway of participants.

<table>
<thead>
<tr>
<th>PROJECT STEP</th>
<th>HARM REDUCTION CENTER</th>
<th>MEDICAL CENTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughout the project</td>
<td>Peer workers:</td>
<td>Navigator:</td>
</tr>
<tr>
<td></td>
<td>- Are in contact with the patient and the navigator throughout the process</td>
<td>- Schedules PWID medical appointments</td>
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<tr>
<td></td>
<td>- Deliver an individual support in addition to the regular appointments: mediation with medical staff, help with paperwork, etc.</td>
<td>- Orientates PWID within the medical center</td>
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<tr>
<td></td>
<td>- Track the patients dropping out of medical follow-up</td>
<td>- Relays relevant information from the medical staff to the peer workers and vice versa</td>
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<tr>
<td>SCREENING</td>
<td>- Noninvasive screening: HCV rapid antibody test and liver elastometry</td>
<td>- HCV confirmation (PCR)</td>
</tr>
<tr>
<td></td>
<td>- Initial interview with peer worker (general information and social assessment)</td>
<td>- Pretreatment assessment (FIB4, genotype, ultrasonography, etc.)</td>
</tr>
<tr>
<td>MEDICAL ASSESSMENT</td>
<td>- Counseling by peer worker at treatment initiation: messages on adherence, side effects, drug interactions, etc.</td>
<td>- Bi-monthly medical appointments</td>
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<td></td>
<td>- Patients’ group discussions (monthly)</td>
<td></td>
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<td></td>
<td>- Multidisciplinary meetings involving peer workers and medical staff</td>
<td></td>
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<tr>
<td>12 weeks POST-TREATMENT</td>
<td>- Counseling by peer worker at the end of treatment: messages on the risk of reinfection and liver disease progression after treatment</td>
<td>- PCR check on 12th week after the end of treatment</td>
</tr>
<tr>
<td></td>
<td>- Reminders to get a PCR check on 12th week after the end of treatment</td>
<td></td>
</tr>
<tr>
<td>POST-TREATMENT</td>
<td>- Counseling by peer worker regarding reinfection 6 and 12 months after the PCR check on 12th week after the end of treatment</td>
<td>- PCR checks 6 and 12 months (right after the counseling session with the peer worker)</td>
</tr>
</tbody>
</table>
elastometry results were also sent to the MC for a second assessment (elastometry performed by a different person and FIB-4 score).  

Besides facilitating the recruitment of PWID by offering screening in a low threshold HRC, the objective of this process was to avoid unnecessary invasive procedures (blood sampling for PCR) and related costs for the majority who would be ineligible for treatment and, at the same time, to be sufficiently sensitive so as not to miss any cases.  

Case management through peer support and patient navigation  

In this pilot, the medical assessment, treatment and follow-up were performed in a MC authorized to deliver HCV treatment (Sofosbuvir, Ribavirin+/− Peginterferon for 12, 24 or 48 weeks according to genotype, treatment experience and cirrhosis status). The peer-support intervention consisted of three mandatory face-to-face sessions and personalized support, plus the organization and moderation of patient group discussions at the HRC.  

The initial interview with a peer took place at the time of the screening of each patient pre-assessed as eligible. The aim of this first meeting was to provide general information about the program (registration process, steps of the treatment program, etc.), to assess each patient’s situation, in particular in terms of social support needs, and to organize a personalized follow-up. A second face-to-face was delivered by peers just after treatment initiation and addressed the questions of adherence, side effects and their management, as well as treatment contraindication and drug interactions. The last face-to-face was delivered just after the end of treatment. Individuals with negative results received information about liver disease progression and post-treatment follow-up (including the importance of a viral load check 12 weeks after the end of treatment), and concerning behaviors carrying a risk of reinfection. Additional meetings or phone calls with peers could also be arranged at the patient’s request. Further support included helping with paperwork or mediated with medical staff, etc.  

Patient group discussions were organized at least once a month at the HRC and were moderated by peers to enable patients to share information about their treatment experience (how to maintain adherence, how to deal with side effects, etc.) and to ask specific questions. Patients at different stages of treatment, including those who had not yet started, also participated.  

Finally, the peer workers were responsible for tracking patients dropping out of the intervention. In the MC, a full-time navigator was in charge of scheduling PWID medical appointments and had a key role as a mediator between the medical staff and the team of peers. If needed, individual cases were reviewed by peer workers and medical staff during multidisciplinary meetings.  

Six peers already working at the HRC were involved, each one followed approximately 40 PWID. Prior to the intervention, peer workers had received three-day training delivered by a medical doctor from the MC partner and a harm reduction specialist, and one-week on-the-job skill enhancement relating to counseling methods delivered by a professional social worker.  

Standardized material was provided to guide the peer-support intervention. The tools (three check lists for the face-to-face sessions, a peer-worker file, a group discussions grid, and a notebook for PWID in treatment) were specifically developed by medical experts of Médicins du Monde, then tested and adapted by the peer workers (Supplementary material).  

Reinfection prevention  

Changing behaviors at risk of HCV transmission was part of the three face-to-face sessions described above, which were also used to deliver standardized messages regarding reinfection, as well as personalized advice based on practices reported. After treatment completion, PWID were invited to two additional visits 6 and 12 months after the confirmation of sustained virologic response. These visits were composed of a counseling session with a peer worker and a PCR check. Messages regarding reinfection were specifically developed for these sessions, following the analysis of behavioral questionnaires completed at treatment initiation. Specific drug consumption related risks were identified in the project population, as providing assistance to one another during drug preparation or drug injection, and purchase of ready to use pre-filled syringes.  

Cascade of care in the project (Fig. 1)  

In a five-months period (May to September 2015), 554 of the ~2600 of HRC usual clients (an estimated 21%) came to be screened to enter the NHCEP. Cascade of care was as follows:  

- 97% (n = 338) of the 350 persons referred by the HRC (i.e. with positive rapid test, and elastometry result ≥F2-F3 or inconclusive) actually attended the MC for eligibility confirmation.  
- 98% (n = 333) of these 338 patients completed the pre-treatment assessment, which took 73 days on average. Eligibility was confirmed for 244 who initiated treatment.
- 98% (n = 239) of the 244 participants who started treatment completed the treatment
- 98% (n = 234) of them came for the PCR check 12 weeks after treatment (88.5% reached sustained virologic response, n = 207). Incarceration was one of the reasons for dropping out of the intervention at this step.
- Finally, 78% (n = 161) of those identified as cured at the end of treatment came for at least one post-treatment prevention session and PCR check
- The intervention, initially implemented in Tbilisi, capital of Georgia, is being replicated in another area of Georgia, in partnership with another local harm reduction organization.

**Conclusion**

Our findings demonstrated that a simple peer-support intervention implemented in a HRC produced excellent treatment uptake and retention among PWID based in Tbilisi, Georgia. Further, our work contributed to securing recognition of PWID as a priority group for prevention and treatment within the national program. Moving forward, we suggest additional key actions to increase equitable access to HCV treatment in Georgia. First, we advocate for further decentralization and integration of HCV care services, which would allow adoption of a multidisciplinary approach to PWID treatment that is fully integrated into HRC. This is likely to obtain even better results in terms of linkage to and retention in care and may appeal to the most vulnerable [Ho et al., 2015]. In addition, ensuring that ongoing public-awareness campaigns incorporate messages to help PWID recognize their risk of HCV on the one hand and to improve public understanding of addiction on the other, would help reduce stigma. Also, drug addiction should be addressed as a health issue and not a crime: restrictive legislation towards PWID that applies in the country still represents a major obstacle to care and prevention in general [Grebel, Dore, Monor, Rockstroh, & Klein, 2017]. Finally, access to effective interventions to prevent reinfection after treatment in PWID is crucial to reach elimination. In fact, the coverage of harm reduction services was still suboptimal when the NHCEP started (51% of PWID had access to needle and syringe programs and 9% to OST in 2015) [Alavidze et al., 2016].

Georgia, as the other middle-income countries developing their HCV control strategy, must prioritize PWID, with specific interventions for screening and support during treatment. Based on our findings, scaling up this model of care nationally appears to be a way to improve PWID access to treatment and to make progress towards the country’s goal of eliminating HCV.

**Conflict of interest**

The authors have declared that no competing interests exist.

**Acknowledgements**

Authors acknowledge the staff of clinic Neolab and Médecins du Monde Georgia for their invaluable contribution in the study. We would like to thank New Vector peer-workers (Guram Shafatava, Mikheil Tavadze, Natia Labartkava, Dimitri Tsklaura, Paata Porchkhde, Aleko Khinchaghashvili, Temur Khutlashvili), Fibrosan Doctor (Nana Rekhvashvili), VCT consultant (Manana Khikhadze) and Laboratory assistant (Tea Kapanadze) for their input.

This work has been made thanks to the financial support of the Agence Française de Développement (AFD). The Funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

**Appendix A. Supplementary data**

Supplementary data associated with this article can be found, in the online version, at [https://doi.org/10.1016/j.drugpo.2017.11.014](https://doi.org/10.1016/j.drugpo.2017.11.014).

**References**


Assessment of HIV Knowledge, Attitude and Behaviour among Hepatitis C-Infected Patients Who Inject Drugs in Tbilisi, Georgia

Keywords: HIV, Knowledge, Attitude, Hepatitis C

ABSTRACT

Blood-borne infectious disease is a growing problem among injecting drug users in Georgia, with growing populations of HIV and HCV-infected people. Despite harm minimisation activity in Georgia since 2005, there are still knowledge gaps around drug user knowledge, attitudes and behaviours. Through compiling and comparing qualitative and quantitative studies, it was shown that HIV knowledge was suboptimal in injecting drug users, and differed between age groups. High amounts of stigma existed around HIV, more than can be accounted for by just injecting drug use alone. Despite education, risk behaviours were still practiced. Differences were demonstrated between risk behaviour severity and infectious status. The study shows many areas for program development and gives valuable insight for similar programs and the need for responsive, personalised, dynamic harm minimisation programs.
INTRODUCTION

In Georgia in 2016 there were an estimated 52,500 injecting drugs users (IDUs)\(^1\), 1.41% of the total population. Georgia is a low HIV/AIDS prevalence country with an estimated infected number of 12,000\(^2\). Conversely, hepatitis C is highly prevalent (high prevalence country), with 7.7\% \(^3\) of the population showing exposure (just under 290,000 people), with 66.2\% of IDUs having hepatitis C\(^4\). The reasons for this transmission has not been properly studied. Harm minimisation services for hepatitis and HIV have been active in Georgia since 2005. The purpose of this paper is to study knowledge, attitudes and risk behaviours related to HIV among hepatitis C infected injecting drug users in Georgia. It is hypothesised that knowledge about HIV/AIDS in injecting drug users with hepatitis C in Georgia is insufficient, and contributes to risk behaviour.

This study was conducted by the NGO "HEPA PLUS’’ and was funded by the International East-West AIDS Foundation (AFEW International). The organisation focusses on hepatitis C, mainly IDUs. Since 2011, “HEPA PLUS” has been actively involved in advocacy campaigns related to the availability of hepatitis C treatment and diagnosis, as well as developing, updating and implementing a strategic plan related to the availability of hepatitis C treatment and diagnosis. The organisation is funded by The Global Fund, and the program is supported by Gilead.

MATERIALS AND METHODS

The study was conducted over 7 months from February 1 to August 30, 2017. The study had two arms; a qualitative in-depth interview and focus group arm, and a comparative quantitative arm which has been previously compiled by the organisation and evaluated 5 years of program activity. The qualitative arm involved 60 IDUs with hepatitis C, and compared the quantitative results of 139 participants, 35 of which were HCV-infected. None of the participants of both arms had HIV. There was no overlap between the arms. Age range was for interview was 25 to 55, and for focus groups, 29 to 65. After ethics approval, respondents were recruited by program officials until required number was reached. The qualitative arm involved in-depth interviews of 30 HCV-positive and HIV-negative IDUs, and the focus groups, 30 people, in 4 groups, with the same infected status. The interviews and focus groups assessed responses to certain conversation topics to gauge HIV knowledge, attitudes and risk behaviours and were led by trained researchers.
Selection criteria included: age 18 years or above, IDU, or IDU history, hepatitis C infected, or in treatment program in the last year, voluntary involvement, and Georgian speaking.

RESULTS

Despite HIV knowledge being available through TV, internet and harm reduction services, level of knowledge was still low. Most participants did not know the difference between HIV and AIDS. Participants knew that HIV was not transmitted by non-sexual and non-blood-related activities, such as hugging, kissing and hand holding, but they did not know the virus cannot be transmitted through utensils and linen. The majority of respondents partook in a risky behaviour, despite knowing the link between their infection status and the risk behaviour. Most of the participants had shared injections, cotton or pottery.

Most participants knew about the high risk for sexual transmission during unprotected sex, but there was still a high rate of unprotected sex. Participants were unable to rationalise their behaviour, with only three respondents stating they undertake risky behaviours while intoxicated.

Most respondents believed that HIV could be transmitted through shaving or sharing toothbrushes, as well as at beauty salons and the dentist. This led many to not share these instruments at home, as well as other common items, such as linen, cutlery and crockery.

Many participants had experience living with an HIV-infected individuals and were confident they would not have issues co-habiting with an infected person. Lack of knowledge was associated with negative attitudes, but many participants stated that if a close contact was to become infected, they would offer empathy and support. Some stated they would be willing to start a family if they loved HIV-infected person.

There was a high level of self-stigmatisation in relation to hepatitis C. Many had tried to protect their status from family and employers. Stigma around HIV was higher, with many males stating they would not marry or start a family with an HIV-positive person, but would be willing to offer support. Responses from women were much broader, ranging from total acceptance to complete separation.

There was no difference in knowledge between males and females, but females had less riskier sexual behaviours. Men often knew their HCV status, yet would still have unprotected...
sex, with some believing it could not be sexually transmitted. Both groups had equal HIV risk, but women knew less about the difference between HIV and AIDS. Injecting risk behaviour was also similar, with the vast majority sharing instruments. As stated, women had wider responses to HIV-infected people, with one stating that they would socially block an infected family member, five women stating HIV-infected people were equal members of society, and three stating they would be willing to marry and start a family if they loved an HIV-infected person.

Interview participants showed no significant difference between the younger (26-35) group, and the older (36-55) group in terms of knowledge, though four participants in the younger group could differentiated HIV and AIDS. The younger group were also more able to independently and easily obtain HIV information. There was no difference between the groups in terms of risk behaviours, stigma towards HIV and satisfaction with NGO services (though more older people used services).

Focus group analysis showed a difference in knowledge, with the oldest group (56 and older) having less knowledge, but they were also less likely to partake in risky sexual behaviour. The middle age focus group (36-55) expressed the greatest amount of fear and sympathy towards the HIV-infected, whereas the younger group (25-35) expressed less stigma.

There were statistically significant differences between HCV-positive and negative people. HCV-positive people more frequently shared water for injection (33% v. 7%, p<0.001), sharing of utensils (43% v. 9%, p<0.001), sharing of cotton (10% v. 1%, p=0.039) and drug sharing (41% v. 12%, P<0.001).

Though there were differences in sexual partner HIV status, condom use, worry about HIV, and knowledge of their own HIV status between HCV-infected and non-infected participants, none of these differences were statistically significant.

Most respondents used the available NGO services and all respondents viewed it as satisfactory. They positively evaluated the Gilead-sponsored hepatitis C program, as well as the education provided. Participants found it difficult to name specific needs, but many mentioned the need for 24-hour needle and syringe exchange. Appreciated services included free dispensation of naloxone and anonymous, daily services.
DISCUSSION

The results of this study show that hepatitis C is somewhat accepted in Georgian society, while HIV/AIDS is extremely stigmatised. There could be various reasons for this, including the high prevalence among the population, availability of treatment options, and optimism about the outcomes of treatment, and could lead to decrease in information seeking. Conversely, HIV treatment is limited to most people, and HIV knowledge was incomplete in most respondents. IDU beneficiaries infected with hepatitis C had a positive attitude towards people with HIV/AIDS, although stigma did still exist to some extent.

Our research has shown that access to information about HIV/AIDS among IDUs with HCV was high, but this knowledge did not always create a risk behaviour change. Although most of the beneficiaries accessed services, there seemed to be little effect on changing risky behaviours. All IDUs infected with Hepatitis C had risky behaviours in the past, and the majority of them continued risky behaviours.

Differences between male and female respondents were demonstrated, with female respondents generally having a more tolerant attitude towards HIV-infected people. Female sexual behaviour was less risky.

People infected with HCV are also somewhat stigmatised, and self-stigma creates a degree of denial about their equal status in family and community. The power of this stigma is such that, despite two years of elimination efforts in Georgia, three respondents stated that they do not participate in programs for fear of employment termination.

Social advertisements in fighting HIV are shown in our research to be extremely important. Attention should be given to the possibility of living together with an HIV-infected person and to increase acceptance of this disease, as is happening towards hepatitis C.

Based on the analysis of quantitative research it is clear that the respondents who did not have HCV were characterised by less risky behaviour in terms of injecting drug use. However, there was no difference in terms of risky sexual behaviour.

CONCLUSION

Our study on the knowledge, attitudes and behaviours related to HIV of injecting drug users without HIV in Georgia revealed interesting results and points for further future program.
development. In reference to HIV knowledge, as predicted, knowledge was incomplete, with participants being generally overly wary about sharing common equipment with HIV infected people. Interestingly though, this often didn’t translate to a change in drug risk. Stigma was generally high around HIV, much more so than HCV, possibly related to higher prevalence. Knowledge of risk of sexual transmission could provide direction for future HIV risk education, and in terms of knowledge, while there was no difference between genders, there was between ages. The results are interesting, and show the need for innovative ways to harm minimise and reduce person risk, and could lead programs to be more responsive and personalised in their approaches to harm minimisation, education and service provision.

LIMITATIONS

Our study was limited due to selection bias and small sample size. The use of focus groups possibly altered the responses of some participants in a group setting.

ACKNOWLEDGEMENTS


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